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Impact of Migration among Farmers of Surkhet, Nepal

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Abstract: Despite 66% of people's engagement in agriculture in 2021, shifts from farming to adopting alternative jobs have been observed due to reduced income and poverty, leading to migration. Arable lands are left abandoned due to a shortage of farmers across Nepal. The research objectives were to assess the status of assets among farmers with any family members who migrated and those who did not migrate and to understand farmers' opinions regarding external migration. A cross-sectional study was conducted randomly through a lottery in wards 2 and 11 of Birendranagar municipality in Surkhet district. The study purposively selected seventy-five farmers and prepared semi-structured questionnaires, which we pretested among 10% of farmers. After obtaining written informed consent, the data were entered in Excel and analyzed in SPSS version 16. Out of 64 farmers holding agricultural land, the majority without migrated family members (54.7%) had their land, whereas 3.1% of farmers left their rain-fed agricultural land barren. 24.2% of farmers without any migrated members reared 11 to 20 livestock, compared to 12% of farmers with migrated members in the family. 53% of farmers without migrated members planted trees within their lands, compared to 34.7% having migrated members. 84% of farmers believe external migration is essential, whereas 16% believe in staying in their homeland and continuing agriculture. The farmers without any migrated family members were observed to have more agricultural land, rear livestock, and plant trees around their houses. The majority of farmers were found to believe that external migration is vital for development, and they expressed their interest in shifting towards alternative jobs if provided with the opportunities. In the long term, the interests of farmers may lead to a shortage of agricultural labor and food insecurity.

Keywords: *Agriculture, Family, Farmers, Migration, Nepal*

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1. Introduction

Migration significantly influences the productivity and socio-economic dynamics of rural communities. Migration among farmers significantly impacts crop productivity, with the scarcity of workers leading to increased work intensity, hiring of farmworkers and machinery, and land leasing (Adamu et al., 2021; Nava-Tablada & Marroni, 2003). However, it can also lead to increased income and employment, better job opportunities, and access to infrastructure facilities (Anamika., 2012; Koko, 2012). The migration of farmers can also lead to clashes between immigrants and host communities and an increase in crime rates (Koko, 2012). In some countries, labor migration hurts agricultural production income but positively affects non-agricultural production income (Yi-Tong et al., 2015). It also affects farmers' access to productive agricultural services (Chen et al., 2021).

Migration among farmers has multifaceted impacts on various aspects of agriculture and rural livelihoods. Research shows that the economic and environmental performance of rice farms can be negatively affected by migration, impacting technical efficiency and fertilizer use efficiency, especially for intensive migrants (Ren et al., 2023). Additionally, migration working experience can enhance social capital among farmers through increased income, risk preference, and ICT adoption despite challenging urban working conditions (Chi, 2022). The impacts of migration on agricultural

production can vary, with migrants often substituting leisure and low-return activities for lost labor (Wang et al., 2014). There is a discussion of the mixed effects of migration on agricultural competitiveness, noting short-term benefits but potential long-term erosion of competitiveness due to suppressed wages and reduced incentives for productivity improvements (Martin, 2013).

Despite the wealth of research on the impacts of migration among farmers, several gaps persist, warranting further investigation to deepen our understanding of this complex phenomenon. One fundamental research gap revolves around the generalizability of findings to diverse agricultural production regions and rural contexts (Chen et al., 2021; Yi Tong et al., 2015). Another critical gap lies in the temporal dynamics and long-term effects of migration on rural communities and agricultural activities. While some studies provide insights into the immediate impacts of migration on household income and agricultural productivity, more research is still needed on the evolving nature of these impacts over time (Nava-Tablada & Marroni, 2003). Therefore, addressing questions about the long-term effects of migration, such as its implications for household livelihoods and socio-economic well-being, and how they maintain their assets is essential to study.

Nepal's poverty reduction plan is primarily driven by the increment in the agricultural sector, which substantially contributes to GDP. The agriculture sector is highly indispensable to increasing the country's income, mitigating poverty, and improving the living standards of people in rural areas (FAO, 2022). Despite 66% of people's engagement in agriculture in 2021, shifts from farming to adopting alternative jobs have been observed due to reduced income and poverty leading to migration. Nepal practices subsistence farming, which has resulted in low productivity (FAO et al., 2023). As a result, the remittance-receiving households need to invest in agricultural productivity, which is one of the issues for an agricultural country like Nepal. Rather than agriculture, the nation is inclined to become highly dependent on remittance. This will lead to a decline in agricultural production beyond surplus labor in the short run, impacting agrarian yield in the long term (Tuladhar et al., 2014). Despite this, the agriculture sector remains Nepal's highest employer, including a diverse range of quality jobs from subsistence to small-scale farming and agriculture, as part-time and seasonal employment occasionally continue (ILO, 2019).

Located in Karnali Province of Nepal, Surkhet district has a population of 415,126 as per the Census 2021, where 61.2% of the population works in the agricultural industry (CBS, 2021) and 96% of the population is involved in agriculture (Laing et al., 2023). Outmigration of the youths is also high, and most go to India (98.7% of the total outmigration) in search of job opportunities (CBS, 2021). Youth migration has been a crucial issue in the district, and as a large population relying on agriculture, it directly impacts the agriculture sector. The primary purpose of the research is to identify how an external migration of family members has impacted the farming pattern. The study tries to assess the status of assets among farmers with any one of the family members who migrated and those who did not migrate, as well as to understand the opinions of farmers regarding external migration.

2. Materials and methods

A 90% confidence interval guided the calculation of the sample size to assess the status of assets among farmers with any one of the family members who migrated and those who did not migrate, as well as to understand the opinions of farmers regarding external migration. Seventy-five farmers were purposively selected, including any family members, regardless of migration status, to access a particular subset of farmers. Pretesting, involving 10% of farmers, was conducted after preparing semi-structured questionnaires. The questionnaires were translated into the local language (Nepali) for the respondents' convenience. Obtaining written informed consent was part of the process. Before initiating the study, the researchers communicated the purpose to the respondents, who were then asked to participate voluntarily, with their right to withdraw emphasized. Data entry took place in MS Excel, followed by importation into SPSS version 16 for analysis. The results were subsequently presented in tabular form after applying the Chi-square test.

3. Results and discussion

The findings comprise socio-demographic characteristics, farmers' assets, and a comparative analysis of migration status with income and external migration.

3.1. Socio-demographic characteristics of respondents

Most respondents (74.7%) were Brahmin, Chhetri, and Thakuri, followed by Janajati, who responded the lowest (4%). Further, about two-thirds of the respondents (69.3%) were female farmers, whereas the remaining 30.7% were male farmers. Almost all respondents were within the working age group, namely 15 to 60 years, comprising 96%. The highest proportion of farmers dropped out of their education while studying at a basic level (36%) and then at a secondary level (22.7%). 17.3% of the farmers were illiterate, and only 6.7% of farmers reported completing their bachelor's level. Only

one of the respondents out of 75 was unmarried. Most farmers were earning Rs. 1000 to 10,000 monthly, as depicted in Table 1.

Table 1: Socio-demographic status of participants (n=75)

Characteristics	**N**	**%**
Ethnicity		
Brahmin/Chhetri/Thakuri	56	74.7
Dalit	16	21.3
Janajati	3	4
Sex		
Male	23	30.7
Female	52	69.3
Age group		
15 to 60	72	96
Above 60 years	3	4
Education		
Illiterate	13	17.3
Literate	10	13.3
Pre Primary education (Below grade 1)	3	4
Basic level (Grade 1 to 8)	27	36
Secondary level (Grade 9 to 12)	17	22.7
Undergraduate	5	6.7
Marital status		
Married	74	98.7
Single	1	1.3
Income range (monthly)		
1000-10000	29	38.7
11000-20000	18	24
21000-30000	23	30.7
31000-40000	1	1.3
41000-50000	4	5.3

3.2. Comparative data of migration with assets of farmers

Table 2 illustrates farmers' assets in terms of trees planted within their home settings, livestock, agricultural land, and the type of available land. 88% of the farmers had any trees planted within their home settings. In contrast, households with at least one family migrated (34.7%) were informed to grow fewer plants than households with none of the family members migrated (53.3%). 88% of the farmers reared livestock, whereas most respondents without family members reared more livestock (54.7%) than the relocated households. Likewise, 50.7% of farmers without migrated family members possessed agricultural land higher than their counterparts (34.7%). Out of 64 respondents with agricultural land, 50.7% without family members migrated, owned agricultural land, 1.6 shared land, and 3.1% abandoned rain-fed land.

Table 2: Assets of farmers

Characteristics	**With migration**		**Without migration**		**Total**	
Trees (n=75)	N	%	N	%	N	%
Yes	26	34.7	40	53.3	66	88
No	3	4	6	8	9	12
Types of trees (n=66)						

Fodder	7	10.6	26	39.39	33	50
Timber trees	17	25.7	21	31.8	38	58
Fruit trees	36	54.5	24	36.6	60	91
Cooking fuel (n=75)						
Wood	1	1.3	0	0	1	1.3
LP gas	5	6.6	1	1.3	6	8
Biogas	1	1.3	0	0	1	1.3
LP gas and wood	39	52	28	37.3	67	89
Livestock (n=75)						
Yes	25	33.3	41	54.7	66	88
No	4	5.3	5	6.7	9	12
Land for agriculture (n=75)						
Yes	26	34.7	38	50.7	64	85.3
No	3	4	8	10.7	11	14.7
Type of land (n=64)						
Own land	23	36	35	54.7	58	90.6
Share cropped	3	5	1	1.6	4	6.3
Abandoned rain-fed	0	0	2	3.1	2	3.1

3.3. Comparative analysis of migration status with income and external migration

Table 3 shows that there was no significant association between migration and income. The overall income of families with migrated members (14.7%) was between Rs. 21,000 and 30,000, whereas most farmers' (26.7%) monthly family income ranged from Rs. 1,000 to 10,000. The study identified a significant association between migration status and interest in external migration with a p-value of 0.01. 84% of farmers expressed their interest in external migration. On the contrary, only 16% of farmers responded to stay within the nation.

Table 3: Cross tabulation of migration status with income and opinion on external migration

Characteristics	**With migration**		**Without migration**		**Total**		**p-value**
Income (monthly)	N	%	N	%	N	%	
1000-10000	9	12	20	26.7	29	38.7	
10000-20000	5	6.7	13	17.3	18	24.0	0.16
21000-30000	11	14.7	12	16.0	23	30.7	
31000-40000	1	1.3	0	0.0	1	1.3	
41000-50000	3	4	1	1.3	4	5.3	
Interest in external migration							
Yes	28	37.3	35	46.7	63	84	0.01
No	1	1.3	11	14.7	12	16	

4. Discussion

The study's primary objective is to assess the impact of external migration on farming patterns, focusing on assets, income, and farmers' interest in external migration. The findings reveal several noteworthy insights. Firstly, the socio-demographic characteristics of the respondents indicate a predominantly Brahmin, Chhetri, and Thakuri demographic with a significant representation of female farmers within the working-age group. However, the high interest in external migration, as evidenced by 84% of respondents, diverges from previous studies, suggesting a growing trend towards migration among rural communities. A study in Japan also identified a growing interest among people in external migration (Simona, 2023).

Comparative analysis of migration status with assets highlights disparities in livestock ownership and land possession between households with migrated members and those without. While most farmers possess livestock and agricultural land, households with no family members migrated tend to have more significant livestock holdings and more extensive agricultural land ownership. This finding is consistent with previous literature suggesting a potential correlation between migration and changes in farming practices, including reduced investment in livestock and agricultural land due to loss of household labor and remittance dependency (Ghimire et al., 2023). The studies show that in many cases, migration of the household members keeps land abandoned and ruins rural settlements (Ghimire et al., 2023; Nguyen et al., 2019; Sati & Singh, 2019). In this research study, 3.1% of farmers without any member migrated were found to abandon their agricultural land.

Moreover, the lack of a significant association between migration and income echoes previous studies, indicating the complex relationship between migration and household economic outcomes. Despite potential remittance inflows from migrated members, the overall income distribution remains varied, with most households earning between Rs. 1,000 to 10,000 monthly. However, a previous study shows a significant relationship between migration and the income of the farmer's households. Several studies in China show migration plays a crucial role in increasing household incomes of the rural community (Chi, 2022; Li & Tonts, 2014; Zhu & Luo, 2014)). This underscores the need for nuanced analyses considering various factors influencing income dynamics in rural settings beyond migration status alone.

Furthermore, farmers' overwhelming interest in external migration underscores the pressing need to explore this trend's underlying motivations and potential consequences. While external migration may offer economic opportunities for households (Chi, 2022; Li & Tonts, 2014), it could also exacerbate challenges related to loss of agricultural labor, changes in farming practices, and food security risks in rural communities (Sati & Singh, 2019). Regarding livestock, most of the farmers reared livestock. In contrast, respondents without any family members reared more livestock than the migrated ones, implicating a significant negative impact of migration on livestock output and indicating lower livestock production in general. Loss of household labor due to migration, especially in livestock raising and production, may cause negative output (Maharjan et al., 2013). Most farmers expressed their interest in outmigration, seeking an alternate job opportunity. A study also showcased that young farmers continue to leave their family's farm work, seeking better employment and being attracted toward outmigration. (Tran et al., 2023).

Half of farmers planted fodder near their homes, whereas households without migrants tended to plan comparatively more than those with members who migrated. Similarly, migrant households planted fewer timber trees than nonmigrants. Similar findings of farmers moving towards less intensive farming practices, including plantation of timber trees on their less productive farmland, were found (Bhawana & Race, 2020). Most farmers responded to using LP gas and wood as means for cooking, whereas households with migrants used it more (52%) in comparison to 37.2% of households without migrant family members. Farmers have started to diversify their sources of cooking fuel to include biogas, LPG gas, and other forms of energy due to changes in migration patterns and diversification of household's source of income, allowing to double the number of tree cover (Chhetri et al., 2023).

5. Conclusion

In this study, abandoned rainfed land of households without any migrant family members was observed, and there was a significant association between interest towards migration and households with migration. Famers moving towards less intensive farming practices, including planting timber trees on their less productive farmland and fodders, were the challenges observed for the agricultural sector. Farmers have started diversifying their cooking fuel sources to include biogas, LPG gas, and other forms of energy due to changes in migration patterns and diversification of households' sources of income, which have increased the number of trees. The study observed various diversifications within cultivating and cooking patterns. The farmers without migrated family members were honored to have more agricultural land, rear livestock, and planted trees around their houses. The majority of farmers expressed their belief in the essential role of external migration for development and conveyed their interest in transitioning to alternative jobs if provided with opportunities. In the long term, such interests of farmers may lead to a shortage of agricultural labor and food insecurity. The research suggests transforming substantial farming into commercial farming to promote sustainable agriculture. It demands the identification of prices to sell food products in the markets. Policymakers need to work on mixed agroforestry systems and foster the provision of financial incentives to the farmers.

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