

The Negative Impacts of Migration on Agricultural Production

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Abstract

Agriculture is a main source of economic and food security in low- and middle-income countries and there is a growing trend of migration from rural to urban areas and towards developed countries. Migration causes a loss of agricultural productivity due to many factors in which the main is shortage of agricultural workers in rural areas. Other factors including improper usage of fertilizers for better growth and production of crops, Households with more migrants have difficulties in dealing with harsh weather to get more agricultural yield. Those regions which have higher rate of male migration have problem to hire manpower for agricultural work. Then women are playing these roles properly, but they receive discrimination because many people believe that these works are specified for men. This discriminate behaviour leads to the potential for less agriculture production. Migration also causes diseases to spread in crops, humans and animals. Crop and animal diseases led to reduction in agricultural production and human disease cause reduction in farm workers. This labor shortage causes difficulty in crop management like planting, weeding and harvesting. It also causes a rise in salaries of agricultural workers which increases the cost of growing crops and less profit from agricultural production.

Key Words: Agriculture production, Migration, Manpower, Crop management, Fertilizer

Introduction

Agriculture plays a significant role in promoting economic growth, reducing poverty, and enhancing food security in many developing nations. Agricultural productivity is decreasing because of rural-urban migration, even while emerging nations are working to end poverty, hunger, and malnutrition. Due to the rapid pace of urbanization in emerging nations and the fact that people are moving from rural to urban regions more quickly than in the past, there is a risk of future shortage of food and other agricultural products if nothing is done (UK AID, 2016).

Agriculture output can be significantly impacted by migration, both at the movement's origin and destination. The number of individuals traveling worldwide is rising annually. Most migrants are moving inside their own countries, from rural to urban areas, despite the common misconception that they mostly leave their place of origin, according to recent statistics. About 281 million individuals moved in 2020 according to the report of United Nations department of economics and social affairs (UNDESA, 2020).

This extends to about 4 percent of the world's population that will be living abroad in 2020. High remittances that migrants send to their family back home, scholars contend that migration is now an essential component of rural livelihoods in many low- and middle-income countries (LMICs) (Mathew, 2014; Obi et al., 2020; Tuladhar et al., 2014). In several LMICs, remittances have played a key role in rural development (Mohapatra and Ratha, 2010). According to a recent World Bank analysis, around US\$ 626 billion entered LMICs in 2022, and this amount is anticipated to rise in the years to come (World Bank, 2022). Remittances are becoming a significant source of off-farm income and a significant addition to the national gross domestic product in many developing nations where agriculture is a significant industry (ADB, 2017; Koczan et al., 2021).

Migration affects the nations of origin and destination in both good and bad ways. As a result, migration has emerged as a significant issue in public discussions of the global economic, social, and political spheres (Castles and Miller, 2014). A significant factor contributing to the labor shortage in LMICs is migration. Numerous studies have evaluated the benefits of labor migration for the rural welfare of the countries of origin, including reducing poverty (Adams and Page, 2005; Lokshin et al., 2010; Wagle and Devkota, 2018; Zhu and Luo, 2010; Nguyen et al., 2015), food security (Isoto and Kraybill, 2017; Mora-Rivera and van Gameren, 2021; Nguyen et al., 2017), improving health (Berloff and Giunti, 2019; Gustafsson, 2018), reducing inequality (Agwu et al., 2018), consuming calories (Karasoy, 2017), managing natural resources (Bierkamp et al., 2021; López-feldman and Chávez, 2016), improving nutritional intake (Isoto and Kraybill, 2017), and improving education (Amuedo-Dorantes and Pozo, 2010; Edwards and Ureta, 2003). However, the detrimental impacts of household labor migration in LMICs have only been the subject of a small number of research.

Negative consequences, such as the loss of productive labor, can also occur in a family with labor migrants (Paudel et al., 2019a). These consequences can eventually impact labor dynamics at the household and community levels as well as the availability of labor in agriculture. Crop production and farm earnings are decreased when workers



leave the home and community, raising rural salaries and crop cultivation costs (Duda et al., 2018; Yamauchi, 2016; Zhang et al., 2014). However, many households in developing nations depend on agriculture as their primary source of income and subsistence, even when there are migrants living there. A household may concurrently experience both good and negative consequences under such circumstances.

The loss of productive labor and a drop in agricultural production and profitability might have a negative impact, while an increase in off-farm income through remittances could have a positive one. However, migration's overall effects are complicated. In terms of rural development, nutrition, food security, agricultural capacity, and the larger rural economy, it can have long-lasting impacts on both the origin and destination areas (Zezza et al., 2011; FAO, 2017; State of Food and Agriculture, 2018).

The broader effects of migration on both origin and destination are examined here.

Gender-based prejudice in the agriculture area

In regions where there is gender-based migration imbalance, with frequently more males departing than women, the agriculture industry may be indirectly impacted, eventually affecting productivity. Research indicates that regions with a greater male migration rate also have difficulties hiring males for agricultural management roles. More women are effectively establishing themselves in farm management jobs since fewer males are available to fill these posts, which are typically held by men in these areas. However, women are experiencing prejudice and unjust treatment since many in the sector believe that a male should fill this function. In addition to having a negative effect on the health of the women who hold these jobs, prejudice can also make it more difficult for the company to succeed. One of the numerous detrimental effects of institutional gender discrimination is the potential for a decline in agricultural production. There is no shortcut to this problem. Addressing gender disparities at their source requires a variety of integrated approaches over an extended period (Zezza et al., 2011; FAO, 2017; State of Food and Agriculture, 2018).

Disease Spread

Research has shown that cross-border migration may contribute to the spread of disease, which might have a detrimental effect on agricultural output and industry overall. Migration can affect the spread of illnesses in humans, animals, and crops which may have a negative effect on agricultural output. Agricultural diseases have the potential to directly reduce agricultural output, and their effects can linger for years. Human and animal diseases can also affect agricultural output; for instance, if a workforce is affected, a farm might not have enough workers to harvest its crops. Alternatively, the framework may suffer if a crucial animal species is affected, which may also have a similar result (Zezza et al., 2011; FAO, 2017).

Impact of migration on fertilizer use efficiency

Increasing fertilizer application is a crucial step in raising agricultural output, however overuse of fertilizers has led to major environmental issues (Wu et al., 2018). Due to a shortage of workers for on-farm work, migration may lead farmers to apply all their fertilizer at once rather than gradually, depending on the demands of plant development (Ma et al., 2017). Migration mostly reduces labor, which impacts the efficiency of technological and fertilizer usage. This is because households with a higher number of migrants have a harder time adapting to weather, plant development, and natural calamities (Sauer et al., 2015). Migration can therefore, on the one hand, reduce the amount of manpower available for agricultural output, which in turn can reduce farm technical efficiency. However, because migrant households have limited agricultural labor, they choose one-time fertilization, which will result in losses of fertilizer and worse fertilizer usage efficiency than spreading fertilizer over time.

Impact of migration on agricultural productivity

Several household and farm-level factors can influence the choice to migrate (Maharjan et al., 2013). Since agriculture is the primary source of income for many households in developing nations (FAO, 2014), a few other factors, such as farm size, household size, land typologies, land productivity, farm management techniques, and climate, influence their decision to move. This makes it possible for us to connect household labor migration to factors including agricultural productivity, labor shortages, crop cultivation costs, farm profitability, and off-farm income.

Communities are experiencing a labor shortage, and rural salaries are rising because of households losing productive workers (Wang et al., 2016; Wiggins and Keats, 2014; Zhang et al., 2014). Even though smallholders often have a lower land-to-labor ratio, their inclination to recruit laborers is impacted by labor shortages and rises in rural wages (Paudel et al., 2019b). There are two ways in which this affects agricultural productivity and output. First, high salaries raise labor prices and crop-growing expenses for farmers, which lowers farm profitability, particularly if remittances aren't utilized to buy better agricultural technology. But for certain households that depend entirely on agricultural labor for their income, raising rural wages may improve their welfare.



Second, farmers might not be able to engage enough workers because of shortages, which would make it more difficult to complete necessary crop management tasks including timely weeding, planting, harvesting, and threshing (Paudel et al., 2019a). Due to labor shortages, timely crop management is inefficient, which lowers agricultural production and profitability and has a detrimental effect on the agricultural economy. Thus, it is empirical to investigate possible trade-offs and synergies between family labor migration and agricultural productivity, production costs, farm profitability, and off-farm income.

According to 30% of all respondents, the primary reason for the drop in agricultural output is migration from rural to urban areas. They said loss of agricultural labor is the primary effect of rural-urban migration, according to people in the examined regions, including the leaders. Since many fields in rural regions are excavated by adults, most people think that if nothing is done to address this issue, agricultural productivity will decline, and poverty will develop. Rural migration also contributes to the rise in agricultural output prices. People claim that because of the high level of market demand, prices rise when agricultural production declines. They claim that if rural-urban migration keeps up, agricultural output will rise significantly (Niyonzima, 2023).

Potential direction

The agricultural sector should get ready to gain from migration by utilizing its potential to boost production and improve the region's overall economic well-being. Additionally, the sector should be conscious of the possible harm that migration may do to farming and put plans in place to anticipate and address these issues.

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