

Livelihood Diversification among the Agricultural Land Scarce Peasants in the Central Highlands of Ethiopia

Reta Hailu¹ and Ali Hassen²

¹ Lecturer School of Environment, Gender and Development Studies, Hawassa University, Ethiopia.

Corresponding Author's E-mail: bretahailu@yahoo.com

² Assistant Professor, College of Development Studies, Addis Ababa University, Ethiopia

This article examines the livelihood strategies of land scarce peasants in Ethiopian. Land scarce peasants have a limited livelihood security on a sustainable manner and bypassed by major development programmes. The study was centred on two sets of rationales. First, for those peasants who do not have sufficient farmland, agriculture provides only a limited portion of households' livelihood security sustainably. Second, although there are ample studies on rural livelihoods and agricultural land scarcity, little is known, for instance, about the dynamics of agricultural land scarce farmers' livelihood strategies in the Central highlands of Ethiopia. The field study surveyed 75 land scarce households and conducted a number of key informant interviews, focus group discussions, direct observations and transect walks to get first hand information and consulted several secondary sources. The result showed that the respondents are still predominantly pursuing agricultural based livelihood strategies through agricultural intensification, extensification, and diversifications. It depicted that 29.3%, 42.7 %, and 98.7 % of the respondents derive income from off-farm, non-farm, and agricultural activities, respectively. They also seasonally migrate outside their village for additional sources of income. Thus, interventions and policies need to promote sustainable livelihood must consider them through enhancing non-agricultural livelihood diversification activities away from agriculture and reduce the heavy dependence on limited land. [Reta Hailu and Ali Hassen. Livelihood Diversification among the Agricultural Land Scarce Peasants in the Central Highlands of Ethiopia. *International Journal of Agricultural Science, Research and Technology*, 2012; 2(1):1-8].

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1. Introduction

Land is one of the key productive livelihood assets for agrarian society in general and Ethiopian farming population in particular where the majority derive a living directly from it. Land also determines an overall socioeconomic status of an individual or a household in the agrarian society. In other words, agricultural land is the fundamental asset of peasants' property and a major source of livelihoods in the rural Ethiopia. According to Tesfaye (2006), land is one of the major conventional inputs that limit agricultural production and the main source of rural livelihoods since options other than farming are scarce. However, evidences show that farming population is unable to live a life free from poverty and hunger, and agricultural growth remains stagnant in the country.

The per capita landholding is diminishing year after year. For example, the average landholding size was diminished from 1.4 to under a hectare during the 1977-2002 (Nagayets, 2005). A study further came across that the landholding size is less than a hectare for the majority and the land-labour ratio (active labour force) on average is as low as

0.38 hectare in the country and the number of landless farmers is also about one in ten at national level and worse in the highly populous highland areas of Ethiopia (Ethiopian Economic Association/Ethiopian Economic Policy Research Institute (EEA/EEPRI), 2002:34). Under low level of technology and shrinking of farm size, the current landholding size is not sufficient to support the livelihood of peasants. Evidences indicated that the Ethiopian small-scale agriculture is getting smaller and smaller from time to time and unable to sustain a life free from poverty for the farming population (Dessalegn, 1999; Yared, 2002; EEA/EEPRI, 2002). Furthermore, the prevalence of extreme land pressure has already resulted in vast deforestation and cultivation of unsuitable slopes in the area, causing severe environmental damages, which make the future prospects of agriculture look bleak without generating non-agricultural activities. This has both policy and development implications on sustainable utilization of natural resources and viability of agricultural activities under farmland scarcity (Dessalegn, 2009).



Abstract

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Therefore, there are two sets of rationales underpinning this research project. First, for those peasants who do not have sufficient farmland, agriculture provides only a limited portion of households' livelihood security sustainably. In this regard, the links between agricultural land scarcity, alternative livelihood strategies, and the driving forces are underrated by the policymakers and development practitioners despite the intensive research works and policy debates on the importance of agricultural land for the survival of rural livelihood and agricultural development. Second, although there are ample studies on rural livelihoods and agricultural land scarcity, little is known, for instance, about the dynamics of agricultural land scarce farmers' livelihood strategies in the Central highlands of Ethiopia. The previous studies yet did not give sufficient explanation on what the victims of the agricultural land scarcity are doing in order to survive in the situation of the key resource scarcity.

2. Materials and methods

2.1. Site Selection and Sampling

Procedures

The study involved a multistage sampling, i.e. a combination of purposive, stratified, and simple random sampling procedures to select the study area and sample households. First, the District was purposefully selected. Then after, basing agro-ecology, the district was divided into two. These are midland and highland agro-ecologies (AEZs). Accordingly, from each agro-ecology, one top most populous (the smallest land-active labour force ratio, an indication of agricultural land scarcity (EEA/EEPRI, 2002)), i.e. Kursit Areda Leqa Kebele (Kebele is the smallest administration unit in Ethiopian governance structure) from midland and Malima Tume Chirfa from the highland were sampled purposefully.

Next, landholding size was stratified into three as low, medium and large agricultural landholdings. Hence, agricultural land scarcity is manifested in the low holding size; the sample frame was the low landholder category, which also included landless peasants. This category further stratified into two as female-headed-households (FHHs) and male-headed-households (MHHs) based on gender. Finally, Simple random sampling technique, using a lottery method, was used to select 75 households of the land scarce farmers from the two Kebeles proportionally from the strata, which formed the sample households studied.

2.2. Research Methods

The field study combined Key Informant Interviews (KIIs), Focus Group Discussions (FGDs),

Household Surveys, Direct Observations and Transect Walks. While semi-structured checklists were designed to manage the FGDs and KIIs, structured and semi-structured interview schedule were developed to undertake the household survey.

In order to analyze and present the data, a combination of qualitative and quantitative methods was used. Statistical techniques such as cross tabulations, averages, standard deviations, t-test, and chi-square test were used for quantitative data analysis. Qualitative information were organized and constructed coherently and analyzed. It also involved narrations, and scoring methods and proportional piling for qualitative data analysis. The results of the key findings were displayed in the form of percentages, narrations and tables.

3. Results and discussion

3.1. Vulnerability Contexts

The household vulnerability factors analysis is now 'customary in the analysis of livelihoods to identify the shocks and stresses with which people must cope. Sometimes this is done as part of a discussion of the vulnerability context of those livelihoods' (Turner 2005). This study revealed that households are vulnerable to different shocks, stresses, and changing trends. Accordingly, households' levels of vulnerability were identified and ranked. While some factors are almost common, others are particular to some groups.

Of the vulnerability factors so far identified, shortage of farmland (100%) and natural resource degradation (98.7%) were ranked first and second, respectively. The extents of the land scarcity was scored 'high' by 94.7% of the respondents while the severity of natural resource degradation was marked as 'low', 'medium', and 'high' by 14.9, 39.2, and 45.9% of the respondents, respectively. Low harvest was also cited by all respondents but ranked third, which scored 'high' by more than half of the respondents (52%), and erratic rainfall (81.3%) was ranked fourth. The severity of the erratic rainfall was 'high' among 93.4% of the respondents. Most land scarce farmers and key informants reported that there were growing trends of the vagaries of nature due to rainfall and temperature fluctuations. These further complicated the problem of the land scarce farmers and incredibly lowering their produce from the existing meagre plots.

While 98.7% of the land scarce farmers reported poverty (Poverty is here subjectively perceived by the community as deprivation of basic needs due to shortage of sufficient income though its meaning and scope may be beyond this) as an important vulnerability factors, 62.2% rated it as a 'high' and 10.8% 'low' degrees of poverty.

Similarly, seasonal food crisis was the other problem for the 96% cases and rated 'high' and 'low' for 43.1% and 19.45% of respondents, respectively. A large proportion of households were experiencing food shortages (96%). The proportion of food insecure households was highest in the highland than midland. Moreover, quite more than half (57%) of the respondents cited unemployment as a growing trends which made living in the rural milieu becomes a challenge without sufficient alternative livelihood options. What hardened the problems and made them more magnificent was the capacity of the land scarce farmers is negligible to withstand those shocks and stresses. As a result, land scarce peasants are vulnerable and less resilient. Interestingly, the diversification of different livelihood strategies to survive in the village opt breathe in their life. The level of vulnerability varies with the capacity and the position of the household in terms of different livelihood assets (Ali, 2008). However, the undeniable fact is that land scarce farmers are vulnerable than land sufficient farmers in the study area as these people have insufficient land.

3.2. Livelihood Diversification

The study result showed that about eleven patterns of livelihood strategies emerged from analysis of activity portfolios of the households. These can be categorized into five broad groups for the sake of analysis and pinpointed the major livelihood strategies and the main features of each categories adopted by the respondents. Moreover, there was no exactly a single livelihood strategies and thus diversification was enormous among the household studied. The strategies were elucidated below.

3.2.1. Extensification of Farmland

Despite most research findings in the Central Highland of Ethiopia, the state and scope of extensification is already limited, it is still found to be the important strategy in some instants where agricultural land scarcity is a serious predicament. Extensification takes different forms. However, extensification in the context of this study is to mean putting more and more land into cultivation in most cases at the expenses of forest, grazing, and other formerly unused areas. Strictly speaking, there is no ideal and/or the traditional slash and burn type of extensification, but a readjustment or reallocation of land to the changing situations.

The cultivation of fragile lands like valley bottom, mountainsides, and steep slope areas are also an indication of extensification for farmland expansions. The desire to meet food need encouraged an expansion of cropland. In the first position, the grazing land is put into cultivation and then forest

areas are encroached. In long run, every land could be abandoned. For example, field evidence showed that more than 50% of the land scarce and landless peasants in the highland AEZ converted their grazing land into cultivated land, and nearly a quarter cleared forest areas to obtain farmland during the last 10 years, and about a third undertook both. The situation is somewhat different in the midland areas where most homestead margins are planted with eucalyptus trees -mainly a plan for long-term income generation, as a benchmark to protect farmland disputes, and a fence and wind break.

Field survey also showed that agricultural extensification as land scarce livelihood strategy is significant at 1% ($X^2=17.064$, $df=5$, $C^2=0.431$) though there is variation in agro-ecology. For example, 98.7% of the land scarce farmers suggested that the main cause of decrease of grazing land is the expansion of farmland and traced the reason for declining trends of livestock population and compositions is overgrazing (degradation of pastureland) for the extensification of cultivated land. Generally, land scarce farmers are practicing some kinds of agricultural extensification strategy to cope with farmland scarcity.

3.2.2. Intensification of Agricultural Land

In this study, intensification is manifested in the forms of soil conservation and management practices on the given plots of land in the study area. The major conservation strategies include soil bund (26.7%, 34.7%), strip grasses (2.7%, none), terracing (5.3%, 14.7%), and mix of the above (6.7%, 9.3%) in the highland and midland communities in series of order, respectively. A Pearson chi-square test also shows that there is significant variations in agro-ecology at 1% ($X^2=10.958$, $df=1$, $C^2=0.375$). For example, of the total respondents, 32% and 58.7% of the highland and midland land scarce farmers, respectively, responded that the land management and conservation strategies have reduced soil erosion, while 9.3%, all in the highland, reported that the practices have had no effect at all. This is mainly due to the topography of the highland that challenges the human efforts. However, there is no significant variation in the practices of conservation strategies between the two communities despite soil erosion affects the highland than the midland communities.

In traditional agriculture, the practice of fallowing is extremely important to regenerate soil fertility (Eyasu, 2002). However, in the study area, with rising population pressure and subsequent shortage of farmland, it is no longer practiced as viable option to enhance productivity. Instead, the farmers prefer more active working, such as intensive ploughing, organic manuring, and a dynamic and

rotational succession of crops. Thus, it is generally believed that there has been a dramatic decline in the fertility of agricultural soil throughout the District as a result of abandoning fallowing; low level of fertilizer applications due to the rise of fertilizer price; using crop residues exhaustively for the livestock fodder; using livestock dung as a household fuel instead of manure; lack of appropriate soil conservation practices; and low level of High Yield Varieties (HYVs) and herbicide utilization.

Since 2007, all land scarce farmers in the highland stopped using improved varieties of crops and that of midland is tremendously diminished from 63.6% in 2006 to 34.3% in 2009. The justification was that the prices of HYVs and fertilizers in the past three years were an exorbitantly increased and very limited credit services for the purpose. Though the available agricultural land is intensively used, the productivity of the farmers is still low in both AEZs due to the dependency of farm yields largely on inputs such as fertilizers, pesticides/herbicides, HYVs, and loss of soil fertility. However, this was not deterring households from farming intensively even if it was unprofitable. The land scarce farmers are not only in dearth of agricultural land but also suffering of capital deficiency to use the essential inputs for the fruitful intensification.

The other probable indicator of agricultural intensification was the technological level of farm inputs. Quite more than half of the land scarce farmers attempted to adopt different farm technologies like better hoe, shovel, Broad Bed Maker (BBM) and other hand equipments. The field evidence further revealed that nearly 46.7% of the land scarce farmers, 16% in the highland and 30.7% in the midland, never used and/or accessed to agricultural technologies. There is difference in agro-ecology ($X^2=25.137$, $df=9$) and found significant at 1%. The variation is also strong ($C^2=0.647$). The reasons reported are absence of appropriate and compatible farm technologies, paucity and insufficiency of information, shortage of farmland that motivate farm equipment adoption, absence of credit, and the costly nature of farm technologies.

In sum, the form of intensification of the study area does not seriously take the form of increasing productivity from the given land using better farm technologies and inputs such as improved soil management practices, modern farm implements, HYVs, commercial fertilizers, and herbicides/pesticides but exhaustive tillage, ceasing of fallowing, and intensive traditional soil management practices that neither increased production nor enhanced soil fertility.

3.2.3. Agricultural Livelihood Diversifications

Within the agricultural livelihood diversification strategies, six sub-activities were found among the sampled agricultural land scarce farmers in both agro-ecologies (See table 1). The purposes of diversification among the land scarce and landless peasants were to minimize varieties of risks, increase their income and achieve food security to ensure livelihood security.

Despite the scarcity of farm land, cultivating own farm is still the dominant activity with no significant variations in highland 31(100%) and midland 39 (88.6%) and subsistence farming is a base for the livelihood of almost 93.3% of the entire land scarce farmers. Engaging on other's farm through renting-in and sharecropping mechanisms is the second most important activity which is the main stay for 53(70.7%) of the total respondents. The third and fourth most important agricultural livelihood strategies are small scale poultry/chicken keeping and livestock herding where more than half of the land scarce farmers 38(50.7%) and 37(49.3%) of the highland and midland communities took part, respectively. The fifth and the sixth agricultural livelihood strategies of land scarce farmers are vegetable gardening 26(36.7%) and beekeeping 17(22.7%) in the same order.

Justifications behind the highland's ownership and more dominance in chicken keeping and livestock herding than the midland are that the former has fewer diseases of chicken and more space (grazing areas) than the latter. As a result, the highland enjoys comparative advantage in livestock herding and the midland has a plus in crop production mainly due to soil types and its higher fertility.

It is important to note that livestock ownership plays significant role as livestock is used not only as farm inputs but also as a means of saving assets, especially in the highland parts of the District. Livestock possession is the long-term asset that can sustain the household economy when things are more fickle like money and employment are unavailable. Some livestock continue to be kept by people who do not own them. For instance, for the summer grazing, livestock is sent to the highland from the midland in the form of local institutional arrangement called *Dereba*. This involves payment in cash depending on the size, type of livestock, and the length of grazing. Moreover, calves and shoats are given to the poorer farmers to keep them for undefined period. They are often paid in kind, either share of part of stock or opted equivalent. Although the variation exists between AEZs, a few respondents sell vegetables beyond subsistence consumption. The reason is that the highland areas have more access to water

resources with rivers and small brooks in comparison to the midland. Moreover, in the presence of enough water, vegetable gardening is done by conventional means, typically, involving the use of simple hand tools and with varying amount of protection from chickens, rodents, and livestock. Thus, it is plausible and fair to say that only a few households in both agro-ecologies put much effort to vegetable production as compared to the potential.

3.3. Non-Agricultural Livelihood Diversifications

The field evidence revealed that the role of non-agricultural activities in reducing land scarce farmers' household vulnerability could not be underestimated though it may be blamed due to the negative effects on natural resource base. Survey results evidenced that non-farm source of income help to complement agricultural activities. These income portfolios can be used for purchase of fertilizer and other agricultural inputs. If there had been no other sources of income apart from agriculture, the land scarce farmers could have been day-off either from subsistence/food or from other household needs. Furthermore, non-agricultural sources of income significantly affect utilization of agricultural resources and material wellbeing of the households. It is also worthwhile to note that the non-agricultural sources of income portfolios were important among the land scarce farmers than others and among the youth and female farmers than other segments of the society. Table 2 below elucidates a breakdown of different livelihood diversities that the households pursued in the two research areas.

Despite the fact that most respondents took part in the non-agricultural activities (non-farm and off-farm) side-by-side with agricultural activities and they are land scarce, agriculture still the dominant sources of income. One of the main reasons is that most businesses operate at very small scale, for example, petty traders operate on very small scale with minimal capital either sourced from rotating credit and saving schemes or informal from *Iqub* (a local contribution of money on the regular basis for mobilizing cash income for particular purpose savings or from personal savings). The businesses were also managed and run by the owner or other household members. This business has less durability as parts of household consumptions are from it.

Most of the midland land scarce farmers have participated in all activities, i.e. 81.2%, 68%, and 59.5% in off-farm, non-farm, and agricultural sources of income, respectively, when compared to 18.2%, 31.3%, and 40.5% in the highland for the activities in the same order. The survey result also depicted that 29.3%, 42.7 %, and 98.7 % of the respondents derive

income from off-farm, non-farm, and agricultural activities, respectively. The proportions of participants are varying with agro-ecology. The levels of participation in off-farm and nonfarm activities are significantly varying in AEZs.

When comparing the participation in different income sources by the broad livelihood activities, agriculture accounts for all MHHs and 93.8% of the FHHs. While 40.7% of the MHHs and 50% of FHHs engaged in non-farm source of livelihood, 34.1% of MHHs and 43.8% of FHHs undertook off-farm activities. Further observation of the data revealed that off-farm activities (agricultural wage of different kinds, and 'environmental gathering' such as charcoal making and fire wood collection, and daily wage) were survival mechanisms pursued mainly by the land scarce peasants but not viewed as an opportunity that the farmers engage in as a choice. Non-farm activities, such as rural crafts were also mainly choices of the highland than their counterparts. Although the average earning among the households and between the agro-ecologies greatly vary, the additional cash plays an important role in the family welfare as the cash is used to purchase soap, kerosene, clothes, coffee, salt, sugar, and store and other food stuffs. Therefore, it is plausible to say that, as several researchers evidenced, there are clear indications in this study that success or failure of coping strategies is determined by the level of the household livelihood diversification (the larger the more successful).

3.4. Seasonal Migrations

Seasonal migrations for wage employments were also found to be the other major livelihood strategies both in the midland and highland but in different patterns. The access to off-village employments often adds significantly to material standard of living like better housing and house equipments and clothing among the land scarce farmers. The land scarce farmers by and large face food and income insecurity. In order to finance these, they often seasonally seek out for wage employment outside their village. At the time, some land scarce farmers are also free as farm operation on their own plot takes short period and they move into the District town, *Bantu*, to look for short-term casual employments from August to October. The midland land scarce farmers migrate as far as *Arsi* and Eastern *Shewa* parts of Oromia during the period between August to mid November to harvest crops and back home at the end of November because of two reasons. First, crops so far in the field are already ready to be harvested and there is no an idle labour. Second, even if the activities on small farms are finished early, it is good opportunity to work on

others' farm either in or outside the village. This could be in the form of a piece job or daily labourer. It is during these periods, December to February, that some of the highland agricultural land scarce farmers move to the midland to harvest *teff*. Some of the highland farmers also travel beyond the District in search of the wage/causal employments.

Regarding the contribution and proportion of seasonal migration, nearly 16(36.4%) of MHHs all in the midland area have migrated for causal work/sale of labour in urban areas which revealed the highland farmers and FHHs are in the disadvantaged position. The average annual income of the migrants from this portfolio was 538 Birr of the average total annual income of 2276Birr. The income from seasonal wage employments provide a temporary financial relief; relax the peak cash demands such as children schooling expenses, clothing, bride prices, or other customary obligations and sometimes payback credits, if any. These can also save the fixed assets otherwise sold for these purposes. However, the respondents reflected that there are limited regular wage employment opportunities available to them.

Like non-agricultural sources of income, seasonal employments provide important supplementary income because of the insufficiency of agricultural based activities to sustain the land scarce farmers. Generally, seasonal wage employment was suggested as it has no negative tradeoffs on the agricultural activities, but it certainly helps to build more livelihood assets and widens choices or opportunities for smallholder households.

3.5. The Outcomes of the Livelihood Diversification

In this study, majority of households participating in agricultural strategies were also take up non-agricultural activities. Sometimes, however, when own production is incapable of sustaining their agricultural activities, they have to embark on retailing. This option is the most common with a participation rate of 81% across the two communities. It also was the most preferred. Petty traders, majority of whom deals on agricultural produces or household items, who can also afford to invest in agriculture. Relatively wealthy households were maximizing the opportunities existing in both farming and trading. Generally, households adopted this strategy in both communities must have access to sufficient farmland as well as financial capital. In fact, the land scarce farmers in the midland (an annual average of 3112 Birr) earned twice that of highland(an annual average of 1440 Birr).

Another strategy of skilled non-farm was handcrafts like carpentry, which is specific to the resource poor community. This group is about 35.5%

of the sample size in the highland and 4.6% in the midland and significant at 1% using Pearson chi-square test and thus, differences in income could be explained by difference in agro-ecologies. Although its main features are statistically apparent, what is more evident is that income level for this strategy is a little higher than the sample in the midland. Moreover, participation in the different piece of jobs as a strategy was high and not significantly varied between the two communities. The participation rate was just 24 (77.4%) in the highland and 32 (72.7%) in the midland.

The study has also grasped the perceptions of the two communities on the agricultural and non-agricultural livelihood diversifications in terms of their economic profitability and social desirability, and rank of the preferences among the strategies. Large proportions of the land scarce farmers prefer piece job and ranked first among non-agricultural activities. None of them suggested it is undesirable. This is followed by fuel wood and charcoal selling which is very undesirable in the communities. Mutual support as livelihood strategies ranks the third but a few rejected for the reason that it creates dependency. The details are vividly presented in the table 3 below.

Switching on to agricultural livelihood strategies, the majority pursue crop production and rank it the first and perceive as desirable strategy though a few have doubt as it is resulting in negative effect on natural resource base. This is followed by livestock keeping where more than half of the respondents reported its effect on the natural resource base as a matter of indifference due to overgrazing that leads to pastureland degradation as well as multifaceted uses.

Consequently, the outcomes of the livelihood diversifications have a potential to enhance or degrade the livelihood of the land scarce farmers. It compromises the live of the people. For example, every farmer has already understood that selling wood and charcoal is socially not desirable, the most an unattractive, and unsustainable livelihood strategies available to them mainly due to the deforestation despite it provides an immediate sources of income. This has also depressed social progress as little of the incomes from it went to asset buildings and human capabilities.

The implication of this finding is revealing that the agricultural intensification and extensification strategies in the resource poor community are unviable and households taking up these strategies are constrained to do so, it is buttressed by the fact that just half of agricultural land scarce farmers take up these strategies (54.7%). This could mean that, in general, the two activities are not efficient and might be the consequence of severe resource scarcity

particularly key agricultural inputs. On the other hand, farming seems to be a viable option for the households taking up the agricultural livelihood diversification strategies as specialization in farming is only made possible by the availability of land, sufficient agricultural inputs, and favourable agro-ecology.

While, almost all land scarce farmers now take up the identified non-agricultural livelihood strategies in both the highland and the midland, the picture for the seasonal migration as a strategy remained the same, with the least participation rate but positively affecting investments on farm inputs. The difference

is also not significant when tested with the agro-ecology and gender. Thus, it can be firmly stated that the livelihood strategies can best work in combination than in divide so as to bring about desirable outcomes on the livelihood of the land scarce farmers as the household assets vary with particular agro-ecology and institutional arrangements. In the sense of desirable and sustainable outcomes, the presence of good combination of livelihood assets complement than compete each other and enhance rather than depleting the existing one.

Table 1. Agricultural Livelihood Diversification in the Respective Agro-Ecology

Livelihood Strategy	Sampled Kebele		Total	X ²
	Highland	Midland		
Farming own plot	31(100%)	39(88.6%)	70 (93.3%)	3.774 ^{NS}
Livestock herding	20(64.5%)	17(38.6%)	37(49.3%)	4.873 ^{***}
Vegetable gardening	18(58.1%)	8(18.2%)	26(36.7%)	12.772 ^{**}
Farming on others' plot	23(74.2%)	30(68.2%)	53(70.7%)	.317 ^{NS}
Beekeeping	14(45.2%)	3(6.8%)	17(22.7%)	15.254 ^{**}
Poultry/chicken keeping	24(77.4%)	14(31.8%)	38(50.7%)	15.130 ^{**}

** , *** , ^{NS} significant at 1%, 5%, and not significant, respectively Note: Multiple responses are possible.

Table 2. The Household Participation in Non-agricultural Livelihood Strategies

Livelihood Strategy	Agro-Ecological Zone		X ²
	Highland(n=31)	Midland (n=44)	
Selling firewood/charcoal/grass	(27)87.1%	(2)4.6%	52.260 ^{**}
Support from parents/relatives	(14)45.2%	(3)6.8%	15.25 ^{**}
Different pieces of jobs	(24)77.4%	(32)72.7%	0.212 ^{NS}
Different handicraft	(11)35.5%	(2)4.6%	12.149 ^{**}
Petty trade/brewing/selling local alcohol	(15)49.4%	(27)61.4%	1.243 ^{NS}
Traditional healing services	(3)9.7%	(0)0.0%	4.435 ^{***}
Saving and credit in cooperatives/CBOs	(10)32.3%	(18)40.9%	0.582 ^{NS}
Renting-out urban room/farmland	(3)9.7%	(4)9.1%	0.007 ^{NS}
Selling clothes/utensils/jewellery	(6)19.4%	(1)2.3%	6.271 ^{NS}

** , *** , and NS significant at 1%, 5%, and not significant, respectively.

Table 3. Summary Ranks and Perceptions about the Livelihood Strategies

Non-Agricultural Livelihood Strategies	Rank *	Desirable**	Undesirable	Indifferent
Support of parents/children /relatives 17(22.7%)	3 rd	15 ^a (88.2 ^b)	2(11.8)	0(0)
Selling fuel wood /grass/charcoal 29(38.7%)	2 nd	0(0)	29(100)	0(0)
Piece jobs / other wage employment 56(74.7%)	1 st	56(100)	0(0)	0(0)
Handicrafts/local manufacture/sewing/ clothes repairs 13(17.3%)	7 th	13(100)	0(0)	0(0)
Brewing/ selling local beer/ 41(56.7%)	5 th	41(100)	0(0)	0(0)
Traditional healing services 3(4%)	8 th	2(66.7)	1(33.3)	0(0)
Savings/credit in the cooperative/CBOs 28(37.3%)	4 th	28(100)	0(0)	0(0)
Renting-out field/ urban rooms/others 7(9.3%)	6 th	7(100)	0(0)	0(0)
Selling clothes /house utensils/jewellery 3(5.7%)	9 th	0(0)	3(100)	0(0)
Agricultural Livelihood Strategies				
Farming own land (not sharecropping) 70(93.3%)	1 st	70 ^a (93.3 ^b)	0(0)	5(6.7)
Livestock rearing 39(49.3%)	2 nd	36(48)	1(1.3)	38(50.7)
Vegetable gardening 26(34.7%)	4 th	25(33.3)	1(1.3)	49(65.4)
Sharecropping /farming rented land 53(70.7%)	3 rd	43(57.3)	10(13.3%)	22(29.4)
Beekeeping 17(22.7)	6 th	17(22.7)	0(0)	58(77.3)
Poultry (keeping chicken) 38(50.7%)	5 th	38(50.7)	0(0)	37(49.3)

^a & ^b inside and outside the parenthesis are the number and per cent of the observation, respectively

Note: Multiple Responses are possible.

4. Conclusion and Recommendations

4.1. Conclusions

It can be concluded that

1) The agricultural extensification and intensification induced by land shortage as diversification in are constrained by lack of access to credit, shortage of draught power, and limited supply of improved agricultural technologies (HYVs, fertilizers, and herbicides). The agricultural livelihood strategies are also not appreciated due to their undesirable impact on the natural resource in general and unviable and unprofitable at current level of technology in particular.

2) Seasonal migration outside the village for wage employments has had significant desirable effect on the land scarce farming households as it increases the income of the household and investment on the better utilization of resources otherwise met by selling fixed assets or extracting natural resources.

3) Despite its vices and a growing land scarcity, majority of the landless households still depend substantially on non-agricultural livelihood strategies and farming (intensification and extensification) of sharecropping and renting.

4.2. Policy Implications

Based on the above findings, the following key remarks are made.

1) Policy makers and NGOs should give a due attention to promote and support non-agricultural activities (NAA). Specifically, skill acquisition by way of vocational training should be encouraged. Support for self-employment, cottage industry, and micro enterprises through government and credit provision are important to achieve this balance. Moreover, land saving agricultural activities such as livestock fattening, chicken raising, beekeeping and diversification with high-value and vegetable production are essentially desirable to exploit the niche opportunities.

2) Side by side, agricultural extension services, provision of low-cost farm inputs, and other agricultural support programmes are necessary to intensify more productive and profitable farming. High priority should be given to interventions targeting agricultural land scarce peasants.

3) Diversifying the livelihood strategies of the land scarce peasants are not an option but an imperative. Thus, it is important for policy makers to recognize the complementarities of agriculture and non-agricultural activities for sustaining livelihoods of land scarce peasants and growing landlessness.

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