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The Ghost Village: Disappearing Human Settlements from the Mountains and the Hills of Nepal

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Abstract

A ghost village is an abandoned human settlement with visible structures due to the failure of economic activity to sustain the villagers. The increasing number of ghost villages in the mountain region is a phenomenon in the Asian highlands due to the outmigration of rural farmers. Rural depopulation is the major cause behind the increasing number of ghost villages in the Mountain and Hill regions in China, India, and Japan. A similar phenomenon is also experienced in Nepal. Thus, this study aims to discuss the number of abandoned villages in Nepal based on population data from the population census and field verification. Changing trend of population of Nepal from 1971 to 2021 and district level changing pattern of population from 2001 to 2021 were analyzed. Ground reality of mountain villages were identified through the field work in 22 villages in the Madi Watershed of Gandaki province of Nepal. The study revealed that a large part of the Mountain and Hill regions have experienced depopulation in recent decades, leaving only the elderly population over 60 years old. In the Madi Watershed of Gandaki Province, nearly 6% of rural settlements in the slope areas have already been abandoned due to the outmigration of rural people to the urban areas and the lower plain. It is estimated that more than 60% of the highland rural settlements will be abandoned within 15 years. The analysis of population dynamics and field study revealed that only a few villages remain along the major route, tourist places, and commercial areas in the slope land areas after 20 to 30 years.

Keywords: Abandoned village, elderly people, ghost village, population dynamics, rural settlement

Introduction

A ghost village is a human settlement that has been abandoned, but usually still has significant visible structures and infrastructure (Timothy, 2024). A village turns into a ghost town when the economic activity that sustained it fails or ceases for any reason (Graves, Weiler, & Tynon, 2009; Lin, 2020; Sandlos & Keeling, 2017) including other several reasons such as drying up of water resources, worked out of mining areas, forests are felled, changes on the routes avoiding neighborhood, natural disaster, etc. (Żmudzińska-Nowak, Rdzawska-Augustin, & Steidl, 2022). The depopulation in rural areas is due to the out-migration of rural people to cities and other regions. Outmigration of rural people occurs due to the intensification of production, the increase in production areas into cities, and changes in activities in rural areas (Jaszczak, Kristianova, Vaznoniene, & Žukovskis, 2018). Additionally, war, scarcity of resources, and disasters affect limited regions, and people are also a cause behind outmigration. An increasing number of deserted villages in certain geographical areas has implications for development planning. Traditional intensive agricultural practices are becoming less important because of globalization and the associated economic changes (Pedroli, Van Elsen, & Van Mansvelt, 2007). Thus, the presence of ghost villages is not an isolated phenomenon but is associated with the dynamics of rural landscapes and the rural economy. Rural landscape changes were the general scenario in the Mediterranean regions during the last two decades (Sluis, Kizos, & Pedroli, 2014). Large parts of rural Japan are suffering from an aging population, which is diminishing economic activities and is on the path to the extinction of villages in a short period (Onishi, 2006). Out of the total of 16,793 villages, 3,500 villages in Uttarakhand, India, were abandoned in 2012 due to the outmigration of people from rural hill areas to the lower plains. Although hill-to-plain migration is not new, whole-family migration has increased in recent decades, which was mostly individual and temporary migration in the past. Unequal distribution of income opportunities and concentration of economic activities in the southern plain areas are the major causes behind the resulting depopulation in large parts of the hilly region of Uttarakhand (S. Pathak, Pant, & Maharjan, 2017; Umar, 2012). National statistics of China revealed that a total of 3.6 million incorporated villages in China in 2000 remained only 2.7 million in 2010, and only 2.4 million in 2017 because of the outmigration of rural people to urban areas (Gao et al., 2017), which resulted in an average rate of 250 villages vanishing every day in China. From 1960 to 2000, the mountain and hill areas of Nepal experienced high population pressure on limited land sources and overexploitation of land resources, making the livelihood of mountain farmers increasingly difficult (B. P. Shrestha, 1994; N. R. Shrestha, Conway, & Bhattarai, 1999). Depopulation has been experienced in most areas of the mountain and hill districts of Nepal because of the outmigration of rural hill populations to urban and

lower plain areas (R. S. Pathak & Lamichhane, 2014). Demographic analysis of these decades shows that the loss of a large proportion of the working-age population mainly males from rural mountain and hill areas (Adhikary, 2014; Khatiwada, 2014; Suwal, 2014), resulting in heavy agricultural land abandonment in the mountain and hill regions of Koshi and Gandaki basins of Nepal because of agricultural labor shortage (Chaudhary et al., 2020; Chidi et al., 2021; Khanal & Watanabe, 2006; Paudel, Tamang, & Shrestha, 2014). Observations revealed that many settlements have only a few elderly people, and they will be empty in a few years; many villages have already been abandoned. This is an important issue for sustainable mountain development, but very little literature is available in this context. Thus, this study aims to assess on diminishing population and human settlements in the mountains and hills of Nepal based on the census report and case study of the Madi Watershed in central Nepal. It helps to understand the dynamics of population to manage the socio-economic, environmental, and cultural consequences that affect not only mountain communities but also downstream areas.

Methods and materials

This study is based on the analysis of population data and field observation in some selected parts of Nepal's Mountain and Hill regions. Local and district-level population data in Nepal from 1971 to 2021 were taken from the Population Census of Nepal. Local administrative and district boundary maps were derived from topographic maps of Nepal at scales of 1:25000 and 1:50000, which were collected from the Survey Department of Nepal. Population trends in ten-year intervals from 1971 to 2021 have been presented on the graph. Maps of district-level population changes were prepared in ten-year intervals from 2001 to 2011 and from 2011 to 2021.

The Madi watershed in Gandaki Province was selected for the detailed analysis of population changes. The settlement units were defined based on settlement names given on the topographic maps. The settlements were grouped based on their locations, such as hill slope areas, plain areas, and different elevation ranges. In addition to map analysis, a study team visited 50 villages in the Madi Watershed for observation and gathering village-level information through discussions with local elderly and knowledgeable persons. During this field survey, 22 Key Informant Interviews (KIS) and informal discussions with local people were conducted. Photos were collected from the surveyed villages. The future scenario was estimated based on the past and present conditions of the population and settlements.

Results and Discussion

Vanishing population from the mountains and the hills of Nepal

Although the population has been growing in Nepal since 1930, the average growth rate has declined since 2081. The annual growth rate of 2.25 in the population census from 1991 to 2001, and reached 0.93 in the population from 2011 to 2021. The decreased growth rate of the population is due to the outmigration of people. Over 1.92 million people were absent from their homes in 2011 (CBS, 2021; Pathank & Lamichhane, 2014).

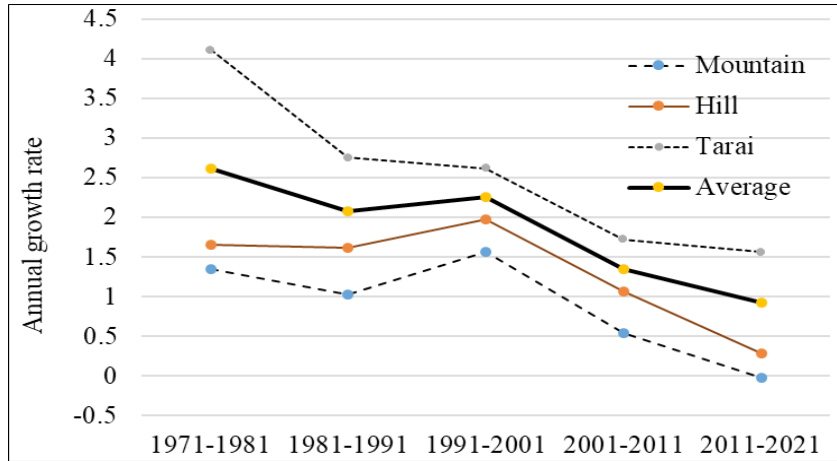


Figure 1. *Trend of the annual change rate of the population*

There is a large variation in the population growth rate in Nepal. The population growth rate in Nepal from 2001 to 2011 was 1.35, but it was only 0.54 in the mountains and 1.06 in the Hills. There is a negative annual growth rate of the population (-0.02) in the Mountain region and 0.29 in the hill region, which is quite lower than the national growth rate of 0.93 from 2011 to 2021 (Figure 1). The negative growth rate of population was due to migration from mountains and hills to the tatar and foreign countries (CBS, 2021; Pathank & Lamichhane, 2014).

The human population of the 28 mountain and hill districts of the Koshi and Gandaki river basins decreased from 2001 to 2011. They have lost 2,59,190 (5%) population during this decade. Thirty-two districts had a declining population from 2011 to 2021, losing 476,457 (7%). Some districts like Sankhuwasabha, Rasuwa, and Mustang have slightly increased from 2011 to 2021 (Declining population from 2001 to 2011) because of the development of accessibility along the China-Nepal transit road. The population increased along the transit road rather than all over the district. Additional districts with declining populations for the first time from 2011 to 2021 were Achham, Ilam, Bajhang,

Dailkh, Doti, Dadeldhura, Baitadi, and Salyan. Those are the Mountain and Hill districts of western Nepal (Figure 2).

Those districts with decreasing populations are in Koshi, Bagmati, Gandaki, and Lumbini provinces. The district with a negative population extended to Sudurpaschim and Karnali provinces from 2011 to 2021 (Figure 2). The depopulation of Nepal has not only been caused by foreign labor migration but has also been significantly affected by highland-to-lowland and rural-to-urban migration. The increasing population in hill districts like Kaski, Kathmandu, Bhaktapur, and Lalitpur is because of urbanization in the Pokhara and Kathmandu Valleys. Similarly, the increased population in some hill districts such as Tanahu, Makawanpur, Sindhuli, and Udaypur is due to the shifting of population from highland areas to the inner Terai (Dun Valleys).

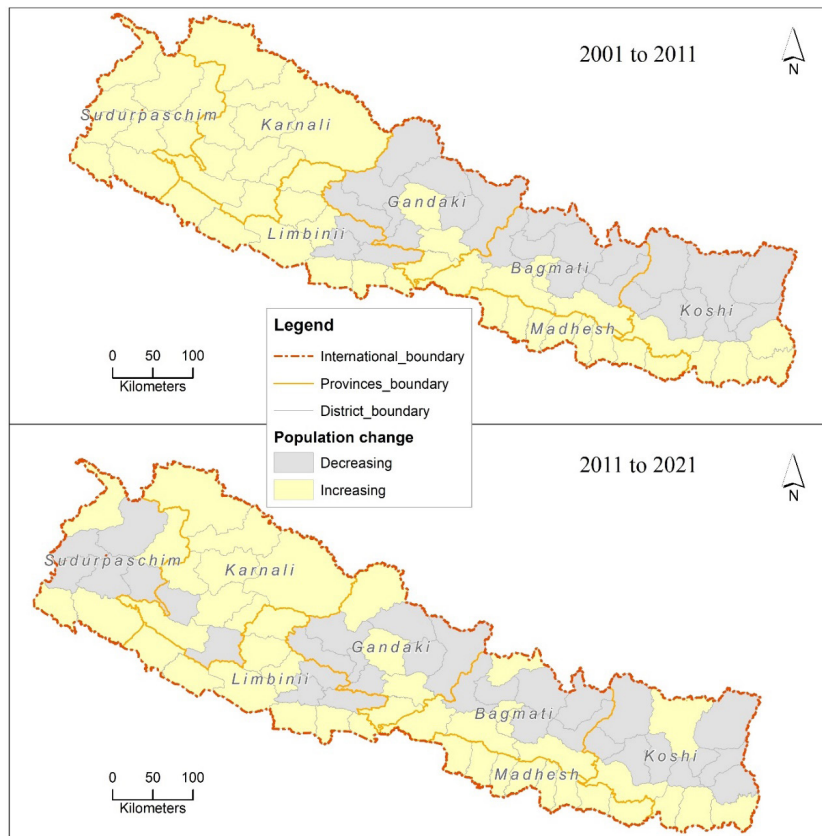


Figure 2. *Distribution of population change by district*

A case study in the Madi watershed

The case study of the Madi watershed area revealed significant changes in settlement and population. It has been described in sub-sections: abandoned villages and vanishing population.

Abandoned villages

The study reveals that a total of 987 human settlements are within the Madi Watershed area, among them 734 (73%) settlements are in the slope land areas. Only 17 % of them are located in the plain and foothill areas. Only 5.2% of total settlements are in the hilly areas below 500 meters in altitude. Most of the settlements in the slope land areas are between 500m and 1500m in elevation. These settlements are 86.7% of the total slope land settlements. Thus, 92% of the total settlements on the slope lands are below 1500 meters, and only 8% are above 2000 meters. Very few settlements are above 2000 meters.

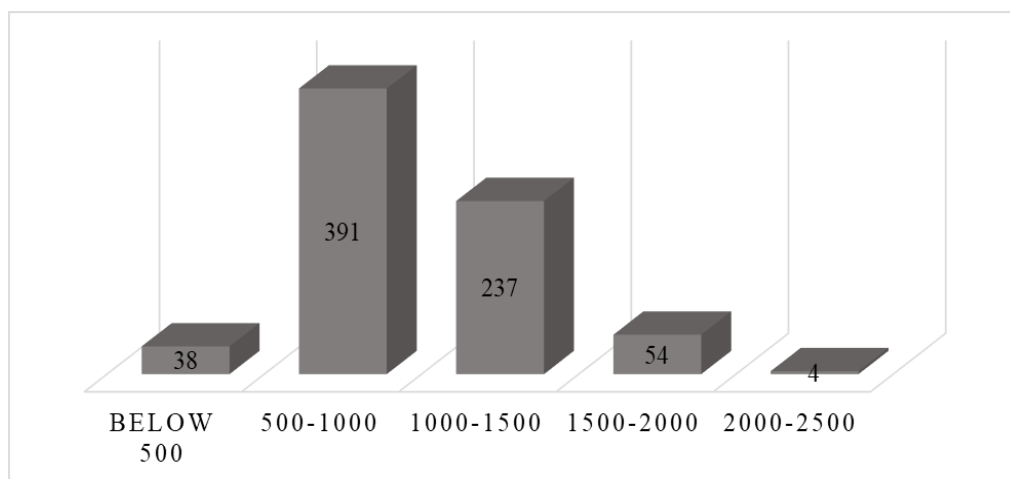


Figure 3. *Distribution of settlements located in slope areas*

Two decades ago, a large proportion of the population in the Madi watershed used to live in joint families, together with grandchildren, parents, and grandparents. Nowadays, very few elderly people are living in rural areas. In nearly 60% of villages, more than 50% of houses are empty without people. In some villages, more than 75% of the houses have been abandoned. Four settlements were completely abandoned among the 22 visited sites in the Madi Watershed area. Among them, two completely abandoned villages are shown in Figure 2. It is estimated that nearly 6% of the total slope land villages have been abandoned to date. Based on field observations in the existing villages, it is estimated that more than 60% of the villages will be empty within 15 years. More than

half of the remaining villages have only elderly people aged 60 years. After 15 years, all of them will be over 75 or 80 years old, and they will not be able to live without their descendants. Thus, they will die or migrate to where their descendant families have shifted. This implies that more than half of the villages will be ghost villages within 15 years, and only a few villages will remain after 20 to 30 years. The remaining villages will be primarily along major trade routes and tourist destinations, where the population has remained comparatively constant or increased.



Figure 4. *Abandoned villages, Ramche in Kaski district and Bhorle in Tanahu district*

Vanishing population

During the 2001 and 2011 population census, more than 17% of the total population was lost in the Madi watershed, and the loss reached 34% by 2021. Field observation in 2024 revealed a more critical situation than the population census report. Large parts of hill slope villages have very few elderly people. Younger generations are rarely found in villages. Elderly people share their experiences that only a few elderly people (over 60 years) live in the villages. Most of the houses are empty. All younger generations of males are either in foreign countries or living in urban areas with their families and children. Some younger people occasionally visit their birthplace because their parents are still there. Day by day, people are vanishing from the village because of their deaths and the outmigration of the older generation with their kids. Some of the younger generation living in the villages want to educate their children in their villages, but many villages are without schools that have been closed or are far from the villages. So, they have to send their children to the urban areas. For the ceremonial works, the younger generation comes to the villages but does not stay long. The younger generation living in the town comes to the village during the cropping and harvesting. This situation is for those whose parents are still in the village. Some enthusiastic young people have returned from foreign countries to do something more. They have tried commercial

agriculture, like commercial cash crops and dairy farming, but they are suffering from a lack of labor, institutional support, and corruption.

Causes of abandoned villages

Mountain agriculture in Nepal is a traditional, intensive subsistence type. It is primarily for subsistence rather than surplus production, unlike commercial agriculture. This was dependent on limited areas of cultivated land. The agricultural transformation in the mountain and hill areas did not occur within the required time in Nepal. Overpopulation, which was more than the carrying capacity, was the major difficulty in the livelihood of mountain farmers. Policies were developed to support the agricultural and livelihoods of farmers, but they became ineffective due to policy weaknesses, implementation-level issues, and corruption (Nepal et al., 2020). As the population increased from the 1950s to the 1990s, it became difficult for the mountain and hill populations due to low productivity and environmental degradation. The outmigration of mountain and hill to the Terai and foreign countries, mostly to India, provided new opportunities for their livelihood. Migration from mountains and hills to the Terai was mostly permanent, but migration to India and foreign countries was mostly temporary. The hill slope areas of the Madi watershed are the homeland of Gurkha Soldiers, mostly Gurung and Magar. They have a dominant population in this region. Magars are in the middle hill slopes of Tanahu district, and Gurungs are in the higher hill slope areas of Lamjung and Kaski districts. Other caste/ethnic groups (mostly Bahun and Chhetris) are in the lower foothill and plain, including other caste ethnic groups. The migration of Nepalese Gurkha soldiers to India started after the Anglo-Nepal War in 1814. It increased during the First and Second World Wars, and the India-China confrontation in 1962 and Pakistan in 1962 and 1967. The remittance of Gurkha soldiers became a safety valve to solve the problems of the failure of the national economy and surplus manpower (Kansakar, 1982). Migration from highlands to lowlands, especially from hills to the Terai, increased after the malaria control in the Terai region of Nepal in 1962. However, this emigration from the hills and mountains was not as fast as it is now. International labor migration from Nepal to other countries except India increased from 1990. Foreign labor migration picked up over 600,000 people in 2017/2018 (Adhikari, Rai, Baral, & Subedi, 2023) and migrated mostly to the Gulf countries and Malaysia. In recent decades, the educational migration of Nepalese students has also significantly increased (IOM, 2019). The Population Census 2021 revealed that a total of 21,90,592 persons are living abroad, which is 23.4% of total households in Nepal.

With globalization, the development of information and communication technology, and exposure to foreign countries, the people of Nepal became exposed to new development

scenarios. The income of rural people increased through foreign labor remittances. Rural people realized quality education for the next generation, but in rural areas, there was not a good environment and good quality education in government schools (Nepal, 2016). As a result, rural villagers brought their children to private boarding schools in the city and town areas with their mothers to take care of the children, resulting in more aged people living in rural villages (Joshi, Chalise, & Khatiwada, 2018). Due to increase in foreign remittances, the villagers started to settle in the city areas with land and houses. As a result, their parents also came with their kids and were involved in off-farm activities in the city, and the villages were left behind, abandoned. Thus, heavy urbanization in the lowland areas and emptiness in the hill slope became a general scenario in Nepal.

The case study has revealed that a few elderly people living in villages suffer from social isolation due to the lack and wildlife intervention on agricultural products. There is much evidence that enthusiastic farmers try to revive their abandoned agricultural activities through commercial production, but most fail due to labor shortages, institutional harassment, and corruption. Government policies are not very suitable for implementation. These situations further aggravate outmigration and abandonment of agriculture and villages as well.

Conclusion

Nepal has a long history of outmigration, but in recent decades, international labor migration has become a factor in the depopulation of mountain and hill regions. Improvements in child education and the changing lifestyles of rural farmers, fueled by remittance income, first encouraged migration abroad. Globalization and advances in information and communication technology further accelerated shifts in rural livelihoods. Government negligence and weak policies have a significant role in this ongoing population decline. Today, vast areas of cultivated land have been abandoned due to a shortage of agricultural labor. Many villages are inhabited only by a few elderly residents. Those are on the brink of complete abandonment, creating the risk of “ghost villages” soon. This trend has raised two pressing issues for Nepal. The first is economic: once a food-exporting nation, Nepal has become heavily reliant on food imports, especially due to the abandonment of farmland in hill-slope areas. The second is cultural: mountain and hill villages are home to many indigenous communities whose identities are deeply tied to their ancestral lands. As they leave, these land-based identities, an essential part of Nepal’s heritage, are disappearing. Balanced and effective policies are urgently needed to foster economic development while preserving Indigenous heritage

sites. Protecting these sites benefits not only Indigenous communities but also the nation as a whole, as they hold significant potential for tourism development in Nepal.

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References

- Adhikari, J., Rai, M. K., Baral, C., & Subedi, M. (2023). Labour Migration from Nepal: Trends and Explanations. In S. I. Rajan (Ed.), *Migration in South Asia: IMISCOE Regional Reader* (pp. 67-81). Cham: Springer International Publishing.
- Adhikary, U. P. (2014). Age and sex composition in the *Population Monograph of Nepal* (Vol. 3, pp. 39-69). Kathmandu: Central Bureau of Statistics.
- CBS (2021). *Preliminary Report of National Population Census 2021*. Retrieved from Kathmandu.
- Chaudhary, S., Wang, Y., Dixit, A. M., Khanal, N., Xu, P., Fu, B., . . . Li, M. (2020). Land A Synopsis of Farmland Abandonment and Its Driving Factors in Nepal. *Land*, 9, 84. doi:10.3390/land9030084
- Chidi, C. L., Sulzer, W., Xiong, D.-h., Wu, Y.-h., Zhao, W., & Pradhan, P. K. (2021). Land use intensity dynamics in the Andhikhola watershed, the middle hill of Nepal. *Journal of Mountain Science*, 18(6), 1504-1520. doi:10.1007/s11629-020-6652-8.
- Gao, X., Xu, A., Liu, L., Deng, O., Zeng, M., Ling, J., & Wei, Y. (2017). Understanding rural housing abandonment in China's rapid urbanization. *Habitat International*, 67, 13-21. doi:https://doi.org/10.1016/j.habitatint.2017.06.009
- Graves, P., Weiler, S., & Tynon, E. (2009). The Economics of Ghost Towns. *PHILIP E GRAVES*, 39.
- IOM (2019). *Migration in Nepal: A Country Profile 2019*. In I. O. f. Migration (Ed.). Jaszczak, A., Kristianova, K., Vaznoniene, G., & Žukovskis, J. (2018). PHENOMENON OF ABANDONED VILLAGES AND ITS IMPACT ON THE TRANSFORMATION OF RURAL LANDSCAPES. *Management Theory*

and Studies for Rural Business and Infrastructure Development, 40, 467-480.
doi:10.15544/mts.2018.43

- Joshi, M., Chalise, H. N., & Khatiwada, P. (2018). Quality of Life of Nepalese Elderly Living in Rural Nepal. *Journal of Gerontology & Geriatric Research*, 7(5):1-6
- Kansakar, V. B. S. (1982). Economy, remittances, and rural development. In V. B. Kansakar (Ed.) *Emigration, Remittances, and Rural Development*. Kathmandu: Center for Economic Development and Administration (CEDA), Tribhuvan University, Nepal
- Nepal, P., Khanal, N. R., & Zhang, Y., Paudel, B., & Liu, L. (2020). Land use policies in Nepal: An overview. *Land Degradation and Development*. <https://doi.org/10.1002/ldr.3621>
- Khanal, N. R., & Watanabe, T. (2006). Abandonment of agricultural land and its consequences. *Mountain Research and Development*, 26 (1), 32–40. doi:[https://doi.org/10.1659/0276-4741\(2006\)026\[0032:AOALAI\]2.0.CO;2](https://doi.org/10.1659/0276-4741(2006)026[0032:AOALAI]2.0.CO;2)
- Khatiwada, P. P. (2014). International migration and citizenship in Nepal. In *Population Monograph of Nepal* (Vol. I, pp. 209-239). Kathmandu: Central Bureau of Statistics.
- Lin, C. P. (2020). *Ghost Towns: Revitalizing Abandoned Towns for Sustainable & Sharing Community*. (Master), Politecnico Di Milano, Milano. Retrieved from file:///C:/Users/chidi/Downloads/Chuah+Phaik+Lin_Research+Booklet.pdf
- Nepal, A. K. (2016). The impact of international remittances on child outcomes and household expenditures in Nepal. *Journal of Development Studies*, 52(6), 838-853. doi:10.1080/00220388.2015.110
- Onishi, N. (2006). Aging and official abandonment carry a Japanese village to extinction. *The Asia-Pacific Journal: Japan Focus*, 4(5), 2003.
- Pathak, R. S., & Lamichhane, K. (2014). Population size, growth, and distribution. In *Population Monograph of Nepal* (Vol. I, pp. 15-37). Kathmandu: Central Bureau of Statistics.
- Pathak, S., Pant, L., & Maharjan, A. (2017). De-population trends, patterns, and effects in Uttarakhand, India: A gateway to Kailash Mansarovar. In *ICIMOD Working Paper 2017/22*. Kathmandu, Nepal: International Centre for Integrated Mountain Development (ICIMOD).

- Pathank, R. S., & Lamichhane, K. (2014). Population Size, Growth, and Distribution. In *Population Monograph of Nepal* (Vol. I, pp. 15-37). Kathmandu: Central Bureau of Statistics.
- Paudel, K. P., Tamang, S., & Shrestha, K. K. (2014). Transforming land and livelihood: Analysis of agricultural land abandonment in the Mid Hills of Nepal. *Journal of Forest and Livelihood*, 12(1), 11-19.
- Pedroli, G. B. M., Van Elsen, T., & Van Mansvelt, J. D. (2007). Values of rural landscapes in Europe: inspiration or by-product? *NJAS: Wageningen Journal of Life Sciences*, 54(4), 431-447. doi:10.1016/S1573-5214(07)80014-5
- Sandlos, J., & Keeling, a. (2017). Ghost Towns and Zombie Mines: The Historical Dimensions of Mine Abandonment, Reclamation, and Redevelopment in the Canadian North. In (pp. 377-420).
- Shrestha, B. P. (1994). Environmental problems in the Nepal Himalaya. *Contribution to Nepalese Studies*, 21(2), 137-151.
- Shrestha, N. R., Conway, D., & Bhattarai, K. (1999). Population pressure and land resource in Nepal: A revisit, twenty years later. *The Journal of Developing Areas*, 33, 245-268.
- Sluis, T. V. D., Kizos, T., & Pedroli, B. (2014). Landscape Change in Mediterranean Farmlands: Impacts of Land Abandonment on Cultivation Terraces in Portofino (Italy) and Lesvos (Greece). *Journal of Landscape Ecology*, 7(1), 23-44. doi:doi:10.2478/jlcol-2014-0008
- Suwal, B. R. (2014). Internal migration in Nepal. In *Population Monograph of Nepal* (Vol. I, pp. 241-283). Kathmandu: Central Bureau of Statistics.
- Timothy, D. J. (2024). Ghost Towns, Landscapes of Abandonment and Journeys Forward. In S. D. Brunn (Ed.), *Geography of Time, Place, Movement and Networks, Volume 2* (pp. 267–288). Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-58029-1_13
- Umar, B. (2012, June 27). The ghost villages of Uttarakhand. *Tehelka Magazine*, 9.
- Żmudzińska-Nowak, M., Rdzawska-Augustin, E., & Steidl, T. (2022). Ghost Village Revival: research and revitalization process of demolished historical settlement in Upper Lusatia, Poland. *Journal of Physics: Conference Series*, 2204(1), 012059. doi:10.1088/1742 6596/2204/1/012059