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Rural Livelihoods in Transition: Insights from the 2078 National Agricultural Census in Nepal

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Abstract

Nepal's rural landscape is undergoing a profound transformation, marked by a decline in traditional agricultural practices, a phenomenon known as deagrarianization. This study analyzes the drivers, patterns, and implications of this shift using data from the National Agricultural Census 2078. Key findings include a decline in cattle farming and an increase in goat and poultry farming, reflecting a diversification of livelihoods. The study further observes a reduction in agricultural land, the adoption of modern technologies, and the emergence of non-traditional agricultural activities like fish farming, mushroom cultivation, and beekeeping. Male out-migration has led to increased female participation in farming. The study highlights the complex interplay of economic, environmental, and social factors driving these changes. This research provides valuable insights into the evolving agricultural landscape of Nepal and its implications for rural development.

Keywords

Deagrarianization, Agricultural Transformation, Livelihood Diversification,
Rural Nepal.

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1. Introduction

Agriculture has long been the backbone of Nepal's economy, providing livelihoods for the majority of its rural population and contributing significantly to the country's GDP. However, in recent decades, Nepal's agricultural sector has undergone profound transformations, driven by globalization, urbanization, climate change, and shifting economic priorities. These changes have led to a process known as deagrarianization, where rural households increasingly move away from traditional agricultural practices and diversify their livelihoods into non-farm activities. This shift has significant implications for rural economies, food security, and the sustainability of agricultural systems.

The National Agricultural Census 2078 provides a comprehensive dataset to examine these transformations, offering insights into changes in land use, livestock populations, crop cultivation, and the adoption of modern agricultural technologies. The census reveals a decline in traditional farming practices, such as cattle rearing, alongside a rise in alternative agricultural activities, such as goat and poultry farming, fish farming, and beekeeping. These trends reflect broader patterns of rural livelihood diversification, as households adapt to economic, environmental, and social pressures.

This paper seeks to contextualize these changes within the framework of deagrarianization, exploring the drivers, consequences, and policy implications of Nepal's shifting agricultural landscape. By analyzing the data from the National Agricultural Census 2078, this study aims to contribute to a deeper understanding of how rural households are navigating the challenges and opportunities of a rapidly changing agricultural sector. The findings of this paper have important implications for policymakers, development practitioners, and researchers working to promote sustainable rural livelihoods in Nepal and beyond.

2. Methods

This study is based on an analysis of secondary data from the National Agricultural Census 2078, conducted by the Central Statistics Office of Nepal. The census provides a comprehensive and nationally representative dataset on various aspects of Nepal's agricultural sector, including land use, livestock populations, crop cultivation, and the adoption of agricultural technologies. The methodology for this paper is structured as follows:

3. Data Source

The primary data source for this study is the National Agricultural Census 2078, which was conducted across all 77 districts of Nepal. The census collected data from 4,131,000 agricultural households, covering a wide range of variables related to agricultural practices, livestock rearing, and household demographics. The census data is publicly available and provides a reliable basis for analyzing trends and patterns in Nepal's agricultural sector over the past decade.

4. Data Analysis

The analysis focuses on key indicators of deagrarianization, including:

- ▶ Changes in the number of households engaged in cattle, goat, and poultry farming.
- ▶ Shifts in livestock populations, particularly cows, bulls, goats, and chickens.
- ▶ Trends in agricultural land use, including the reduction in cultivated land and the expansion of non-traditional agricultural activities such as fish farming and beekeeping.
- ▶ The adoption of modern agricultural technologies, such as tractors, irrigation systems, and improved crop varieties.
- ▶ Gender dynamics in agriculture, including the proportion of male and female primary farmers.

Descriptive statistics are used to summarize the data, and trends are analyzed by comparing the 2078 census data with the previous census conducted in 2068. This comparative approach allows for an examination of changes over time and provides insights into the drivers and consequences of deagrarianization in Nepal.

5. Theoretical Framework

The study is guided by the concept of deagrarianization, which refers to the process by which rural economies and societies move away from agriculture as the primary source of livelihood. The analysis draws on theoretical perspectives from livelihood diversification theory (Ellis, 2000) and political economy approaches (Bernstein, 2010) to understand the economic, social, and environmental factors driving deagrarianization in Nepal. These frameworks help to contextualize the census data within broader global and national trends, such as globalization, urbanization, and climate change.

6. Limitations

While the National Agricultural Census 2078 provides a robust dataset for analyzing trends in Nepal's agricultural sector, there are some limitations to this study. First, the census data is cross-sectional, meaning it provides a snapshot of the agricultural sector at a specific point in time. Longitudinal data would be needed to fully understand the dynamics of deagrarianization over time. Second, the census does not provide detailed information on the socioeconomic characteristics of agricultural households, such as income levels, education, or access to credit. These factors are important for understanding the drivers of deagrarianization and should be explored in future research.

7. Contextualizing Deagrarianization in Rural Nepal

Deagrarianization, the process by which rural economies and societies shift away from agriculture as the primary source of livelihood, has emerged as a significant phenomenon in developing countries, including Nepal. Historically, Nepal has been an agrarian society, with agriculture contributing substantially to the national economy and employing the majority of the rural population. However, in recent decades, the country has witnessed a marked decline in the reliance on agriculture, driven by a combination of economic, social, political, and environmental factors. This literature review contextualizes deagrarianization in rural Nepal by examining its drivers, consequences, and the responses it has elicited, drawing on theoretical frameworks and empirical studies from Nepal and beyond.

Theoretical perspectives on deagrarianization provide a foundation for understanding this complex process. Bryceson (1996) defines deagrarianization as the economic and social reorientation of rural households away from farming, often accompanied by diversification into non-agricultural activities. This process is closely linked to broader global trends such as globalization, urbanization, and neoliberal economic policies (Bernstein, 2010; McMichael, 2006). In the context of Nepal, deagrarianization is not merely an economic shift but also a socio-cultural transformation, as rural households adapt to changing circumstances. Livelihood diversification theory, as articulated by Ellis (2000), offers a useful lens for understanding how rural households in Nepal are increasingly engaging in non-farm activities such as wage labour, remittance-based income, and small-scale entrepreneurship. Meanwhile, political economy approaches emphasize the role of structural forces, including global capitalism and state policies, in shaping agrarian change (Akram-Lodhi and Kay, 2009). These theoretical frameworks highlight the multi-dimensional nature of deagrarianization, which encompasses economic, social, and environmental dimensions.

The drivers of deagrarianization in Nepal are multifaceted and interconnected. Economic liberalization and globalization have played a significant role in undermining the viability of smallholder agriculture. Since the 1990s, Nepal's integration into the global economy has exposed its agricultural sector to competition from cheap imports, leading to declining profitability for local farmers (Adhikari, 2014). At the same time, remittances from migrant workers have become a critical source of income for rural households, reducing their dependence on agriculture. Seddon *et al.* (2002) note that labour migration, particularly to Gulf countries and India, has become a dominant livelihood strategy in many rural areas, with remittances now accounting for a significant portion of Nepal's GDP. Urbanization and rural-urban migration have further accelerated deagrarianization, as rural youth are drawn to cities like Kathmandu and Pokhara in search of better opportunities (Thapa *et al.*, 2019). Environmental challenges, including climate change, soil degradation, and water scarcity, have also contributed to the decline of agriculture. Gentle and Maraseni (2012) highlight how changing weather patterns and natural disasters, such as floods and landslides, have made farming increasingly risky and unviable in many parts of Nepal. Additionally, policy and institutional factors, such as weak

agricultural support systems, land fragmentation, and limited access to credit and markets, have exacerbated the challenges faced by rural farmers (Karki, 2013; Sugden, 2013).

The consequences of deagrarianization in rural Nepal are profound and far-reaching. On the one hand, the diversification of livelihoods has provided rural households with new opportunities for income generation and risk management. Studies by Jaquet *et al.* (2016) and Sunam and McCarthy (2016) highlight how households have adapted to deagrarianization by engaging in non-farm activities, such as wage labour, small businesses, and remittance-based income. However, this shift has also led to increased economic inequality, as wealthier households are better able to capitalize on new opportunities, while poorer households struggle to adapt. The socio-cultural impacts of deagrarianization are equally significant. Traditional rural lifestyles and knowledge systems are being eroded, as younger generations move away from farming and adopt urbanized lifestyles (Bhattarai, 2015). Migration has also led to the feminization of agriculture, with women taking on greater responsibilities in farming while men seek work elsewhere (Gartaula *et al.*, 2012). This has placed additional burdens on women, who must balance agricultural work with domestic responsibilities. Environmental implications of deagrarianization are mixed. In some areas, the abandonment of farmland has led to forest encroachment and land degradation (Paudel *et al.*, 2020), while in others, the shift to non-farm livelihoods has reduced pressure on natural resources (Chhetri *et al.*, 2013).

Responses to deagrarianization in Nepal have been varied and context-specific. At the household level, livelihood diversification has emerged as a key strategy for coping with the decline of agriculture. Rural households have adopted a range of activities, including seasonal migration, off-farm employment, and small-scale entrepreneurship, to supplement their income (Scoones, 2009). At the policy level, the Nepalese government has introduced programs to support agriculture, such as subsidies, training, and infrastructure development (Karki, 2013). However, these efforts have often been insufficient to reverse the trend of deagrarianization, due to limited funding, poor implementation, and a lack of coordination between different stakeholders (Adhikari, 2014). Community-based initiatives have also played a role in sustaining rural livelihoods. For example, cooperatives, agro-tourism, and organic farming have been

promoted as alternative livelihood options in some regions (Gurung, 2016). These initiatives highlight the potential for local innovation and collective action in addressing the challenges of deagrarianization.

Despite the growing body of literature on deagrarianization in Nepal, several gaps remain. First, there is limited research on the long-term impacts of deagrarianization on rural communities, particularly in remote and marginalized regions. Second, few studies explore the intersection of deagrarianization with issues of gender, ethnicity, and caste, which are critical to understanding the social dynamics of rural change in Nepal. Third, there is a need for more policy-oriented research to identify effective strategies for supporting rural livelihoods in the context of deagrarianization. Addressing these gaps will require interdisciplinary approaches that integrate economic, social, and environmental perspectives.

In conclusion, deagrarianization in rural Nepal is a complex and multi-faceted process shaped by global, national, and local forces. While it has created new opportunities for livelihood diversification, it has also posed significant challenges for rural communities, particularly in terms of economic inequality, cultural change, and environmental sustainability. Addressing these challenges requires a holistic approach that integrates economic, social, and environmental dimensions. By contextualizing deagrarianization within the broader framework of rural transformation, this review highlights the need for innovative and inclusive strategies to support sustainable rural livelihoods in Nepal.

8. Findings

The findings from the National Agricultural Census 2078 reveal significant transformations in Nepal's agricultural sector over the past decade, highlighting both progress and challenges. These changes reflect broader trends of deagrarianization, as rural households increasingly diversify their livelihoods away from traditional farming practices. Below, we discuss the key findings and their implications for Nepal's rural economy and agricultural landscape.

8.1 Decline in Cattle Farming

One of the most striking findings is the decline in cattle farming, particularly the rearing of cows and bulls. The number of households

engaged in cow and bull husbandry has decreased by 573,000, from 2,281,000 in 2068 to 1,708,000 in 2078. This decline is accompanied by a significant reduction in the bovine population, which has fallen by 1,877,000, from 6,430,000 in 2068 to 4,559,000 in 2078. This trend can be attributed to several factors, including the rising costs of cattle maintenance, limited access to grazing land, and the increasing attractiveness of non-farm income sources such as remittances and wage labour. The decline in cattle farming has significant implications for rural livelihoods, as cattle have traditionally been a critical asset for smallholder farmers, providing draft power, manure, and milk. The reduction in bovine populations may also affect Nepal's dairy industry, which relies heavily on cattle for milk production.

8.2 Growth in Goat and Poultry Farming

In contrast to the decline in cattle farming, the census data reveals a significant increase in goat and poultry farming. The goat population has grown by 3,252,000, from 10,990,000 in 2068 to 14,242,000 in 2078, reflecting a 1.5-fold increase. This growth suggests that goats are becoming a more viable livelihood option for rural households, likely due to their lower maintenance costs and higher adaptability to marginal lands. Similarly, poultry farming has experienced a remarkable transformation, with the number of households engaged in poultry farming increasing to 1,799,000, and the total chicken population reaching 45,118,000. Notably, 55% of the poultry population now consists of high-quality breeds, such as layers and broilers, indicating a shift towards more commercialized and efficient poultry production. The concentration of poultry farming in the Bagmati region, particularly in Kathmandu, highlights the role of urban demand in driving this sector's growth.

8.3 Decline in Sheep Population and Agricultural Land

The census data also highlights a notable decline in the sheep population, which has decreased by 119,000, from 630,000 in 2068 to 478,000 in 2078. This decline may be linked to changing land use patterns and the reduced availability of grazing areas. Additionally, the total agricultural land area has decreased by 308,000 hectares, from 2,531,000 hectares in 2068 to 2,218,000 hectares in 2078. This reduction in agricultural land is likely driven by urbanization, land fragmentation, and the conversion of farmland for non-agricultural purposes. Despite this decline, the number of agricultural

households has increased by 300,000, from 3,831,000 in 2068 to 4,131,000 in 2078, indicating that smaller landholdings are becoming more common. This trend raises concerns about the sustainability of smallholder farming, as fragmented landholdings may limit productivity and economies of scale.

8.4 Technological Advancements and Mechanization

The census data points to significant advancements in agricultural technology and mechanization. The use of tractors has increased, with 1,639,000 farming households now utilizing them, while the use of traditional iron plows has declined sharply, from 856,283 in 2068 to 59,825 in 2078. This shift reflects the growing adoption of modern farming techniques, which can enhance productivity and reduce labour costs. However, the uneven distribution of mechanization across regions may exacerbate inequalities, as wealthier households are more likely to afford such technologies. The increase in irrigation coverage, from 52% in 2068 to 54.5% in 2078, is another positive development, as it can improve crop yields and reduce vulnerability to climate variability. However, the fact that only 70% of farming households have access to irrigation suggests that significant gaps remain, particularly in remote and marginalized areas.

8.5 Diversification into Non-Agricultural Activities

The census data highlights a growing diversification of rural livelihoods into non-traditional agricultural activities, such as fish farming, mushroom cultivation, and beekeeping. The number of households engaged in fish farming has increased from 17,191 in 2068 to 42,800 in 2078, with the total pond area expanding from 2,519 hectares to 10,383 hectares. Similarly, 17,554 households are now involved in mushroom cultivation, and 196,854 households are engaged in beekeeping, managing a total of 510,414 beehives. These activities represent important opportunities for income generation and livelihood diversification, particularly for smallholder farmers facing constraints in traditional crop and livestock production. However, the success of these activities depends on access to markets, technical knowledge, and supportive policies.

8.6 Gender Dynamics of Change

The census data reveals important shifts in gender dynamics within the agricultural sector. While men still dominate as primary

farmers, accounting for 67.6% of the total, women's participation has increased to 32.4%. This trend reflects the feminization of agriculture, as men migrate to urban areas or abroad in search of non-farm employment, leaving women to manage agricultural activities. Despite this increased responsibility, women often face barriers to accessing resources, credit, and extension services, which limits their productivity and income potential. Additionally, the proportion of farming households relying on agriculture as their primary source of income has declined from 83.1% in 2068 to 70.4% in 2078, indicating a growing reliance on non-farm income sources. While this diversification can reduce vulnerability, it also underscores the challenges faced by smallholder farmers in achieving sustainable livelihoods through agriculture alone.

9. Discussion and Conclusion

The findings from the National Agricultural Census 2078 reveal a profound transformation in Nepal's agricultural sector, characterized by a shift away from traditional farming practices and a diversification of rural livelihoods. These trends align closely with the theoretical framework of deagrarianization, which posits that rural economies and societies increasingly move away from agriculture as the primary source of livelihood due to economic, social, and environmental pressures (Bryceson, 1996; Bernstein, 2010). This discussion contextualizes the findings within the broader literature on deagrarianization, highlighting the drivers, consequences, and implications of these changes for rural Nepal.

The decline in cattle farming and bovine populations, as documented in the census, reflects the broader economic and environmental challenges facing smallholder farmers in Nepal. Economic liberalization and globalization have exposed Nepal's agricultural sector to competition from cheap imports, reducing the profitability of traditional farming practices (Adhikari, 2014). This aligns with the political economy approach to deagrarianization, which emphasizes the role of global capitalism and neoliberal policies in driving agrarian change (Bernstein, 2010; Akram-Lodhi and Kay, 2009). Additionally, the rise in remittance-based income has provided rural households with an alternative source of livelihood, reducing their reliance on agriculture (Seddon *et al.*, 2002). This trend is consistent with livelihood diversification theory, which argues that rural households diversify their income sources as a risk management strategy (Ellis, 2000).

Environmental factors, such as climate change and land degradation, have also contributed to the decline in traditional farming practices. The reduction in agricultural land and the shift towards non-traditional activities, such as goat and poultry farming, reflect the adaptive strategies employed by rural households to cope with environmental pressures (Gentle and Maraseni, 2012). This aligns with ecological modernization theory, which highlights the role of environmental challenges in shaping agrarian change (Scoones, 2009). The decline in sheep populations and the reduction in cultivated land further underscore the vulnerability of traditional farming systems to environmental and economic shocks.

The findings reveal both positive and negative consequences of deagrarianization for rural households in Nepal. On the positive side, the growth in goat and poultry farming and the diversification into non-traditional agricultural activities, such as fish farming and beekeeping, have provided new opportunities for income generation and livelihood diversification. These trends reflect the resilience and adaptability of rural households in the face of changing economic and environmental conditions. However, the decline in cattle farming and the reduction in agricultural land also raise concerns about the sustainability of rural livelihoods, particularly for smallholder farmers who lack access to alternative income sources.

The feminization of agriculture, as evidenced by the increasing proportion of female primary farmers, highlights the gendered dimensions of deagrarianization. While women are taking on greater responsibilities in agriculture, they often face barriers to accessing resources, credit, and extension services, which limits their productivity and income potential (Gartaula *et al.*, 2012). This trend underscores the need for gender-sensitive policies that address the specific challenges faced by women in agriculture.

The adoption of modern agricultural technologies, such as tractors and irrigation systems, represents a positive development in Nepal's agricultural sector. However, the uneven distribution of these technologies across regions and households may exacerbate inequalities, as wealthier households are more likely to afford such investments. This aligns with the political economy approach, which emphasizes the role of structural inequalities in shaping agrarian change (Bernstein, 2010). Efforts to promote inclusive and equitable access to agricultural technologies are essential for ensuring that the benefits of modernization are shared by all rural households.

The findings provide valuable insights into the changing dynamics of Nepal's agricultural sector. While the decline in traditional farming practices, such as cattle rearing, reflects broader trends of deagrarianization, the growth in goat and poultry farming, as well as the diversification into non-traditional activities, highlights the resilience and adaptability of rural households. However, these changes also underscore the need for inclusive and sustainable policies to address the challenges faced by smallholder farmers, particularly in the context of land fragmentation, climate change, and gender inequality. By leveraging the opportunities presented by technological advancements and diversification, Nepal can build a more resilient and productive agricultural sector that supports the livelihoods of its rural population.

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