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# Labor Shortage and Changes in Land Use Patterns Experiences from Migrant Communities in Ethiopia and Nepal

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### Background

This brief explores how households and communities cope with labor shortages resulting from out-migration and whether labor shortages lead to any changes in land use patterns. These are key questions given concerns about consequences of migration, including land abandonment, in countries like Nepal where the rate of labor migration is high.

We answer these questions by using qualitative and survey data collected under the AGRUMIG research project in migrant commu-

nities in Bhojpur and Dhanusha in Nepal and in the Gamo Highlands in Ethiopia. The households in the studied villages in both districts of Nepal were engaged in subsistence farming, yet with growing agricultural stress and persisting land inequality, most households also had one or more members participating in labor migration to mostly the Gulf Cooperation Council (GCC) countries and Malaysia. The households in the Gamo Highlands in Ethiopia were engaged in subsistence farming and household



Gamo Hills, Ethiopia (Photo: Mengistu Dessaiegn)

members, facing land shortages and ecological stress, are increasingly migrating to Addis Ababa, the capital city, for work to supplement their farm income.

## Key Findings

The following key findings emerged from the study.

### Farming Households Turn to Less Labor-Intensive Forms of Agriculture

An important finding was that in spite of the popular narratives around land abandonment, few fields were actually left fallow. Migration has contributed not to a departure from agriculture, but the emergence of a 'dual' livelihood, whereby neither agriculture nor migration are sufficient on their own to subsist. However, in the context of labor shortages, farmers still have to adapt their cultivation methods, and many households are turning to less labor-intensive forms of agriculture to cope with migration of the working age population, predominantly men, from these communities. People in Bhojpur of Nepal have turned to agro-forestry, planting trees, such as the Nepali alder (*utis*) (*Alnus nepalensis*), a fast-growing native species, in the upper alti-

tude zone. This tree is mainly used for local construction and plywood manufacturing. The forest office in Dingla, the municipality headquarters, noted that plantations of private forests known as *niji ban* were becoming more common due to out-migration. Planting trees requires little labor and provides a good return after a few years—and thus provides an optimal choice if land is not immediately required for subsistence production. People also planted oranges and rudraksha trees in lower belts of land. Rudraksha (*Elaeocarpus ganitrus*) cultivation was driven by increasing demand and prices of the seeds which fetch a high price in religious markets in India and China—although recent drops in the price have begun to reverse this trend.

In the Gamo Highlands of Ethiopia, farming households facing labor shortages have converted some of their cropping lands into grazing lands for livestock feed. One sixty-year-old male farmer stated, "Since we lack capacity to work on available land, I plough part of the land and leave the rest for another time."

Farmers did not abandon their farming land. Instead, they used some portion of their land to grow grass for animal fodder. This practice nevertheless helps the cattle-raising



Rudraksha farm in Sangrang, Bhojpur, Nepal (Photo: Arjun Kharel)

farming households to fill a critical gap in the need for livestock feed as there is already a high shortage of grazing land in the area, with the demise in communal grazing areas which used to serve communities. A similar trend was also observed in Bhojpur, where some farming households left a portion of their land uncultivated, mainly marginal lands, to grow animal fodder.

### Mechanization of Agriculture

The study also found evidence that farming households are turning to machinery, as far as geographical conditions allow, to overcome difficulties in cultivation and harvests caused by labor shortages. Power tillers had just reached the lower-belt village in Bhojpur at the time of the research, subsidized by the Prime Minister Agriculture Modernization Project. No agricultural mechanization was observed in the higher-altitude villages of Gufagaon and Kimalung in Bhojpur, or in the Gamo Highlands in Ethiopia. In the former, the rugged terrain, steep terracing, and fragmented landholding make use of many labor saving technologies infeasible.

Private sector-led mechanization, such as tractors and (occasionally) a combine harvester,



Farmers in lower-belts of Bhojpur in Nepal have started using power tiller, but with limited success due to geographical constrains. (Photo: Arjun Kharel)

was more prevalent in the plains of Dhanusha where the geography is more suitable. The use of threshers and combine harvesters reduced the demand of physical labor in the field. However, the costs of mechanization are high, particularly at a time of spiralling fuel prices. Investment in technologies is also constrained by the fact that most remittances go into basic subsistence, leaving limited funds to spend on agriculture. For the many farmers in Nepal working as tenants, the rent burden makes investment even more challenging, and tenure insecurity means that incentives to spend money on technologies are low.

Farming households increasingly burnt rice straw, which was traditionally used for animal fodder, as harvesting it would require a significant amount of work. As one farmer noted in Dhanusha:

*If I don't find enough labor, I will have to burn the straw (para), left over from paddy, I will have to burn those in the farm. Farm labor cannot be found easily, they need to be paid higher, so the labor cost will be more than the amount potentially earned by selling the straw. That is why people prefer to burn the straw in the farms.*

The demand for rice straw has recently declined due to the decrease in the number of livestock per family. While there were some successful returnee migrants who had invested in commercial livestock farms, and some who had purchased cattle and buffalo as investment, the general trend appeared to be a decline in animal husbandry.

### Land Becoming More Accessible to the Poorest Households in Some Contexts

A major impact of migration has been the increasing accessibility of land to the poorest households through land tenancy. In the Gamo Highlands in Ethiopia, the landholding households, especially female-headed house-

holds without working men for labor and without cash to hire laborers, have rented out their land on a sharecropping basis to avoid the land remaining idle. The landowning households were not always happy with this arrangement because they would receive less than they might, had they produced for themselves. When they engage in sharecropping arrangement, they receive only half the produce. This arrangement nevertheless provided other farming households without sufficient land or any land at all to lease from labor-constrained farmers and expand their own cropping activities.

In Bhojpur and Dhanusha, in some cases the poorest households had enhanced access to land on lease due to the migration of better-off families to cities or their lack of interest in farming. However, landlessness remains an acute challenge, and the tenancy system itself is highly exploitative, with half of the harvest going to the landlord, usually under a sharecropping arrangement. All migration has done in this context is make it easier to secure land on lease. For landless households, however, the inequalities which compel them to enter unequal tenancy arrangements persist. While many landless households are themselves migrating, the remittances earned are rarely sufficient for them to invest in a plot of land.

### Change in Cropping Patterns

An important change in cropping patterns has been the farming of reduced numbers of crops in a year, although labor shortages could only partly explain this phenomenon. The lack of proper irrigation, high costs of agricultural inputs such as seeds, fertilisers and pesticides, and low yields and low prices of food grains were other contributing factors that continued to dissuade people from farming multiple crops. This phenomenon was more dominant in Dhanusha and Bhadare of Bhojpur, where farmers planted rice in all cultivable land while

wheat or corn was farmed only selectively after harvesting rice. Farmers in Bhojpur also complained about the wild monkeys destroying their crops, and cited this as a reason to not farm crops such as corn that are easily targeted. In the Gamo Highlands in Ethiopia, the farming households are turning to relatively less labor-intensive crops to cope with labor shortages. Barley is the major crop produced by farmers in the study area, but requires a lot of labor. Therefore, in times of severe labor shortage, farmers tend to minimize barley production and maximize the production of less labor-intensive crops such as potato. During fieldwork, a farmer indicated that, “When there is lack of capacity [shortage of labor], I partition the land on which I am supposed to plant barley and use part of it for potatoes. When I regain capacity, I change the potato field to barley production.”

### Change in Labor Arrangements

The study also observed that migrant communities had diverse outcomes regarding labor arrangements: these included revival of traditional forms of labor exchange, particularly in the hills of Nepal, while increasing reliance on wage labor in the Gamo highlands of Ethiopia.

In Bhojpur, a system known as *parma*, which is widespread across the middle hills of Nepal, entails families working on someone else’s land, before the owner comes and works on their land in return. This has remained an important strategy for households to cope when they have insufficient labor for major tasks such as planting and digging out potatoes or paddy transplantation. However, even this indigenous system of exchange is suffering due to a shortage of productive workers – with one respondent noting how in the past there would be up to seven people available for *parma*, whereas now it was often only possible to get three to four people together.

Interestingly, in Dhanusha, where systems



Adoption of labor-saving technology is constrained by rugged and terraced terrains in the hills.  
(Photo: Bhojpur, Nepal by Arjun Kharel)

of labor exchange, known locally as *paincho* or *sapati* have been less common, the system was witnessing a revival.

*Earlier, most people worked for cash. Now, people are willing to participate in exchange labor. It is called paincho. It is also called sapati. If I have need for labor in my farm they come to help me, and the next day, when they have need, I participate in their farms. Now, things are "equal" mostly. Earlier, there were more workers, fewer employers. So, the employers could choose the workers. They had their conditions to provide 5 kg paddy and made the workers work full day. Now, the employers are many, and workers are few. Workers choose now. They say I will charge 500 rupees and will only work till noon. They arrange their schedule and work for multiple people in the same day and earn more. Changes are in the opposite direction. (Nepal Research Report)*

Households in the Gamo Highlands in Ethiopia coped with labor shortages through local agricultural wage labor, often hiring wage labor using remittances. One of the defining features of outmigration in the study area is that households largely rely on wage labor to accomplish major agricultural activities, including ploughing. During fieldwork, farmers appreciated the role of agricultural wage labor when they are faced with critical labor shortage at times of peak agricultural activity. However, they

insisted that the quality of work performed through wage labor is often less satisfactory compared to owner-performed labor activities.

## Policy Recommendations

The analysis of data from research sites in Nepal and Ethiopia shows changes in land use patterns in the agricultural communities due to labor shortages caused by outmigration of the working age population. In response to these findings, we suggest the following policy recommendations:

- The agricultural practices have changed in migrant communities to adapt to the labor shortages induced by labor outmigration. While cases of complete land abandonment could not be found, some farming households were planting fewer crops in a year now than before, and also converting cropping plots into grazing plots. The main reasons given were, among others, the lack of irrigation facilities, crop destruction by wild animals, and the cost of farming, in addition to household labor shortage. In other words, a range of larger issues facing farmers need to be addressed to increase agricultural productivity and enhance livelihoods for farming

households – and not just migration effects.

- Labor-saving technologies in agriculture, such as machineries for crop planting and harvesting, can help farming communities experiencing extreme shortages of farm labor. Machinery can be made more affordable to the farming communities through subsidies by government organizations and development agencies. Machinery also needs to be appropriate to the local agro-ecological context, and opportunities for households to share equipment through cooperatives and similar endeavours are important. Agricultural extension services should also facilitate the accessibility and use of viable machineries through rents.
- In places where farming households are turning to agro-forestry due to labor shortages, the national and local governments can help by providing saplings of perennial plants that are suitable for the geography and provide good returns. Government bodies can also work on improving farmers' access to markets through better connectiv-

ity and market information. Good access to markets and better connectivity are even more important for farmers who are growing fruits and vegetables.

- The land has become more accessible to the poorest households as relatively wealthier households are not engaged in farming. However, farming households do not save anything due to the high cost of farming and high rates of land tenancy. In this context, land reform remains a critical question, particularly in countries such as Nepal, if migration is going to benefit actual farmers, who are usually among the poorest population in any country. One of the primary reasons why farmers in Nepal were not accessing technologies was that tenancy arrangements lowered incentives for investment.
- It is also important, for example in the case of Ethiopia, to develop relevant land use and access regulations/guidelines that can attract and enhance the use of remittances for agricultural investments.



*Paddy farm in the plains of Tarai in Nepal. (Photo: Arjun Kharel)*

## AGRUMIG Policy Brief Series

This policy brief is one in a series of briefs produced as part of the AGRUMIG project.

## AGRUMIG Project

The project titled AGRUMIG ‘Leaving something behind’ - Migration governance and agricultural & rural change in ‘home’ communities: Comparative experience from Europe, Asia and Africa proposes an integrated approach to migration governance to address the two-way relationship between labor mobility and changes in agriculture and the rural sector. Migration creates challenges for rural ‘sending’ communities in low- and middle-income countries, yet it can also be transformative. The project engages in a comparative analysis of seven countries (China, Ethiopia, Kyrgyzstan, Moldova, Morocco, Nepal and Thailand) to identify the economic, institutional, cultural and agroecological factors which shape these relationships. It will identify the range of governance interventions that can harness migration to stimulate sustainable, gender equitable growth in agriculture, and reduce the distress associated with migration.

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**Project website:** <http://agrumig.iwmi.org>

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