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Policy Problems and Progressive Solutions to Halt Increasing Social Harms on Disadvantaged Rural Communities from Current Neo-Colonial Land Grabbing Policy in Nepal : Insights and Opinions

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Abstract

Many critical problems are intensified in rural Nepal despite the policy advice and financial support from international agencies to alleviate them. This study attempted to explain the causes and policy solutions to the problems based on secondary sources of data and the authors' insights. It identified that international agencies involved actively in policymaking and guided the land resource management policy to result in the best benefits to the people in privileged regions and other countries. The policies ruined institutions, resource conditions, social-ecological systems, and social environments essential for sustaining mountain farming and the rural economy in the country. The destructions exacerbated emigration, farming land abandonment, indigenous farming practice loss, food insecurity, and cultural heritage degradation. Adverse impacts of the policy interventions are exposed higher in disadvantaged areas and especially in the regions of indigenous ethnic communities. Those policies have institutionally placed the communities suffering for generations and increased risks of out-breaking interethnic conflicts and national security threats on many dimensions. This study explained some pragmatic policy measures to manage the agriculture and forestry resources for community wellbeing and national security. It also demonstrated how the national expert-driven policies would address the current problems in rural areas and the holistic development of the nation.

Keywords: Agriculture, Carbon-Forestry, Exploitations, Foreign Interventions, Indigenous Ethnic Communities, Land Grabbing Strategies, Policy Drivers.

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1. Introduction

International agencies have launched global campaigns of developing naturally intact forests and increasing protected areas of at least over half of the earth's territory by 2050 to offset global greenhouse gas (GHG) emissions and mitigate global climate change (Buscher 2019; Crist et al. 2021; Ellis and Mehrabi 2019; IUCN 2022, UNCCD 2022). The emissions are mostly produced by developed and other industrialized countries. The agencies considered that the cheapest and easiest means of emission offsetting were to sequestrate forest carbon in public lands and reduce emission-intensive activities, including livestock farming, in developing countries (Christoff 2008). For instance, Germany, the World Bank, and other donors offered funds and pursued many African governments to expand forests to 100 million ha by 2020 to meet the Bonn Challenge (Dave et al. 2018), which was based on false assumptions and calculations (Bond et al. 2019). The forestation initiatives have occupied the land space, destroyed the millenniums' old biomes, and threatened the lives and livelihoods of 3.5 million poor African people (Bond et al 2019). The investors motivated the plantation in the pasturelands for multiple benefits: reducing local livestock numbers (the source of GHG emissions), increasing forest carbon to offset their emissions, and potentially increasing the market for trading agricultural products of developed countries. Land grabbing has also dramatically increased displacement, conflicts, and violence in communities (Lunstrum 2016; Schmid 2022). Grassland ecosystems established within millennium years of the presence of humans have started radically declining (Bond et al. 2019). Over 90 percent of the lands are under customary (common) ownership which made the foreign agencies easier to make use of such big lands dealing with politicians and bureaucrats in power positions (Chimhowu 2019; Lumnstrum 2013; Schmid 2022). The following lines of participants involved in the reducing emissions from deforestation and forest degradation (REDD) policy negotiation process have well explained the main intention of developed countries to manage forests of developing countries:

> *"Governments will decide by the end of 2009 how developing country forests will be included in global efforts to mitigate climate change as part of a new post-2012 climate regime. Current negotiations seek consensus on the most effective methods and incentives for 'reducing emissions from deforestation and forest degradation' (REDD), under which Northern countries would pay Southern countries for forestry practices within their national borders. One proposal is to give them aid money for the purpose. Another is for Southern countries to sell the carbon locked up in their forests to the North to allow Northern industries to continue polluting as usual under a global system of carbon trading" [Griffiths and Martone 2008; p.1).*

The New York declaration aimed at ecological restoration of 350 million ha by 2030 and mostly in developing countries (Stanturf and Mansourian 2020). According to Bond et al. (2019), the 2030 targeted area is very ambitious: it is equivalent to the combined area of the ten largest European countries (France, Spain, Sweden, Norway, Germany, Finland, Poland, Italy, the UK, and Romania), 45 percent of Australia, or 36 percent of the USA. As such, developed countries started the carbon forestry plantation in developing countries by taking advantage of reckless politicians, ill-informed civil societies and mavens, and corrupt bureaucrats. Kumar et al (2020) warned that international environmentalists have misinterpreted the current ecological conditions of the Himalayan region for managing the land resources for forest carbon sequestration. The resource management hampers local biodiversity and jeopardizes the lives of the resources-based communities under climate change. Countries with conscious government officials and politicians on national security and sovereignty, such as India, have strongly opposed the carbon forestry policy and rejected the international agreement from the conceptual stage (Down to Earth 2022). They argue that public forests in developing countries are communal orchards to get products to meet the basic daily household and farming needs of local communities (Johnson 1994). Pro-community scholars termed that the land use for carbon sequestration for the benefit of materially well-off countries is "*a colonial mechanism to enclose lands*" (Cabello and Gilbertson 2012, p 1).

Developed countries have influenced international land use policies to continue their GHG emission-intensive activities and use as much as possible lands of developing countries for carbon sequestration and decarbonizing economies by saving their land resources (Buscher et al. 2019; Christoff 2008; Pimm 2018; Schleicher et al, 2019; Semieniuk and Yakovenko 2020;). Many scholars are also worried about globally growing socially unfair and unsustainable policies of excessively using land for global environmental conservation (Pimm 2018; Schleicher et al, 2019). Buscher et al (2019) stated that the policies encroach on livelihood-supporting lands of poor people and protect the main culprits of environmental degradation. The policies have increased militarized control of resources and reinforced the colonialism of powerful societies and economic dispossession or exclusion of weak societies (Kashwan et al. 2021; Sovacool et al (2021). The recent climate policies of decarbonization at the landscape scale and forestation in large land areas in developing countries further slows-down or distort the economic and other development processes and reinforce inequality between countries in the world (Semieniuk and Yakovenko (2020). International agencies and other environmentalists have produced misleading environmental resource information which has helped the developed countries to use the lands of institutionally weak countries for their best benefit

(Bond et al 2019; Veldman et al. 2015).

The Nepal government has also followed land use policies that resemble the African countries with bad governance. Community pasturelands are afforested in many communities with advice and financial support from international agencies (Thoms 2008). Livestock grazing is restricted in most forest localities and community pasturelands (Dhakal et al. 2011). The following declaration by ICIMOD, a UN organization with headquarters housed on Nepal's soil, indicates that the other community lands currently used for livestock grazing are likely to be afforested soon:

> *As we embark on this decade of ecosystem restoration, we commit to assisting our regional member countries in taking significant steps for planning and implementing large landscape-level restoration. In the past, through our REDD+ program, we have been successful in designing regional-scale restoration programs in the participating RMCs (Regional member countries) that leverage climate finance for national-level implementing partners in different countries. We have also built the capacity of national partners for implementing restoration programs. We are now exploring opportunities for leveraging carbon finance to support afforestation activities in Nepal that will be implemented by national-level institutions. To begin with, we are in discussions with provincial governments in Nepal through the National Trust for Nature Conservation (NTNC) to explore the possibilities for restoring up to 15,000 ha over the next decade in partnership with community forestry user groups. This, in essence, is an example of how carbon finance can be leveraged for achieving the goals of the UN Decade on Ecosystem Restoration (Gyamtsho 2021).*

Nepal has over 45 percent of land under forests where trees are overstocked and underutilized (Paudel et al 2022; Nurse et al. 2019), whereas the country has a shortage of wood and other daily need essentials (Dhakal et al. 2022b). Following technical and financial support from the World Bank and ICIMOD, the government has prepared the forest carbon selling to international agencies (FSC 2016; Gyamtsho 2021). Agreements are done with foreign agencies, including the World Bank, to sell carbon credits of three main provinces including Terai. Most of the forests are in strategically important locations for nation-building (Pokharel 2021; World Bank 2021). Communities do not get perpetuated income from the carbon credit sell (Dhakal et al. 2022b). The WWF has implemented a landscape-scale decarbonization program in Terai which has targeted to displace indigenous livestock breeds that were adapted to grazing in rough terrains and could sustain on forest (WWF et al. 2019). The government has already established protected areas with more than 23.6 per cent of the national territory based on the advice of international agencies (World Bank 2021; Henein and Kattel 1992). This proportion is substantially higher than the

global average (17%) and over three times of India (6%) (World Bank 2021). On world environmental day 2021, the then Prime Minister of Nepal committed to the government's plan to increase the protected areas to 30 per cent by 2030 to contribute to the international goal, which is to establish 50 per cent of the earth's land as protected areas by 2050 and offset the GHG emission mainly from developed and industrialized countries (Christoff 2008, IUCN 2022). The government has started establishing and expanding protected areas as recreational sites within a day's distance from major cities (Dhakal et al. 2022a). The protected areas also require registering in international bodies and following management practices as per international policies (IUCN 2022). These land use policies undoubtedly change the community's access and control of local land resources.

Problems associated with the conservative land use policies are poorly acknowledged in previous policy review studies and formulation of recent long-term agricultural and forestry policies in Nepal (GON 2014; MOAD 2016; MSFP 2016; MFSC 2015b; MFSC 2015b; MFSC 2016). Metz (1995), an American scholar, pointed out that foreign agencies heavily meddled in policy formulation and implementation with vested interests to purposively stagnate Nepal's development. The study suggests that the plans developed by local experts, independent of international agencies, would have put Nepal in a much better position. Considering the current economic and other performances and issues in the agricultural and forestry sectors, the conclusion of the study is worthy of investigation. Pro-community studies have, in the past, attempted to investigate policy alternatives. However, they have either been limited in terms of technical knowledge or have been focused on instant basic problems (Nurse et al 2019; Dhakal et al 2012). No study has interrogated macro-level consequences of current land use policies, especially during mega/global crises and protracted crisis conditions. Policy visions of pro-community professionals for national security especially from agricultural and forestry fields are also not been explored. The main goal of this study is to contribute to addressing this knowledge gap in the policy literature.

This study contributes to the advancement of policy knowledge in the following ways. Firstly, it critically reviews current agricultural and forestry-related policy problems. Secondly, the study identifies the likely situation of rural communities being at the receiving end during the mega global crisis and protracted crisis in Nepal. Finally, it assesses an alternative policy and working strategies that may have the potential to address the current social, economic, and environmental problems in Nepal.

The remaining parts of the paper are organized as follows. The next section describes the land use policy position of Nepal and presents the review of land use policies and

their environments. It provides essential background information to determine the model and method of the study. Then the study method is concisely described. The impacts of the current and alternative policies are evaluated in the main section followed by a discussion and conclusions.

2. Significance of forest and other public land resources in Nepal

Versatile uses of land resources in Nepal are constrained by physical features, geo-ecological fragility, and climatic situations (Ives and Messerli 1989). The constraints dictated the mountain communities to appropriate arable farming land and be settled in selective pockets of the hills (with low risk of frequent landslides) or along foothills on river sides. The communities managed other lands in forestry, including for livestock grazing purposes, with a communal system for thousands of years. The land use practice evolved forestry resource-complemented farming systems and farm and forest mixed landscapes (agroforestry) as illustrated in Figure 1. The mountain community followed the land use systems from the millennium's long experience and learned to adapt to harsh geo-ecological regions (Schroeder 1985). The integrated land use systems led to the evolution of many other social, cultural, and economic systems and agrobiodiversity unique to their local conditions.

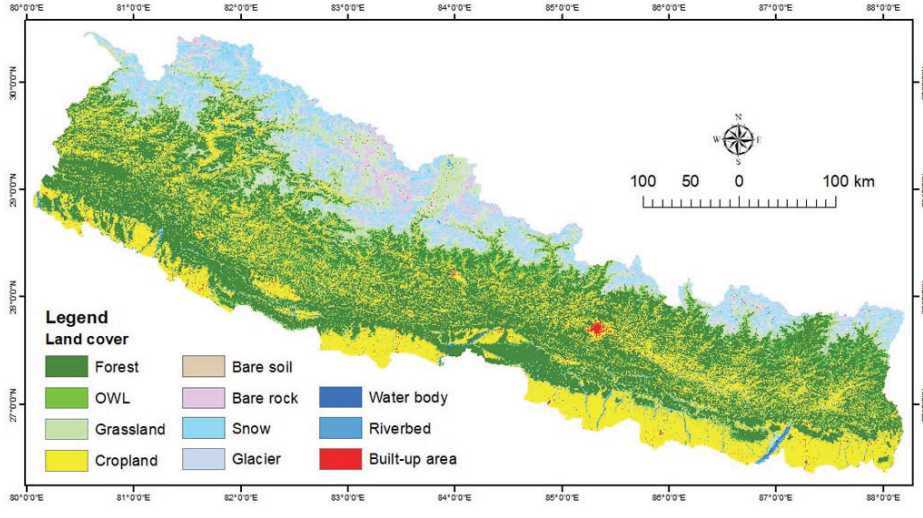


Figure 1: The forest-farm mixed landscapes (DUSS 2022; Dhakal et al. 2022b)

The geo-ecological conditions of the mountain also compelled the communities to have small and multiple private landholdings (Schroeder 1985). The land average landholding of mountain communities is 0.7 ha and most farmers have less than 0.5

ha (CBS 2019). The average land parcel (holding) number is 2 at the national level and 3 in the mountainous regions. The average size of the parcel is 0.2 ha. People struggle hard to manage their livelihoods in such small land areas (Gautam 2019). Moreover, the sloppy land gradient of mountain farming makes the land vulnerable to high erosion and it is mandatory to top up organic matter and other soil nutrients annually. The use of imported fertilizer to replenish soil nutrients is highly expensive due to remoteness. In the past, people were keeping soil fertility by applying farm manure from their livestock. They managed the forest with the help of their ancestral local knowledge and they were able to get timber, fodder, and firewood from the forest sustainably.

National statistics report that 14.8 per cent of the national territory is occupied by arable farming. Table 1 shows comparative statistics of land uses and farming-dependent populations in South Asia and the main developed countries that provide financial support and technical advice for allocating more land for environmental conservation. The land use in the agriculture sector of landlocked Nepal, including food production, is very low compared to other South Asian countries (Table 1). In addition, the figure of the arable land also includes the areas used for residential, development, and other community uses. With the increase in population, the lands are increasingly occupied for residential and development purposes. The land use for forestry and other conservation uses is 45 per cent, which is higher than other countries except for Bhutan and Finland. Studies show that land use is dramatically decreased for cropping and pasture and increased for forestry (Adhikari et al. 2022).

Table 1. Comparative land access position of Nepalese people relative to neighboring countries and some developed countries [Source: World Bank, 2021)

Country	Rural population %	Per capita (ha)	Percentage of total land of Nepal			
			Agricultural land total^	Arable land	Forest area	Protected area
Bangladesh*	64.1	0.05	70.4	59.4	11.0	4.6
Bhutan	59.8	0.14	13.8	2.6	72.5	48.0
China*	42.0	0.09	56.2	12.7	22.4	17.1
India*	66.4	0.12	60.5	52.6	23.8	6.0
Nepal#	80.7	0.08	28.8#	14.8#	45.3	>23.6$
Pakistan*	63.3	0.15	47.0	40.3	1.9	12.3
Sri Lanka*	81.6	0.06	43.7	20.7	32.9	29.9
Denmark*	12.2	0.41	62.2	56.0	14.7	17.6
Finland*	14.7	0.41	7.5	7.4	73.1	14.9

Country	Rural population %	Per capita (ha)	Percentage of total land of Nepal			
			Agricultural land total^	Arable land	Forest area	Protected area
Germany*	22.7	0.15	48.0	34.0	37.7	23.7
Norway*	18.1	0.16	2.7	2.2	33.2	17.0
Switzerland	26.2	0.05	38.4	10.1	31.8	9.7
Australia*	14.1	1.90	47.6	6.0	16.3	17.0
New Zealand*	13.5	0.10	40.5	2.2	38.6	32.6
UK*	30.8	0.09	70.8	24.9	13.1	28.2
USA*	17.8	0.47	44.4	16.7	33.9	13.0

Note: * = Countries with access to ocean resources for the livelihoods of people and national economies. ^=Agricultural land comprises mainly arable lands, permanent pasturelands, and other permanent croplands. In Nepal, most permanent pasturelands are located in an alpine region that is inaccessible or seasonal in use. #=Studies report a wide variation in figures for land use (from 7.9 to 29.8 per cent) for agriculture. The cropland figure of the country also includes the public lands with herbaceous cover managed for communal uses. $= The protected area figures do not account for the areas that the government has recently declared protected areas to make it 30 per cent of the national territory by 2030.

3. Reviews of Forest, Climate, Biodiversity, and Agricultural Policies

3.1 Forest and public land grabbing policies in Nepal:

Public land grabbing in Nepal by foreign agencies started in the 1970s. Mountain farmers grazed livestock in local forests and public lands, as their ancestors practiced, to produce animal manure for farm fertilization and sustain families in smallholdings. The multipurpose use of forests including grazing in naturally grown forage had resulted in moderately open canopy conditions. People from international organizations blamed forest-based livestock farming as a culprit of deforestation and landslides in the mountain and floods in Bangladesh and called for international interventions to dismantle the practice of grazing livestock in forests (Aase 2017; Ives and Messerli 1989). Precarious warning of materially and symbolically powerful international agencies and especially the World Bank convinced the government agencies to dismantle the millennium-old natural solution-based mountain farming system., but the hidden intention of dismantling forest-based livestock farming was to protect natural forests for climate change mitigation (Ives and Messerli 1989). This

was the time that the environmental scientists of developed countries recognized that their farming and other economic activities produced excessive GHG emissions and hampered global climate conditions (Arts et al 2010; White 1979; WMO 1979). They had understood livestock as a source and forest as a sink of the emissions.

The developed countries, then, followed the policy of increasing forests and reducing livestock wherever possible in developing countries. The countries started advising and funding for afforestation in community pasturelands in Nepal (Ives and Messerli 1989). International aid agencies phased out their support for integrated rural development, including livestock development programs, and directed the resources for afforestation to public lands including community grazing lands (Dhakal et al. 2022a). They actively involved in policy development and implementation of forestry, including protected areas (Edmonds 2003; Thoms 2008; Heinen and Kattel 1992; Master Plan 1988). Aryal et al. (2019) provide a detailed account of interventions of international agencies in forestry sectors. It is these agencies that influence government policies by way of technical advice and guidance.

One of the land use policies making the biggest impact on rural economies is the Forestry Sector Master Plan 1988. Foreign experts prepared the master plan for the Nepal government (Master Plan 1998a), with the focus on increasing the quantity of timber production to meet the needs of urban people and industries, which would, as a result, dismantle forest-based livestock farming. The strategy part of the Master Plan suggests that "[t]here are other strategies to reduce demands for forest products such as ... and reducing and controlling the number of livestock" (Master Plan 1988b: p.112. Similarly, the plan directed that "the long-term goal should be for the livestock sector to depend less and less on the forest until it finally becomes fully self-sufficient" (Master Plan 1988a p.85). But the forest fodder was a daily need for local people and more important than timber and carbon sequestration. Moreover, making the mountain farmers self-sufficient in fodder on private lands was an unrealistic assumption considering the local mountain context, private landholding size, and other farming-related conditions in Nepal.

The experts knowingly ignored foreseen conditions that their policy would result in a big surplus of timber and a deficit in the daily needs of forest products for communities (Hrabovszky and Miyan 1987). The main objective of increasing land use for forestry and reducing livestock holding in Nepal was to increase carbon sequestration and reduce GHG mainly emitted from developed and other industrialized countries. International negotiations for an internationally binding agreement to manage public forests of all countries for carbon sequestration and climate change mitigation were ongoing during the plan formulation time (Dhakal et

al 2022a; Down to the Earth 2021; Johnson 1994). The international experts were undoubtedly aware of international forest politics. They, therefore, intentionally designed the plan of afforestation in pasturelands and restricted livestock grazing to increase tree stock or wood products for carbon sequestration. As per the plan, wood-oriented forests would be developed and protected in community pasturelands, including bottlenecks of mountain areas, which would prevent communities from using essential forest products and services in critical need seasons. Yet, reckless government agencies hailed the support of the foreign experts (Master Plan 1988a, 1988b) and endorsed the policies they influenced out of their vested interests without verifying the underlying intentions.

Bilateral agencies and the World Bank implemented the plan globally (Thoms 2008; Edmond 2003). They offered flash financial incentives to lure communities and government agencies for planting trees in community pasturelands and restricting their livestock grazing on public lands including forests. The activities made local farmers unable to sustain their forest-based livestock business and crop farming based on livestock manure.

The current Forestry Sector Strategy (2015-2025) was formulated based on goals and activities of forestry conservation developed by the Multi Stakeholders Forestry Program (MSFP) – a joint venture of the UK, Switzerland, and Finland – formulated with the technical support of DFID. The main strategic goal of the MSFP was to keep forests out of agricultural use (MSFP 2011; Dhakal 2014; MFSC 2015). The plan directed to sequestrate as much forest carbon as possible, which is explicitly stated in their official documents. These are colonial resource management policies and programs.

The resource politics of developed countries and potential adverse impacts on national security are well known in recent years (Dhakal et al. 2022b; Satyal et al. 2019). The governmental agencies, however, have continued signing agreements with international agencies and demonstrate commitment to increasing afforestation in communal and private lands by keeping forests intact in natural conditions to address problems created by developed countries (Pokhrel 2021; WWF et al. 2018; World Bank 2021). The government has established the Reducing Emissions from Deforestation and Forest Degradation (REDD) units in almost all districts, sold the carbon credit of community forests to foreign agencies, and let developed countries continue their land for economic activities (Dhakal et al 2022a; FPCF 2016). The forests managed for carbon sequestration and trading for carbon lock the lands forever from other productive uses (Palmer 2011). This is the reason the developed countries used their vast land areas for livestock and other farming activities instead of carbon farming. For example, the USA has leased 155 million acres of public land for industrial-scale livestock grazing (US Government 2021). The Forest Service of the USA has well justified the forestland use for grazing saying "We believe that

livestock grazing on these lands if responsibly done, provides a valuable resource to the livestock owners as well as the American people" (US Forest Service 2021). Over 44 per cent of public forestlands in Australia are leased for industrial-scale livestock grazing (Australian Government 2021). The developed countries have funded to increase forests and sequestrate carbon in developing countries including Nepal for offsetting the GHG emission from such industrial scale livestock farming. Multiple uses of forest resources will have incomparably high important leverage and pervasive roles in the economic, social, and environmental systems of the mountain regions in Nepal than carbon trading.

3.2 Protected areas establishment and expansion policy

International interventions in protected area establishment and expansion also started in the 1970s when the expansion of forests started (Heinen and Kattel 1992). Protected areas in the mountain regions initially started for securing quality recreational sites (Borradaile, et al. 1978). People of developed societies get incredible recreational enjoyment by visiting mountain forests and other landscapes (Dhakal et al. 2022b; Jacquemet 2017). Therefore, most protected areas are established in the localities of high Himalayan regions (Figure 2). The agencies had advised the government to relocate the local communities, even Sherpa communities of the Mt Everest region into Terai (Heinen and Kattel 1992; Dhakal et al. 2022a). The relocation objective was to secure recreational tranquillity in the regions. However, Most Nepali environmentalists related to the forestry sector believed that protected areas in the regions are needed to reduce the critical threat of extinction of wild animals and other species. On the contrary, wild species of the high hill region are socially and ecologically less threatened than the species in the mid hills (Dhakal et al. 2022a). Shrestha et al. (2010a) also conclude that the protected areas in the high hills have been established illogically. A conservation development analyst stated a similar argument in an open letter for IUCN members in a global context. The letter is posted on the Crossroads blog page of the IUCN in 2021 as:

> *"While a percentage target for protected and conserved areas is simple, measurable, and can help gain political and public traction; areas are often designated as protected or conserved where it is convenient rather than because they are important for conserving biodiversity. Protected areas tend to be created in remote places, at high elevations, and in locations that are less likely to be developed for agriculture. Since 2010, protected areas have increasingly been created in places that are not sites of global biodiversity importance. If this trend continues, we will undoubtedly keep losing biodiversity even while achieving area-based targets. The solution is to ensure that plans to meet these targets comprehensively incorporate areas of importance to the persistence of biodiversity.*

> *Key Biodiversity Areas (KBAs) are recognised as sites of global importance for biodiversity and should be used to guide where protected and other conserved areas are established (IUCN 2021 p. webpage)".*

The grabbing of the land resources provides strong evidence that these conservation agencies do not value the lives, cultures and misery of the disadvantaged and other mountain communities. They are only concerned on benefiting well off and powerful society irrespective of the humanitarian costs of the indigenous ethnic communities, and other people in disadvantaged areas. It implies monovalent people have control over the conservation agencies.

Protected areas provide more secure carbon sequestration which is another important motivation of international agencies to emphasize expanding protected areas as much as possible (IUCN 2020). Most protected areas are established or expanded in the localities of indigenous people (Figure 3). Currently, the government agencies have started the establishment and expansion of protected areas also in the mid hills and Terai to meet the international target of protected areas. The current conservation policies restrict the use of forest resources in the protected areas for community benefits (Wildlife Act 1973). The government has established military and paramilitary posts to control and restrict the use of resources by local communities. These control measures have increased various kinds of abuses and maltreatment of locals, especially women, who require collecting forest resources in the protected areas for making a daily living (Dhakal et al. 2022b).

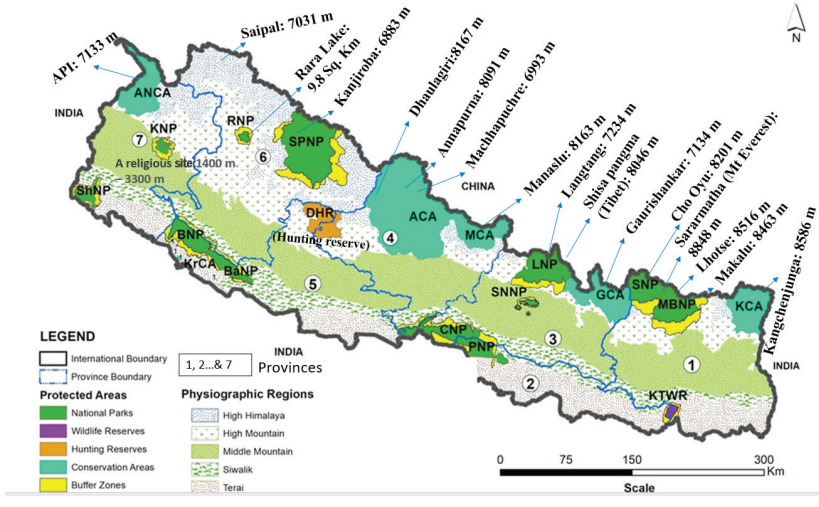


Figure 2. Protected areas are declared mostly in the areas with the highest mountains

[Source: Dhakal et al. 2022b modified the map of Department of Wildlife Conservation)

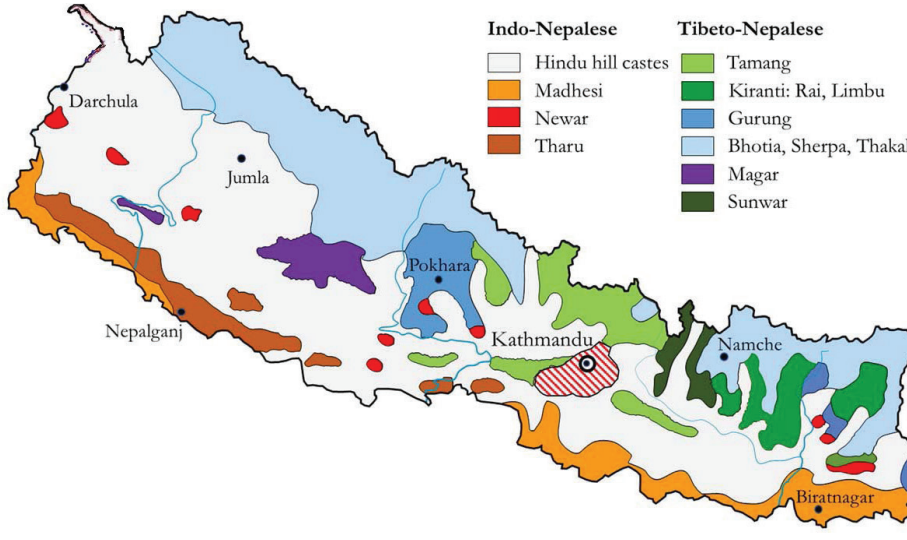


Figure 3. Agro-ecological belt-wise distribution of main ethnic groups in Nepal *[Source: Edmond 2019].*

Current biodiversity conservation strategies for the national level and the Terai region are developed with the guidance of IUCN, WWF, USAID, UNDP, and ICIMOD. The plans have directed the government agencies to change the management of 50 % of production forests into sustainable management systems which are literally managing biodiversity and carbon sequestration. The plans also directed to relocating local communities of some Terai regions to extend protected areas. In practice, these agencies have guided the government on all the current biodiversity conservation policies and programs.

3.3 Ecological restorations and landscape scale decarbonization program

Now the government has adopted the international policy of landscape scale decarbonization (MFSC 2016). It was proposed and endorsed directly by international agencies and indirectly by developed countries (CIFOR 2013). The international policy of landscape scale decarbonization was introduced when developed countries and the World Bank assured funding Landscape Forums 2014, 2015). The Global Environment Facility (GEF) is the largest international fund to implement the program. FAO mobilized CIFOR to make the policy endorsed by international political forums (CIFOR 2013). It is actively working in partnership with IUCN, and UNEA to provision funds for implementing the program in developing countries

(Schneck et al. 2020).

The Nepal government developed its plan with the advice of ICIMOD, IUCN, and UNDP (MFSC 2016). Figure 4 shows the zoning of the landscapes delineated in the plan. The policy is scientifically inappropriate and socially unjust for most communities. Mountain ecosystems including biodiversity resources have evolved and established in moderately open forest canopy conditions due to activities of millennium-old human settlement (Zhang and Li 2000; Schroeder 1985). The heterogeneous ecosystems fostered many economically and medicinally valuable species that benefited the local people. Now, these resources have been obstructed by inappropriate land use and forest management policies. Generally, Nepali farmers have no private pasturelands. There used to be communal pasture lands and open forest areas available for grazing, but with the change in policies, these services have gone and the farmers are suffering. The ecological restoration occupied the left-over open land space that used to be for livestock grazing. The ecological restoration policy has rather increased negative externalities to farming lands and abandoned arable lands from farming in mountain areas. The importance of land or nature-based solution for economic development and social wellbeing is growing worldwide due to increasing environmental problems and resource shortages. The lands occupied for carbon sequestration and climate change mitigation hampers those solutions. The landscape-scale ecological restoration and decarburization policies, therefore, further harm local communities and national security. Many international scholars have presented strong evidence that international agencies have produced misleading information and persuaded the governments of institutionally weak countries to practice harmful policies to benefit developed countries (Bond et al 2019; Kumar et al 2020; Veldman et al. 2015; Feldman et al 2019).

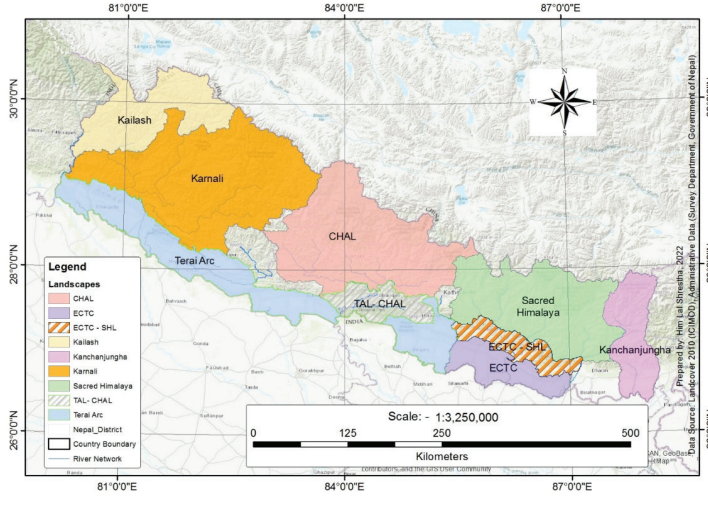


Figure 4. Landscapes scaled decarbonization and wildlife conservation plan in Nepal [Source: MFSC 2016].

The policy of landscape-scale ecological restoration and decarburization is likely to place rural communities in a further disadvantaged position in terms of benefits from local forests. The WWF project, for example, has a hidden goal of landscape-scale decarburization and an open goal of restoring ecology and carbon sequestration (contribute 1,270,919 tCO_2eq in 5 years). Managing the livestock of local communities is considered the main area and challenge for achieving the goal. Basically, the project wants to rid of local breeds of livestock by restricting communal pastoral land and access to forests for grazing and fodder (WWF/GEF 2018). To them, grazing is one of the drivers of deforestation and forest degradation in Nepal. Overgrazing inside the forest is mainly due to the near-absence of the practice of agro-forestry in farmers' fields which can supply fodder; information about stall feeding, low productivity of local breeds, and abandoned cattle (WWF/GEF 2018, p. 23).

The policy strategy is to reduce the use of forest resources by animals, as foreseen and clearly stated in the document:

> *The proposed project is unlikely to cause displacement of people however, the project does intend to carry out activities to reduce the impacts of open grazing on natural habitats, and that may include the implementation of no-grazing zones. ... In order to mitigate any adverse impacts from the banning of grazing during project implementation, interventions will include the preparation and subsequent implementation of Livelihood Restoration Plans, which will provide tailored livelihood support and benefit sharing for affected persons, groups, and communities. Affected communities and households around the project-supported protected areas, corridors, and BZ area will be provided with opportunities to restore their livelihoods to pre-project levels or better (WWF/GEF 2018, pp. 109-110).*

The restoration of the resources being used by vulnerable social groups – the poor, landless, and indigenous people, as stated in the document – is not a temporary job that the WWF can fix in five years. In effect, the project agencies can neither restore the opportunity to use the forest resources nor can reinstate indigenous farming and resource nurturing knowledge and social network of the vulnerable communities that the project hampers.

Poor farmers have kept the breeds with natural adaptability of grazing in difficult terrains and sustaining on forest-based (low nutrient) feeds for management convenience or to cope with land shortage problems. The agencies working to make a gain from forest carbon undoubtedly want to replace the livestock breeds that can

graze in the forests even on difficult terrains. So does the WWF attempt to promote exotic breeds that can hardly graze in forests. The program of promoting agroforestry in private lands and stall-feeding practices little compensates for the loss of the landless and other poor farmers' opportunities for livestock grazing in the local forests. The flash incentives of the project may attract the victims temporarily, but they undoubtedly create many adverse conditions – institutional, forest resource-wise, and other socio-ecological – that affect the people for years, as has the community forestry program done at the community level (Dhakal et al. 2022b). The Nepalese farming systems, especially in disadvantaged regions, are already very low GHG emissions intensive. Practicing the international policy to address problems of high emission-intensive countries further hampers economic development inequalities with other countries.

Professional people, especially those involved in forestry and other environmental sectors, argue or defend that Nepal needs more land areas in the forest for soil erosion and other environmental conservation purposes in comparison to other countries. Most soil erosion threatening the local environment and lives of people is associated with the natural process which is beyond the control of forest users or farmers (Ives 2006). The ecosystems of Nepal evolved in moderately open forest conditions where the forest is managed with a naturally intact regime to suppress the biodiversity and other economically important vegetation. Critical studies and live evidence proved that the argument of requiring more lands for forestry and biodiversity conservation is scientifically flawed and misleading (Bond et al 2019; Feldman et al. 2015 Dhakal et al 2022a). The program activities of ecological restoration and landscape scale decarbonization are misleading to reduce local livestock and increase forest for GHG emission benefits. It is a standard strategic approach of international agencies to use flash incentives-driven support and lure communities for changing existing land use practices for addressing their interests. The incentives have been proven successful to destabilize existing institutions and make costly to reestablish them (Dhakal et al 2022b).

3.4 Review of the current agricultural plans

The policies and plans in the agricultural sector have little recognition that the physical barriers of the mountain have placed farming in the mountain regions in vulnerable and costly positions. Most farmers are small landholders and cannot sustain lives and livelihoods on private land alone. It is a costly endeavour for mountain farmers to use modern technologies, such as tractors and other farm equipment, intensively due to inaccessibility and the landholding being fragmented and small, especially in hills and mountain regions. The forest-based livestock and

crop are the mainstream farming systems in most countries and especially in communities with high policy significance. Traditionally, these farmers have used forests and other public land resources to complement the resources of smallholding they require to sustain their family lives. For example, the manures from forest-based livestock are used to restore soil organic matter and other nutrients washed away by soil erosion in sloppy farming lands. They grow different crops based on their needs and raise a few heads of cows, buffaloes, goats, and sheep to meet their dairy and meat needs using their own family labour. Externally guided policies have now taken away the communal pastoral land for afforestation and prevented using forest resources for their daily needs. Such policies have created institutional and physical barriers (occupied production space by unwanted species) and distorted socio-ecological systems and social environments enjoyed by local communities for millenniums.

Farmers could not sustain livestock farming when restricted from accessing public forest resources during the critical shortage of on-farm feeds and they had to reduce their stock number. The destocking of the livestock hampered local income and employment opportunities of adults who were crucial farm laborers. It made cascading effects on youths who were then forced to leave communities to find jobs in cities and overseas, creating a social whim (peer pressures) for other youths to follow suit leaving behind families that are isolated and despondent. Even when some communities had the resources to employ some people, the lack of job security and social support discouraged local labourers from staying back. Unless the government guarantees enough incentives and ways of earning a decent income from the land, youth migration – and its resultant social consequences – cannot be halted. The government has no plan to this end. The agricultural plans and policies have not even acknowledged the scale of community problems associated with the collapse of forest-based livestock farming.

The viable solution to revitalize mountain farming, economies, and other social activities in the core rural areas is to manage public land resources for multipurpose uses that support farming. The action plans of the current agricultural development strategy (2015-2035) are not intended to use the resources for addressing the crucial problems of the areas. Some of the policy directives presented in the subsistence forestry section (e.g. carbon sequestrating forestry) are against agriculture development in core rural areas. Interestingly such crucial agricultural problems and pragmatic solutions for core rural areas are not acknowledged even in the subsection of past policy reviews.

Mountain farming is founded on complex interlinked social, economic, and

environmental systems. Seeking the productivity of each piece of land in the mountain is erroneous thinking. Even low-productive land can be supportive of making local systems functional. Given physical barriers and the meagre size of private land holdings, effective management of land resources in a communal system can be a way for needy people to sustain their living in the mountainous region. The problems and solutions of mountain farming, therefore, require critical examination from the landscape scale farming system perspective.

Despite a good level of consultation with governments and stakeholders in the preparation of action plans, the final document considers most of the production components to function independently like an industrial farming system of a big company. The policy structurally directs the use of imported inputs and the adoption of commercial farming practices, which may help big farmers in accessible areas but not others and little to the communities in disadvantaged localities. The Prime-Minister Agricultural Modernization Program, a unique supplementary program designed to implement the long-term plan, has also undervalued indigenous sustainable resources and practices that over 67 per cent of farmers, a majority of them from communities in disadvantaged localities, follow for family consumption (Dhakal et al 2022a; Paudel et al, 2016). Local resource-based farming is a mountain farming culture (can be termed lifestyle-based farming), a way of conserving rural communities' heritages and the means to hedge people in crisis, which the agriculture policy has failed to appreciate and realize. The result of this failure is apparent in the increasing import of food from abroad. By promoting modern input-based farming, the policy has indirectly placed the food security of Nepal under the control of multinational companies.

Most Nepali farmers are prosumers and have followed lifestyle-based farming systems. The farming practice has hedged the farmers against extreme misery and other social and mental problems. The social value of products from indigenous farming practices is increasing nowadays. The indigenous assets have evolved over generations and have been a part of local ecological systems. Conservation of these assets requires maintaining the local ecological systems. The millenniums' old heritages passed through biotic and abiotic stresses of many generations and have proven resilience or adapted against many common diseases, poor nutrition, and other problems. The assets can be valuable means to adapt to climate change environments. Managing a favorable social and ecological environment is much more valuable than compensating for profit margin difference from modern input-based farming. The prosumers would contribute to conserving the heritages if the social, economic, and ecological environmental conditions are maintained. Conservation of the heritages in the

mountain context is, however, not possible without economy-oriented multipurpose management and convenient access to forests and other public resources. The long-term agricultural policy has little acknowledged the importance and made provision for conserving valuable resources and practices.

Farmers felt the values of native crop varieties in imported input crises in covid19 time but they could not get the inputs in their locality. Countrywide shortage of agricultural inputs during covid19 seasons proved that the current agricultural policies are fully reliant on foreign countries and will make food security even worse in the future. The problem urged maintaining the resources centre of indigenous varieties (local landraces) in all regions and making them accessible to all farmers in need.

The rural areas in the mountains are in a strategically disadvantaged position. They cannot compete with farmers of plain areas or India and other non-farming businesses due to inadequate facilities for agricultural development and physical barriers or ecologically sensitive conditions. Developed countries in general provide huge subsidies with different justifications to revitalize farming during such a transitional phase of development. Switzerland, for example, provides decent subsidies to mountain farmers to maintain the culture of livestock grazing in forests and conserve native livestock breeds (Chételat et al. 2013; Zabel 2019). However, the subsidies provided in Nepal are for chemical fertilizer, seeds, and machinery which are affordable only to a handful of elite farmers in accessible regions. There are no subsidies for farming that are based on traditional resources and practiced by most farmers in geographically disadvantaged regions of hills and mountains. More importantly, there is no subsidy for landless farmers as the subsidies are only for farm inputs that they do not buy. A decent amount of payment based on contribution in multiple aspects is needed to revitalize rural farming. Such payments for the communities will be much cheaper than addressing the spill-over problems in other areas such as the import of food, its transportation, and management. The opportunity to live with the family in ancestral land can attract people even with the low level of incentive payments if they are guaranteed for the long term. Such a guarantee motivates them in engaging and investing in the farming business. The payment would utilize underutilized or idle resources and conserve our heritages. The plan has, however, not recognized the need for the payment system to sustain mountain farming and reinstate food security in the current transitional development stage.

The agriculture plan has not acknowledged the crucial problems of disadvantaged areas and it has not suggested viable options for agricultural development in those areas. The plan has rather directed to following a carbon forestry policy that further aggravates food and national security. Most of the action plans are superficial and

likely based on personal assumptions. This is probably due to inadequate knowledge of and expertise in planning for rural areas. Genuine stakeholder consultations would help mitigate the gap to some extent. However, they appear to have done for window dressing.

The Asian Development Bank (ADB) prepared the current 20-year agricultural plan (Agricultural Strategy 2015-2035) by compiling technical reports of 15 international organizations (ADB 2013). Those critical flaws and misleading information in the plan are a usual thing when the government relies on foreign agencies to develop a long-term plan for national building and security. This policy flaw or weakness, experts with fair thinking and awareness of current problems in Nepal's agricultural field suggest, is responsible for increasing farming land abandonment, rural emigration, household food shortage, and increasing dependency on imported food (Adhikari et al.. 2021; Maharjan et al. 2020; Subedi et al 2022; Pant et al. 2022).

4. 4. Critical impacts of these policies

The conservation policy reduced the livestock business, the engine of mountain farming, which has some role in immigration and population growth in Nepal. Households can rarely sustain crop farming without livestock holding in the mountain region. Forest conservation activities are restricted using forest products and livestock grazing (Dhakal et al 2011; Lamichhane et al, 2019). Growing non-fodder species have suppressed understorey vegetation (Shrestha et al 2010a). Harms from wild animals, such as crop destruction and livestock predation from wild animals have also increased on the farms surrounded by forestlands. This will further worsen as the wild animal population increases as there is no human intervention (Baral et al. 2021; Bista et al, 2021). In this regard, the historical account of international environmental politics and the motives of foreign agencies to reduce forest-based livestock farming practices in Nepal is instructive (Dhakal et al 2022a).

Increasing forest conservation has direct and indirect impacts on regional population balance. Figure 5 shows that the population growth in hilly and remote regions is positive in areas with no protected forest areas, such as the Karnali region, and negative in high hill areas of other regions where protected areas are maintained. Protected areas are established or expanded mostly in the region with indigenous ethnic communities (Figure 3). The conservation activities have, therefore, impacted more indigenous ethnic communities. The human population has decreased in the region dominated by broadleaved vegetation where the protected areas are established, whereas it has increased in non-protected areas dominated by pine vegetation. Indigenous communities are living in both regions. The conservation activities

hindered local economic activities which have led to high immigration of adults with reproduction age and contributed to a lower rate of reproduction on the eastern side. The proportion of emigration of the reproduction age population of indigenous ethnic groups is higher than other groups due to lower education levels and land holdings. The current census survey shows the continuity of the trend of population decline in the highly forested or protected areas of the mountainous regions. Despite marginal land holding and adverse impacts of land use policies, the population growth of Dalit ethnic communities have determined by other social factors.

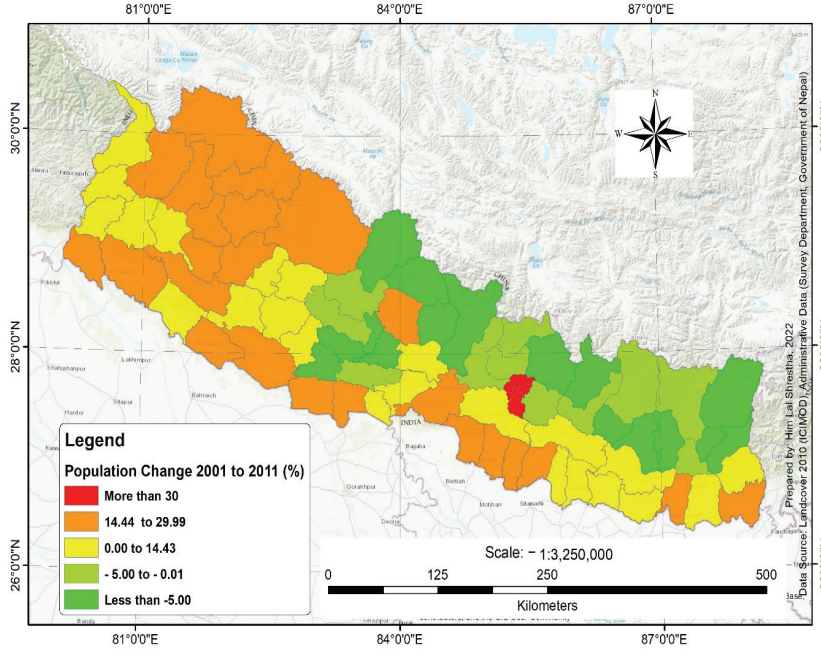


Figure 5: Nepal's regional human population change between 2001 and 2011 census times

(Source: CBS. 2017, Improvement by courtesy of Him Lal Shrestha, Kathmandu Forestry College)

Appropriate management of land resources is the main feasible solution to revitalize social and economic conditions and address the current problems of rural communities in Nepal. The insufficiency of private landholding is a bottleneck to scaling up resource-based economic activities. The geo-ecological setting of the mountain has constrained the expansion of private land resources in the hilly region. These realities imply that rural community problems cannot be addressed without efficient utilization of all available land resources. In addition, appropriate management of resources requires enabling environments that range from psychological, social, politico-

institutional, and economic to technological and biophysical factors. The transitional stage of economic development has made enabling environments more crucial. High emigration has created problems both upstream and downstream. Resettlement in the mountain region is not like urban development. It requires emotional attachment to the land, income generation, and basic facilities, such as schools, hospitals, suitable means of transport, and many other assets that support the stay and works environment in the locality. Deliberate policy supports are crucial in making the environmental problems supportive for revitalizing rural social and economic activities in the transitional development stages. Contrary to the facts, most of the conditions at present are insufficient or adverse to utilizing the resources (Dhakal et al 2022b).

Nearly 45 per cent of the country's land is covered by forests. The increasing intensity of conservative forestry policies has reduced the contribution of the forestry sector to GDP (FAO 2004). Woods in community-managed forests are overstocked and decaying, whereas the community has experienced a shortage of daily needed forest products and services to respond to which the country imports timber from other countries (Dhakal et al. 2022b). The government has restricted communities from using trees from their community land for building houses even in mega-disaster, such as the 2015 earthquake (Saxena et al 2022). The country requires importing 3,681,190 m^3 for reconstruction purposes by spending the US $1.19 billion per year (Dhakal et al 2022b). The forest which used to provide timber is now institutionally and physically locked to offset excess GHG emissions of developed countries.

Land resources are sources of problems and solutions for rural development. Critical insufficiency of local income and underemployment from their land-based business have forced rural youths (mainly unskilled) to leave the local community and emigrate to cities or overseas. The income generated by low-skilled emigrants is just enough to buy family consumables and services and pay for the basic educational expenses of children. The lack of partners' presence has made women physically and emotionally stressed. All this has resulted in previously cultivated land lying fallow, leading to food shortage. Although foreign employment has increased the per capita income of Nepal, the emigration culture has negatively impacted the social environment (Kunwar, 2017). There is often peer pressure to leave, and it is hard to find youths for local farming and other economic activities.

Some of the adverse impacts of current land use policies and practices on rural communities are very serious. They have compelled some communities to take jobs with high life risks or social stigmas, which cause their population to dwindle or extirpate. The policy has forced many households to be relocated from their ancestors' land to unsafe places for good. Some translocated people have died before the normal age of death due to the adverse climate of their new settlement (Heinen and Kattel

1992). Another example of the reckless conservative land use policies is seen in religious change. For example, Chepang communities have been compelled to proselytize in mass (CBS 2011; Dhakal et al, 2022b). Many indigenous ethnic communities of highly forested and protected areas have been compelled to emigrate from their ancestors' homelands (CBS 2017). The emigrants are found to suffer for generations (Dhakal et al. 2022b) in the new place, with their population decreasing because of various slow poisoning impacts of the land use policies on local communities. Based on social theories, such land use changes can be considered genocide against some ethnic communities (Cox 2017). Despite the dire conditions of local communities, the international agencies are still strategically pushing the Nepal government to use as much land area as possible for forestry and other protected areas for carbon sequestration (NPC 2018; NPC and ADB 2014; MSFP 2011; Master Plan 1988).

The roles of intellectuals are crucial to track bad governance and minimizing its social, economic, and environmental harms, especially in highly contested and complex political and ecological environments (Ojha et al. 2022). One of the current critical problems related to bad governance in land resources including the forests sector are increasingly grabbing of community lands by foreign agencies and underutilization of community forest resources associated with practicing regressive environmental policies. It is the professional responsibility of the mavens, academicians, and other people of forestry sector and other civil societies to identify and explain the critical problems based on national strategic positions and actively advocate and stand in favour of the nation and disadvantaged communities. But they have actively worked or silently supported the land grabbing and regressive policies. Traditional management of forest resources still benefits a large number of people disadvantaged from managing their lives in off-farm employment. The people have been unable to get benefit from the resources due to the development of inappropriate institutions, resource conditions, social-ecological systems, and social environments by external agencies (Dhakal et al 2022a). However, most people in the forestry-related profession are against the traditional practice of using public land resources for livestock business and other daily farming purposes (Rai et al. 2022). Forest policy analysts and policy decision makers also consider that the scope of forest resources for food security is only supplementary. The resource-based communities are expected to be benefitted from utilizing residual products (Adhikari et al. 2016). They considered that the resources managed for the benefit of foreign countries or remained idle or underutilized are better than traditional farming uses. In addition, professional groups are used to create barriers in most development activities in the name of environmental protection. They rarely think about what could be an appropriate or tolerable level of environmental resource management in the context of the country.

This conservative or anti-community thinking is mostly associated with forestry education which is based on curriculums developed for a western society where forests and pasture lands are separate components. The developed countries have appropriated most part of their land for agricultural and other private uses. The management of the forestry school often claims that the curriculums of the school are of high quality as it is based on the US universities such as the University of Yale. The problems of western value-based thinking are well reflected in the research publications of the professionals who graduated from forestry schools that trained them (Rai et al. 2022; Adhikari et al. 2016; Paudel 2016). The developed countries have appropriated most part of their land for agricultural and other private uses and well-established development infrastructures. The public lands including forests in the countries are mostly managed for environmental conservation and recreation. The contexts of Nepal are very different. Such locally inappropriate thinking and behaviours of the social groups are institutionalized and perpetuated by educational curriculums and professional cultures. The education founded based on the context of developed countries oriented them to support the grabbing of community lands for the benefit of other countries and work against communities and the nation.

The inappropriate educational knowledge and values, coupled with institutionally inherited conservative values and military professional cultures, have distorted the cognitive power of new forest officials who behave with or treat local communities harshly have developed policies against local communities and national securities to address best interest of foreign agencies. They do not let communities use forest timber to build houses even in mega-disasters in the country. The senior government officials rather authorize foreign agencies to grab public lands at the expense of local communities' further marginalization and national security (Dhakal et al. 2022b). They have still been capturing local communities' land and contributing to making over 50 per cent of the land area of the earth for offsetting GHG emissions produced by affluent societies and developed countries. The advice of foreign agencies is considered superior and followed in all policy making. Government officials trust and let the agencies formulate major plans despite the policies being strategically sensitive from a national security perspective (MFP 2016; MFSC 2016; Master Plan 1988). They often admire and hail the programs of international agencies even though they harm local communities and national security (WWF 2020).

Problems in the agricultural sector are also similar to those in the forestry sector. The agricultural school has also promoted agricultural practices based on imported input that benefit mostly a handful of farmers living in accessible areas. Senior officials also are unable to recognize the mainstream farming systems and the crucial issues that

are missing in national policies, including the long-term agricultural development plans (GOA 2014). Agriculturists have marginalized the farmers who cannot access modern inputs and services and made the country rely on multinational companies. Another critical problem currently facing agricultural and other rural development is the mismanagement of forests and other public land resources. Addressing the problems is vital for halting food security and bringing the rural development environment on right track, which requires countering inappropriate policy activities of foresters. This, undoubtedly, should be the role of agriculturists. The problem, however, is they have not recognized that livestock-crop integrated farming systems complemented by forest resources are essential for sustainable or resilient agricultural development in a country dominated by mountainous geo-ecology. The senior agricultural officials supposed to be unaware that excessive use of local public lands for global benefits is the main cause of lands being unused, which is higher in disadvantaged localities of hills and high mountains.

The recent agricultural plan penalizes farmers who follow their land. It has also directed the introduction of a policy providing for the single heir-based inheritance of farming land. Farming in Nepal's social context is not just a factory of food production as it is in developed or industrialized countries. Most Nepali farming families are prosumers. Farming is a lifestyle. The policy of single heir-based property inheritance undoubtedly disintegrates families and primary communities and exacerbates problems of land fallowing, rural community heritage loss, and social vulnerability in the mountain regions. The policy will impact disadvantaged communities, especially indigenous ethnic communities, more adversely than other groups due to the formers' social and behavioural orientations that differ substantially from others.

Dealing with most of the policy problems in the agriculture and forestry sectors requires a good degree of technical knowledge and insights. Politicians should conduct sufficient studies and broader consultations before finalizing decisions on policies related to such technical sectors. However, they rarely do so and most often depend on the guidance of conservative bureaucrats who cunningly guide the politicians based on their interests and values (WWF 2020). Explaining or reigning policy issues of cross-cutting fields is a social and professional responsibility of academicians and intellectuals, especially those in the agricultural field. However, the intellectuals have not fulfilled this moral responsibility due to the lack of a professional culture – or practice – of proactive and critical thinking and exploration of alternative options. This situation has contributed to the production, reinforcement, and reproduction of an institutional environment in which land resource management practices and

their outcomes have gone against the interest of the community and the nation.

5. National security areas associated with land resources

The above review indicates the following critical areas of national security that are associated with land resource management.

a) Conservation of food production to secure the lives of vulnerable people in unpredictable global or transboundary crises

b) Protection of community heritages, including mountain culture and natural resources, during the crisis transitional period for economic and other social developments

c) Conservation of indigenous knowledge for farming in the mountain region and securing local lifestyle-based farming

d) Reducing mental and emotional stresses of women associated with family isolation and socially and cognitively disabled people from widening social divide

e) Hedging of institutionally marginalized social groups including women and vulnerable ethnic communities against extreme adverse exposures

f) Providing hope and inspiration for income and employment in the farming sector for people from non-farming sectors

g) Reducing migration and human trafficking

h) Reducing dependency on imports and saving hard currencies

If the government does not address these land resource management issues in time, the country can go into a crisis. The mismanagement of land resources in disadvantaged communities, and mainly in indigenous ethnic communities, is critically harmful and unsustainable from a livelihood perspective and socially unjust from an ethical perspective. Land resources are managed for dumping greenhouse gas emissions and enhancing recreational site qualities to benefit well-off societies overseas. The land use policies exacerbating social unfairness and life hardship can lead to ethnic revolt and protracted crisis. Even if the crisis does not break out locally, there are high chances of a global crisis the mismanagement of land may result in and its impact may be worse than that of the COVID-19 pandemic. The crisis can be caused by natural phenomena, economic problems, or socio-political reasons. Nepal requires, on its part, to optimally use its land resources for the well-being of disadvantaged communities, and strengthen national development and national security in different unpredicted situations.

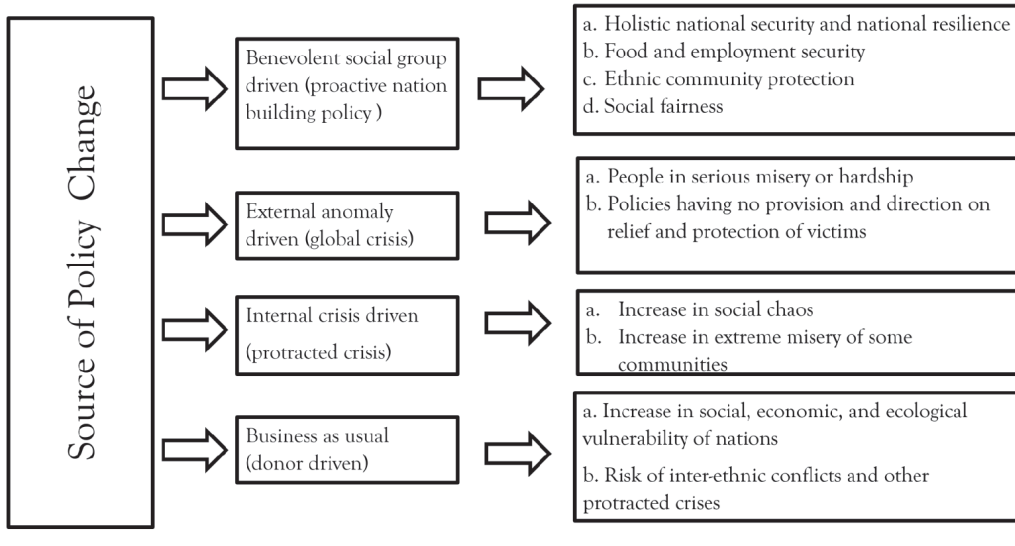
6. Method

This study is based on the qualitative method. It is mainly based on two sources of data: (a) secondary sources, and (b) authors' insights. The secondary sources of data were collected from government documents, periodic and casual publications, and journal articles. Most of the information was available online. Policy evaluation studies commonly follow such a method (Wright et al. 2020; Mitchell et al. 2015 Pugh 2009). The authors' insights from in-country and overseas work experiences have been used to frame scholarly arguments.

Many modalities and approaches to policies are possible. The choice of a policy model and approach depends on the drivers of change. The source and driver of change can be internal or external (Wright et al. 2020). The policy change caused by the crisis and public rebellion can be more radical relative to the proactive approach of leadership (Pugh 2009). Literature suggests choosing policy scenarios taking into account the context of the society influenced by – or malleable to – potential policy change drivers and models.

Based on the insights from the literature and life experiences, the authors classify the most likely policy situation as follows.

a) Business-as-usual situation: It explains the continuation of the current policy situation without significant directional changes.



b) Global crisis: It accounts for the potential situation resulting from unpredicted

events. The government and other agencies deal with reactive policies to relieve the disadvantaged communities and people that are seriously suffering from global crisis-related problems.

c) Domestic protracted crisis: It casts the situations resulting from revolts of frustrated social groups or communities that are marginalized and placed suffering for generations from existing policies. Governments deal with such a situation with reactive policy measures.

d) A harmonious proactive policy dedicated to national security and social equity: This explains potential policy measures worked out by visionary and innovative leadership with the intention of social justice and national security.

Figure 6 The conceptual model of policy changes.

The message of the literature review urges the study to focus the analysis on the following issues.

a. Economic uses of lands

b. Food security and livelihood situation

c. Social division, oppression, and exploitation

d. Ethnic population dynamics, including emigration

e. Social and cultural breakdown

f. Regional development situation

g. Local ecological systems

The potential situations are projected based on theories and evidence of current and historical cases (Wright et al. 2020; Mitchell et al. 2015 Pugh 2009). This study follows the approaches proposed by the studies and uses the most likely situation based on the review of existing policies. The forecast and explanation are based on current local situations of social, technological, economic, political, and ecological systems. The situation analysis has followed a hybrid approach of trend extrapolation and creative narration techniques.

This study has predicted the situation most likely to happen within the next 40 years or so. The time frame projected is based on the current outcome status of national and international policies and their potential effects. For example, the government has followed land use policies directed by international agencies. The foreign agencies

have a target of making protected areas 30 per cent of the land territory of the earth by 2030 and 50 per cent by 2050. The Nepal government has followed the policy guidelines and has actively worked to make protected areas 30 per cent by 2030. Most of the protected areas will be established in the localities of indigenous ethnic communities and disadvantaged regions as is happening now. The official documents show that government policy and institutions have been set up to manage all public forests in a manner that increases forest carbon and trade with international agencies by restricting land use of local communities for economic activities (Dhakal et al. 2022b; FCFP 2016). The government is most likely do agreements with international agencies to trade forest carbon credits for remaining forests. Land uses definitely escalates social, economic, and environmental problems in the communities. Some policies may take time to yield their effects and impacts on communities. The victim communities too may require some time to recognize the culprits and come to action.

7. Projections

7.1 Foreseen problems in the business-as-usual policy situations

In this scenario, strategic interventions of foreign agencies on public land, including forest areas, will continue to address the priority interests of developed countries. All public land resources including will be managed for carbon sequestration, GHG emission reduction, wildlife proliferation, and adventurous recreation. Additional legal and other institutional arrangements will be made as guided by international policies and agencies to reduce community access to the products and services of the land resources and managed them in naturally intact conditions. The institutions for landscape-scale decarbonization will be strategically induced in all affairs of community life and the economies of the nation. Impacts of past interventions on the community forest, protected areas, and other landscapes will also come into full effect with a positive feedback loop process.

The establishment and expansion of new protected areas are no doubt to be continued in indigenous ethnic communities that have a meagre of private land areas and a low level of personal capital to get decent jobs outside the communities. The government increases wildlife conservation offices and military or paramilitary posts to restrict or control local communities for using the resources of the protected areas in newly established or expanded protected areas. There are many unaccounted cases in which the personnel of the organizations victimized local communities through fake legal punishment, sexual abuse, rape, and torture (Dhakal et al. 2022b; LAHURNIP and NIWF 2020; Jana 2007). The population suffering from such maltreatment will increase in the future. Then victim communities either suffer for generations or

resettle somewhere else leaving their ancestors' homeland. Either way, the population of indigenous ethnic groups gradually dwindles unless they revolt against current political regimes.

Most mountain farming lands are surrounded by natural forests. As arable farming ceases due to slender community support and the high-security cost of crop and livestock protection, the abandoned lands will be converted into natural forests by a natural regeneration process within a decade or so. Furthermore, the restriction on the use of forest resources for farming and other livelihood purposes also increases the social divide between social groups. Productive lands remain under the control of elite groups who occupy plain and fertile lands of warmer regions (Bista 1991; Borradaileet al. 1978). Development priorities of most national and international development agencies, including the agricultural sector, are also in those accessible areas (GON 2014). Incomes from these fertile lands make the landholders relatively better off than other ethnic groups, who generally are squeezed into marginal lands to sustain their lives (Bista 1991; Borradaileet al. 1978). The price of accessible private fertile lands is on an increasing trend and has been out of reach for most indigenous and socially oppressed ethnic communities. The grabbing of communal resources of indigenous ethnic communities has already resulted in their mass displacement as discussed in Section 2. The government has given low priorities to the development of the areas where the human population has declined. Even established development services, such as health posts and schools, are being closed or merged to other accessible localities for structural adjustment or cost minimization.

New policies that restrict the use of forest raw materials (timber, firewood, leaf litter, and fodders) and promote carbon sequestration and wildlife hamper the practices of using public land resources to complement private land resources for sustainable livelihoods of the people. Economically valuable non-timber crops grow naturally only in specific sites and mostly in forest margins or underused areas. (Schall et al. 2021; Royo et al. 2006). The intensification of trees in the forests and promotion, for the higher amount of carbon sequestration, of aggressive, woody, and invasive species in open spaces suppress germination and growth of economically valuable, indigenous non-timber species and residual forest products that the conservation agencies would allow local people to collect (Papanastasis 2009; Schall et al. 2021; Royo et al. 2006). The economically useful products under the intact conservation regime will, thus, be scanty and hardly enough to supply the needs of households in the vicinity. The resultant material hardship compels people to compromise social trust and engage in the abuse of common properties by way of deforestation and illegal wildlife trade (Dhakal et al. 2022b; Duffy et al. 2016). It is well evidenced that the prisoners involved

in illegal trades of endangered species or restricted products are mostly poor and from indigenous ethnic communities (Paudel et al. 2020).

The climate change mitigation-oriented land-use policy will have dire vicious effects on mountain food security economies and social lives. It will affect crop production due to shortages of labour and farm manure to replenish organic materials and other soil nutrients lost from sloppy gradient lands. Enriching the soil with chemical fertilizer is almost impossible due to the remoteness of such places. The increasing number of wild animals and declining number of farming families increases farmers' cost of production. The changes adversely impact on local food security and further increase reliance on imported food from somewhere else (Kc and Race 2019). Some impacts of the carbon forestry policy have been already seen in the communities (Dhakal et al. 2010; Poudel et al 2015; Khatri et al 2019; Dhakal et al. 2022a).

Farming in the mountain is a physically labor-demanding business and people in the community help each other through mutual exchange of family labour to complete difficult tasks. When a significant number of people leave their communities, no human power remains in the community for mutual work. Due to peer pressure, those in the communities also leave to resettle somewhere else. The interactions of such social phenomena have resulted in the abandonment of arable lands for farming in Nepal (Bista and Song 2021). Restrictions on adequate and convenient access to daily forest products, such as timber, firewood, and fodder create many other direct and immediate impacts on the community. Excessive intensification of trees in forests and other private lands for carbon sequestration hampers the habitats of many wild animals and compels them to come out of the dense forest for food and light. When they are out of the forest, they will enter the community and destroy crops, predate on livestock, and increase life threats to the farmers. When people lose their crops and livestock and also feel unsafe, they are forced to give up farming and migrate to safer localities (Bista and Song 2021). Payments for the economic loss for a few households do not compensate for such indirect and mental insecurity costs of the farmers and motivate them to continue farming there.

The incessant growth of wildlife will have a spillover effect. It will, among others, cause intolerable loss of crops and livestock (Bista and Song 2021; Baral et al. 2021; Chaudhary et al. 2020). The loss of income will intensify farmers' mental stress in terms of family security, pest management, and other worries, which cannot be offset by monetary compensation, which some conservation agencies provide, for wildlife harm to crop production and predation of livestock. Most off-tourist track communities, which have no other distinct tourism attractions, will see no difference in the flow of tourists even after the increase in wild animals. Due to the resultant

hardship, the people choose to emigrate, as has been experienced in other countries (Jaquet et al. 2016). The migration will destroy the indigenous crop varieties, cultural heritages, indigenous knowledge, and other biodiversity developed there in human presence. The increasing abandonment of farming land and out-migration will reduce the food production. These problems will lead an increase in landless population and forestland encroachment in Terai and other accessible areas.

The people remaining in their homelands have a growing feeling of poverty and helplessness due to institutionalized control, exploitation, and maltreatment by forest resource conservation-related government agencies (Dhakal et al. 2022b). A growing number of women from indigenous ethnic communities have been forced into jobs that involve life-threatening risks or social stigma (Simkhada et al 2018). The hardship experienced by indigenous ethnic communities has already hampered their reproduction opportunities, placed their population in declining trends, and made it difficult for them to sustain their cultural practices and identities that are largely based on traditional livelihood practices (Dhakal et al. 2022b; CBS 2017; CBS 2022). The populations of some of the communities are less than the wild animal species listed on the threatened list of IUCN (CBS 2019; CBS 2017). The population dwindling to extinction is an environmentally and socially serious issue neglected by the government and international agencies alike. According to the UN declaration on human rights, placing minority ethnic groups in such conditions is an inexcusable crime (UN 1992). Continuity of the current forest and other public land-use policies will further exacerbate these critical problems in Nepal.

7.2 The global mega-crisis situation

Currently, the economy of Nepal is sustained by remittances from temporary migrants mainly from the Middle East countries (MEC). The positions of these countries are politically and economically volatile (UNCDF, 2021). A serious degree of global socio-political hostility can be erupted and polarise countries to the extent that affects the trade and cooperation regime and cause collapsing of economic activities in the MEC. Global scale natural disasters can outbreak during transboundary political crisis time in the near future. These dire conditions will compel most Nepali labourers working overseas to return home.

The influx of returnee migrants requires them to be engaged in economic activities to support their families. The opportunities in service and industrial sectors will not be enough to absorb that much labour force. The situation can create several social and economic problems. The government will also have shortages of foreign currency reserves to import essential products such as foods, chemical fertilizer, and medicines

from overseas as the remittance from those migrants will stop. Support of international agencies in such a global crisis will not be enough to address these social and economic problems. Government can attempt to apply all considerable policy measures including mobilizing public land resources. But it cannot provide adequate resources for the rehabilitation of land resources and provide other institutional infrastructures in the communities' abandoned regions. Solving the immediate problems of the returnees will not be possible by just letting them use land resources. The political relationship between India and China is very volatile. Being a land-locked country, Nepal is most likely to be politically and economically trapped between the two giants leading to the suffering of a large number of poor people. Ill preparation for such unpredicted situations can lead to lasting economic social and political crises in the country. It can be more serious than what happened in Shri Lanka recently. India's economic blockade of Nepal aftermath of the mega-2015 earthquake indicates that neighbouring countries can put deaf ears to the plea of Nepalese people even in such humanitarian situations (Dhakal and Kattel 2019).

7.3 Possible outbreak of the protracted crisis

Many policies and practices have led to the situation of interethnic revolt and protracted crisis.

a) These land grabbing policies in Nepal are endorsed and authorized mostly by institutionally privileged elite ethnic communities (Pokhrel 2021; World Bank 2021; WWF 2020; Master Plan 1988). These ethnic communities have occupied over 90 % of the powerful political positions in the country (Jamil and Baniamin 2020)

b) The government statistics indicate that the recently practiced land use policies have resulted in slow poison effects on many aspects of disadvantaged communities and especially indigenous ethnic communities. The disadvantaged ethnic groups were historically squeezed by the elite ethnic communities into marginal lands (Borradileit et al 1978; Bista 1991). Now the political works of the elite ethnic communities have displaced even from the marginal lands. The land use policies have a strong effect on displacing the ethnic communities from their ancestor homelands and declining their population which is already explained with the evidence above. The productive private land even in remote areas has become out of reach of most ordinary people due to skyrocketing prices that only elites can pay for.

c) Current land-use policies have, thus, widened the personal and social

capital gaps between the elites and the indigenous and other disadvantaged ethnic communities. The institutional discrimination has compelled marginalized ethnic groups to be employed in socially and physically high-risk and low-paid jobs (Simkhada et al 2018). The conservation agencies grabbed their livelihood resources and created extreme hardship for living. They made a rule to punish the resources based communities for using of their resources that their ancestor used for millenniums. The conservation agencies have compelled the communities and created the environment for wildlife hunting and trades. Current land grabbing policies render family isolation, trigger social tragedies of a different kind and exacerbate emotional and mental stresses on all family members, more so on women.

d) A disproportionately high share of agricultural and other development budgets of the government and other agencies, directly and indirectly, are used for the benefit of people in accessible areas. The government has spent a huge budget to subsidize the cost of riding cars and motorcycles for urban people but it has given meager subsidies to afford essential goods and services in the disadvantaged regions. The government has introduced agricultural and forestry development policies against marginalized communities especially in disadvantaged regions. The returnee migrants from the MEC have seen profitable livestock farming even in semi-desert areas. Similarly they will seek an answer to developed countries such as the USA, Australia and Switzerland are allowed to use forest resources for their industrial scale livestock farming for profit making but why Nepali farmers are not allowed to use the resources for making their basic living. Some of them will understand that government policy problems made the land resources of Nepal unprofitable for farming and compelled them to be isolated from families and work in undesirable working conditions.

e) Furthermore, the land resources supporting the livelihood of poor local communities are occupied for protecting decent economies and luxurious lifestyles of people in other countries (Griffiths and Martone 2008). The policies have made the disadvantaged communities victims of legal punishment, sexual abuse, rape and torture (Dhakal et al. 2022b; LAHURNIP and NIWF 2020; Jana 2007). These policies have made the communities suffering for generations and place them at the threat of extirpation (Dhakal et al. 2022b). Some ethnic minorities have been

> compelled to give up social identities, including religion, for enduring economic hardship imposed on them by the conservation policies (Dhakal et al 2022b)

Once the communities become aware of the injustice meted out to them, they will build the force needed to fight the injustice, with a revolt against the political regime being an option (Duff 2016; Homer Dixon 1994). This conflict will most likely be between marginalized and elite communities as the mainstream policies, including the evil forestry policies that marginalize indigenous ethnic groups, are formulated or endorsed and enforced mostly by elite ethnic groups. The conflict may result in serious long-term impacts on the whole of society.

The revolt/conflict may render existing governmental forestry institutions dysfunctional. Rebellious groups may no doubt make extensive use of resources from the forest and protected lands. In the process, they may cause rampant deforestation and serious losses of wildlife and many other endangered species that contribute to forest biodiversity. The rebellious movement may also make use of the hilly lands for grazing-based livestock farming and the production of other multipurpose products for the benefit of the local community. Such land uses may foster indigenous breeds of livestock and promote practices of using other non-timber products. The livestock grazing opportunities in forests and the production of sufficient farm manure may reduce farming costs and motivate farmers to grow locally adapted indigenous crops. However, these achievements may be limited only to the localities controlled by rebellious groups. Groups beyond their control will have no access to these opportunities. This may trigger inter-ethnic hostility, and hamper a cooperative and harmonious environment in the community. There will be no investment in resource improvement in the rebel control regions due to insecurity of return from the land. This scenario risks adding another dimension to the conflict.

The conflict may further escalate the emigration of the people, both marginalized and others, who have lived in their ancestral properties and contributed to the evolution and conservation of community heritage, including agrobiodiversity. This may exacerbate farming land abandonment and community heritage loss, which may even make some people landless and force them to settle in forest margins and other marginal lands close to the city or Terai. All this may cause social tensions and cultural clashes, and also affect the system of the production of healthy and socially meritorious organic foods. The displaced may be trapped in a cycle of suffering for generations.

7.4 An alternative policy for national building

It is assumed arising of some political leaders with deeply conscious of current land

use policy-related condemnable and inexcusable harms in some social groups and national securities. The indigenous ethnic communities currently suffering from unfair land use policies will also have an adequate understanding of both immediate and long-term adverse impacts of the current land management policies on their culture, ethnic identity, existence, and living opportunity in their ancestral regions. This understanding of the stakeholders will lead to an effective grassroots-political movement that pressurizes the national government to make radical amendments to existing policies and institutional structures. The conscious groups will also understand that current land-use policies are misleading as this has resulted in use of our invaluable resources for the benefit of other countries.

The social movements will lead to a progressive government. The regime will consider the geo-ecological and current institutional positions of the country and recognize appropriate uses of land resources as the most pragmatic solution to uplift disadvantaged communities. The forest, livestock, and crop integrated farming system will be considered as locally appropriate natural-based solution for sustainable farming and vitalizing rural economies and other social affairs. Appropriate management of forests and other public resources for multipurpose and local economic uses will be recognized as the most pragmatic solution to make a success of agricultural and other economies of farmers with small private lands and achieve holistic national security.

The government will recognize that vitalizing local social, economic, and ecological systems or activities requires raw materials instead of cash income from selling environmental services of the resources. Construction-oriented wood production takes many years. It little helps local communities who require income and employment regularly. Considering the geophysical constraints of the country, livestock will be one of the most feasible and reliable core business activities to utilize the land resources. This business with adequate access to the fodder resources will provide people a way of living or engaging in local economic activities and with families. It provides the opportunity even for people with impaired cognitive ability or some other handicaps to manage lives in other activities. The social values of the opportunity are invaluable.

The biggest external threats to hinder practicing the progress of land uses are foreign agencies that have benefited from current institutional structures and land resource management of Nepal. The international agencies have actively influenced land-use policies and practices of institutionally weak countries to protect their pollution-intensive economic activities including livestock farming in developed countries (ADB 2013; Aryal et al. 2019; Dhakal et al. 2022a). Nepal's government will provide

adequate evidence and convince the international agencies that the proposed land-use practices are much more environmentally friendlier than those practiced by most developed countries and justify the institutional reforms and land-use changes strongly. It will defend the national new land use policy with the evidence that the land resource management policies and practices advised and funded by the agencies exacerbated many sensitive aspects of national securities. The reforms are required for achieving holistic national security. Moreover, Nepal has sovereignty rights to manage its own resources for the security of its people and the nation. Nepal has enough expertise from its own people and does not need to rely on foreigners for setting policies. The government, therefore, will limit the presence and influence of international agencies in resource management at a symbolic level.

The progressive leadership will recognize the government bureaucracy of forestry as the biggest internal barrier for pro-community management of land resources. They have benefitted from the institutions and can collude with international agencies and prevent any changes in the current regressive resource management policy and institutions of forestry. Currently, there is no link at all between agriculture and forestry, which, in an ideal situation, should work together. A mechanism can be developed to foster coordination between the two – or the two may be amalgamated to ensure coordinated and effective resource management of forest land resources along with animal and crop farming. The leadership will dare to dismantle or overhaul the institutions to make effective use of the land resources for holistic benefits. The forestry and agricultural ministries may be amalgamated to make unified policies with a focus on community development and national security. In addition, the government will reform educational curriculums of both forestry and agricultural colleges and universities so that graduates are capable of managing land resources appropriate to local conditions and national interests.

The new land resource management authority will recognize that inappropriate management systems and institutions have hindered the management of forest resources for livestock and other economic uses. It will develop and implement policies that change forest management from the current tree and environmental-oriented management of the forest to a fodder-dominated multipurpose management regime with moderately open space and access to the local community. Protected areas will be downsized to core areas. The resources of other areas will be managed for multiple uses which will allow the coexistence of wildlife and humans. The new management will provide adequate spaces and increase resources for environmental conservation, local community wellbeing, and national security. The population of wild animals that are a threat to farming activities and safe living will be culled at safe

thresholds of their reproduction and the carrying capacity of the forest resources. The remaining individuals will be electronically tagged to monitor their roaming and provide real-time information about the animal location to farmers for protecting their farm products. The changes in the forest conditions will also provide the wild animal's favorable environment to stay in the forests.

The social conditions for living and doing land resource-based business in most rural areas have already been degraded by inappropriate development policies. Geophysical conditions have some roles to make them uncompetitive relative to other areas. Revitalization of land-based economic activities is not possible without adequate security from the government. The government can provide decent payment in addition to other development supports by accounting for a much broader agenda and mission for holistic national interests and securities instead of mere conserving ecosystem services or social heritages. The country will be much better off from such payments than enduring the hidden costs of managing the growing problems downstream associated with inappropriate land management related to rural migration. Adequate numbers of families will be resumed or actively involved in the farming business in the disadvantaged localities and marginal lands when government provides at least 30 years guarantee for descent compensation/incentive payments for forest agricultural integrated -farming business.

The government will follow the national strategic position based on policy and support for practicing modern and indigenous practices based on farming to make Nepal self-sufficient in food. Other components of agriculture will also be promoted based on the livestock business in different pocket areas based on their comparative advantages and market niches (e.g. supplying off-season fresh vegetables in scarce areas of low-lying foothills including India). The government takes the merits of modern technologies with adequate measures to hedge against the risks of exposure to their critical demerits. Communities will have no access to the indigenous native varieties and breeds conserved or stored in gene banks or museums, therefore, special provisions will be needed to make the resources available. Considering the sensitivity of geophysical conditions of Nepal, the production land will be zoned based on comparative advantages, ecological sensitivity, suitability, and nature of the business or activity mainly to (a) native species and indigenous practices conservation zone, (b) proactively improved native species and knowledge practicing zones, (c) imported inputs and hybrid methods based intensive production zone. The land use policy will help the farmers to utilize available resources based on their needs. The practices of managing private and public land resources will make community and wild animals friendly. Considering the current advancement in knowledge and technologies, most

areas of forest with biodiversity resources will be managed in core or small land areas and manageable in number.

The secure income from land resources and incentive payments will motivate communities to live in their original places which will contribute to the conservation of indigenous knowledge and biodiversity. The social value to live in rural areas and especially mountain areas is increasing with the growing consciousness of people on physical health, social lifestyle, natural amenities, pristine environment, and locally grown organic foods. Assured income and healthy lifestyle opportunities can motivate other people to move to the countryside from non-farming jobs in urban areas, overseas, and even after retirement. Many families will return to the localities of their family's origin, reuse the abandoned farming lands and revive the indigenous lifestyle. They will follow mainly the indigenous systems with some modifications as needed and this might serve as a retirement lifestyle as well. The mountain landscapes will look like well-managed multipurpose gardens. The primary community environment will provide special attractions to affluent people retiring from different professions for a healthy, and happy natural lifestyle in the mountain. However, the development of communication networks, schools, hospitals, roads, and other facilities will be needed to support their lifestyle.

8. Discussion

This study has explained that the main problems of agricultural and rural development are caused by inappropriate policies and especially land uses. The policies created many barriers and disincentives for rural people engaging in agriculture. The land resources traditionally used for farming and local communities are now used to benefit foreigners. The lands have been green deserts for local communities and national economies. The trees in the forests have worked as weeds with noxious allelopathic effects in local systems. The main problem to emerge such problem is too much dependency on foreign agencies to make national policies which are very sensitive institutions for national building and security. These policies have played the role of a slow poison. It has not only resulted in the displacement of regional ethnic communities from their ancestors' localities but also hampered millennium-old social heritages. It is an inexcusable thing to place indigenous ethnic communities in the position of either be suffered for generations or being displaced from their homeland for good. These policies and institutions have produced, reinforced, and reproduced economic, social, and environmental outcomes against community and national securities due to unsuitability in local contexts. The recent case of Shri Lanka well demonstrated that inappropriate agricultural-related policies could affect many sectors and place the country in crisis (Economist Bureau 2021; Bhattacharya

and Singh 2021).

The policy development and implementation for long-term national building and securities are very sensitive and strategic subjects. Resource politics and policy determine who owns, manages, and benefits from land resources. The political ecology of land resources management for global environmental conservation is getting a hot issue in the world. Every country is attempting to protect its resources for the best uses in the future. It seems that the international agencies are working in their vested interests and are oriented toward addressing the problems created by developed countries by using resources from developing countries (Dhakal et al 2022b; Christoff 2008; Johnson 1994). Ironically, the Nepal government agencies have proactively managed the resources essential to support the life and livelihood of poor and disadvantaged communities for protecting the economic and luxurious lifestyles of other countries. Such sensitive matters should not be given to foreigners who have limited knowledge of the complexities of mountain farming, socio-ecological systems, and geosocial conditions, vested interests in the land resources, and less seriousness of the national security of Nepal. Only people with careless about sensitive humanitarian and national security can endorse and implement such anti-nation policies. It is serious negligence that the government handed the job of making Agricultural Development Strategies 2015-2035, a long term strategic plan, to 15 different international organizations. The policy consultants have undoubtedly contested interest in the land resources. That naturally motivate the agencies to formulate misleading policy that can be against the well-being of local communities and national security. These policy structures and outcomes are consistent with the finding of Mertz (1997) who stated that the international agencies made the policy to keep Nepal in underdeveloped conditions for a long time. It seems that that handful of people who participated in the consultation process of policy making have either little understanding of problems faced at the local level or ignored them due to their own vested interests. These work practices and negative outcomes from policies indicate the complete failure of Nepal's intellectuals. The bad governance of the Nepal government especially careless work of senior forestry officials and intellectual failures of senior agricultural officials gave developed countries opportunities to colonize the land resources of the country without a military presence.

The current global mega-crisis is likely to collapse economic activities in many Middle Eastern countries which have become major employment destinations for Nepalese unskilled labor. If this happens these people will return to Nepal and they need to be employed in some sectors. The majority of these workers come from rural areas and they are likely to go back to their ancestral land if employment opportunities become

available. But current land-use policies are likely to be a barrier to using the land resources for providing income and adequate food production in rural areas inviting humanitarian catastrophes during such crisis times. The crisis will result in serious tragedies on the land resource based poor social groups and especially indigenous communities. The situation can be worse when multiple crises overlap. For example, many people in the world have suffered now from the overlapping economic crises of the Covid19 pandemic and the Russian-Ukrainian war. The increasing political tensions between China and the western allies and India and China are more threat full for Nepal. These humanitarian and economic problems will not go away immediately even if the government applies its best resources and strategies.

This study pointed possibility of conflict eruptions between ethnic groups leading to protracted crises due to current regressive and discriminatory land-use policies and practices. The conflicts destabilize most land-use institutions and destroy forest and biodiversity resources. The resources cannot make the community better off due to sociopolitical instability and insecurities. The conflict is likely to suffer many people, especially those with poor land assets and ethnic minorities. The world has seen strong evidence of such uprising conflicts and political unrest in such deception, exploitation, and marginalization situations (Le 2013; Homer-Dixon 1994; Duff 2016). These are very sensitive socio-political issues for national building and security.

The current agricultural policies and practices have excessively promoted modern technologies for flash high yield which has spoiled or displaced the indigenous resources, technologies, and knowledge. The losses of the heritages are no repercussions (accidental or unintentional) as they have resulted from externally induced policies and practices. The harms can be considered an inexcusable or serious degree of negligence or bad governance of state authority from both national food security and sovereignty perspective. This negligence of the state is mainly caused by heavy dependence on the advice and support of international agencies. Many international agencies including FAO provided technical expertise to plan development and implementation for food security in Nepal for many decades (FAO 2019). The loss of precious assets after following their technical advice and other support is evidence of their policy failure. They are not providing trustworthy support. The materially and symbolically powerful international agency, the World Bank, for example, recently persuaded the institutionally weak government to accept the unnecessary loan in the name of resilience development (Subedi 2022). It lured the Nepal government with some grants for making the policy of selling forests and bought the forest carbon credits at a very cheaper price (World Bank 2021). The agreement has bound Nepal to save the carbon in the forests forever to contribute to climate change mitigation.

Moreover, the forest lands are strategically very important locations for future development of the countries. Nepal's government used the fund to manage community forests of most districts to sequestrate forest carbon (FSC 2016). This is done by dumping excess (GHG emissions) from affluent societies.

This study explained some critical issues associated with foreign meddling in policy affairs related to land resource management in Nepal. The government agencies gave foreign agencies too many opportunities and authorities to develop and implement land use plans that are strategically sensitive for national building and security. The government involved foreigners in the temptation of foreign aid. The foreign agencies have vested interests (managing the land resource for their benefit) in the land resources and limited knowledge of the complex situation of the nation. Most international policies of land resource management, in the current global context, are less likely in favor of institutionally weak countries including Nepal. It is based on the fact that international policies and funding are mainly clutched by people of developed countries who have different policy priorities and social values (Novosad and Werker 2019). Even if people from Nepal or neighboring countries manage the organizations, international policy and funding control or regulate their work. The work programs of IUCN, WWF, and ICIMOD regressive to the well-being of Nepali communities are its strong evidence. The government has little considered the contested current global politics in land resources. The conflicting interest motivated the staff of foreign agencies to use reckless, autocratic, rogue, and corrupt bureaucrats, and oppress and exploit the public by legitimate and illegitimate measures (Dhakal et al. 2022a; Pant et al/ 2022). The agencies have used environmental conservation propaganda and policy channels to grab land resources. Other international policies are underway with the objective of mitigating global climate change which will further bind countries to keep on their forestland in naturally intact conditions. Some institutions also evolved spontaneously in response to the induced institutions which are making the land-use changes too costly. Since only a small proportion of the national territory of the country is under private ownership, the international control of the public lands with the neo-colonization approach will harm the well-being of the resource-based communities and the whole nation probably for centuries.

9. Conclusions

The policy review identified some seriously critical problems in forestry land use and agricultural development policies. Agricultural friendly management of forests and other public land resources is a prerequisite in most rural areas. But the public land-use policies have been directed to manage the lands for producing environmental services and other benefits for global societies. The uses of the land resources reduced

the availability of the resources of the public lands that the farmer requires to complement private resources and sustain farming-based livelihood in most rural areas. The marginal landholders could not sustain their livelihoods on private land alone. Moreover, the land uses for environmental conservation distorted social-ecological systems essential for farming in the mountain region. The problems related to institutional, physical, and social-ecological systems increased the cost of farming and reduced the return of private lands which motivated adult labor forces to emigrate for income to afford family expenses. The agricultural development activities guided by long-term agricultural policies were focused on accessible areas. They overlooked the problems of mainstream farming systems in hilly and disadvantaged areas. The policy issues of the strategically disadvantaged position of the rural communities and the transitional development stage of the areas are ignored. The mountain communities had managed large land areas in common and natural forests for community wellbeing which protected local environmental resources. But the people and agencies with vested interests made the public lands curse for the mountain communities who contributed to saving the local environment. Main flaws in the policies routed from international agencies which got too much opportunity to meddle in developing the long-term policies with strategic importance for national building and security.

Current land-use policies and practices in Nepal are detrimental to the well-being of rural people, especially mountainous ethnic communities. This has marginalized the ethnic communities and forced them either to suffer for generations or leave their ancestral land and settle somewhere else. Land resources are the main pragmatic and hedging means to relieve possible humanitarian crises in unforeseen circumstances. Looking at geophysical barriers and other immediate prospects, it is not possible to secure the future of the ethnic communities without downscaling protected areas and allowing multiple uses of public land and forest resources for the community. Foreign agencies are most likely to interfere in the policy decisions for changing the institutional structures and land management. These agencies had done similar interventions in Malaysia while changing land uses for national buildings (Bending and Rosendo 2006). Based on the seriousness of living conditions and the existing threats to indigenous communities, radical changes in land use policies are crucial. The government authority holding the legal power to change land use policies has been strongly backed by foreign agencies that have benefitted from Nepal's current land use policies and practices. Therefore, an adequate level of policy changes is less likely possible by the government initiatives alone. The critical issues urged dismantling or overhauling of the corrupt rouge and reckless government institutions. It is the moral responsibility of agriculturists and other people in civil societies to support the social

movement strongly to make the institutional overhauling and bring new land use policies for addressing critical national security and humanitarian subjects. The unjust land use policies can be halted and changed quickly if people from indigenous communities lead to raise the issues of the condemnable policies. A deeper understanding of socioeconomic vulnerability, social systems, cultural practices, and the natural way of thinking and behaving of their communities may motivate the people of the indigenous communities to campaign against current colonial land use policies.

Physical barriers of mountain have placed the economies of rural areas in a comparative disadvantaged position. But Nepal requires to keep up the forest-livestock crop integrated farming system in the region for conserving cultures and other heritages and supporting lives of institutionally disadvantaged communities. The farming is a nature-based solution and economic sustainability in the regions. Revitalization of land resource use in disadvantaged communities requires an attractive incentive payment with a guarantee at least for the transitional development phase. The payment policies such as the EU common agricultural policy and the recent ones have been proven success in agriculture development and revitalizing other rural activities in developed countries (Miguel and Pinilla 2015). European countries have followed such payment policies and succeeded to keep up forestry resource-based farming and conservation of rural heritage for national security to large extent (Chételat et al. 2013; Zabel 2019). The payment policy can be justified for the disadvantaged community context on the ground of sustaining many meritorious assets and opportunities for long-term benefits. Implementing the payment policy by the local government may be more effective. The radical policy changes to make economic uses of the land resources and providing such incentive payments may attract many people and bring a golden age in rural areas.

Nepal requires waking up and capitalize on the strength of national experts and take own leadership role in developing national plans and policies as per the country's needs. Similarly, existing international policies need to be critically evaluated and revised considering the national strategic position of the country. The critical flaws in the plans developed for Nepal by international agencies indicate that national or independent experts without the involvement of international agencies can better identify critical problems and pragmatic policy solutions to address challenging problems. Long-term plans and policies are sensitive and important strategic political measures for national building and security. People only with good knowledge of local social, economic, and environmental systems and ownership feelings or emotional attachment should lead in making such sensitive policies. Nepal can be

better off by avoiding/minimizing the influences of international agencies in such policy-making similar to the recent practices of India. The current globalize presence of the Nepalese diaspora has provided the country an opportunity to use the advanced technical expertise they have acquired around the world. The government may consider pro-national experts living overseas to help develop such sensitive national policies as has been practiced in India and other countries.

Our intention is not to discourage planting trees for environmental benefits, but it should not be done at the expense of the livelihood of rural people whose life depends upon communal pastoral grazing and agroforestry. The notion of tree planting and expansion of protected areas in the name of conserving biodiversity and offsetting GHG emissions is based on wrong assumptions. For example, despite giving the deforested and degraded look of Africa's savannas and grasslands, they sequester more carbon and provide more biodiversity than the closed forests and these grasslands have existed alongside forests for millions of years. This condition is not much different from our open forest land where livestock grazing vis-à-vis the use of forest products for the community is allowed. Consultations in plan development for giving stakeholders the opportunity to make their saying in the plan development is not enough. Some constructive feedback is also essential for stakeholders' consultation. Educated people with constructive thinking and especially in concern fields will provide vital information in policy formulation and planning. The forestry institutes need to coordinate with agricultural institutes to provide effective services for managing forest land resources along with animal and crop farming. Currently, there is no link between agriculture and forestry institutes. In addition, the government needs to reform educational curriculums of both forestry and agricultural schools and universities so that the graduates and government officials have an adequate level of understanding of the mainstream (agricultural and forestry integrated) farming systems and other rural economies attached to public land resources and how can they make constructive inputs. A revised education system in agriculture and forestry should adequately familiarize graduates with contested global politics and policy strategies of other countries in the agriculture, forestry, and other land use field.

Deeper insights on some current policy problems and the likely situation of Nepal in future crisis conditions are some strengths of this paper. But most of the presentations are based on information from secondary sources and authors' life experiences. Analyzing the problems with a Delphi method may provide future studies with more realistic findings.

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References:

Aase, T.H. (2017). Are doomsday scenarios best seen as failed predictions or political detonators? The case of the Theory of Himalayan Environmental Degradation. *Geographical Journal of Nepal*, 10, 1-14. https://doi.org/10.3126/gjn.v10i0.17386

Acharya, K.P., 2004. Does community forests management supports biodiversity conservation? Evidences from two community forests from the mid hills of Nepal. *Journal of forest and livelihood*, 4, 44-54.

Adhikari, J., Ojha, H., and Bhattarai, B. (2016). Edible forest? Rethinking Nepal's forest governance in the era of food insecurity. *International Forestry Review*, *18*(3), 265-279.https://doi.org/10.1505/146554816819501646

Adhikari, J., Shrestha, M. and Paudel, D., 2021. Nepal's growing dependency on food imports: A threat to national sovereignty and ways forward. *Nepal Public Policy Review*, *1*, 68-86. https://doi.org/10.3126/nppr.v1i1.43429

Adhikari, K. (2015). Perception or reality? A case study of corrupt practices in the forestry sector in Nepal. *European Bulletin of Himalayan Research*. 46, 9–34.

Arts, B., Appelstrand, M., Kleinschmit, D. Pülzl, M., Visseren-Hamakers, I. and et al. (2010). Discourses, actors and instruments in international forest governance. Paper presented at the *Embracing complexity: Meeting the challenges of international forest governance*. A global assessment report. Prepared by the Global Forest Expert Panel on the International Forest Regime.

Aryal, K., Laudari, H.K., Neupane, P.R., Maraseni, T. (2021). Who shapes the environmental policy in the global south? Unpacking the reality of Nepal. *Environmental Science & Policy*, 121, 78–88. https://doi.org/10.1016/j.envsci.2021.04.008

Aryal, N., Regmi, P.R., van Teijlingen, E., Trenoweth, S., Adhikary, P., and Simkhada, P. 2020 The Impact of Spousal Migration on the Mental Health of Nepali Women: A Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 17, 1292. https://doi.org/10.3390/ijerph17041292

Baral, K., Sharma, H.P., Kunwar, R., Morley, C., Aryal, A., Rimal, B., Ji, W. (2021). Human Wildlife Conflict and Impacts on Livelihood: A Study in Community

Forestry System in Mid-Hills of Nepal. Sustainability 13, 13170. https://doi.org/10.3390/su132313170

Basnyat, B., Treue, T., and Pokharel, R.K. (2019). Bureaucratic Recentralisation of Nepal's Community Forestry Sector. *International Forestry Review*, 21, 401–415. https://doi.org/10.1505/146554819827906861

Bhatt, R.P. and Khanal, S.N. (2009). Environmental impact assessment system in Nepal–An overview of policy, legal instruments and process. *Kathmandu University Journal of Science, Engineering and Technology*, 5.

Bista, R. and Song, C. (2021). Human-wildlife conflict in the community forestry landscape: a case study from two Middle Hill districts of Nepal. *Human Dimensions of Wildlife*, 1-17. https://doi.org/10.1080/10871209.2021.1980158

Borradaile, L., Green, M., Moon, L., Robinson, P. and Tait, A. (1977). *Langtang National Park Management Plan 1977–1982*. University of Durham, Himalayan Expedition, UNDP, FAO National Parks and Wildlife Conservation Project.

Büscher, B., Fletcher, R., Brockington, D., Sandbrook, C., Adams, W.M., Campbell, L., Corson, C., Dressler, W., Duffy, R., Gray, N. and et al. (2017). Half-Earth or Whole Earth? Radical ideas for conservation, and their implications. *Oryx*, 51, 407–410. https://doi.org/10.1017/S0030605316001228

Campbell, B. (2005). Nature's discontents in Nepal. *Conserv. Soc.*, 3(2), 323–353.

Cabello, J. and Gilbertson, T. (2012) A colonial mechanism to enclose lands: A critical review of two REDD+-focused special issues. *Ephemera: Theory & Politics in Organization*, 12.

Central Bureau of Statistics (CBS). (2019). *Environmental Statistics of Nepal 2019*. Central Bureau of Statistics (CBS) .

Central Bureau of Statistics (CBS). (2021). *Preliminary Report of National Population Census 2021*. Central Bureau of Statistics (CBS).

Central Bureau of Statistics (CBS). (2017). *National Population Report 2017*. Central Bureau of Statistics (CBS).

Chaudhary, S., Wang, Y., Dixit, A. M., Khanal, N. R., Xu, P., Fu, B., Yan, K., Liu, Q., Lu, Y., & Li, M. (2020). A Synopsis of Farmland Abandonment and Its Driving Factors in Nepal. *Land*, *9*(3), 84. https://doi.org/10.3390/land9030084

Childs, G., Craig, S., Beall, C. M., & Basnyat, B. (2014). Depopulating the Himalayan Highlands: Education and Outmigration From Ethnically Tibetan Communities of Nepal. *Mountain Research and Development*, *34*(2), 85–94. https://doi.org/10.1659/MRD-JOURNAL-D-14-00021.1

Christoff, P. (2008). The Bali roadmap: Climate change, COP 13 and beyond. *Environmental Politics*, *17*(3), 466–472. https://doi.

org/10.1080/09644010802065807

Crist, E., Kopnina, H., Cafaro, P., Gray, J., Ripple, W. J., Safina, C., Davis, J., DellaSala, D. A., Noss, R. F., Washington, H., Rolston, H., Taylor, B., Orlikowska, E. H., Heister, A., Lynn, W. S., & Piccolo, J. J. (2021). Protecting Half the Planet and Transforming Human Systems Are Complementary Goals. *Frontiers in Conservation Science*, *2*. https://doi.org/10.3389/fcosc.2021.761292

CIFOR. (2013). Global Landscapes Forum Final Report 2013. In *Proceedings of the Parties (COP 19) to the UN Framework. Convention on Climate Change (UNFCCC)*, 16–17, Warsaw, Poland.

Dave, Saint-Laurent, & Murray. (n.d.). Second Bonn Challenge progress report: application of the Barometer in 2018. *IUCN: Gland,* Switzerland.

Dhakal, B., Bigsby, H., & Cullen, R. (2010). Forests for Food Security and Livelihood Sustainability: Policy Problems and Opportunities for Small Farmers in Nepal. *Journal of Sustainable Agriculture*, *35*(1), 86–115. https://doi.org/10.1080/10440046.2011.530903

Dhakal, B., Bigsby, H., & Cullen, R. (2012). Socioeconomic Impacts of Public Forest Policies on Heterogeneous Agricultural Households. *Environmental & Resource Economics*, *53*(1), 73–95. https://doi.org/10.1007/s10640-012-9548-4

Dhakal, B.; Chand, N.; Shrestha, A.; Dhakal, N.; Karki, K.B. and et al. (2022). How Policy and Development Agencies Led to the Degradation of Indigenous Resources, Institutions, and Social-Ecological Systems in Nepal: Some Insights and Opinions. *Conservation*, 2(1), 134–173. https://doi.org/10.3390/conservation2010011

Dhakal, B., & Kattel, R. R. (2019). Effects of global changes on ecosystems services of multiple natural resources in mountain agricultural landscapes. *The Science of the Total Environment*, *676*, 665–682. https://doi.org/10.1016/j.scitotenv.2019.04.276

DLUS (2022). *Land Use Map. Department of Land Survey (DLUS)*, Nepal Government. accessed on July 6. https://www.dos.gov.np/products-services.

Domínguez, L., & Luoma, C. (2020). Decolonising Conservation Policy: How Colonial Land and Conservation Ideologies Persist and Perpetuate Indigenous Injustices at the Expense of the Environment. *Land*, *9*(3), 65. https://doi.org/10.3390/land9030065

Downey, L., Bonds, E., & Clark, K. (2010). Natural Resource Extraction, Armed Violence, and Environmental Degradation. *Organization & Environment*, *23*(4), 417–445. https://doi.org/10.1177/1086026610385903

Duffy, R. (2014). Waging a war to save biodiversity: the rise of militarized conservation. *International Affairs*, *90*(4), 819–834. https://doi.org/10.1111/1468-

2346.12142

Edmundson, H. (2019). *Tales from the Himalaya–Religion, Science, Politics, Society*. Vajra Books Publisher.

Ellis, E. C., & Mehrabi, Z. (2019). Half Earth: promises, pitfalls, and prospects of dedicating Half of Earth's land to conservation. *Current Opinion in Environmental Sustainability*, *38*, 22–30. https://doi.org/10.1016/j.cosust.2019.04.008

FAO, (2004). T*rends and current status of the contribution of the forestry sector to national economies. Working paper FSFM/ACC/07*. Food and Agriculture Organization of the United Nations.

FCPF. (2016). *Annual Progress Report 2016; Forest Carbon Partnership Facility*. The World Bank Groups: Washington,DC, USA, Retrieved 20 February 2021;.

Garratt, K.J. (1981). *Sagarmatha National Park Management Plan*. National Parks and Wildlife Conservation Office: Kathmandu, Nepal.

Griffiths, T. & Martone, F. (2008*). Seeing 'REDD'? Forests, climate change mitigation, and the rights of indigenous peoples and local communities, Update for Poznan (UNFCCC COP 14).* Forest Peoples Programme, Moreton-in-Marsh, United Kingdom

Global Landscape Forum Donor and Partner Report (2015). Paris, France. Available online: https://www.globallandscapesforum.org/publication/2015-global-landscapes-forum-donor-partner-report/(accessed on 22 July 2021).

Global Landscape Forum Donor Report 2014, Lima Peru. Available online: https://www.globallandscapesforum.org/publication/2014-global-landscapes-forum-final-report/(accessed on 22 July 2021).

Gong, P., Wang, J., Yu, L., Zhao, Y., and at el. (2013). Finer resolution observation and monitoring of global land cover: first mapping results with Landsat TM and ETM+ data. *International Journal of Remote Sensing*, *34*(7), 2607–2654. https://doi.org/10.1080/01431161.2012.748992

Gyamtsho, P. (2021). *The Decade to Restore Our Planet. Declaration on 2nd June 2021*. Available online: https://www.icimod.org/ the-decade-to-restore-our-planet/ (accessed on 27 September 2021).

Schall, P., Heinrichs, S., Ammer, C., Ayasse, M., and et al. (2021). Among stand heterogeneity is key for biodiversity in managed beech forests but does not question the value of unmanaged forests: Response to Bruun and Heilmann Clausen (2021). *The Journal of Applied Ecology*, *58*(9), 1817–1826. https://doi.org/10.1111/1365-2664.13959

Heinen, J. T., & Kattel, B. (1992). Parks, people, and conservation: A review of management issues in Nepal's protected areas. *Population and Environment*, *14*(1), 49–84. https://doi.org/10.1007/BF01254607

Homer-Dixon, T.F. (1994). Environmental scarcities and violent conflict: Evidence

from cases. *International Security,* 19(1), 5–40. https://doi.org/10.2307/2539147

Hrabovszky, J. P., and K. Miyan. (1987). Population Growth and Land Use in Nepal "The Great Turnabout". *Mountain Research and Development* 264–70. https://www.jstor.org/stable/3673203

Ives, J. (2004) *Himalayan Perceptions: Environmental Change and the Well-Being of Mountain Peoples*; Routledge: New York, NY, USA.

Ives, J.D.& Messerli, B. (1989) *The Himalayan Dilemma: Reconciling Development and Conservation*; Routledge: New York, NY, USA.

IUCN. (2021). We need to protect and conserve 30% of the planet: but it has to be the right 30% https://www.iucn.org/crossroads-blog/202108/we-need-protect-and-conserve-30-planet-it-has-be-right-30. Downloaded on03/09/2022

Jacquemet, E. (2017). Why do people come to see mount Everest? Collective representations and tourism practices in the khumbu region. *Revue de Geographie Alpine / Publiee Par l'Institute de Geographie Alpine , 105-3*. https://doi.org/10.4000/rga.3844

Jamil, I. & Baniamin, H.M. (2020). Caste, Ethnicity and Inequality in Nepal: Representative and responsive bureaucracy in Nepal: a mismatch or a realistic assumption?[Special Issue], *Public Administration and Policy: An Asia-Pacific Journal*, 23(2),141-156. https://doi.org/10.1108/PAP-03-2020-0016

Jana, S. (2007).Voices from the margins: Human rights crises around protected areas in Nepal. *Policy Matters*, *15*, 87–99

Johnson (Einführung und Kommentar), S. P. (1995). The earth summit: The united nations conference on environment and development (UNCED). *Verfassung Und Recht in Übersee*, *28*(1), 134–135. https://doi.org/10.5771/0506-7286-1995-1-134

Joshi, A. R. (2022), *Nepal was supposed to double its tiger population since 2010. It Tripled It. Mongabay Series: Conservation Effectiveness*. Available online: https://news.mongabay.com/2022/07/nepal-was-supposed-to-double-its-tiger-population-since-2010-it-tripled-it/ (accessed on 30 July 2022).

Kandel, P., Chettri, N., Chaudhary, R. P., Badola, H. K., and et al. (2019). Plant diversity of the Kangchenjunga Landscape, Eastern Himalayas. *Plant Diversity*, *41*(3), 153–165. https://doi.org/10.1016/j.pld.2019.04.006

Kane, S. and Dhiaulhaq, A., Sapkota, L.M.and Gritten, D. 2018 Transforming forest landscape conflicts: The promises and perils of global forest management initiatives such as REDD+. *Forest and Society*, 2, 1–17. https://doi.org/10.24259/fs.v2i1.3203

Kanel, K. and Shrestha, K. (2001). Tropical secondary forests in Nepal and their importance to local people. *Journal of Tropical Forest Science*, 13(4), 691–704.

K C, B., Race, D., Fisher, R., & Jackson, W. (2021). Changing Rural Livelihoods and Forest Use Transition in the Middle Hills of Nepal. *Small-Scale Forestry*, *20*(3), 479–501. https://doi.org/10.1007/s11842-021-09477-6

Kunwar, L. S. (2015). Emigration of Nepalese People and Its Impact. *Economic Journal of Development Issues*, 77–82. https://doi.org/10.3126/ejdi.v19i1-2.17705

LAHURNIP & NIWF (2020). Fact Finding Mission Report. In *Violation of Indigenous Peoples' Human Rights in Chitwan National Park of Nepal*; Lawyers' Association for Human Rights of Nepalese IPs (LAHURNIP) and National Indigenous Women Federation (NIWF): Kathmandu, Nepal, 2020

Lamichhane, B. R., Persoon, G. A., Leirs, H., Poudel, S., and et al.. (2018). Spatio-temporal patterns of attacks on human and economic losses from wildlife in Chitwan National Park, Nepal. *PloS One*, *13*(4), e0195373. https://doi.org/10.1371/journal.pone.0195373

LeBillon, P. & Duffy, R. V. (2018). Conflict ecologies: Connecting political ecology and peace and conflict studies. *Journal of Political Ecology,* 25**,** 239-260.

Lewis, S. L., Wheeler, C. E., Mitchard, E. T. A., & Koch, A. (2019). Restoring natural forests is the best way to remove atmospheric carbon. *Nature*, *568*(7750), 25–28. https://doi.org/10.1038/d41586-019-01026-8

Lunstrum, E. (2016). Green grabs, land grabs and the spatiality of displacement: eviction from Mozambique's Limpopo National Park. *Area*, *48*(2), 142–152. https://doi.org/10.1111/area.12121

Maharjan, A., Kochhar, I., Chitale, V. S., Hussain, A., & Gioli, G. (2020). Understanding rural outmigration and agricultural land use change in the Gandaki Basin, Nepal. *Applied Geography* , *124*, 102278. https://doi.org/10.1016/j.apgeog.2020.102278

MFSC. (2016). *Conservation Landscapes of Nepal*. Ministry of Forests and Soil Conservation (MFSC)

MFSC. (2015). Nepal Biodiversity Strategy and Action Plan 2014–2020; Ministry of Forests and Soil Conservation [MFSC].

Ministry of Forest. (1988a). *Forestry Sector Master Plan 1988 Main Report.* Ministry of Forest and Watershade Management.

Ministry of Forest (1988b). *Forestry Sector Master Plan 1988 Forest Development Plan for the Supply of Main forest products.* Ministry of Forest and Watershade Management

Minya, A.(2021). Ekai din 479 dadhelo: ahilesammakai sabai bhanda dherai (479 Forest Fires in a Single day). *eKantipure News*. 26 March 2021 Available online:

https://ekantipur.com/news/2021/03/26/16167199233075910.html (accessed on 12 July 2021).

Minya, A. & Pokharel, G. (2022). Barha barshamaa Tebbar bagh (Triple number of tigers within 12 years). July 30, 2022. *eKantipure News*. Available online: https://ekantipur.com/news/2022/07/30/165914536695461439.html (accessed on 30 July 2022).

MOA. (2016). *Project Document of Prime Minister Agriculture Modernization Project*. Ministry of Agricultural Development (MAD); Ministry of Agriculture Development.

MoFE. (2019). *Forest Act 2076*; Ministry of Forest and environment [MoFE].

MOFSC. (2015). *Strategy and Action Plan 2015–2025, Terai Arc Landscape*. Ministry of Forest and Soil Conservation [MOFSC] and Ministry of Forest and Soil Conservation.

MSFP. (2015). *Forestry Sector Strategy (2016-25)* A Joint Venture Project of UK, Finland and Swiss Government; of Nepal; Ministry of Forests and Soil Conservation; Multi Stakeholder Forestry Programme (MSFP). Ministry of Forest and Soil Conservation.

Novosad, P. & Werker, E. (2019). Who runs the international system? Nationality and leadership in the United Nations Secretariat. *The Review of International Organizations*, 14, 1-33. https://doi.org/10.1007/s11558-017-9294-z

NPC. (2014). *Agriculture Development Strategy (ADS) 2014-2025*. Ministry of Agriculture Development.

Nuberg, I, Shrestha, K. & Bartlett, A. (2019). Pathways to forest wealth in Nepal. Australian Forestry, 82, 106–120. https://doi.org/10.1080/00049158.2019.1614805

Pokhrel, M. (2021). Will Nepal Ever be Paid for Saving Trees? Lots of Pledges in Glasgow, But Doubtful if They will Actually Bring Nepal Cash for Protecting Forests. *Nepali Times*. Available online: https://www.nepalitimes.com/latest/will-nepal-ever-be-paid-for-saving-trees/ (accessed on 8 April 2022).

Ojha, H., Nightingale, A. J., Gonda, N., Muok, B. O., et. al., (2022). Transforming environmental governance: critical action intellectuals and their praxis in the field. *Sustainability Science*, **17**, 621–635. https://doi.org/10.1007/s11625-022-01108-z

Pant, D.P., Acharya, B. & Kattel, M.R. (2022). *Foreign Direct Investment in Nepal: Perspectives of Primary Agricultural Stakeholders*. Policy Research institute.

Paudel. D. (2016). Re-inventing the commons: community forestry as accumulation

without dispossession in Nepal, *The Journal of Peasant Studies*, 43(5), 989-1009

Paudel, G., Carr, J. & Munro, P.G. (2022). Community Forestry in Nepal: A Critical Review. *International Forestry Review* 24(1), 43-58, https://doi.org/10.1505/146554822835224810

Paudel, K., Potter, G.R. & Phelps, J. (2020) Conservation enforcement: Insights from people incarcerated for wildlife crimes in Nepal. *Conservation Science and Practice*, 2, e137. https://doi.org/10.1111/csp2.137

Paudyal, P., Kulasabanathan, K., Cassell, J.A., Memon, A., Simkhada, P. & Wasti, S.P. (2020). Health and well-being issues of Nepalese migrant workers in the Gulf Cooperation Council countries and Malaysia: A systematic review. *BMJ Open*, 10, e038439. http://dx.doi.org/10.1136/bmjopen-2020-038439

Pimm, S.L., Jenkins, C.N. & Li, B.V. (2018). How to protect half of Earth to ensure it protects sufficient biodiversity. *Science Advances*, 4, eaat2616. https://doi.org/10.1126/sciadv.aat2616

Poudel, M., Thwaites, R., Race, D. & Dahal, G.R. (2015). Social equity and livelihood implications of REDD+ in rural communities–a case study from Nepal. *International Journal of the Commons*, 9, 177–208. http://doi.org/10.18352/ijc.444

Prins, H., Liefting, Y., & De Jong, J. (2022). Marginal farmers carry the burden of damage caused by Asian elephants Elephas maximus in Bardiya National Park, Nepal. *Oryx, 56*(1), 73-81. https://doi.org/10.1017/S0030605319001431

Rai, R.K., Nepal, M., Karky, B.S., Timalsina, N., Khadayat, M.S. & Bhattarai, N. (2022) Opportunity Costs of Forest Conservation in Nepal. *Frontiers in Forests and Global Change*. 5, 857145. https://doi.org/10.3389/ffgc.2022.857145

Royo, A.A. & Carson, W.P., (2006). On the formation of dense understory layers in forests worldwide: consequences and implications for forest dynamics, biodiversity, and succession. *Canadian Journal of Forest Research,* 36, 1345-1362. https://doi.org/10.1139/x06-025

Saxena, A., Buettner, W.C., Kestler, L. & Kim, Y.-S. (2022). Opportunities and barriers for wood-based infrastructure in urban Himalayas: A review of selected national policies of Nepal. *Trees, Forests and People*, 8, 100244. https://doi.org/10.1016/j.tfp.2022.100244

Schall, P., Heinrichs, S., Ammer, C., Ayasse, M., et al. (2021). Among stand heterogeneity is key for biodiversity in managed beech forests but does not question the value of unmanaged forests: Response to Bruun and Heilmann Clausen (2021). *The Journal of Applied Ecology*, *58*(9), 1817–1826. https://doi.org/10.1111/1365-2664.13959

Schmid, D. V. (2022). Are forest carbon projects in Africa green but mean?: A mixed-method analysis. *Climate and Development*, 1–15. https://doi.org/10.1080/17565529.2022.2054400

Schroeder, R.F. (1985). Himalayan subsistence systems: Indigenous agriculture in rural Nepal. *Mt. Res. Dev*. 5, 31–44.

Schneck, J., V.L. Panadero, and B. De Ridder, (2020). The Restoration Initiative: a new model for partnerships on restoration. *Restoring the Earth-The next decade. Unasylva*,71(1), 3-8.

Seeland, K. (2000). National Park Policy and Wildlife Problems in Nepal and Bhutan. *Population and Environment*, *22*(1), 43–62. https://doi.org/10.1023/A:1006629531450

Shrestha, U.B., Shrestha, B.B .& Shrestha, S. (2010b). Biodiversity conservation in community forests of Nepal: Rhetoric and reality. *International Journal of Biodiversity and Conservation*, 2(5), 98–104.

Shrestha, U.B., Shrestha, S., Chaudhary, P. & Chaudhary, R.P. (2010b). How representative is the protected areas system of Nepal? *Mountain Research and Development*, 30(3), 282–294. https://doi.org/10.1659/MRD-JOURNAL-D-10-00019.1

Simkhada, P., Van Teijlingen, E., Gurung, M. & Wasti, S.P. (2018). A survey of health problems of Nepalese female migrants workers in the Middle-East and Malaysia. *BMC International Health and Human Rights*, 18, 4. https://doi.org/10.1186/s12914-018-0145-7

Springer, J. & Almeida, F. (2015). *Protected Areas and the Land Rights of Indigenous Peoples and Local Communities: Current Issues and Future Agendas*; Rights and Resources Initiative.

Stanturf, J.A. & Mansourian, S. (2020). Forest landscape restoration: state of play. *Royal Society open science*. **7**(12), 201218. https://doi.org/10.1098/rsos.201218

Subedi, S. R. (2022). *World Bank loan for GRID project against Nepal's interests*. *MyRepublica* (newspaper). August 31, 2022. https://myrepublica.nagariknetwork.com/news/loan-agreement-with-the-world-bank-against-nepal-s-interest/

Subedi, Y.R., Kristiansen, P. & Cacho, O., (2022). Reutilising abandoned cropland in the Hill agroecological region of Nepal: Options and farmers' preferences. *Land Use Policy*, 117, p.106082. https://doi.org/10.1016/j.landusepol.2022.106082

Subedi, Y. R., Kristiansen, P., Cacho, O., & Ojha, R. B. (2021). Agricultural Land

Abandonment in the Hill Agro-ecological Region of Nepal: Analysis of Extent, Drivers and Impact of Change. *Environmental Management*, *67*(6), 1100–1118. https://doi.org/10.1007/s00267-021-01461-2

Thapa, S. (2010). Effectiveness of crop protection methods against wildlife damage: A case study of two villages at Bardia National Park, Nepal. *Crop Protection* , *29*(11), 1297–1304. https://doi.org/10.1016/j.cropro.2010.06.015

Uddin, K., Shrestha, H. L., Murthy, M. S. R., Bajracharya, B., et al. (2015). Development of 2010 national land cover database for the Nepal. *Journal of Environmental Management*, *148*, 82–90. https://doi.org/10.1016/j.jenvman.2014.07.047

UNCCD. (2022). *The Global Land Outlook* (2nd ed); United Nations Convention to Combat Desertification (UNCCD) https://www.unccd.int/sites/default/files/2022-04/UNCCD_GLO2_low-res_2.pdf (accessed on 12 May 2022).

Veldman, J.W., Overbeck, G.E., Negreiros, D. et al., Mahy, G. et. al (2015). Where tree planting and forest expansion are bad for biodiversity and ecosystem services. *BioScience*, 2015. 65(10), 1011-1018. https://doi.org/10.1093/biosci/biv118

Veldman, J.W., Aleman, J.C., Alvarado, S.T., Anderson, T.M. et al (2019). Comment on "The global tree restoration potential". *Science*, 366(6463), eaay7976. https://doi.org/10.1126/science.aay7976

White, R.M. (1979). The World Climate Conference, Geneva, Feb 1979; report by the conference chairman. *World Meteorological Organization [WMO] Bulletin*, 28, 84–91. https://agris.fao.org/agris-search/search.do?recordID=XF19800502888

WMO. (1979). Proceedings of the World Climate Conference - a conference of experts on climate and Mankind. *World Climate Conference-1 (WCC-1) WMO-No. 537*. (12-23 February 1979; Geneva, Switzerland).

World Bank (2019). *Global Development Indicators: Open Data.* World Bank.

World Bank (1999). *Nepal and the World Bank Three decades of partnership*. Available online: http://web.worldbank.org/archive/website00811/WEB/OTHER/BA58AF89.HTM?OpenDocument (Accessed July 21 2022)

World Bank. (2021). *Nepal and World Bank Sign Innovative Financing Agreement on Forests and Climate Change for Building Back Greener*. World Bank press Release. Available online: https://www.worldbank.org/en/news/press-release/2021/02/26/nepal-and-world-bank-sign-innovative-financing-agreement (accessed on 7 July 2022).

WWF, MoF Nepal, GEF. (2018). *Integrated Landscape Management to Secure Nepal's Protected Areas and Critical Corridors. WWF/GEF Project 9437*. Availabe online: https://www.thegef.org/project/integrated-landscape-management-secure-nepal-s-protected-areas-and-critical-corridors (accessed on 24 January 2021).

WWF. (2022). *Government of Nepal launches new Integrated Landscape Management Project*. https://www.wwfnepal.org/?uNewsID=358411. (accessed on 24 June 2022).

Zhang, D. D. & Li, S. H. (2002). Optical dating of Tibetan human hand- and footprints: An implication for the palaeo-environment of the last glaciation of the Tibetan Plateau. *Geophysical Research. Letter*. 29, 16-1–16-3 (2002) https://doi.org/10.1029/2001GL013749

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