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Migration and Food and Nutrition Security

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1.Introduction

Migration, both within and between countries, can play an important role in food and nutrition security. But that role is relatively understudied both within the migration literature and within the food security literature.[2] The migration literature tends not to study food security as an outcome of migration, in part because food security is not directly affected by migration and the causal chain is difficult to fully demonstrate. [3] Meanwhile, from the perspective of food security analysis, most surveys that collect nationally representative information about food and nutrition security neglect international migration because it is relatively rare and estimates of the number of food or nutrition insecure persons do not tend to account for movement.[4] Moreover, food insecurity is only a cause of migration in more involuntary settings, when people's livelihoods are at stake due to conflict or extreme weather shocks.[5]

Voluntary migration can have important implications on those left behind, so it is important to consider the implications of migration for food and nutrition security from both perspectives. In this note, I will first consider how migration can affect food and nutrition security among migrants themselves. Second, I will look at how migration can affect food and nutrition security in rural areas that migrants leave, and third, I will provide brief thoughts about how research on changes in food and nutrition security may be affected. I will also conclude with some thoughts about future research directions.

2. Food and nutrition security among migrants

It is perhaps easiest to think about how food and nutrition security among migrants themselves might change. Migrants experience a change in income when they migrate; if positive, it may allow them to eat better food and therefore they may be less likely to be food insecure after migration. However, if migrants were not food insecure before they migrated, then there is no effect on overall food insecurity. Additionally, it is important to understand how migrant diets change. Migrants moving to urban areas or internationally may become malnourished; whereas they might have access to enough food, exposure to processed foods may lead their diets to decline in quality, leading to a type of nutrition insecurity.

Perhaps not surprisingly, substantial micro and macroeconomic evidence suggests that migrants earn higher returns to their labour when they migrate.[6] In the context of internal migration, research has found that returns to labour in migration or outside of agriculture are quite substantial, even controlling for differences in standard human capital measures. While there is debate about whether this wage gap relates to restrictions against migration or differences in innate ability, risk tolerance and other unobservable characteristics, from a food and nutrition security perspective the important point is that returns to labour rise when people are able to move out of agriculture.

This difference can be far more substantial when considering international migration. Again, research shows that migrants reap large gains in the form of higher wages when they migrate, as the returns to their

[2] J. Crush (2013). Linking food security, migration and development. *International Migration*, vol. 51, No. 5, pp. 61-75.
[3] A. Zezza, C. Carletto, B. Davis and P. Winters (2011). Assessing the impact of migration on food and nutrition security. *Food Policy*, vol. 36, pp. 1-6.
[4] FAO, IFAD, UNICEF, WFP and WHO (2019). *The State of Food Security and Nutrition in the World 2019. Safeguarding against economic slowdowns and downturns.* Rome: FAO.
[5] FAO, IFAD, IOM and WFP (2018). *The Linkages Between Migration, Agriculture, Food Security, and Rural Development*. Rome: FAO.
[6] Beegle, K., S. Dercon and J. de Weerdt (2011). Migration and economic mobility in Tanzania: Evidence from a tracking survey. *Review of Economics and Statistics*, vol. 93, pp. 1010-1033; Gollin, D., D. Lagakos and M. Waugh (2014). The agricultural productivity gap. *Quarterly Journal of Economics*, vol. 129, pp. 939-993.

skills increase.[7] In the context of international migration, mobility restrictions are substantial and although obviously politically infeasible, opening borders would almost certainly lead to large gains.[8]

Although income gains to migrants are fairly clear, migrants may not have been food or nutrition insecure prior to migrating. There is little evidence on this point, but it is clear that migration requires the payment of up-front costs and if the food insecure are more likely to be credit constrained they may not be able to afford those up-front costs.[9] While credit constraints are more likely to negatively affect international migration, evidence on whether they affect internal migration is less clear.[10] Whereas the No Lean Season program initially worked to overcome credit constraints, the presence of credit constraints may be quite concentrated geographically, as nationally representative data shows no evidence of credit constraints affecting internal migration flows.[11]

Migrants' diets may also change as they move. Among poorer migrants, diets may improve; for example, internal migrants in Ethiopia eat substantially more animal source products than similar residents of source villages who did not migrate.[12] However, it is plausible that migrants often eat more processed foods when moving to urban areas or international destinations, rather than eating healthier diets. More rigorous research is required to better understand whether migrant diets tend to change for the better or worse on average when they leave, to better understand effects on nutrition security.

3. Migration and food security among those left behind

Decisions made by rural households to send out migrants and other decisions that affect their food security are interrelated.[13] Households must consider the expected benefits of migration against the costs; among households at risk of food insecurity and as noted above, particularly for international migration such costs may be insurmountable. Further, it is an empirical question as to whether migration is positive or negative. After a rural household member leaves, their labour is no longer available for household agricultural production but any remittances that migrants might send back can compensate for those losses and be used for consumption or can be used to invest in agricultural or non-agricultural production. These remittances may also arrive with a lag as migrants establish themselves and pay off loans related to their journey. Thus, the impacts of migration on food security and nutrition are complex, particularly as rural households receiving remittances may substitute food purchases for home production.

Linking voluntary migration, whether internal or international, to food and nutrition insecurity among those left behind is not trivial. As the discussion above suggests, both observable and unobservable factors may play a role in determining whether a household member decides to migrate. This decision can have several different effects on rural household income and time allocation, which can affect members' food and nutrition security. If source households primarily depend upon their own production for food, it is important that the potential lost labour effect on production from the migrant leaving does not outweigh

[7] McKenzie, D., S. Stillman and J. Gibson (2010). How important is selection? Experimental vs. non-experimental measures of the income gains from migration. *Journal of the European Economic Association,* vol. 8, No. 4, pp. 913-945.
[8] Clemens, M. (2011). Economics and emigration: Trillion-dollar bills on the sidewalk? *Journal of Economic Perspectives,* vol. 25, No. 3, pp. 83-106.
[9] Rapoport, H. (2002). Migration, credit constraints, and self-employment: A simple model of occupational choice, inequality, and growth. *Economics Bulletin,* vol. 15, No. 7, pp. 1-5.
[10] D. McKenzie (2007). Paper walls are easier to tear down: Passport costs and legal barriers to emigration. *World Development* vol. 35, Issue No. 11, pp. 2026-2039.
[11] Bryan, G., S. Chowdhury and A.M. Mobarak (2014). Under-investment in a profitable technology: The case of seasonal migration in Bangladesh. *Econometrica,* vol. 82, Issue No. 5, pp. 1671-1748; De Brauw, Alan (2019). Rural Youth: Determinants of Migration Throughout the World. IFAD Rural Development Report Background Paper, No. 15.
[12] De Brauw, A., V. Mueller and T. Woldehanna (2018). Does internal migration improve overall well-being in Ethiopia? *Journal of African Economies,* vol. 27, No. 3, pp. 347-365.
[13] R.E.B. Lucas and O. Stark (1985). The new economics of labor migration. *American Economic Review,* vol. 75, No. 2, pp. 173-178.

and possible positive effects through remittances. Similarly, if the household largely purchases food from markets, the overall effect on household liquidity must be positive. The latter case would potentially work for the urban food insecure. Therefore, overall effects on household income are theoretically indeterminate. Moreover, if regular shortfalls occur during the year, the increase in income may not be enough to increase food and nutrition security; additional income or product must be available during times when households normally fall short of food.

In general, the literature demonstrates that migration has either no effect or a positive effect on agricultural production.[14] It appears in general that households are able to adjust their production patterns or techniques to at least maintain the same level of income. Furthermore, some authors have shown that migration can act as an imperfect substitute for insurance, as migrants can send back additional remittance when source households face shocks. As a result, migration helps reduce the overall risk of household income.[15]

Although both urban and rural areas are affected, globally, poverty and undernutrition, precursors for food insecurity, are concentrated in rural areas.[16] However, the effect of emigration on food security in rural areas is often overlooked due to the preconception that international migrants tend to come from urban areas. In general, with the exception of Bangladesh, the proportion of migrants who leave rural areas for international destinations is roughly equivalent to the proportion of the population who lives in rural areas (figure 1). International migrants often leave rural areas, clearly linking international migration to rural poverty.

Another potential effect on food and nutrition security is through investments in young child nutrition. In this context, conflicting evidence exists. In China, internal migration by parents have been shown to increase weight-for-age among children under 5 years of age, but not height.[17] Internationally, a positive correlation has been shown between migration from Guatemala to the United States and child height-for-age.[18] In contrast, though, children in households from which migrants in Tonga left for New Zealand have lower height-for-age than children in non-migrant households.[19] These results might suggest that women's time allocation allocated to child care declined in Tonga, while income plays a more important role in Guatemala. So, context is important in explaining how migration might affect nutritional investments in young children.

4. Changes in food insecurity and migration

Though worldwide estimates of the number of food or nutrition insecure are unaffected by migration, changes within a national context are worth considering more deeply, particularly for countries with substantial international (or even rural-urban) migration. Similar to the idea of income per national, to better understand how migration affects food and nutrition security, it is worth considering changes in food insecurity among a specific population over time.[20] For example, if we wanted to truly consider changes

[14] De Brauw, A. (2019). Migration out of rural areas and implications for rural livelihoods. *Annual Review of Resource Economics,* vol.11.
[15] Katz E., and O. Stark (1986). Labor migration and risk aversion in less developed countries. *Journal of Labor Economics,* vol. 4, No. 1, pp. 134-149.
[16] L.C. Smith, M. Ruel and A. Ndiaye (2005). Why is child malnutrition lower in urban than in rural areas? Evidence from 36 developing countries. *World Development,* vol. 33, No. 8, pp. 1285-1305.
[17] Mu, R., and A. de Brauw (2015). Unattended but not undernourished: Left-behind children in rural China. *Journal of Population Economics,* vol. 28, pp. 631-657.
[18] Carletto, C., K. Covarrubias and J. Maluccio (2011). Migration and child growth in rural Guatemala. *Food Policy,* vol. 36, No. 1, pp. 16-27.
[19] Gibson, J., D. McKenzie and S. Stillman (2011). What happens to diet and child health when migration splits households? Evidence from a migration lottery program. *Food Policy,* vol. 36, No. 1, pp. 7-15.
[20] Clemens, M., and L. Pritchett (2008). Income per Natural: Measuring Development for People Rather than Places. *Population and Development Review,* vol. 34, pp. 395-434.

in food and nutrition insecurity in Nepal between 2010 and 2015, we would want to consider both urbanization that takes place between the two years, as well as the food security status of international migrants who left during that period.

5. Avenues for research on migration and food security

As stated at the outset of this note, the relationship between migration and food and nutrition security is complex, which likely has left it understudied. There are several clear avenues for future research, though statistical identification will always be difficult. Though not discussed above, agricultural technology adoption can lead to higher productivity and therefore improved food and nutrition security; some long-term research on correlations between migration and agricultural technology change should be possible in places like China for internal migration and the Philippines for international migration. Second, more work is needed to understand whether the food insecure tend to be constrained against migrating; if so, then potentially it would make sense to try to catalyze more voluntary migration among that group, as in northern Bangladesh. Finally, more knowledge would be helpful in understanding how migrant diets change (or not) when they move to urban areas or international destinations. While positive effects on diets are possible, so are negative effects, and, in rapidly urbanizing countries, they can have implications for the entire food system.