Transforming Land and Livelihood: Analysis of Agricultural Land Abandonment in the Mid Hills of Nepal

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Abstract : Land grabbing is often seen as a way, among many ways, to intensify agriculture for food security around the world today. However, in Nepal, a quite opposite phenomenon is taking place. Fertile agricultural lands are being abandoned at an unprecedented degree in recent years. A critical question that then arises is: How and why productive lands are being abandoned by farmers who otherwise had cultivated them for so many generations? The question is much more relevant for a country like Nepal that faces severe food insecurity. The aim of this paper is to investigate the drivers of agricultural land abandonment in the mid hills of Nepal. This study employs a mixed method approach to data collection, using household survey and key informant interview, in four mid hill districts of Nepal. The results indicate three key drivers: first, sociopolitical instability, which forced people to move out; second, reduced agricultural production, concomitant with availability of more attractive alternative opportunities; third, farming ceasing to be a viable occupation for many farmers to maintain sustainable household economy and being seen as an occupation for those who cannot do much else. Land abandonment has serious social, economic and ecological implications, particularly for the poorest of the poor. The paper concludes by highlighting some ways to address the land abandonment issue.

Key words: Abandonment, transformative agriculture, under utilization, food security,

INTRODUCTION

Nepal is experiencing unprecedented socioeconomic changes, including massive outmigration of the youth. Nepalese society is rapidly moving towards urbanization, monetization and commercialization, reinforced by economic globalization and market enforcement (Seddon *et al.* 1998). This has implications in terms of changing agro-based land use and livelihood. With these effects, agriculture—the backbone of Nepalese economy—is going through a massive transition, mainly caused by changing population dynamics in rural areas as there is a shortage of farm labour due to male outmigration and increased feminization of agriculture.

Agriculture is the main livelihood source for rural people in Nepal. Almost 80 per cent of the rural households are involved in agriculture, which has involvement of 78.5 per cent of the workforce and women's contribution of 89.6 per cent (ADB 2013). For the last two decades, the mid hills of Nepal have witnessed an increase in abandonment of agricultural land[1]. This is particularly worrisome as only about 21 per cent of the country's land is arable. The mid hills, where 44.3 per cent of the country's population live, shares 40.4 per cent of the arable land (CBS 2002). Unfortunately, the availability of arable land is declining fast. Above 55 per cent of the holdings are smaller than 0.5 hectares (ha) in 2010 (CBS 2011). Similarly, out of 56.6 million households, 4.25 million farming households are landless and half of them are deprived of a piece of land even for housing (CSRC 2012). Given the scarcity of land resources, it is important to understand how the existing arable land is being used.

[1] In this article abandoned agricultural land refers to private agricultural land that has been abandoned, underutilized or unutilized and left fallow, generally referred to as *Banjho Jamin* in Nepali.

The rural households in the mid hills derive significant part of their livelihood from farm activities (51 per cent), non-farm income (33 per cent) and remittances (16 per cent). A Nepal Rastra Bank report says that 78.9 per cent of the remittances are used on daily consumption, 7.1 per cent on repayment of loans, 4.5 per cent on acquisition of household assets, 3.5 per cent on education and 2.4 per cent on capital formation (Nepal Rastra Bank 2010). The inflow of cash comes direct to the household, and a large part of it (>80 per cent) is spent on food, clothing and other consumables. This is followed by repayment of loan (7 per cent), acquisition of household assets, education and capital formation consecutively (Paudel *et al.* 2012).

The traditional practice of small-scale subsistence farming is not generating adequate income to meet household demands. In addition, landlessness, decreasing access to productive natural resources, low returns on labour and other investments, and increasing demand for cash to pay for health, education and other social services are acting as disincentives to farming communities to continue farming in the hills (Paudel *et al.* 2012).

In recent years, privately-owned agricultural lands are being abandoned, mainly by the households whose family members have out-migrated. A study conducted by Malla (1992) in three Village Development Committees (VDCs) of Kavre, shows that land abandonment, mainly that of *Bari* (unirrigated) land, is around 7.5 per cent. Other studies suggest that a significant proportion of land is left fallow (Thapa 2001; Khanal 2002; Gautam 2004). Land abandonment has tremendous impact on food security and local livelihood in areas already suffering from mass poverty and food deficit (Khanal and Watanabe 2006). Equally, if agricultural land is left unutilized, it will have several negative consequences for the fragile mountain ecology, particularly on the hill slope processes where hill slopes have been terraced and managed for centuries through massive input of family labour (Jodha 1992).

Land has a complicated and multi-dimensional relationship with socioeconomic phenomena. Multiple drivers of changes, including social, economic, cultural and ecological, as well as agricultural technologies, are playing a vital role in land abandonment. One such driver is outmigration. There is an increasing trend of people migrating temporarily and permanently out of Nepal. Currently, above 53 per cent of the households have at least one member living either within or outside the country (CBS 2011). At least 56 per cent of the households receive remittances from foreign employment (ADS 2013).

Outmigration is not a new phenomenon, but its intensity is certainly unprecedented. In fact, Nepal has been sending its youth abroad for the past 200 years and has been receiving remittances (Adhikari 2006). However, outmigration by such a large number of Nepalese farmers, abandoning their productive land resources, is unprecedented. Currently, more than 4 million Nepalese youth are serving as labour outside the country, and the remittance economy contributes 30 per cent to the Gross Domestic Product (GDP) (World Bank 2009). The remittance economy, associated with outmigration of an economically active labour force, mainly male, has become the most powerful force for transforming rural life and livelihood. In the last ten years, massive outmigration of rural youth has dramatically changed the rural landscape in the mid hills of Nepal (Paudel and Adhikari 2010; Adhikari and Hobley 2011).

Since agricultural land underutilization and abandonment of agricultural land is a recent phenomenon, which though is happening very rapidly, there has been no comprehensive study on this issue yet. Some case studies suggest that this phenomenon is triggered by the modern development aspirations of rural population in

search for a better life, accelerated by political and social instability, including the Maoist insurgency. In recent years, the regional trends of employment mobility have played a significant role by leading to migration of the youth population to the Gulf countries (Seddon *et al.* 1998; Adhikari and Hobley 2011).

This paper aims to identify the state of abandonment of agricultural land in the mid hills of Nepal and analyse its causes and consequences. By analysing the status, trends, types and drivers of land abandonment, and its consequences in terms of food and livelihood security in the mid hills of Nepal, it will generate some insights that will help explain and address the issue of land abandonment. The study focuses on some key questions regarding land use:

- What is the extent of agricultural land abandonment and how has it changed over the past few decades?
- What types of land in which ecological belts and which categories of farmers are abandoning land?
- What explains land abandonment: what are the driving forces behind land abandonment and what are implications of land abandonment for food security?

The paper is structured as follows: the first section provides an overview of land abandonment; the second section presents the methodology employed for the study; and in the third and fourth sections, following research findings, discussion and conclusion of the paper are presented respectively.

RESEARCH METHOD

This study employs an actor-oriented approach to qualitative research. Specific research questions were developed to explore the issue. Four mid hills districts, viz. Kavre, Lamjung, Parbat and Pyuthan, were selected as case study sites (see Figure 1). These districts were selected because high per centages of agricultural land are being abandoned after migration (in Lamjung and Parbat) and intensive farming system is practised and there is low labour migration (in Kavre and Pyuthan).

The case study was supported by a household survey in selected households in the field sites. A survey questionnaire was prepared to assess the status of landholding, outmigration and abandonment of land, particularly of *Khet* and *Bari* lands. Similarly, focus group discussions (FGDs) were held to find out the status and trends in land use, types of land being abandoned, and its causes and consequences. Participatory Rural Appraisal (PRA) tools were employed to gather information.

The household survey explored quantitative figures on the causes of land abandonment, which were supplemented by the information generated from FGDs and key informant interviews (KIIs). Consequences of land abandonment were explored from literature review and interactions with various groups at field sites.

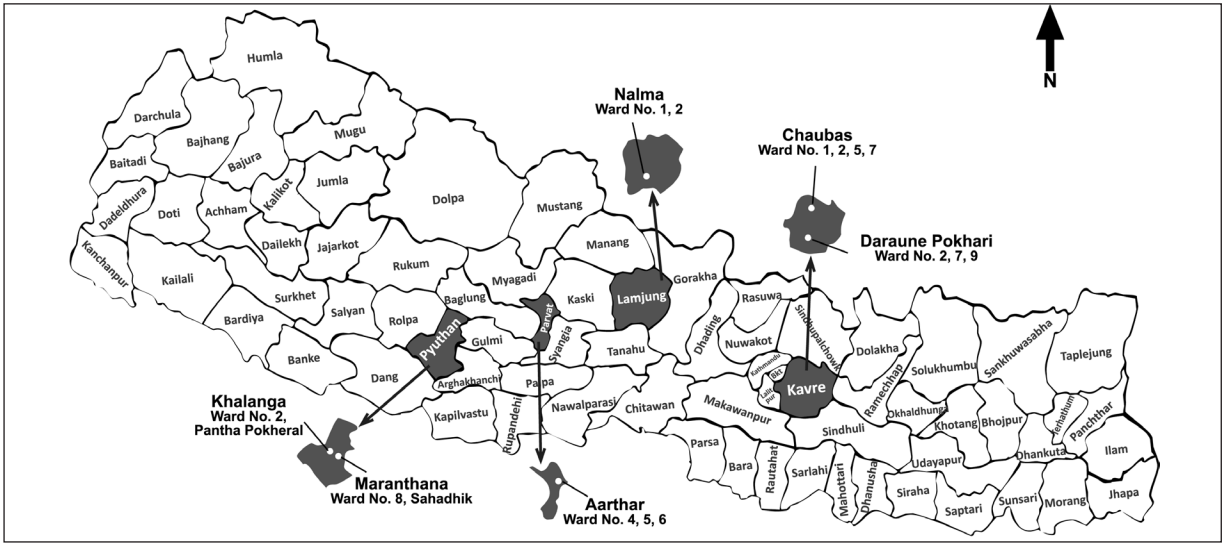

Figure 1 : Map of Nepal showing case study districts (Paudel *et al.* 2012)

This paper draws on ten FGDs, five case stories and a survey of 250 sample households. The participants of the FGDs were mostly those families who had abandoned their lands. Literature review of changing land use, changing population dynamics and its impact on local food production at field sites was followed by participatory exercises such as participatory mapping, FGDs and KIIs. The questions were focused broadly on causes and consequences of land abandonment.

RESULTS

Scale of land abandonment

In the case study sites, abandoned agricultural land ranged from 17.9 to 36.8 per cent and more[2] in area. It is almost double to the findings of earlier studies (Malla 1992; Thapa 2001; Khanal 2002; Gautam 2004; Khanal and Watanabe 2006) conducted in different locations. It is higher in Parbat (36.8 per cent) and compared to other three districts (see fig 2). The factors of abandonment varied from site to site and cannot be generalized. The high level of land abandonment in Parbat and Lamjung can be attributed to outmigration, both permanent and temporary. The other factors are closeness to urban area and alternative income sources.

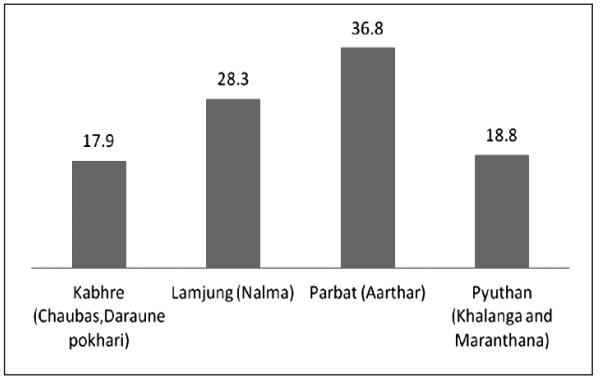

Figure 2 : Scale of land abandonment (Paudel *et al.* 2012)

In Kavre, many of abandoned land pieces were being used for planting grass and fodder trees for livestock, as well as converting to fruit orchards. Since the area is close to a market with road access, farmers are producing vegetables and cash crops. Furthermore, soil is more fertile in Kavre compared to other sites. However, in Pyuthan, though farming is not productive and profitable,

[2] There is some variation in total land abandoned in the site and the data received from the household survey.

land abandonment is low as compared to other sites mainly because of absence of alternative livelihood sources.

Trend of land abandonment

Traditionally, patches of distant, less fertile and slope marginal agricultural land used to be abandoned for a few years to allow them to become productive for the next crop. However, now lands are being abandoned permanently. Figure 3 shows the trends of land abandonment for the last 20 years in the field sites. It shows acceleration in land abandonment during 2002-07. One of the reasons for this, as claimed by villagers, is the accelerated movement of rural population to urban centres due to the Maoist insurgency.

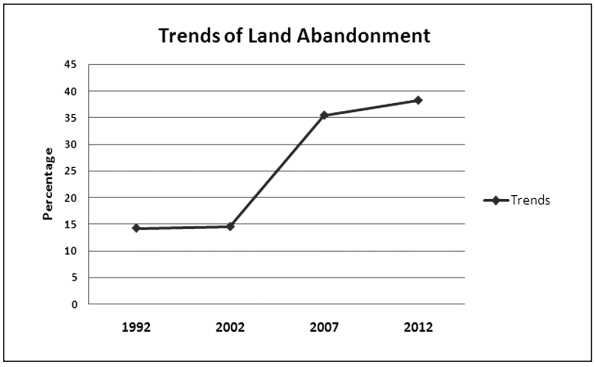

Figure 3 : Trends of land abandonment (Paudel *et al.* 2012)

Type of abandoned land - *Khet*[3] and *Bari*[4] land

In all cases, agricultural lands, mainly distant, less fertile and close to the forest areas, have been abandoned. However, in many cases well-irrigated rice fields have been abandoned, in Lamjung and Parbat in particular. As shown in the figure, many farmers have abandoned the land that used to be paddy fields. On average, two-thirds of *Khet* and one-third of *Bari* land have been abandoned. Although this field observation contradicts with the general meaning of *Khet* (well-irrigated and fertile land than *Bari* land), most of the abandoned *Khet* are far from the village, close to the forestland where there is enough water during rainy season and which is mainly used for rice cultivation. These already degraded *Khet* are far from human settlements, require more labour to prepare field, and supply inputs, weeding and other farm practices.

According to villagers in Kavre and Lamjung, younger members were away and elderly members at home cultivated usually only those parcels of land which were close to their homes. Parcels of land far from home were usually left fallow. This was also the case in Parbat and Pyuthan.

Land abandonment in different ecological regions

In terms of elevation, mid hills can be differentiated as upper, mid and lower hills. Microclimate, soil quality, and flora and fauna vary across these regions and determine particular agro-ecological practices. In the study sites, abandoned agricultural lands are 44 per cent in the uphill, 23 per cent in the mid hills and 33 per cent in lower plains or foothills. Since most of the marginal lands are in upper elevation and lower parts of the forestland, there is high level of land abandonment. In the mid layer, there are mostly settlements with less abandoned agricultural lands.

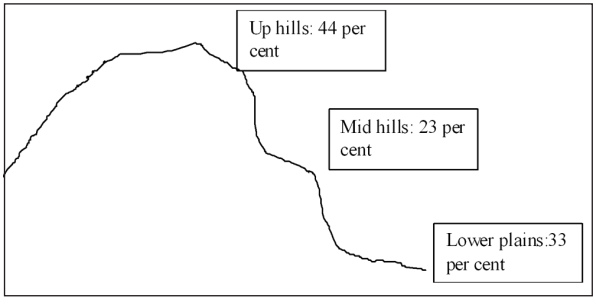

Figure 4 : Land abandonment by ecological regions (Paudel *et al.* 2012)

[3] *Khet* is mainly a paddy field, usually well irrigated, fertile and productive land where two to three crops can be cultivated a year
[4] *Bari* is upland, rainfed and less fertile as compared to *Khet*, and one to two seasonal crops are grown

Type of farmers abandoning farm lands

In terms of land abandonment by types of farmers (Figure 5), poor households have abandoned more land (50 per cent) than rich and medium farmers (17 per cent). It is primarily because poor households have marginal lands usually far from their homes. As cultivating such land is no more profitable, people prefer to engage in wage labour that provides cash for which they are desperate. According to farmers, returns on investment of labour and other inputs from agricultural production of these marginal lands are low.

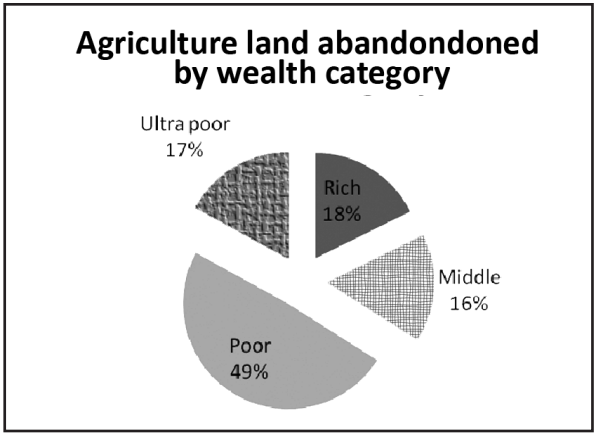

Figure 5 : Land abandonment by class category

Many farmers abandoned their land as a result of forced by political instability and insecurity. The decade-long Maoist conflict forced many people to leave their villages and permanently abandon their lands. Most of them are relatively well-off families. Though many pieces of such land are cultivated by poor households supported by Maoists, several areas are left idle due to continued uncertainty and fear.

The average landholding varies across caste/ethnic groups. Contrary to many other districts, *Janajatis* have larger average landholding, followed by Brahmin/Chhetry and *Dalits*. However, caste/ethnic groups hold more *Bari* than *Khet*. Furthermore, there is no significant difference in land abandonment across caste/ethnic groups. The figure shows that abandonment of agricultural land is more or less same among the caste/ethnic groups.

Table 1 : Land abandonment by caste/ethnicity

Caste/ ethnicity	Average holding and abandoned lands in all sites (in Ropani)			
	Khet	Bari	Total	Abandoned
Brahmin/ Chhetry	2.3	17.2	19.5	5.5
Ethnic group	8.3	9.1	17.4	6.1
Dalits	1.8	8.9	10.7	4.5

Source: Field survey, 2012

According to the farmers and stakeholders in the study sites, the abandoned agricultural lands are usually marginal and have poor productivity. It does not mean that cultivated lands are productive and farmers are making profit out of them. But the abandoned ones are really poor. In many cases, innovative farmers have started using abandoned lands for cultivating fodder and grasses, planting non-timber forest products (NTFPs) (in Kavre), cultivating cardamom (in Lamjung) and growing fodder trees (in all sites).

Causes of land abandonment

The field observation, discussions and collective reflection with farmers as well as key stakeholders in the districts identified the internal and external causes of land abandonment. Although there are variations in priority causes of land abandonment in different sites, push and pull factors are almost the same in all sites. These factors can be divided into four broad categories: socioeconomic, production technology, cultural and biophysical.

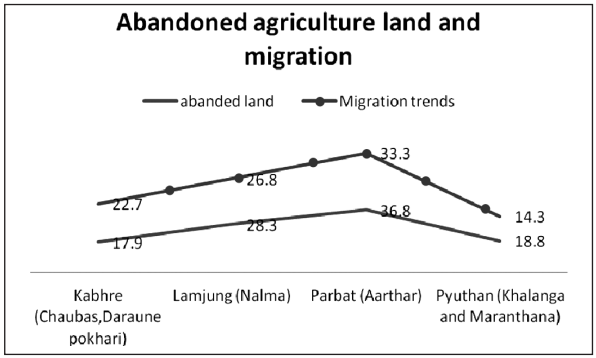

Figure 6 : Land abandonment and migration

Among these factors, socioeconomic changes in rural landscape, particularly outmigration, have been observed as the biggest triggering factor. For example, the data shows the trends of agricultural land abandonment and migration moving parallel across the sites. The main reason behind this is large-scale outmigration of rural farming communities to urban areas and foreign employment. With this effect, the family members of out migrated individuals, unemployed youth and students were moving out from villages to nearby urban areas, Terai and road heads for settlement, work opportunities and studies respectively.

DISCUSSION

Explaining land abandonment

The findings of the field study suggest that there is large-scale land abandonment across the sites. There has been unprecedented increase in land abandonment in recent years. This was mainly accelerated during the last decade, coinciding with the massive scale of outmigration. Moreover, increasingly larger patches of agricultural land have been abandoned in all sites, particularly those near forests, distant from settlements and with low productivity. It suggests that labour shortage is one of the major constraints on farming across the mid hills.

Evidence suggests that causes such as rural–urban mobility, massive outmigration in search of employment opportunities, changing geopolitics, people's socioeconomic growth ambitions, increased cost of production and low productivity all tie together to force people to leave the land either underutilized or abandon it.

There is an increasing dilemma of agricultural land use. On the one hand, farmers are giving up agriculture, which is not adequately supporting their livelihood needs and, on the other hand, there is increasing food insecurity at local level. Farmers' decision to leave farm uncultivated is not a simple matter of investment and returns. It is a more complex phenomenon. In the villages, no one wants to keep their land fallow, but the practice of land abandonment is widely spreading. This suggests that farmers are forced to leave farms and look for alternatives; otherwise, they will not be able to maintain their household economy.

Because of this there have been visible changes in land use; for example, farmers are increasingly moving towards less labour-intensive agricultural practices in their farmlands. They are abandoning distant marginal pieces of land and planting fodder trees, grasses, fruits and other NTFP species. There are also changes in the cropping pattern; because of labour shortage and increased labour costs, farmers are cropping single crops, whereas earlier, they used to grow two to three seasonal crops. Similarly, many smallholder farmers who earlier used to be sharecropper have now become labourer, leaving their own land to fallow. Abandonment of two-thirds of area by poor and marginal farmers in the study sites suggests that they are abandoning their own lands as they find it economically profitable to work as labour rather than cultivating their own lands.

All these factors contributing to abandoning of agricultural land has great consequences on food security of rural communities. For resource-poor rural farmers, currently, there are no ways other than to continue farming as they have limited

choices for their livelihood. As evident from the studies, if their economic status is improved, they will be moving out like others. If these agricultural lands are not made more productive, more and more land will be abandoned to ensure food security and livelihood. This moving out from agriculture eventually may have far-reaching implications for agricultural and rural development in the mid hills of Nepal.

Household data shows that one-third of the cultivated land has been abandoned, which is equivalent to 18 per cent of the total land cultivated in Nepal[5]. If such huge pieces of land are kept abandoned in the long run, it will greatly affect the well-being of the hill people and hill ecology. Therefore, timely innovations on utilization of abandoned private land are urgent. Moreover, innovations on abandoned lands could offer opportunities to support 4.25 million landless farming communities who are deprived of basic resources for livelihood.

Furthermore, none of the study sites are food secure with their local production. It is observed that areas with high migration often tend to have abandoned farmlands, with negative impacts on overall national food production. This usually induces food insecurity among the poor and marginalized. Decreased labour availability has hampered livestock enterprise, resulting in less manure and increased reliance on imported inputs.

According to the villagers, many young educated people are abandoning agriculture as they believe it is the job of uneducated and unskilled people. Even among the people educated in agriculture it is the least preferred job. There is a common saying '*Panch padhyo halo chhodyo, Das padhyo thalo*' (those educated up to grade five leave the plough and those up to grade ten leave the village). In general, agriculture has been projected as laborious work.

[5] Out of the total arable land 56 per cent is in the mid hills (ADB 2013)

Addressing land abandonment

Since there is large-scale land abandonment across the mid hills, proper utilization of land to enhance productivity is the key issue for consideration for income, employment and food and livelihood security of poor and marginalized communities.

There is 'a paradox' for scholars, policymakers and practitioners as to why productive land is left unutilized or underutilized in a country that has rampant poverty. Of course, abandonment of productive agricultural land is a major problem, but, in the rural hills, it offers some opportunities to transform subsistence practices to entrepreneurial agriculture, which has strong potential to contribute to poverty alleviation and a fresh opportunity for re-imagining a land tenure system that can lead to a more equitable land distribution mechanism with real impacts on food security.

CONCLUSION

The glimpse of the status, trend, types and causes of land abandonment highlights the extent of land abandonment. There is continuous land abandonment across the mid hills, and it is expanding fast. Initially, distant and degraded lands were abandoned; however, shortage of labour and increased cost of production are forcing farmers to abandon fertile and well-irrigated productive land as well. Both the absentee landholders as well as smallholders are abandoning their land. Mostly, it is abandoned by the farming families of foreign and urban migrants.

Land abandonment in the mid hills is a recent phenomenon. The rural-urban mobility, followed by the Maoist insurgency, outmigration of the youth, thereby labour shortage at local level are the key driving forces of land abandonment. As a consequence, feminization of agriculture and low production and productivity have resulted in food insecurity, thus rise in food import. Since agriculture economy is the backbone of the

country, this will have far-reaching consequences on food and nutrition security, poverty reduction, socioeconomic development and sustainable agro-ecology.

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