Chapter 7
Impacts of Economic Growth, Transportation, and Tourism on the Contemporary Environment

Abstract  First open to the outside world after the 1950s, Nepal has passed through different phases of economic development. It has advanced from a mixed type (1951–1980) to a fully liberal economy since the 1980s. However, the liberal economic policy prescribed by the International Monetary Fund and the World Bank has not only widened income inequality and disparity in resource sharing but has also made the economy very competitive and beyond the accessible limit to millions of low-income people. Trade deficits have increased, and many old industries that were established with the help of donors and lending agencies have been closed because of their inabilities to compete in the international markets. The disparity has been so extreme that the top 20% richest individuals control over 54% of the resources and the poorest 20% of the population has access to only 4% of the resources. Despite Nepal’s geographic location between two Asian economic giants (China and India), Nepal is yet to establish itself as a land-linked country from its current landlocked status and to rip benefits from its geostrategic location. Instead, Nepal has encountered economic blockades twice within the past three decades from its southern neighbor—India. Since the 2015–2016 economic blockade, Nepal’s focus has been shifted towards its northern neighbor, China, a deviation from century long special relationships with India.

Nepal experienced severe political upheavals due to the Maoist insurgency between 1996 and 2006. During this period, a large portion of the development budget was funneled to security spending, fully jeopardizing its economy and making millions of working-age people jobless. Historically, many countries either directly or through thousands of I/NGOs have found Nepal a political laboratory; this practice proliferated very quickly after the Maoist insurgency in Nepal either in the form of human rights or in various pretexts. Some I/NGOs found Nepal a favorite place for proselytizing people into Christian faiths in the pretext of social upward mobility of poor, especially the lower-caste Dalits.

Despite the claim of poverty reduction from 45% in 1985 to 15% in 2011, the widening gap between the rich and poor has made life harder for low-income people. Almost 8 million working-age people have emigrated to various countries in search of jobs to remit money back to their families; however, many are returning home in boxes. Within Nepal, due to unplanned bulldozer engineering in the name of road
and other developments while ignoring the land capability classes, millions of people have become development victims because of resulting landslides, floods, and other natural and mad-made calamities. In a seismically sensitive landscape, unplanned development has induced more inequality than ever before. Political leaders representing frontier areas (less developed areas) have undertaken various construction projects including the construction of roads. Road connectivity is a good step for development, but unplanned land excavation in the name of road construction, irrespective of the land capability, not only has created numerous environmental problems and rendered households homeless. The unplanned development approach has also aggravated rural communities from a self-sustained livelihood tradition with organic agricultural products to a dependent culture of consuming imported food products. Many productive farmlands are plotted for settlements, while others are left fallow that were previously used for organic farming. Ecosystem services are severely degraded. In order to improve the economy, bring the emigrated Nepali working-age people back home to restore the degraded environment; Nepal has a few options. These include but are not limited to (a) consolidation of fragmented farmlands; (b) providing incentives to utilize farmlands that have been left fallow and re-initiate organic farming on them; (c) creating favorable environments for foreign direct investment (FDI) and establishing various industrial estates; (d) producing electricity from available hydro resources; (e) regulating developmental activities based on land capability classes and making them environmentally friendly; (f) commoditizing resources of the mountain and undulated terrain to promote ecotourism; and (g) linking southern and northern neighbors with electric railways making Nepal a land-linked instead of a landlocked country. These steps might help not only reviving the currently distorted social fabric and restoring ecosystem services, but they may also help improve the Nepali economy.

Keywords Nepal · Income inequality · Backwash · Spread effects · Railway · Ecotourism · Sustainability · Commoditization · Ecosystem services

7.1 Introduction

This chapter presents a nexus among economic growth, income inequality, and contemporary environmental conditions in Nepal. It starts with a brief historical account of Nepal’s economic growth followed by a theoretical debate on income inequality and disparity. In the theoretical debate, it discusses how the cumulative movement of resources from less developed to more developed areas followed by “backwash” and “spread effects” further enhances the income inequality leading to environmental degradation. This is followed by a discussion on the interrelationship between socioeconomic inequality and environmental sustainability. Land use practices are considered as major factors of environmental conditions and economic growth (Chaps. 2, 3, 5, and 8) because the daily activities of almost 2/3 of the total
population of Nepal is tied to agriculture. In addition, it discusses how intricately linked economic growth, land use practices, and environmental conditions are and how Nepal has been and may continue to be impacted by road construction, air connectivity, and the tourism industry.

The theoretical debates on economic growth and development began in the mid-twentieth century with the start of various movements for decolonization (Kanbur 2018; Naude 2013). Over time, the concepts of World Systems Theory, Globalization (Naude 2013), Supranationalism, and 3C model (Ohmae 2005) came into discussion as economic cooperation became more useful than the military alliances in improving peoples’ living conditions. With much emphasis on multilateral relationships, international cooperation started at various levels. However, despite the flow of capitals from donors to recipient countries, many developmental projects did not take off, and many project leaders ignored environmental concerns (Kronenberg 2014; Plieninger et al. 2012). Then the concepts of sustainable development (IISD n.d.), entrepreneurship (Amiri and Marimaei 2012), and

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1Natural resources are environmental factors that are tied to the livelihood of people. Poverty leads to the over extractions of these resources, for example, the conversion of forest into farmlands for food supply. Extensive agriculture and its modernization with mechanization, use of hybrid seeds, and chemical fertilizers often lead to environmental degradation. For example, farmers are often subsidized to buy machineries and chemicals to modernize agriculture; however, the sustainability of these practices is questionable.

2After the devastation of European countries from the World War II, in 1944, Belgium, the Netherlands, and Luxembourg (BeNeLux) came together to ease their existing trade and transit barriers. With this exemplary initiative, the economic forces of globalization have motivated the nation-states of Europe to work together realizing that teamwork would help progress the economic front faster than working separately. It was realized that by utilizing some centripetal forces such as common culture, the Indo-European language, and Christianity, many nation-states could work together for economic prosperity. With the objectives of utilizing centripetal forces, 27 European countries came together, eased their tariff and trade barriers, and agreed on the voluntary association in economic, political, or cultural spheres with some measure of sovereignty for their mutual benefits.

3Kenichi Ohmae of Japan came up with the idea that the 3C (corporation, customer, and competition) must be in balance in the form of a strategic triangle for sustainable competitive advantages.

4Ecological and social progress should go hand in hand to achieve both conservation and economic gains. Unfortunately, many of the development projects are operated without proper environmental impact assessments (EIA). For example, out of 11,155 operated between 1747 and 2007, only 17.6% of the World Bank run projects encountered both conservation and economic gains. A majority of the projects failed to quantify production functions and identify trade-offs among multiple ecosystem services and the design of appropriate monitoring programs.

5Our Common Future, also known as the Brundtland Report, development that meets the needs of the present without compromising the ability of future generations to meet their own needs is the main motto of sustainable development. Sustainable development aimed at maintaining the equilibrium between nature and society while fulfilling all aspects of societal demands without hampering the ongoing natural ecosystem.

6Planning and organizing small business ventures through the mobilization of people and resources to meet people’s needs.
cooperatives (Poudel 2019) came into practice to accelerate the pace of sustainable economic growth and to alleviate poverty through participatory approaches. After turning to entrepreneurship and cultivating on laissez-faire economies (Tucker 2017), many Asian countries including Japan, South Korea, Singapore, Hong Kong, and Taiwan (Radcliffe 2017; Gaw 2016) (and mainland China) made many spectacular economic strides. The idea of entrepreneurship and institutional reforms became popular for the proper identification, management, allocation, production, and consumption of resources. Following similar approaches like the 3C model, various economic activities were implemented in different parts of the world to move from low value added, low productive, and rural-based economic activities to more productive, higher value-added activities in services and manufacturing industries located in bigger cities. These activities obviously created income inequality and disparity and many environmental concerns. The issue of income inequality (Gini coefficient) (Chappelow 2019) became a serious debate, while evaluating various contemporary environmental conditions.

Contemporary environmental conditions had a direct influence on economic growth, because a society needs to adapt to the changing environmental conditions by adapting to threats posed by climate change, land use change and biodiversity loss (Chap. 8), deteriorating water quality (Chap. 6), resource supply, migration (Chap. 2), and food security (Chap. 5). Economic growth and environmental

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7 Cooperatives are locally organized self-help groups for undertaking different activities including production, marketing, supplies, finance, and providing services. They follow the bottom-up structure in its governance and function locally; they may potentially serve as effective organizations for agricultural production, natural resources conservation, and economic development.

8From an economic perspective, disparity and inequality have different meanings. Disparity refers to a situation where income varies among people having the same/similar academic qualifications, skills, and experiences. However, inequality refers to a situation where possession of resources varies across the population living in a certain geographic area, for example, near-landlessness and landless vs. large productive landholders. In the case of environmental analysis, disparity and income inequality are used synonymously because of their nexus to land uses either for the living (farming) or for developmental activities.

9Environmental concerns are associated with political, economic, social, and technological factors. Thus, environmental assessments research and scientific cooperation are needed to provide future insights for development keeping high priorities on environment.

10 Italian Statistician Corrado Gini in 1912 developed a statistical tool to measure the economic inequality. It measures income/wealth distribution among a population ranging from 0 (or 0%) to 1 (or 100%). The value of 0 represents perfect equality, and 1 represents perfect inequality. Values over 1 are theoretically possible due to negative income or wealth. It is generally measured in percentiles in a population. In theory, at the global scale, the Gini index increased over the nineteenth and twentieth centuries, but it has declined in more recent years. The Gini index is often represented graphically through the Lorenz curve, which shows income (or wealth) distribution by plotting the population percentile by income on the horizontal axis and cumulative income on the vertical axis. However, the metric’s accuracy is dependent on reliable GDP and income data. Since many economic activities today are influenced by informal economic activities, the Gini index of measured incomes may overstate true income inequality. Accurate wealth data is even more difficult to come by due to the popularity of tax havens. In addition, in the Lorenz curve, it obscures information about the “shape” of inequality.
conditions are intricately linked (United Nations 2015a, b). Changing environmental conditions influence species diversity (Chap. 8) because different species have specific roles in an ecosystem’s functioning and services including the overall biomass production (Tilman et al. 2014). However, it is not clear yet what functions performed by a particular species can be compensated by other species (Mouillot et al. 2013) in the context of global climate change (Chap. 3). Further research is needed to quantify ecosystem resilience (Mori et al. 2013) and to understand how intraspecific and community activities (Bjorkman et al. 2018) change in relation to specific disturbances within and across biomes (Kissling et al. 2018) as the global climate changes.

Biodiversity strongly determines ecosystem functioning and ecosystem service delivery (Harrison et al. 2014) and the primary land productivity (Cardinale et al. 2012). Rich biodiversity means more nutrient mineralization, more carbon sequestration, high land productivity (Foley et al. 2011), and greater prosperity to derive economic growth through improved land productivity (Seufert et al. 2012). In order to maintain both biodiversity and land productivity under the changing climatic conditions, it is essential to skillfully maneuver human capital (Jung et al. 2017), natural capital (Ellis 2000), social capital (Dubos and Cook 2017), physical capital (Joshua 2016), and financial capital (Kiptot and Franzel 2014). Since biotic (species composition), abiotic (landscape, soils), and atmospheric compositions are interconnected, a whole system approach is needed that considers all these factors as an intricate unit. The whole systems approach takes into account the economic growth, transit system, and tourism vis-à-vis the contemporary environment. The relationships among various factors need to be coordinated in space and time depending upon the types of topography and soils.

It has been estimated that almost 1/3 of the world’s soils are degraded. Their productivities are below expected levels making ecosystem services ineffective (FAO and ITPS 2015). Many soils are losing organic contents due to erosion, landslides, contamination, excavation, sealing, compaction, salinization, acidification, and eutrophication (Kibblewhite et al. 2008) which will lead to a decline in biodiversity. Good quality soil is essential for ensuring human well-being (Amundson et al. 2015) and will facilitate an improvement in land productivity. The world faces major challenges in the protection and restoration of soils. Nepal is no exception, especially in the context of the recently developed culture of bulldozer engineering for various developmental activities in many frontier areas, irrespective

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11 Human potential capital has its roots in the Sustainable Livelihood Analysis (SLA) framework. Natural capital, such as the quantity and quality of land, is associated with land productivity, and the land productivity is associated with the levels of farm production. Sound human capital is an indicator of efficient labor production and increased household incomes. Social capital is associated with peoples’ activities that can help market participation to improve economic growth. Physical capital incorporates machinery, equipment, plant, and transportation facilities. In the traditional industrial economy, physical capital plays a leading role in increasing revenue. Financial capital enables farm households to purchase materials to increase production and household incomes. Financial capital also enables a family to acquire good education.
of the slope and soil types and the nature of erodibility. Many key strategies are needed to improve and conserve soil quality. Lal (2015) suggests reducing erosion, retaining and increasing organic soil matter, maintaining appropriate soil micro- and macronutrient profiles, promoting soil biodiversity, and enhancing rhizosphere processes to restore the quality of soil. Planners and policy makers and land use planners (herein after development experts) need to realize that organic matter content in soil needs to be increased in order to improve land productivity by establishing perennial grasslands or forests. This can be achieved by increasing inputs of organic matter by reducing tillage and carefully regulating the current bulldozer engineering-based development to minimize the number of development victims.

Nepal’s undulated landscape is very sensitive to various factors such as rainfall patterns, landslides, soil erodibility, seismic vibrations, and vegetation losses in the context of rapid climate change (Chap. 3). These factors influence the energy cycle of terrestrial and aquatic ecosystems that affect soil carbon, water, and nutrient status (Ciais et al. 2013). Increasing gaseous emissions from various developmental activities, including industrial emissions, raises the level of atmospheric CO₂. Rising CO₂ levels have the potential to stimulate plant productivity (Zhu et al. 2016; Lindner et al. 2014; Donohue et al. 2013), if other growth factors such as moisture and soil conditions are favorable. However, when this carbon is overaccumulated in the atmosphere, it accelerates the climate change via increasing temperatures. As temperatures rise, soil rapidly loses carbon, moisture, and organic matters (Schmidt et al. 2011), and soil productivity decreases (Frank et al. 2015). When temperatures continue to increase in the absence of soil moisture, decomposition rates of various materials slow down (Camino-Serrano et al. 2016). Changing temperatures, soil moisture, and decomposition of organic soil matter (Aerts 2006) affects plant productivity. This nexus has potential effects on climate change, whereby relatively small changes in ecosystem services, such as vegetation productivity and losses, may result in massive carbon releases (Lindroth et al. 2009), and forest dieback is likely to occur in areas affected by climatic extremes (Seidl et al. 2014) (Chaps. 3 and 8). In the case of Nepal, such changes become very sensitive because a massive release of carbon into the atmosphere may cause the melting of the Himalayas glaciers (Chaps. 3 and 6). These extreme events, including storms, floods, forest fires, droughts, or heatwaves, affect ecosystem services and land productivity and hence the economy.

Climate change influences the hydrological cycle including the groundwater recharge (Cisneros et al. 2014). The loss of vegetation coverage decreases transpiration but increases evaporation due to direct solar irradiance. The decrease in transpiration and increase in evaporation means lower rates of decomposition, interferences with the biogeochemical cycle, a decrease in biodiversity, and diminishing land productivity. With the loss of vegetation, especially in the hardwood tropical forest, it is suspected that by 2050, significant changes will be noticed in river flow regimes because it will affect the snow and ice status of the Himalayas. The loss of hardwood coverage will lead to a massive release of carbon into the atmosphere, though the magnitude of loss varies by geographic locations (Schewe
et al. 2014). The massive release of carbon into the atmosphere affects the hydrological cycle, which in turn affects the biodiversity and land productivity.

After this brief overview, this chapter is structured as follows. First, it presents the historical background of Nepal’s development. Second, it presents a theoretical discussion on how income inequality is affecting environmental conditions. Third, it talks about how the development of the roads and their connectivity with the aviation industry is impacting the tourism industry and environment. Fourth, it discusses how the tourism industry can assist in economic developments without damaging Nepal’s environment. Finally, it discusses how income inequality, road and air connectivity, and the tourism industry can contribute to Nepal’s overall economic development while preventing environmental deterioration.

7.2 History of Nepal’s Development

After the Gorkha ruler, King Prithvi Narayan Shah, conquered the Kathmandu Valley in 1768, Nepal became a unified kingdom. Nepal’s boundaries were laid after the Anglo-Nepal War (1814–1816). In 1846, the Rana family took over the reign of Nepal, under which prime ministership was to pass from brother to brother within the Rana family. During that time, Nepal’s monarchy became a titular head under the powerful Rana Prime Minister, and the country was completely cut off from the outside world. After the political protest by the Nepali Congress Party against the autocratic Rana rules for a long time in general and more forcefully from 1950 to 1951, the Rana were forced to yield spaces to democratic and progressive forces. A joint government of Ranas and democratic forces was formed, and subsequent changes eliminated the Ranas from the governance. After the abolition of the autocratic family rule of the Rana, Nepal remained open to the outside world. Since then Nepal has experienced several changes. These changes have had multifaceted influences on the Nepali economy in various periods.

Since Nepal was closed to the external world until the 1950s, whatever economic development occurred was premised primarily on the mobilizations of internal resources until that period. The traditions of presenting an annual budget in Nepal began in 1951 (March 1951 to February 1952), which was one of the new changes brought about immediately after the overthrow of the Rana regime. The budget12 amounting to slightly over half a million dollars was presented through Radio Nepal by erstwhile Finance Minister, Mr. Subarna Shamsher Rana, under the Premiership of Mr. Matrika Prasad Koirala. This budget targeted to collect around $0.45 million in revenue from various sources (MyRepublica 2017a, b).

12The tradition of presenting a budget was to promote awareness and capacity of citizens and government officials at various levels through a public dialogue about public expenditures. It was also meant to introduce the system of social accountability through the transparent budget processes in order to reduce waste and corruption.
Before the 1950s, except for the ropeway connecting Bhainshe (Makawanpur, Hetauda) to Kathmandu, Tribhuvan Rajpath Highway (connecting Birgunj and Kathmandu), and a hydropower plant at Pharping (500 kW) installed in 1911 during the reign of Prime Minister Chandra Shamsher Rana, other developmental activities in Nepal were nonexistent. Historically, Nepal’s merchants were actively involved in the circulation of industrial commodities with British, American, Japanese, and Indian textiles in different bazaars of Nepal. They also dealt with large Indian wholesale houses in Kathmandu and northern Indian cities. In 1939–1944, Prime Minister Juddha Shumsher Rana tried to revive the country’s indigenous textile production, which had eroded due to the imports of textiles from outside since the mid-nineteenth century (Sangroula 2019). Within a short interval, the indigenous textile products were overproduced, the Western markets searched for new outlets for overproduced goods in the 1920s and 1930s, and they needed additional markets. Nepal’s “revolution” of 1950–1951 bought changes and created power classes among the indigenous business population. The power classes were close to the ruling elites, and they started influencing Nepali businesses. Many elites were from India who sought to influence the Nepali ruling class (Mikesell 2001; Bhattarai 2003).

China has been expressing its continuous but non-interfering interest in Nepal’s development since the 1960s, especially after signing the Friendship Treaty between the two countries; however, its activities in Nepal were closely watched (Sangroula 2019: xviii). The first elected Prime Minister, Mr. B. P. Koirala, took a courageous step to strengthen the Nepal-China relationships, despite India’s displeasure. India considered B. P. Koirala as an architect of the deepening of Nepal-China relationships and considered him an obstacle to the establishment of India’s hegemony in South Asia in general and Nepal in particular. King Mahendra’s ambition to establish a direct rule in Nepal and India’s tacit support to dislodge Koirala, encouraged King Mahendra to disband the Koirala’s government that was formed with a 2/3 majority. PM, Mr. Koirala was imprisoned without any judicial trial. He was released in 1968 after he suffered from cancer. Members of the Koirala cabinet and hundreds of Nepali Congress leaders were imprisoned, and some were beheaded (Plate 7.1). Many member of the Nepali Congress Party became underground, their properties were confiscated without giving any justification, and big buildings of the 13The economic engagement between Nepal and India is centuries old and still growing. Before 1950, external trade of Nepal was heavily dependent on India and to some extent on Tibet, China. The share of India in the international trade of Nepal was 90% until the 1970s, which gradually shifted to other overseas countries due to increased export of ready-made garments, carpet, pashmina, and handicraft products to Europe and the United States. The trend continued until 1995–1996, until the situation was reversed by revision in a bilateral trade treaty that provided duty-free access to all Nepali products in India on the basis of Certificate of Origin provided by Nepali authorities.

14Nepal’s royal government gave permission to the United Mission of Nepal, a Christian missionary agency, establishing its office in Nepal, in 1954. An International Institute of Language was also established in Nepal in 1956, “which acted against China from Kathmandu.”
Shamsher Bahadur Khatri was gunned down and beheaded in Dhurkot of Gulmi District for opposing the dismissal of B. P. Koirala’s elected government by King Mahendra. After dismissal, Prime Minister Koirala was sent to jail without any legal notice. Opposing this action, some youths in Amarpur Village (Amarpur Gaon Palika in the current federal structure, located at about 4 h. walking distance from the Gulmi District’s headquarters Tamghas) assembled in a local school compound under the leadership of Shumsher Bahadur Khatri. Government spies informed this activity to government authorities in Tamghas. A team of the Royal Nepal Army immediately rushed to Amarpur and surrounded the assembly. One of the soldiers of the Royal Nepal Army gunned Shumsher Bahadur Khatri on his chest. While Mr. Khatri’s body was restless on the ground, a police constable named Rail Bahadur, beheaded Mr. Khatri. Police forcefully dragged Late Khatri’s best friend, Dal Bahadur Mahat, a scholar and poet, to the incidence site and asked him to put Late Khatri’s head on a bag and take it to the district headquarters Tamghas. Mr. Mahat was reluctant to do so, but after he was bitten mercilessly, Mr. Mahat was left with no option but to follow police’s order. On the way, despite Mr. Mahat passed out, signaled for drinking water, he was denied, instead he was bitten mercilessly. Once the head of Shumsher Bahadur was brought to Tamghas, it was hanged on a Lankuri tree (Fraxinus floribunda) at Chidichaur (close to the local High School) for a few days. Mr. Chandra Man Thakali, District Chief Officer of erstwhile His Majesty’s Government of Nepal, asked people of Gulmi-Arghakhanchi-Isma district (all were in one district at that time) to visit Tamghas to watch the hanging head of Late Khatri. Each visitor was given a message that if anyone associates with the Nepali Congress Party, the person will have the fate of Late Khatri. People were terrified. Mr. Tikaram Khanal of Khana (now in Arghakhanchi district) who was arrested in Amarpur was taken to Dhurkot Rajasthal and buried alive. Since Mr. Khanal was buried under wooden logs, he did not die for 3 days. He asked for help from the ditch, but Royal Nepal Army prohibited anyone to help Mr. Khanal. Yet, another companion of Late Khatri, Mr. Moti Prasad Bhusal of Wangla (now in Arghakhanchi), was taken to a nearby pond in Amarpur and tied to a Maula (wooden pole meant to sacrifice animals). First, his genital parts were slashed, then ears, nose, arms, and limbs were chopped, and was left to die by bleeding. He died with last words “Jaya Nepal.” Locals of Wangla have established a Moti Library in his honor. Every year, in the martyr week, political leaders and public garland the statue of Late Khatri and memorize his contributions. [This narrative was composed based on the discussion with Mr. Bhuwan Shrestha and Mr. Trailokya Sen and the nearest relatives of Late Mr. Khatri of Gulmi district]. (Photo by Keshav Bhattarai, January 07, 2020)
Nepali Congress Party leaders/cadres were confiscated for government uses. Hundreds of hectares of agricultural lands and private forests areas owned by the Nepali Congress Party leaders/cadres were converted into recreational and conservation places.

After disbanding Koirala’s government, King Mahendra imposed a party-less Panchayat system in 1960 and played China’s and India’s cards as needed to strengthen his reign. Many admire these policies of King Mahendra as tactical and wisest strategies to strengthen Nepali nationalism to provide a strong shield against the Nehru doctrine, which literally considers Nepali Himalayas as northern protective fortress of Nepal, Bhutan, Sikkim, and India. Nehru’s doctrine15 had many hidden agendas that were never understood fully. For example, there were 18 Indian military check posts in the northern part of Nepal (RSS 2006) (does not include the military base camp at Kalapani). These check posts were removed during the Premiership of Kirti Nidhi Bista (Nepal) and Atal Bihari Vajpayee (India) in 1969. The Indian military base camp at Kalapani still operates within the territory of Nepal, where 640 sq. km area of Nepali land has been unilaterally taken by India.

Even after disbanding the Koirala’s government, King Mahendra16 followed many developmental blueprints of B. P. Koirala. One of such blue prints was the Tarai resettlement program similar to the Kibbutz system of Israel by clearing the dense forest along the Nepal-India border.17 Later, the United States helped in the malaria eradication program in the Tarai starting from the Chitwan Valley. Additionally, King Mahendra also institutionalized the National Planning Commission meant for the periodic planning of Nepal. Furthermore, King Mahendra proactively undertook several development programs. The east-west highway (connecting Meki in the east to Mahakali in the west) and Kodari Rajmarg (connecting Kathmandu-Tibet at Tatopani) were his creations.

Among the industrial activities, the Biratnagar Jute Mills, Janakpur Cigarette Factory, Birgunj Sugar Mills, Hetauda Industrial Estate, Balaju Industrial Estate, Pokhara Industrial Estate, Butwal Textile Industry, and Bhairahawa Sugar Mills

15. “...Our northern or north-eastern approaches consist of Nepal, Bhutan, Sikkim, Darjeeling and the Tribal Areas in Assam. From the point of view of communications, they are weak spots. Continuous defensive lines do not exist. There is almost an unlimited scope for infiltration. Police protection is limited to a very small number of passes. There too, our outposts do not seem to be fully manned.” (RSS 2006:1).
16. One of the authors had a chance to briefly speak with Mr. Kirti Nidhi Bista (deceased 17 Nov. in 2017), who served as the Prime Minister for four times during Kings Mahendra (two times), Birendra (one time), and Gyanendra (one time as one of the chairs of the Council of Minister) reigns. He revealed that in a few meetings, King Mahendra said, “a Prime Minister should be like B. P. Koirala when it comes to revealing facts, nationalistic stand, and bold decision-making.”
17. Originally, B. P. Koirala proposed the Israeli style of settlement plans in the Tarai region of Nepal to increase agricultural production and settle ex-military personnel retiring from Indian and British military with a hope that they will transform their knowledge gained from their jobs. Since large-scale irrigation was difficult at that time, Mr. Koirala initiated having big ponds to harvest rainwaters for irrigation purposes. Many community fishery farms are still in practice in those ponds in the Tarai region today.
were established with the cooperation of various donors. Several institutions such as the Industrial Enterprises and the Salt Trading Corporation were also established including the academic think tanks at Tribhuvan University, the Center for Nepal and Asian Studies (CNAS), and the Center for Economic Development and Administration (CEDA). King Mahendra died in 1972 in Chitwan following a cardiac arrest while he was on a hunting trip. His successor King Birendra institutionalized developmental activities by dividing Nepal into five development regions incorporating Nepal’s three physiographic regions—Mountains, Hills and Tarai. However, despite the concept of regional development connecting three ecological region of Nepal, there was no proper decentralization of power.

On May 16, 1975, India annexed Sikkim. According to some Nepali Congress political leaders, Indian Prime Minister Indira Gandhi asked B. P. Koirala to meet with her to make strategies to install Koirala as the head of the state of Nepal by dislodging the monarchy, but Koirala refused to meet with her. He felt that Nepal’s sovereignty was in danger like that of Sikkim. Thus, he returned to Nepal despite having several legal cases pending against him that could have put him on death cell. As B. P. Koirala returned home, democratic awareness rose even in Nepal’s rural areas. While democratic awareness was in the offing in Nepal, former Prime Minister of Pakistan, Zulfiqar Ali Bhutto, who was facing a legal trial on the charge of murdering of his political rival, was assassinated by hanging. Students in Nepal protested against the assassination of Pakistani’s former Prime Minister outside the Pakistani Embassy in Kathmandu. Nepal security forces baton-charged students with water fountains/streams, tear gas, and rubber bullets. The protest movement gradually turned into an anti-Panchayat movement. The protest movement forced the direct ruling of King Birendra to announce a referendum on the party-less Panchayat system giving a choice between a reformed party-less Panchayat system and a multiparty system of governance. During the referendum, the party-less Panchayat system was endorsed by a narrow margin.

Realizing that Nepal’s political system became stable, His Majesty’s Government of Nepal introduced some economic reforms and accepted recommendations from the World Bank and the International Monetary Fund (IMF) aiming to:

(a) Increase investment and reducing subsidies on various sectors
(b) Accelerate the efficient use of domestic and foreign resources
(c) Promote exports
(d) Strengthen the country’s budgetary system with external finances
(e) Maintain a realistic monetary exchange rate

18King Birendra also proposed the “Nepal Zone of Peace (ZoP)” during his coronation ceremony in 1975. King Birendra formally asked the international communities to endorse his ZoP proposal and that the United Nations should declare Nepal a ZoP to give a new dimension to the Nepalese non-alignment foreign policy. However, India did not endorse it.

19Many people from various regions of Nepal including Indian citizens were settled in the Tarai by clearing the dense forests. Some were granted large chunks of forest by the direct decree of King Birendra. In return, the new settlers were coerced to cast their votes in favor of the Panchayat system during the referendum. These rigging practices were the major factors that led to the defeat of the multiparty option by a narrow margin.
(f) Liberalize foreign trade and industrial policies
(g) Reduce and improve the focus of government interventions in the agricultural sector
(h) Restructure of public sector enterprises and improve their administration
(i) Improve the administration of development expenditures

Starting in the late 1980s, Nepal embarked on the path of economic liberalization (Rankin 2004). In these endeavors, Nepal introduced the “Privatization Act, Industrial Enterprise Act, Foreign Investment and Technology Transfer Act, Industrial Policy, and the Trade Policy Act,” among others (Bastola and Sapkota 2015:199). Though the private sector took the leading role in the economy, the private sector took initiatives only in low-risk sectors, such as highly profitable social, financial, and aviation areas. Entrepreneurs did not feel secured to invest in manufacturing areas, agriculture, and power sectors because of militant trade unions, political instability, frequent power outages, a weak infrastructure, frequent strikes, and administrative red tape (Shrestha 2016).

At the international forum, “Nepal affiliated with regional trade agreements, such as the South Asian Free Trade Area (SAFTA) and the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC)” (Bastola and Sapkota 2015:199). Nepal successfully received access to the World Trade Organization (WTO) in 2004 to be with the global trading system. Though these steps may have had tremendous impacts on Nepal’s economy with global exposure (Shrestha 2016), these activities also increased inequality in the Nepali society (Sangroula 2019: xv–xvi).

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20The “myth of neoliberalism” “introduced right after the 1990 political change, privatized all the nascent foundation of industries. The World Bank injected Western capitalist ideas under the structural adjustment policy, which pushed Nepal’s economy into the hands of “middlemen, smugglers, and unethical corporatist financiers.” These activities ruined the industrial growth rate of 16%. The trolley bus installed with the help of China was privatized, and buses and other logistic were indiscriminately auctioned.

21Having access to the World Trade Organization (WTO) international organizations such as the South Asian Free Trade Area (SAFTA) and Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) would help Nepal to diversify trade and trade risks associated with reliance on a few international markets. Despite election rhetoric and political ideological affiliation and it’s theoretical belief of regulating trade and business by the government, no matter which party comes to power, Nepal has given continuity to trade openness; however, it has benefitted the least from the open economy, even after accession to the WTO. Mainly this is because of Nepal not having her significant export materials. Unfortunately, in each successive years, the import has increased. Increasing import without export has widened the trade deficit, which is turning into a serious concern.

22In manufacturing, in the name of privatization, public industries were sold without proper evaluations. This happened even though Nepali industries cannot compete with the goods produced in India and China, both of which have economies of a larger scale. Dumping of cheap goods from neighboring countries is killing off domestic production. The Industrial base has been ruined. Industrial growth came down from 8.7% in 1990 to 1.8% in 2000. There is negligible protection for industries and great difficulty in stopping smuggling of commercial products through the Nepal—India porous border. Actions to control smuggling were ineffective.
While the country had just embarked to implement the neoliberal agenda, in 1988, King Birendra’s government imported some light arms and antiaircraft guns from China. India resented this and refused to renew its trade and transit treaty with Nepal. India saw this as an attempt by Nepal “to play the China card against India.” India imposed an economic blockade that lasted for over a year. The blockade caused shortages of goods and petroleum products into Nepal. Nepal was forced to airlift petroleum products from Bangladesh apart from importing oil from China. Imports of oil from both Bangladesh and China proved costly. Since importing oil from China requires the crossing of high altitude routes, vehicles used in ferrying oil from China developed serious problems (Jha 2015). The shortages of essential goods caused massive resentment in the people against the royal palace because of the increasing costs of commodities. This situation triggered movement against the Panchayat system in favor of the restoration of the multiparty democracy. The Nepali Congress Party led the movement.

The 1989–1990 movement succeeded in the reestablishing of a multiparty democracy in Nepal with a constitutional monarchy. While the democratic system was barely in place, a fraction of the political forces, the Maoist Party, expressed displeasure with the constitutional monarchy and Westminster Parliamentary system. The Maoist party also expressed its discontent on the 1950s Nepal-India Friendship Treaty stating this treaty as unequal as it puts Nepal as subordinate to India. The Maoist Party launched an armed attack against the parliamentary democracy and constitutional monarchy from 1996 to 2006.

While the Maoist arm conflict was at the climax, the royal family of King Birendra was decimated on June 01, 2001 under mysterious circumstances. This incident raised several questions such as how and why this happened and who was behind it. All these questions are still unanswered. This incident put Birendra’s brother Gyanendra on the royal throne. People disliked King Gyanendra’s autocratic ruling practices. The decimation of the royal family gave extra courage to the Maoist insurgency.

The Maoist insurgency and the government counter actions not only took the lives over 17,000 people but also damaged the social fabric of Nepal. Many lost hope of economic prosperity. Frustration piled up among all classes of people; crime rates increased. Since then there has been mass exodus in the range of 1200–1500 working-age people per day in search of livelihood (MyRepublica 2017a, b).

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23 The Maoist insurgency from 1996 to 2006 damaged many physical and social infrastructures, and Nepal plunged into deeper political and economic crises. Many foreign agencies openly interfered in Nepal’s political discourses making Nepal’s socioeconomic, cultural, political, and demographic situations worse. Proselytizing to the Christian faith increased, and churches were established in many places.

24 The current trend of Nepali youths going abroad for overseas employment has continued for more than a decade. Such exodus will have a negative impact on the social, economic, and cultural aspects of the country. According to the National Human Rights Commission of Nepal, over 3.5 million Nepali youths are currently working abroad apart from India, and around 3–4 million youths are in India for jobs. Similarly, 1.2 million Nepali are in Qatar and Saudi Arabia alone. If all
When the Maoist insurgency started, there was a sharp increase in security spending by the government that resulted in a decline in real investments on development and nature conservation which obviously not only has had long-term impacts on economic growth but also on the contemporary environment. In addition to these direct costs, the conflict also resulted in significant indirect costs, such as disruptions in trade and commerce, loss in tourism revenue, a toll on children, loss of infrastructure, and a reduction in foreign investments. Between 1996 and 2006, the opportunity cost of the conflict in terms of lost output rose to 3% of Nepal’s GDP (Pradhan 2009).

While the Maoist insurgency was about to be settled with the negotiation between the Seven Party Alliance (SPA) consisting of mainstream parliamentary parties and the Maoist Party, people in Madhesh (Tarai of Nepal) demanded one Madhesh and one Pradesh under the new federal structure. There was a massive Tarai uprising. If this demand met, it would include all 20 districts that incorporates Tarai (Jha 2015:1):

23 percent of Nepal’s geographic land, 51 percent of the total population, accounting for 59 percent of the GDP, 76 percent of the government’s annual revenue, 66 percent of the total cultivable land, 57 percent of the cereal crops production and two-thirds of the industrial production, but with only 10 to 15 percent of representation to the court, cabinet, parliament, and national level political parties.

The Tarai-Madhesi people argued that they have been the major victims of internal colonization and of failed development. Thus, they want a separate province from the Hills and Mountains. India has clandestinely supported the demand of the Tarai-Madhesh people.

Many development programs/processes started while Nepal was under the multiparty democratic system from 1990 (Pradhan 2009). Between 1990 and 2001, Nepal’s aggregate GDP increased by 5.3% per year, and per capita income increased by more than 2.5% as the economy responded to macroeconomic stability and liberalization (Rankin 2004: p166, Liechty 1995: p170). The gross national product this work force returns home at once, it will impact Nepal severely. It is hard for Nepal to bring all emigrated Nepali home easily. For instance, to bring 1.2 million home, it takes around 18 months by air, 9 months by ship, and 8 years through the existing processes.

25This was led by the Nepali Congress Party leader Girija Prasad Koirala.

26Almost 90% of Nepal’s primary-aged schoolchildren are now enrolled in school. The infant mortality rate has dropped from 165 (per 1000 live births) in 1970 to 48 in 2006. Although still among the lowest in South Asia, life expectancy at birth has increased to 63 years in 2007 and 72 years in 2019.

27Owing to the free market policy embedded in neoliberal structural adjustment, export-oriented growth emphasis ironically spawned an era of import boom, leading to new patterns of commoditization. The effect of trade liberalization was all too conspicuous; the volume of total trade shot up from a mere 16% of the GDP in 1975 to 40% in 1996, with much of the expansion coming from a dramatic uptake in imports. Domestic markets were flooded with imported consumer goods, ranging from basic housewares to luxury goods. Fashionable shops in Kathmandu and other urban centers were crowded with consumer electronics. In short, the impact of neoliberal policies had at once made Kathmandu the Las Vegas of South Asia and, to quote Liechty, the “Hong Kong of South Asia.”
income per capita tripled from $210 in 1990 to $730 in 2015 (ADB 2017). There was also a rapid growth in trade. Infrastructural facilities started improving (Pradhan 2009); however, inflation also increased rapidly (Fig. 7.1). Although the poverty level has decreased from 74.8% in 1985 (World Bank 2018) to 15.0% in 2010 with the poverty head count ratio at $1.90 a day (2011 Purchasing Power Parity --PPP) (ADB 2017; NLSS II 2011; World Bank 2011), infant mortality rate has dropped from 165 (per 1000 live births) in 1970 to 48 in 2006, and the life expectancy at birth has increased to 63 years in 2006 (UNDP 2018), yet income inequality is widening in Nepal. Despite some positive economic indicators, higher inflation than growth of real GDP (Fig. 7.1) did not help in making the Nepali economy prosperous.

GDP per capita for Nepal increased from $232 in 1999 to $972, while the purchasing power parity (PPP) was $2902 in 2018 growing at an average annual

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28The human development index of Nepal in 2015 was only 0.54, which is low even by the South Asian standards.

29GDP per capita is the product divided by midyear population. It is the sum of the gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources.

30GDP at purchaser’s prices is the sum of the gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current US dollars. Dollar figures for GDP are converted from domestic currencies using single-year official exchange rates.
The real GDP shown in Fig. 7.1 determines the economic performance of Nepal. The PPP (Fig. 7.1) shows an exchange rate at which the currency of Nepal is compared with other countries’ purchasing rates in standard dollars in order to show the purchasing power of the Nepali currency in purchasing the same volume of goods and services across other countries. It clearly depicts that during the past four decades, there has been a large gap between nominal GDP and PPP in Nepal. A strong economy would show a narrow gap between the real GDP and PPP. A strong economy would show a narrow gap between the per capita income and PPP. Both Figs. 7.1 and 7.2 clearly suggest that Nepal’s economy is not performing well because (a) the inflation rate is much higher than the real GDP growth rate; (b) the per capita income is much lower than the PPP; and (c) the gap between the imports and exports is widening at all times and more so in the recent years.

rate of 8.11%. Government gross debt$^{31}$ as a share of GDP for Nepal fell gradually from 58.5% in 2004 to 30.4% in 2018 (WDA 2018).

Fig. 7.2 Export, import, and difference among these components. The gap between export and imports has been widening in successive years. In 2019 alone, Nepal imported goods equivalent to $10.61 billion but, exported only $690 million equivalent of goods and services (Onlinekhabar 2019a, b, c, d)

Data sources: https://knoema.com/atlas/Nepal/Current-account-balance; The World Bank 2018

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$^{31}$Gross debt consists of all liabilities that require a payment of interest and/or principal by the debtor to the creditor at a date in the future; it includes debt liabilities in the form of Special Drawing Rights (SDRs), currency and deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes, and other accounts payable.
The Maoist conflict from 1996 to 2006 contributed to the reduction in exports and increases in import that created a wider gap between the imports and exports at a time when the global recession was weakening the Nepali economy (Pradhan 2009: 116). In such a precarious scenario, the growth in revenue slowed down, but the security spending increased creating an unprecedented budget crisis. This has effects on the Nepal economy even today, and it will continue for many years to come. Such an unbalanced situation led to the reduction of development spending by 20%, which was at a 10-year low (Pradhan 2009).

In 1996, when the insurgency began, security spending was about 0.9% of GDP. In October 2002, King Gyanendra dismissed the political parties from power, took over the state authority, and even declared a state of emergency on February 1, 2005. This step severely curtailed the fundamental rights in the name of containing the Maoist insurgency. India, the United States, and the United Kingdom froze all military aid to Nepal. In 2002, spending on security increased 32% for the purchase of advanced weapons and logistics for the police and the army to fight the insurgency. In 2006, security spending increased by 10%. By some estimates, security expenses grew by over 300% between 2000 and 2006, mostly due to the purchase of arms and ammunition (Pradhan 2009). The increase in defense and internal security spending was associated with lower investment and reduced nonmilitary government expenditure and economic services. As more money was pumped into the war, fewer funds were available for development, and no new jobs were created. Working-age youths continued emigrating looking for livelihood opportunities jobs to the Middle East, Malaysia, and other countries (Bhattarai 2013). There were claims that once the kingship was abolished, prosperity would come to New Nepal. The Seven Party Alliance (SPA) organized a mass uprising against the king, which left more than 20 dead and many more wounded. On April 21, 2006, the king was forced to relinquish authority and indicated that “power was being returned to the people.” The Maoists agreed to a ceasefire, and an “armed management” process started under the supervision of UNMIN32 (Shrestha and Bhattarai 2017). After the arm management, two constituent assembly elections were held in April 2008 and November 2013, and the new constitution was promulgated in 2017; Nepali economy still sees the widening gap between export and import (Fig. 7.1).

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32 A Comprehensive Peace Agreement was signed on November 21, 2006 between the Government of Nepal and the Communist Party of Nepal (Maoist) at the end of the Nepalese Civil War (1996–2006). The United Nations was requested both the Government of Nepal and Maoist for assistance. Accordingly, the United Nations Mission in Nepal and named it United Nations Mission in Nepal (UNMIN) on January 23, 2007. It monitored the disarmament process of the Maoist rebels and the preparations of conducive environment for the Constituent Assembly elections in 2007, which was held on April 2008. UNMIN continued its work in Nepal until January 15, 2011.
7.2.1 The Gap Between Export and Import

International trade includes both import and export are affected by several casual factors, such as more favorable policies, efficient uses of resources, economies of scale, skilled manpower (Baskota and Sapkota 2015), investments in more productive sectors (Balassa 2013), and the use of the refined twenty-first-century technology by firms and industries. Nepal’s trade with its two neighbors is miniscule as compared to their sizes (economies, geographic areas, population, and the use of modern technologies). The slow pace of economic growth, low exports, but the rapid growth of imports, particularly since the beginning of the first decade of this millennium, have widened the trade deficit. As a result, goods from India and China are becoming cheaper and more durable in Nepal than its own domestic products (Ojha 2014).

Before the 1950s, external trade by Nepal was heavily dependent on India and to some extent on Tibet of China. India’s share in international trade with Nepal remained almost 90% until the 1970s. Starting from the late 1970s, gradual shift occurred to overseas countries due to increased exports of ready-made garments, carpet, pashmina, and handicraft products. The trend continued until 1995–1996, when the situation was reversed by a revision in the bilateral trade treaty that provided duty-free access to all Nepali products in India based on a Certificate of Origin duly verified by Nepali authorities (Ojha 2014). Bilateral trade between Nepal and India increased from $1095 million in 2003–2004 to $4498 million in 2012–2013. Nepali export during this 10-year period increased from $308 million to $518 million (with an average annual growth of 6.8%), while imports from India increased from $787 million to $3980 million with an average annual growth of 40.6%. The share of India in the overall trade basket of Nepal is increasing and now occupies 66% of the total export and import (Ojha 2014).

However, the non-tariff barriers have become the major hassles behind low Nepali trade. Lack of laboratories at customs stations, non-accreditation of Nepali labs, state taxes, and various surcharges in export items are hindering Nepali exports. Moreover, imposition of additional countervailing duties on Nepali garments, transit fees for exports of medicinal herbs, and retention of tariff rate quota are some non-tariff barriers that contribute to the decrease in export. However, there are very few such barriers in the import of goods. Nepal exports Tibetan designed woolen carpet (Baskota and Sapkota 2015) but imports goods predominantly used for domestic consumption rather than raw materials used to manufacture goods for export markets. Except for the production of Tibetan carpets, Nepal barely takes comparative and competitive advantages of its cheap labor cost. The trade liberalization policy on one hand and the Maoist insurgency on the other increased import disproportionately between 1996 and 2006, and its hangover continues even today (Fig. 7.2). For example, in the 1980s, there was a negative balance of 7.19% in export; it increased to 10.53% in 1990, 9.14% in 2000, 26.82% in 2010, and 33.79% in 2017 (World Bank 2018).

Nepal’s trade deficit including the trades of goods and services increased from $2475.70 million in 2017/2018 to $2653.70 million in 2018/2019 (NRB 2019). Net
service income was in deficit by $22.7 million in 2017/2018 and by $165.2 million in 2018/2019. Total trade deficit of the country widened by 13.5% (an increase from $11,637.40 million in the fiscal year 2017/2018 to $13,214.30 million in 2018/2019). This deficit is 38.1% of the GDP (TRN 2019).

In 2017/2018, the trade deficit with India reached $8551.90 million (import 2055.10 million and export $21.00 million), and with China, it was $2034.00 million (import $9179.2 and export $627.30 million). Nepal had the third biggest trade deficit worth $350.40 million (import $353.60 million and export $3.25 million) with the United Arab Emirates in 2017/2018 (TRN 2019). Nepal’s trade deficit with France reached $185.50 million (import $198.60 million vs. export $12.90 million) in 2017/2018. Nepal’s trade deficit with Indonesia reached $181.90 million, with Thailand $143.50 million, Canada $126.50 million, the United States $25.70 million, and Switzerland $122.00 million. In addition to the above, Nepal had trade deficits $123.20 million with Malaysia in 2017/2018, and with Vietnam, the deficit was $106.20 million. However, Nepal’s trade balance remained positive with Afghanistan (0.14 million), Central African Republic (2.75 million), Estonia, Iceland, Guinea, El Salvador, Sudan, Monaco, the Maldives, New Caledonia, Rwanda, Seychelles, Azerbaijan, Panama, Algeria, Bermuda, Antigua and Barbuda, the Bahamas, Yemen, Kazakhstan, and Armenia in 2017/2018 (Kafle 2019). Meanwhile, the gross foreign exchange reserves decreased from $11,025.90 million in 2017/2018 to $10,389.20 million in 2018/2019.

Despite being in between two rapidly rising Asian economics—China in the north and India in the south—the annual economic growth rate of Nepal is barely reaching 6.5% though Nepal has a stable government with a 2/3 majority in the federal parliament and six provincial governments of the same party out of 7 (Ministry of Finance 2019). Covid-19 on one hand since December 2019, and political bickering and confusion, even after having a 2/3rd majority government, have a huge negative impact on the economic growth rate in Nepal. Goods from India become cheaper in Nepal than the goods produced in Nepal (Ojha 2014). As a result, export and import ratio remains too disproportional, for example, the ratio was 1:9 in 2012 and 1:79 in 2013 (the Trade and Export Promotion Center TEPC 2013). Import of petroleum products increased by 15.9%, transport vehicles by 37.3%, and electric/electronic goods by 12.4% in 2012 (MyRepublica 2012). Nepal also is establishing markets with Southeast Asian countries (Poudel 2017), but trades with these countries are at low level at present.

Nepali economy suffers from multiple factors. The Ministry of Finance conducted a survey in 2017. The result reveals that political bickering and confusion contributed 33% to the failure of the economy. Other factors weakening the Nepali economy include the failure to identify the priority sector for development (30%), inept leadership (22%), and failure to identify the major economic problems (15%).

33PM K. P. Oli visited Cambodia and Vietnam in May 2019 and signed the bilateral agreements between two countries. In FY 2018–2019, Nepal and Cambodia traded equivalent to the amount of $170 thousand, and Cambodia has exported apparel equivalent to $120 thousand.
Between 2010 and 2019, the trade deficit has increased five times. Between 2000 and 2010, Nepal exported $68.6 million worth of goods but imported $291 million. In 2018, Nepal exported goods equivalent to $81 million but imported $1243 million with a deficit of $1162 million. In 2017, export increased by $12 million, but imports increased by $1000 million (Dhakal 2019). It is necessary to import telecommunications equipment, spare parts for the airplane and automotive, and mobile phones and their spare parts because Nepal does not produce these items; however, importing millions of dollars of food grains and fruits is a different story for an agricultural country, such as Nepal.

India unilaterally imposed an economic blockade on Nepal between September 20, 2015 and February 20, 2016. This blockade had a debilitating effect on a deadly earthquake recovering crippling economy of Nepal. During this period of economic blockade, Nepal incurred an economic loss of over $7 billion, which is one-fifth of the country’s total economy. This loss is mainly due to the decline in custom revenue and the closure of industries and business activities in the private sector because of the lack of raw materials (Jha 2015).

Additionally, the Indian blockade created a favorable climate for unscrupulous traders to do more transactions off the official radar. Illegal trading activities grew not only in border towns but also in urban areas where demand for essential goods increased (Raut 2016). Consequently, it prompted the underground economy (UE) (Raut 2016; Ojha 2014). As if it was not enough for Nepal, an unbridled rise in inflation and lack of access to necessary raw materials made the situation worse that increased the costs of production. The UE adversely affected government revenue, primarily due to tax evasion arising from unrecorded trade and business transactions (Raut 2016). The weighted average size of UE was around 37% of the official GDP of Nepal, which placed the country in the 64th position out of 162 countries in the world and in second place in South Asia after Sri Lanka (The World Bank Policy Research Working Paper 2016). The average growth rate of UE remained 19% between 1991 and 2000, but just between 2001 and 2010, it remained around 17%. Between 2011 and 2012 however, it climbed to 32% (Raut 2016). The

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34Nearly 75% of the vehicles were grounded due to the lack of fuel that used to come from India. Tourism and banking sectors were badly affected. Medicines and oxygen cylinders ran out of stock in the market. Each section of the Nepalese society was plagued by the shortage of goods in the market. Prices of essential and other items were skyrocketed. For example, a liter of petrol was sold at $5 when the normal price was $1 per liter. Landlocked Nepal became India locked. China, the second largest economy of the world, opened the door for Nepal though the majority of the coastal facilities China agreed to provide for the use of Nepal are over 3200 miles away from the Nepali border as compared to 1100 km to the nearest Indian coastal areas. Up to this period, Nepal used to rely entirely on the Indian Oil Corporation for the import of oil and gas, but after this crisis, China promised to supply 1000 metric tons or 1.3 million liters of petrol to Nepal as a grant. The Madhesi Front leaders expressed their displeasure over the way the Chinese provided oil to Nepal through the Rasuwagadhi-Kyurung route.

35UE includes not only illegal activities but also all legal ones that are untraceable and hence not taxable. They are not reflected in national accounts. A study from the early 1990s period revealed that normally, the size of UE was between 35 and 44% of GDP for developing countries, 21 and 30% for transition countries, and 14 and 16% for the developed and OECD countries.
economic blockade and its impact on the overall economy in Nepal cultivated anti-Indian sentiments among Nepali.

Growing Anti-Indian but Pro-Chinese Sentiments

The 2015 economic blockade created an anti-Indian movement in Nepal (Jha 2015). The Nepali Communist Party-United Marxist and Leninist (NCP-UML) stood aggressively against Indian action on economic blockade, while the Nepali Congress Party preferred to deal with this problem diplomatically. Cashing aggressive anti-Indian slogans, CPN was successful to attract a large number of votes during the Nepal’s Parliamentary general election of 2016. In the general election, the Nepali Congress Party was relegated to a distant second position in all three tiers—federal, provincial, and local—of governments. However, despite having a government of almost 2/3 majority, CPN has not been instrumental to guide Nepal to the path of distinct economic policy. It is neither a capitalism nor a socialism, but a cocktail of everything. The Nepali Communist Party leaders stood too aggressively against India during the election and established a concept that anti Indianism means being a patriotic mantra, but once in power, they became close to the Indian leadership.36 Howeer, the relationship between Nepal and India has gone to a historical low point after Nepal asked India to return its territories of Limpiyadhura, Kalapani, and Lipulekh that India has been occupying since 1962. Since India ignored Nepal’s friendly request to return its land, Nepal revised its map by incorporating the India occupied Nepali territory of Limpiyadhura, Kalapani, and Lipulekh. Since then the relationship between the two countries has gone to a historic low point. Nepal has a difficult geography. Merely distancing from India does not provide any practical solution to improving Nepal’s economy. Though China is willing to help Nepal, it would be virtually impossible to reduce the 3,500 km distance to the nearest Chinese seaports against just over 1,100 km distance to the nearest Indian seaport. In addition, it is essential to understand that after the breakdown of the erstwhile Soviet Union in 1989, India became friendlier to the Western world. Many Western countries look South Asian countries through Indian lenses. It is not possible for Nepal to be distanced neither from China nor from India but to maintaining peaceful relationships between the two neighbors. Becoming a land linked between the two neighbors and benefitting from their economies is the only possible way for Nepal to improving its economy.

Sangroula (2019) argues that Nepal’s only future prospect is through the “belt and road initiatives” (BRI) that could shift Nepal’s position from a landlocked country to land-linked country and remain engaged in global geo-economics. He argues that the BRI will increase the prospect of Chinese investment in Nepal. Linking Kyurung and Kathmandu by a fast train as a part of the BRI would make Nepal’s economy

36The Nepali Congress Party and its leaders have their orientation from the Indian politics. They do not spread venoms against India while in opposition as the Communist leaders do. Thus, Nepali Congress leaders once they come to power do not need to justify their loyalties towards Indian leadership, but the Communist Party leadership in power often finds it hard time to justify that they are not anti-Indian, which might cost them more than they desire to do to win the Indian confidence.
prosperous (Sangroula 2019). Additionally, the BRI would compel India to shun its political aggressiveness and turbulent decision practices against Nepal. The Communist Party-led Government of Nepal signed many agreements with China in 2017, which were in the pipeline during the coalition governments led by the Nepali Congress Party and the United Marxist Leninist Party from 2015 to 2017. Merely signing the agreements would not help Nepal’s crippling, but opening industries by attracting foreign direct investment (FDI) and creating jobs may help to sustain the life of Nepali, which at present suffer from the skyrocketing expenses in the heavily inflatated economy.

**Increasing Inflation and Government Expenditures**

After the general election in Nepal in 2016, the costs of all the commodities increased unexpectedly as people are required to pay local, provincial, and federal taxes. There are hardly any facilities for people to equate to the heavy taxes they pay, and Nepal’s fiscal policy is not free from criticism\(^{37}\) (Economic Freedom 2019).

Nepal’s annual budget size has been increasing in successive years from just a half million dollars in 1951 to a total of $15,729 million in 2019–2010 (Fig. 7.3) (NepaliSansar 2019). In the FY 2018–2019, the budget projected an annual growth rate of 8%, later amended to 7.1%, but in reality, it turned out to be 6.3% (Fig. 7.2). The agricultural sector contributed 4.5% growth due to a good monsoon with 8.4% growth in rice production in 2018–2019. The industry sector was expected to grow over 7.1% from 2020 onwards due to improvement in the supply of electricity. The service sector was expected to grow by 6.4% with the expansion of wholesale and retail trade, hotels and restaurants, and financial intermediation. In 2019, inflation

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\(^{37}\) Employment possibilities are very little. Corruption has been rampant in all three levels of government. Though Nepal has scored 53.8 in economic freedom, making it the 136th freest economy in the world as per the 2019 index, its overall score has decreased by 0.3 point, with lower scores for trade freedom and government spending. Nepal is ranked 34th among 43 countries in the Asia-Pacific region in 2018 in terms of economic freedom, and its overall score is below the regional and world averages in term of government spending.
was projected to rise by 4.4%, which was 4.2% in 2018. These assumptions were based on the fact that similar inflation would occur in India, oil price would remain stable, and government expenditures would be higher under the new federal structure. Other assumptions were that the revenue collection would increase with the improvement of the tax system.38

Accordingly, the central government allocates budgets to the provincial governments in the form of grants, conditional grants, and project financing. Despite the global norms of setting aside 20% of the total budget to education, in 2018/2019, the Nepal Government set aside only 10.19% of the total budget to education. The government aims at achieving 100% in literacy rate by 2022. The government announced the creation of 500,000 jobs in FY 2018–2019; however, the achievement is nowhere close to the target. The government has set aside $564.1 million in 2018–2019 for the health sector as compared to $320 in the 2017–2018. The government has planned to provide $10,000 for each returning immigrant as seed money to start businesses depending upon the skills and educational degree a person has. Likewise, under the youth support program, a youth may get up to a maximum of $7000 per person as a loan if the borrower has a higher educational degree39 (NepaliSansar2018). Field visits and interviews of some youths however revealed that such funds are easily available for those youths who are close to the governing party, while others are asked a variety of questions to dissuade them from these facilities.

In this budget, the government has promised to resolve the problems of encroached public land by providing land titles to land encroachers. Environmentalists are opposing this provision because land distribution is often politicalized. Without making land use plan, merely distributing lands to political cadres on an ad hoc basis will negatively affect the contemporary environment. This annual budget also encourages the expansion of road network in the Mountains and Hills that too without making any land capability maps.40 In each successive budgets, the

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38The government offers a 1% tax bracket for those earning below $3500 per annum and a 10% bracket for those earning above $3500. In 2019–2020, the budget amount has increased the nontaxable income limit, up from $3500 in FY 2018–2019 to $4000 in FY 2019–2020 for an individual, and for a couple, the nontaxable ceiling is fixed at $4500.

39The purpose of higher education (HE) is multidimensional; however, the HE plagued with the lack of resources, shortage of qualified manpower, inconsistency in the policies of various regimes, political indoctrination, inefficient educational management system, wastage of resources, and poor implementation of policies and program. Educational institutions are mushrooming in Nepal, but there is a lack of required quality.

40The common practice of bulldozer engineering to construct roads in the Mountain and Hill regions would bring several environmental calamities, yet the Government of Nepal (GoN) has set aside $1630 million for the construction of roads and $77 million for rail, metro rail, and monorail development. The government has promised to have road accesses to every district headquarters with blacktopped roads by 2022. It aims to upgrade the East-West Highway into four lanes from the current two lanes with the allocation of $191.80 million. The budget also has set aside $122.00 million for blacktopping of the 435 km section of the Mid-Hill Highway; $126.3 million for blacktopping of Hulaki (postal) Highway, connecting several Tarai districts; $50.60 million for key corridor projects such as Koshi, Kaligandaki, Karnali, and Mechi; $48.20 million for the Madan Bhandari Highway, which will connect Chitara, Dharan, Gaighat, Hetauda, Katari, and Sindhuli; and $18.1 million to improve the roads in and around the Kathmandu Valley.
The percentage of the recurrent expenditure has been higher than the capital expenditure (Fig. 7.4), meaning that more money is spent in salary, wages, and other administrative expenditures than in developmental activities (MoF 2016).

The government has promised to offer grants to encourage farmers to make Nepal self-sufficient in dairy, fresh vegetables, and poultry with much emphasis on organic farming and seasonal fruit cultivation in every province. Around $5 million is set aside for community farming with the allocation of a $340 million total budget for agriculture that also includes $236 million for irrigation programs in the Tarai Region. Considering environmental conditions, the government has planned several underground diversion projects for hydropower and irrigation41 (Onlinekhabar 2019a, b, c, d). National pride projects such as fast track are also receiving great attention with the allocation of $20.5 million. Science and technology education is

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41The major tunnel-based diversion projects include Bheri-Babai, Karnali, Madi-Dang, Naumuri-Rapti, Kaligandaki-Tinau, Kaligandaki-Nawalparasi, Trishuli-Shaktikhor, Sunkoshi (Marin-Kamala), Tamor, Kankai Multipurpose, and Sunkoshi barrage.
allocated $1630 million. The government also has increased the elderly allowance from $20 to $30 per month per person including the health coverage of $1000 for each elderly person each year. On the tourism sector, the budget has allocated $226.8 million and has committed to make Visit Nepal 2020 a success with the addition of many development infrastructures. The Visit Nepal 2020\textsuperscript{12} campaign aims to bring 2 million tourists into the country. In environmental-related tasks, the government has set aside $51.00 million for specialized employment programs including “Build Your Village Yourself.” The government has set aside $1410 million for post-earthquake reconstruction activity in all affected districts.

Property rights are undermined by an inefficient judicial system that is subject to substantial corruption and political influence. Academic rights are not protected effectively, and it can take years to resolve property disputes. The Constitution of Nepal imagines an independent judiciary, but the courts remain vulnerable to political pressures, bribery, and intimidation. Time-consuming administrative requirements have been hindering this investment. There are numerous reports of corrupt practices undertaken with impunity by government officials, law enforcement officers, and political parties who undermine the rule of law. The government has cultivated the environments of favoritism and impunity for cadres having political affiliations with the ruling party. The economy lacks the entrepreneurial dynamism needed for stronger economic growth and long-term development and foreign direct investment (FDI).

7.2.2 Foreign Direct Investment (FDI)

Since 1971, the international community has been supporting the least developed countries (LDCs) by making the “Programmes of Action” effective to help countries to graduate from the LDCs to developing status. Nepal promulgated Industrial Policy and the Industrial Enterprise Act of 1987 to facilitate the flow of FDI in Nepal. Over 40 development partners contribute 57%, and multi-development donors\textsuperscript{43} contribute 43% for Nepal’s development funds (Bhandari 2016). Nepal

\textsuperscript{12}The government also has prioritized the construction and promotion of various airports. Accordingly, $33.40 million has been set aside for the completion of the Gautam Buddha International Airport, Bhairahawa (Province 5), and an $80 million for the construction of the Pokhara Regional International Airport, Pokhara (Province 4).

\textsuperscript{43}The volume of ODA disbursement on both on-budget and off-budget projects for 2014–2015 was about $1.02 billion, of which bilateral development partners contributed 57%, while the remaining 43% was contributed to multilateral partners. The trend in budgetary allocation and expenditure of aid component for 2009–2010 to 2014–2015, the volume of aid in the annual budget has gradually increased. For example, the total aid spent in 2009–2010 was $497 million against the allocated $785 million (63.3%); in 2013–2014, $587 million was spent against the allocation of $1132 million (51.8%); and in 2014–2015, it was $550 million against $1230 million (44.7%).
needs a huge amount of FDI to graduate from the LDC to developing status by 2022. However, like other LDCs, Nepal continues to face significant development challenges (Acharya 2016). These challenges are yet to be overcome despite Nepal’s participation in various international programs such as the Istanbul (Turkey) conference in 2011 that set an ambitious sustainable development agenda for the United Nations. Nepal also participated in the Sendai (Japan) Framework for Disaster Risk Reduction 2015, the Addis Ababa Agenda for Action 2015, and the UN’s 2030 Agenda for Sustainable Development and the Paris Climate Agreement of 2015.

India and China have been the major contributors to FDI inflows. Until 2012, India ranked top in FDI when China ranked second and the United States ranked third. China has recently become the largest investor in Nepal and is aggressively eyeing the energy sector as opposed to its earlier focus on hotels and restaurants. India has been pushed to the fourth position in terms of the number of development projects in Nepal (MyRepublica 2016a, b). South Korea ranks second, the United States ranks third, and Japan ranks fifth in terms of the number of projects implemented in Nepal (MyRepublica 2016a, b; NRB report 2016/2017). While India and China allocate most of their money in hydropower power, South Korean prioritizes the service sector. With the increase in Chinese investment in various development projects, many Chinese tourists are finding Nepal as their favorite destination (Yiqian 2017), but the Covid-19 Pandemic has negatively affected

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44 In 2011, the international community met in Istanbul, Turkey, for the Fourth United Nations Conference on the Least Developed Countries (LDC-IV) and adopted the 10-year Istanbul Programme of Action (IPoA) which articulated a set of commitments by LDCs and their development partners to overcome the structural challenges faced by the LDCs, to achieve structural transformation of their economies, eradicate poverty, and enable half of the LDCs to reach graduation status by 2020. The Green Climate Fund’s commitments to allocating 50% of its adaptation financing to vulnerable countries and the World Bank’s efforts to increase its climate financing portfolio to 28% by 2020 were a critical step forward as is the Paris Climate Change Agreement.

45 Of the total FDI in Nepal, Indian investment spans to 566 industries (21%) with a total investment of $758 million (35%) and employs 61,632 people (34% of total FDI projects).

46 In 2012–2013, China committed $73.1 million against $27.7 million in 2010–2011 with $42.3 million to the energy sector alone.

47 In 2015/2016, China pledged $621.0 million for 125 projects, while India has pledged $19.4 million for 23 projects. The Nepal Government has authorized China to invest in 125 projects, South Korea in 55 projects, the United States for 40, India 23, Japan 18, the United Kingdom 11, and other countries 69, taking the number of projects to 341. These projects are employing 11,426 people.

48 Nepal–China are updating the Air Service Agreement (ASA) signed between two nations in 2004 with the changing scenario. This facilitates the Nepali airline companies to fly to new cities of China. The prevalent ASA allows such companies to operate flights in seven Chinese cities—Beijing, Shanghai, Lhasa, Guangzhou, Kunming, Xanadu, and Xian. It allows operating 70 air flights a day between the two countries. In some cases, Nepali airlines find it tough to get suitable slots in some of the airports situated in these cities. In other cases, such airlines do not possess the aircraft technically suited to operate in some airports of these places. Recently, 30–40 air flights are being operated from China to Nepal every week. The new deal will allow Nepali air companies to operate flights in the commercially viable Chinese airports. The Nepal Airline Corporation and Himalaya Airlines are looking to fly to China.
Visit Nepal 2020 (Spotlight 2020). Though FDI flows from India began to wane after 2012, its multinational corporations (MNCs) and local companies continue to be among the major taxpayers\(^49\) in Nepal’s economy.

A large volume of aid has been coming into Nepal for development; however, development spending has been very low (Fig. 7.4). Many entrepreneurs are reluctant to invest in Nepal because of (a) higher income taxes (25%); (b) an unclear value-added tax (VAT) system; (c) poor infrastructure; (d) difficulty in getting work permits for skilled foreign workers; and (e) disrespectful behaviors towards industrialists by politicians, their cadres, and bureaucrats. High-level corruption has been a major impediment in Nepal’s development. Additionally, FDI’s projects are not performing well because Nepali expatriates working in such projects are poorly paid in comparison with other foreign expatriates, which make the Nepali counterparts less enthusiastic about working (Bhandari 2016).

Very often, there is “fiscal dumping” in which funds are disbursed to districts or implementing agencies far too late in the fiscal year and work is done very poorly without meeting the set standards. Nepal is in a very sensitive seismic zone, so built-in infrastructures need to be shockproof, but there have been several structural failures. Unfortunately, Nepal still faces multidimensional challenges to develop resilient communities (Acharya 2016) and environmentally resilient infrastructures. Nepal’s contribution to global warming is negligible, yet it has been the disproportionate victim of climate change. It is a sad reality that despite great potential for development of a green economy to offset climate change, Nepal’s contributions towards mitigating global climate change, especially the melting of glaciers, and land degradation are merely confined to slogans. The destruction of tropical hardwood forests continues.

In order to meet the various development goals through proper decentralization by properly assessing the location-specific issues, Nepal was restructured in 2015 to divide power between provincial and national governments. Accordingly, Nepal is divided into 7 provinces, 753 local units, and 6743 hamlets (the smallest political units) for structural transformation and decentralization. Today, there are 761 governments in Nepal with different power levels at the central, provincial, and local levels. Thus, the volume of expenditure has increased many folds, which is well above the Nepali resources can sustain.

\(^{49}\)Among the major companies are Asian Paints (Nepal) Pvt. Ltd., Berger Jenson and Nicolson (Nepal) Pvt. Ltd., Nepal SBI Bank Limited, Everest Bank Limited, Surya Nepal Pvt. Ltd., Dabur Nepal Pvt. Ltd., Unilever Nepal Ltd., Varun Beverage Nepal Pvt. Ltd., United Telecom Limited, and Manipal Education and Medical Group Pvt. Ltd.
7.3 Structural Transformation

In 2015, along with the promulgation of the new constitution, Nepal witnessed the structural transformation from a unitary system to a 3-tiered government that includes a federal government, 7 provincial governments, 753 village and municipal levels governments, and 6743 hamlets (Chap. 2; Table 7.1). The goal is to decentralize power and create enormous opportunities for economic and political growth by overcoming various internal and external challenges. With these principles, the country is federated into seven provinces. Table 7.2 presents various economic indicators of seven provinces of Nepal (Nepal Rastra Bank 2019; Economic Survey 2017/2018). With the provincial governments, GoN has introduced major policy reforms to devolve decision-making power to the provincial government with their own budgets (Tables 7.3, 7.4, and 7.5).

There are differences in development and resource availability in various recently federated provinces of Nepal. In comparison with Provinces 2, 6, and

| Provinces | Area (Sq. Km) | Percent | Population (No. of Villages or Municipal) | Districts | Number of Rural and Municipality Councils in each district |
|-----------|---------------|---------|------------------------------------------|----------|-----------------------------------------------------------|
| One       | 25,905        | 17.6    | 4,534,943                                | 14       | 18.18                                                     |
| Two       | 9661          | 6.6     | 5,404,145                                | 8        | 10.39                                                     |
| Three     | 20,300        | 13.8    | 5,529,452                                | 13       | 16.88                                                     |
| Four      | 22,585        | 15.3    | 2,735,661                                | 11       | 14.29                                                     |
| Five      | 17,318        | 11.73   | 4,114,184                                | 12       | 15.58                                                     |
| Six       | 31,873        | 21.7    | 1,623,602                                | 10       | 12.99                                                     |
| Seven     | 19,874        | 13.3    | 2,552,517                                | 9        | 11.69                                                     |
| Total     | 147,516       | 100     | 26,494,504                               | 77       | 100                                                       |

Source: Economic, social, and financial status of Nepal, Nepal Rastra Bank 2018; CBS (2011)

There are 195 countries in the world today. This total comprises 193 countries that are member states of the United Nations and 2 countries—the Holy See and the State of Palestine—that are non-member observer states. Of the 193 countries, 26 countries have gone from the unitary system to the federal system. Of the 26 federated countries, 4 countries—Sudan, Ethiopia, Nigeria, and Belgium—that have similar socioeconomic conditions of Nepal have been confronting devolution problems.

It is pathetic that the government has not been able to name the provinces due to competing ethnic claims. Though Province 3 (Bagmati), Province 4 (Gandaki), Province 6 (Karnali), and Province 7 (Sudur Paschim) are named, yet Provinces 1, 2, and 5 are yet to be named. For uniformity, all provinces are named as 1, 2, 3, 4, 5, 6, and 7.

Multidimensional poverty is very high in Provinces 6 and 2 followed by Province 7. Likewise, in terms of developmental activities, Provinces 7 and 2 have fewer infrastructures. However, in terms of natural resources, such as medicinal plants and mineral resources, Provinces 4, 5, and 6 are relatively richer than other provinces. In terms of agricultural production, Province 2 is self-sufficient followed by Provinces 5 and 1 in ranking order.
Table 7.2  Selected indicators of various provinces

| Provinces | GDP (percent) | Per capita income ($) | Human Development Index (HDI) | Human Poverty Index (percent) | Multidimensional Poverty Index | Gender ratio | Literacy rate (percent) |
|-----------|---------------|-----------------------|------------------------------|-------------------------------|--------------------------------|--------------|-------------------------|
| One       | 17.5          | 1024                  | 0.504                        | 27.2                          | 0.085                          | 91.5         | 65.3                    |
| Two       | 16.2          | 799                   | 0.421                        | 41.9                          | 0.217                          | 101.2        | 40.9                    |
| Three     | 31.9          | 1534                  | 0.543                        | 27.1                          | 0.051                          | 98.8         | 69.3                    |
| Four      | 10.5          | 1021                  | 0.513                        | 26.1                          | 0.061                          | 83.1         | 55.6                    |
| Five      | 13.4          | 868                   | 0.468                        | 31.6                          | 0.133                          | 90.7         | 59.4                    |
| Six       | 4.1           | 677                   | 0.427                        | 41.0                          | 0.230                          | 95.7         | 53.0                    |
| Seven     | 6.3           | 660                   | 0.431                        | 35.3                          | 0.146                          | 91.3         | 54.9                    |

Source: Economic, social and financial status of Nepal, Nepal Rastra Bank 2018; Provincial Government’s Budget (2017) 2018/2019

Table 7.3  Budget allocation to seven provinces from the federal government

| Categories | Provinces (total amount in million dollars and figures in the parenthesis are percentages of the total budget) | Nepal Federal govt. |
|------------|-------------------------------------------------------------------------------------------------|---------------------|
|            | One | Two | Three | Four | Five | Six | Seven | Federal govt. |
| Total budget | 359.36 | 293.885 | 356.16 | 240.23 | 280.90 | 272.83 | 250.66 | 13151.60 |
| Recurrent | 145.54 | 144.27 | 85.74 | 69.15 | 99.66 | 70.29 | 111.76 | 8454.50 |
| Capital | 188.78 | 149.61 | 217.73 | 159.08 | 166.24 | 212.54 | 117.15 | 3140.00 |

Sources: Provincial Governments’ Red Book. FY 2018/2019 and Federal Governments’ Red Book, FY. 2018/2019

Table 7.4  Budget by sources in seven provinces

| Budget sharing | Total budget in million dollars by various provinces (figures in the parenthesis indicate percentages) | Total |
|---------------|-------------------------------------------------------------------------------------------------|-------|
|               | One | Two | Three | Four | Five | Six | Seven |       |
| Total         | 359.36 | 293.89 | 356.16 | 240.23 | 280.90 | 272.83 | 250.66 | 2050.43 |
| Fed. govt. sharing | 228.87 | NA | 172.85 | 160.44 | 171.40 | 212.66 | 170.02 | 1116.24 |
| Revenue collection | 122.44 | NA | 183.30 | 65.76 | 109.50 | 60.17 | 75.70 | 616.87 |
| Internal source | 8.06 | NA | NA | 14.04 | NA | NA | 4.93 | 27.03 |

Sources: Provincial Governments’ Red Book. FY 2018/2019 and Federal Governments’ Red Book, FY. 2018/2019
Table 7.5 Distribution of total budget by seven provinces

| Budget category      | Total budget in million dollars by various provinces (figures in the parenthesis indicate percentages) | Total |
|----------------------|-------------------------------------------------------------------------------------------------|-------|
|                      | One       | Two       | Three      | Four      | Five      | Six        | Seven      |  |
| Total                | 359.36    | 293.89    | 356.16     | 240.23    | 280.90    | 272.83     | 250.66     | 2054.03   |
| Expenditure          | 334.31\(^{93.03}\) | 293.89\(^{100}\) | 303.27\(^{85.15}\) | 228.23\(^{95.01}\) | 265.90\(^{94.66}\) | 282.83\(^{103.67}\) | 228.91\(^{91.31}\) | 1937.34   |
| Intergovernmental   | 25.05\(^{6.97}\) | NA        | 52.88\(^{14.85}\) | 12.00\(^{4.99}\) | 15.00\(^{5.34}\) | NA         | 21.75\(^{8.68}\) | 126.68    |
| transfer            |           |           |           |           |           |           |           |           |

Sources: Provincial Governments’ Red Book. FY 2018/2019 and Federal Governments’ Red Book, FY. 2018/2019

7. Provinces 1, 3, 4, and 5 are relatively well developed. These variations in the levels of development, education, resource distributions, and skewed government policies in resource allocations have created income inequality in Nepal. The income inequality and disparity have affected the contemporary environment. The paragraphs below discuss how inequality affects the contemporary environment from both a theoretical and historical perspectives.

7.4 What Creates Income Inequality?

Inequality, a multidimensional issue, is one of the major divisive factors in the evolutionary history of humankind. It occurs in every sphere of social, political, and economic structure at the local, provincial, national, and international levels. Social inequality exists because of differences in income, wealth, status, knowledge, and power among individuals, social groups, and communities (Soares et al. 2014). The seminal work on economic inequality is rooted on the research of Kuznets (1955), who maintained that inequality tends to rise “in the early stages of economic development” as industrialization starts. Kuznets also argued that inequality decreases to some extent once “capitalism matures” and it represents a classical inverted U → \( \cap \) shaped trend overtime. However, Guidetti and Rehbein (2014) questioned Kuznets’s findings arguing that it is not the economic growth alone that creates inequality, but “...the nature of economic growth which determines the development of inequality” (p. 2). Their arguments were based on “the degree of economic dualism, the structure of employment, the distribution of land, the operation of capital markets and the overall level of human capital” (p. 2). Stiglitz (2012) agrees with Kuznets (1955) that economic inequality affects the pace and the nature of economic growth but disagrees on the fully reversed structure (U → \( \cap \)) that Kuznets has claimed with economic development.

A French Economist, Thomas Piketty (2014), in his famous book *Capital in the Twenty-First Century* has illustrated that Kuznets’s theory has failed to justify that higher economic growth does not necessarily minimize the income gap between the rich and poor or improve environmental conditions to invert the structure from U to \( \cap \). An analysis of 250 years of records of economic growth revealed that the world is
moving towards capitalism\textsuperscript{53} (Sharma 2015) and this has affected not only the economy (Sunar 2019) but also the political stability and contemporary environmental conditions. Piketty has concluded that until and unless capital and property in the private sector increases more than the overall economic growth of a country and the real GDP grows higher than the inflation, economic inequality will persist and increase further. This situation may create all kinds of instability in a society. Such increasing inequality has necessitated increasing property taxes. Though many have criticized the rising of taxes, increasing taxes may become necessary to improving the economy of a country. A large body of literature from many authors, such as Stiglitz (2012), Balassa (2013), Barr (2012), Bartels (2016), Wilkinson and Pickett (2011), Sherraden and Gilbert (2016), Atkinson (2015), Flora (2017), Ostry et al. (2014), and Milanovic (2009, 2016), have discussed patterns of inequality and related sustainability issues. Milanovic (2009) made a country-level analysis of inequalities, while using data of the past three decades, Cingano (2014) discussed the issues of inequalities between social classes in 18 Organizations for Economic Co-operation and Development (OECD) countries.\textsuperscript{54} Devaux (2015) also analyzed the data from the OECD countries for the period of 2006–2009 and observed differences on health-care services based on income inequalities. Cingano (2014) concluded that inequality affects economic growth because of the differences in levels of education. Vasylieva et al. (2018) and Abaas et al. (2018) studied the impact of inequality on sustainable development and environment for the 14 Organization of the Petroleum Exporting Countries (OPEC).\textsuperscript{55} These studies have

\textsuperscript{53}Capitalism is helping to break the traditional occupations. It is offering occupational choices and freedom. Capitalism is creating new job opportunities. Capitalism is destroying the caste system in its own speed. Capitalism represents industrialization, urbanization, and modernization. Capitalism is not located in the market only, but in the brain or in the level of our consciousness. Social and cultural capital is part of capital system. Knowledge is power, knowledge and power is capital of individual. In capitalism education and skill is capital of an individual. Those who are highly educated have high academic capital and they can sell their knowledge in the market. Capitalism in true sense has become a crusader against caste-based discrimination in Nepal. The core value system of capitalism is profit. In order to make a profit, the system becomes blind to caste, color, creed, race, gender and religion. The only thing that is permanent in capitalism is competition.

\textsuperscript{54}OECD countries with an average per capita income of $40,713 as of 2018 include the countries of (in order of Gross Domestic Product per capita) Luxembourg ($110,906), Ireland ($83,081), Switzerland ($67,961), Norway ($65,603), the United States ($62,480), Iceland ($57,453), the Netherlands ($56,326), Austria ($55,529), Denmark ($55,138), Australia ($54,144), Germany ($53,752), Sweden ($52,767), Belgium ($50,442), Finland ($48,248), Canada ($48,107), the United Kingdom ($45,505), France ($45,149), Japan ($42,823), Italy ($41,626), New Zealand ($40,713), South Korea ($40,096), Spain ($39,908), Israel ($39,835), the Czech Republic ($39,741), Slovenia ($38,135), Estonia ($35,498), Slovakia ($33,924), Portugal ($33,035), Poland ($30,989), Hungary ($30,666), Greece ($29,592), Turkey ($28,205), Chile ($25,168), and Mexico ($20,145).

\textsuperscript{55}The Organization of the Petroleum Exporting Countries (OPEC) was founded in Baghdad, Iraq, with the signing of an agreement in September 1960 by five countries, namely, the Islamic Republic of Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela. They were to become the Founder Members of the Organization. These countries were later joined by Qatar (1961), Indonesia (1962), Libya (1962), the United Arab Emirates (1967), Algeria (1969), Nigeria (1971), Ecuador (1973), Gabon (1975), Angola (2007), Equatorial Guinea (2017), and Congo (2018).
concluded that alleviating inequality by 1% would improve life expectancy by 1% on average and 0.5–1.33% growth in GDP per capita. They further concluded that this is possible through the formal and informal education, training, coaching, advocacy projects, and advising.

Capitalism embodies and sustains freedom of trade opportunities (Sunar 2019); however, it may nurture economic inequality, alongside equality, within the legal limit (Hodgson 2016). This happens because inequality is embedded in historical roots of traditional culture and national institutions (Rehbein 2011). Giovanni and Rehbein (2014) argued that the higher the level of income inequality, the lower the chance to improve the relative position in the present social hierarchy. The level of education of parents impacts children, directly indicating that the income disparity does not depend on “the individual behavior, but on the background traits” [qualis pater, talis filius] (Giovanni and Rehbein 2014: 10). Likewise, the differences between the global framework and precise local knowledge (Rehbein 2011) also contribute to inequality. The ultimate determinants of inequality are the inherent factors themselves when evaluating specific models of capitalism for an economic growth. An understanding of the specific model of capitalism would help to explain how the dynamics of inequality starts.

Economic growth is vital for the alleviation of inequality. State intervention can encourage institutional improvements to help poverty, income inequality, and disparity (Myrdal 1968; Naude 2013). As the world is moving towards capitalism, private sector involvement becomes inevitable for economic development. However, both government and private sector activities involved in economic development face “cumulative causation” and “backwash effects.” These factors again create income inequality and disparity and affect the contemporary environment of a place.

Global inequality has both convergence (Ravallion 2001) and divergence (Krugman 2007) effects. In the capitalistic economic mode of production, it is likely that the divergence effect emerges too fast (Krugman 2007). Both these effects have impacts on the contemporary environment because of the production of massive throughputs from the convergence (see Chaps. 3 and 4). Likewise, the indiscriminate uses of land resources (see Chaps. 5 and 8) by a wealthy few, and by the illogical

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56 A vibrant private sector triggers economic dynamism, enhances productivity, transfers and diffuses new industrial technologies, maintains competitiveness, contributes to entrepreneurship development, and ultimately helps in poverty reduction, income inequality, and disparity.

57 Convergence is a term used to indicate inequality in income within a country, where per capita consumption is converging towards medium levels—a Gini index around 40%. The convergence process is neither rapid nor certain, and more observations over time are needed to be confident of the pattern.

58 The divergence is a term first that was used by Nobel Laureate Paul Krugman. This term was used for the first time to indicate a period starting in the late 1970s, during which income differences increased between countries, especially between the United States and other countries.
decision to distribute lands to political workers by some myopic leaders while ignoring the future consequences to the environment, also cause environmental problems. Such illogical decisions not only create resource inequality among party cadres but also political instability. Additionally, the unplanned development such as Nepal’s recent bulldozer engineering practices at the whims of influential decision-making bodies to expand the political businesses at the frontier regions has not only created massive environmental damages but has also produced resource inequality in the name of development. Under the capitalistic mode of production, the global top 1% of the total population that used to control the major income share in the 1980s is now controlled by the top 20%, and it is expected that if this trend continues, by 2050, almost 24% of the richest people will control most resources. Unfortunately, the global bottom 50% who were limited to 10% of the resources in the 1980s have decreased to 9% of the resources in 2017. If all the countries follow this capitalistic mode of production, like the United States under the Trump administration (2016–2020), the global top 1% income share would rise even more, to around 28% by 2050 at the expense of the global bottom 50% whose income share would fall to 6% (WEO 2007:36). If all countries follow the relatively low-inequality growth trajectory as European countries have been doing since the 1980s, the global top 1% income share would decrease to 19% by 2050, while the bottom 50% income share would increase to 13%. The differences between high- and low-inequality growth trajectories within countries have an enormous impact not only on incomes of the bottom half of the global population but also on the contemporary environment. Under the US-style high-inequality growth scenario, the bottom half of the world’s population would earn $5814 per adult per year by 2050 versus $10,155 under the EU style, low-inequality growth scenario (for a given global average income per adult of $39,616 in 2050 in both scenarios) (World Inequality Report 2018:250). It is not easy to alleviate inequality and disparity merely by decree and economic growth. For example, in the United States, the “richest 1 percent own 34 percent of the wealth and the richest 10 percent own 74 percent of the wealth, whereas in the UK, the richest 1 per cent own 12 percent of the wealth and the richest 10 percent own 44 percent of the wealth” (Hodgson 2016:1). In France, the top 1% own 24% of resources, and the richest 10% own 62% of the resources. Whereas in Switzerland, the richest 1% own 35% of the wealth; in Sweden, 1% of the top richest people own 24%; and in Canada, 1% of the top richest own 15% of the resources. These are capitalistic countries (Hodgson 2016).

Even policies such as progressive taxing have been failing to alleviate resource inequality and income disparity. Genevey et al. (2013) argued that inequality could be reduced only through collaborative efforts and social innovation. Inequality remains a major challenge to bringing improvements to the contemporary
environment (UN 2015a, b). Out of the 17 goals 59 (UN 2015a, b) of sustainable development of the UN, 11 goals address various forms of inequality, equity, and/or inclusion. Of these 17 goals, goal 10 is “explicitly targeted to reduce various forms of inequalities” (Freistein and Mahlert 2015:7). The world is facing unsurmountable challenges to maintain sound economic, social, and environmental conditions. More than 1 billion people are still living in extreme poverty (Fig. 7.5) following the extractive economy, and they are often blamed for environmental degradation. Maintaining sound environment would require “global actions to deliver the legitimate aspiration” of the people. Such an achievement would facilitate not only economic and social progresses but would also encourage “growth and employment” (DESA 2013: iii). In many cases, institutional reforms are needed to bring balance among the social, economic, and environmental pillars. The environment, the economy, and the climate mitigation all need to be integrated in order to move progressively towards achieving the environmental goals through progressive development.

“Cumulative causation” helps to move progressively from an underdeveloped state to a developed state (Myrdal 1968). However, economic dualism pushes some areas to an underdeveloped situation where the environmental conditions are poor. The environment of an underdeveloped region further deteriorates because resource allocation gravitates towards more prosperous regions than to less prosperous regions and more developed regions advance further leaving aside the economically deprived regions. Because of “cumulative causation,” migration occurs from less developed regions towards more developed regions, especially when the population

59 The UN goals of sustainable development include (1) No Poverty; (2) Zero Hunger; (3) Good Health and Well-being; (4) Quality Education; (5) Gender Equality; (6) Clean Water and Sanitation; (7) Affordable and Clean Energy; (8) Decent Work and Economic Growth; (9) Industry, Innovation and Infrastructure; (10) Reduced Inequality; (11) Sustainable Cities and Communities; (12) Responsible Consumption and Production; (13) Climate Action; (14) Life Below Water; (15) Life on Land; (16) Peace and Justice Strong Institutions; and (17) Partnerships to achieve the Goal. Goal 10 has several targets. These include:

• **10.1** By 2030 progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average.
• **10.2** By 2030 empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.
• **10.3** Ensure equal opportunity and reduce inequalities of outcome through the elimination of discriminatory laws, policies and practices and promoting appropriate legislation, policies and actions in this regard.
• **10.4** Adopt policies, especially, fiscal, wage, and social protection policies and progressively achieve greater equality.
• **10.5** Improve regulation and monitoring of global financial markets and institutions and strengthen implementation of such regulations.
• **10.6** Ensure enhanced representation and voice of developing countries in decision making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions.
• **10.7** Facilitate orderly, safe, regular and responsible migration and mobility of people, including through implementation of planned and well-managed migration policies.
is in the second and third phases of demographic transitions\(^\text{60}\) (Grover 2014). When more youthful and better-trained people migrate from less developed to more developed regions seeking better living conditions, the less developed regions suffer from the lack of skilled human capital. This creates disparity in a society and adds further environmental agony to the underdeveloped regions where environmental conditions continue to deteriorate. Low social awareness in contemporary environmental issues often contributes to high fertility rates (phases 2–3 in demographic transition model) in the backward regions as compared to developed region (having phase 3 and 4 of the demographic transition) (Grover 2014). As a result, the per capita income of the less developed regions remains low, and poverty and environmental vulnerability in the underdeveloped regions increase further. Capital also moves from the poorer regions to the prosperous regions, because capital investments in the developed regions as compared to the underdeveloped regions are more secure and the rate of return remains high (Myrdal 1968). Applying the same logic, banking sectors also move from less prosperous regions to more prosperous regions seeking a high rate of returns with security. The “cumulative movement” of trained people and capital towards a more developed regions leaves the economically weaken region further weaker, which Myrdal calls “backwash effects.”

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\(^{60}\)The Demographic Transition Model (DTM) is based on historical population trends of birth and death rates. It represents a country’s total population growth rate cycles through stages as that country develops economically. Each stage is characterized by a specific relationship between birth and death rates (number of annual births and death per 1000). A change in death and birth rates greatly affects a country’s total population. In stages 2 and 3, there are more births than deaths, whereas in stage 4, many staggering elderly aged people dominate the population. In fact, there are no countries in stage 1 (hunters and gatherers) and stage 5 (population implosion).
“cumulative movement, “backwash effects,” and “spread effects” enhance both income disparity and inequality leading to the degradation of the natural environment. As the prosperous regions become enriched with economic resources such as human capital and social capital, more environmental problems would emerge in the backward regions than in the prosperous regions in a theoretical sense. However, in practice, it would be difficult to measure environmental quality merely based on the accumulation of resources; for example, the worst environmental conditions of

61In the present context of Nepal, poor people have accesses to fertile lands in the rural areas of Nepal as elites, educated, and working-age population have out-migrated, from the Mountain and Hill regions, to advance their careers in more developed regions of Nepal or to foreign countries. Despite having accesses to agricultural lands, these people are unable to utilize such lands because of the (a) lack of market opportunities in low-populated rural areas due to out-migration; (b) lack of logistic support for agriculture; and (c) lack of manpower to work on the farmlands and (d) bulldozer engineering destroying many of the natural resources including water springs, increasing soil erosion and landslides while constructing roads but having no perennial link with the big urban centers because of the seasonal dirt roads created by bulldozer engineering without giving any thoughts to other issues.

62Tools like the environmental Kuznets curve that is assumed to measure the quality of environment with economic development also fails to indicate the reality of the Kathmandu Valley. The Kuznets curve states that at the beginning of development, the environment deteriorates, but after a certain level of economic growth, a society begins to improve its relationship with the environment. As the economy advances, people will have more discretionary income after paying for necessities; therefore, they are more amenable to paying higher prices in return for better environmental standards. With increasing GDP, improved technology and using the 21st technology, productivity increases, but the population decreases with a higher standard of living. However, it has been just the opposite in the case of the Kathmandu Valley. The environmental conditions of the Kathmandu Valley show that pollution is not simply a function of income but many factors, for example, the effectiveness of government regulation, the development of the economy, living standard, number of vehicles and their types, and constructional activities, to name a few. The reality has been that the link between levels of income and environmental degradation is quite weak. It is possible that economic growth will be compatible with an improved environment, but it requires a very deliberate set of policies and willingness to become environmentally friendly in the changing circumstance. Gross domestic product (GDP) has long been criticized because it simply measures economic activity and not genuine improvements in the quality of our lives and environment. GDP measures everything, except that which makes life worthwhile. GDP does not tell anything about sustainability, and it fails to track the depletion or degradation of natural, human, built, and social capital on which all economic activity ultimately depends. It fails as well to capture the inherent unsustainability of economic activity financed by debt.

63Economists assess environmental quality based on the level of gross national product (GNP), which is the commonly accepted measure of economic development of a nation. However, very often, GNP also fails to reflect the true cost of development because it excludes the cost of depletion of natural resources and other environmental costs. For example, when a timber tree is felled, it generates revenues and this income is added to the GNP, but the environmental consequences resulting from the felling of tree is not accounted for anywhere. This raises the question of sustainable development that attempts to strike a balance between the demands of economic development and the need for the protection of our natural environment. Ignoring the path of sustainable development means, in the short run, the development will pick up, but it will be at the cost of environmental degradation in the end. Thus, while formulating a development policy, a balance needs to be maintained between the requirements of the present and the needs of the future generations even considering the strong international commitment and cooperation because ecology and environment transcend national and geographical boundaries.
the Kathmandu Valley may remain despite the concentration of economic resources and human and social capitals.

Myrdal also coined the term “spread effects” (equivalent to trickle down in the neoclassical term) in contrary to the “backwash effects.” The “spread effects” will have positive impacts on the underdeveloped areas in terms of “demand, market avenues and technology through the transfer of surplus capital” from the more developed regions to the less developed regions. Theoretically, the “spread effect” will neutralize the “backwash effects.” However, in practice, the effectiveness of “spread effect” often becomes minimal as compared to the “backwash effect” to improving the environmental conditions of less developed regions. Thus, the “spread effect” often becomes less effective in maintaining economic growth in less developed regions. As a result, regional disparities and inequalities further widen in less developed areas because of the income differences between rural and urban areas and due to “cumulative causation” as well as “backwash effects” (Kanbur 2018). As the inequality and disparity continue, political power largely concentrates at the top social strata—among the elite groups—in the underdeveloped regions. Through money and political influences, these elite groups accumulate more power than lower-income people. Further, these elite groups even violate state rules and regulations and mobilize government resources for personal benefits. These elites even escape punishment for wrongdoing through legal processes. Even institutional reforms often fail to correct these discrepancies. Stern actions are needed to reform institutions, fight against corruption, and implement scientific land reforms and the displacement of elites from the commanding heights of a state (Gasper 2017; Kanbur 2018).

If institutional reforms become unsuccessful, the elites will continue dominating the economies of the less developed region and the “spread effect” becomes weaker than the “cumulative causation,” and the economic inequalities between developed and developing regions widen. In the less developed regions, the weaker sections of the community, whose economies depend on extractive activities, are often blamed

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64The “spread effects” and “cumulative causation effect” could have environmental effects both in developed and developing regions. The “spread effects” may help transfer technology to rural areas, for example, people who have returned from Israel with experience in agriculture have shown positive changes in the rural areas. As per the “cumulative causation effect,” as resources (human, capital) accumulate in certain location such as the Kathmandu Valley, environment deteriorates due to mismanagement of resources, while elites while seeking luxurious lives deteriorate environments due to an excess of throughputs and vehicular emissions.

65The theory of anthropocentrism considers human beings as the most important entity of the world, and they deserve a higher level than other organisms on this planet. However, this intelligence also acts as a double-edged sword because humans can allow economic progress while still preserving the environment, but at the same time, the uncontrolled economic development may take a toll on precious natural resources. Uncontrolled economic development neither benefits humans nor does it serve any purpose in the conservation of the environment.
for environmental degradation and weakening of ecosystem services. Generally, this happens in highly populated areas where the land to population ratio is low, especially when the population is in the second and third stages of demographic transitions. The extractive activities associated with economic development negatively affect the environment. Recently, however, in Nepal, especially after the Maoist insurgency (1996–2005), many working-age people chose to leave the rural areas in search of jobs either in urban centers or in other countries. As a result, many of the cultivable lands in less developed regions are left abandoned, and families who could not afford to send off their working-age members away from home for financial reasons may have access to these abandoned farmlands. However, their inability to invest in new farming technologies to modernize their farms limits these families to traditional farming practices. As a result, productivity per unit land area does not increase.

In recent days in rural Nepal, there has been a wave of bulldozer engineering for various developmental activities, where many cultivable and other land areas, despite their high degree of slope with soil erodability, are excavated. In this area of bulldozer engineering, any arguments in favor of nature conservation are considered anti-economic and anti-development. Amidst these controversies, some environmental concerns are raised even in the rural areas, especially after experiencing various abnormal climatic conditions such as high-intensity rainfall, temperature extremes, and prolonged drought conditions. As a result, global climate change has been a great concern even in the rural areas of Nepal. While many European countries are working towards limiting atmospheric emissions by urging rapidly industrializing developing countries like China and India to reduce their level of gaseous emissions, Nepali communities at the local level are working towards a green economy to minimize carbon abnormalities.

At the World Environment Conference in Stockholm in 1972, participating countries promised to minimize environmental problems from industrial pollution, pesticides, fertilizers, carbon monoxide, and nitrous oxide emissions from automobiles. However, newer pollutants emerged from the use of new chemicals and are now polluting soil, water, and air, making the environment further polluted. In 1992, at the Earth Summit at Rio de Janeiro, Brazil, representatives from over 150 countries

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66 When the population was low in the eighteenth and nineteenth centuries, people were less concerned with environmental degradations. Environmental problems started in European countries after a large chunk of forests were converted into agricultural farms to increase food production under the tutelage of agricultural revolution. Likewise, deforestation in North Africa/Southwest Asia occurred in the nineteenth century after the Ottoman Empire extracted a large volume of timber from the Balkan region and Saharan Africa to export them to the European countries to pay the large amount of loan the Empire had borrowed to support Ottoman’s large military bases. During the twentieth century, the exploitation of natural resources occurred merely on economic interests. The political climate, governmental policies, and culture all were gravitated towards the exploitation of natural resources with the least concerned to environmental conservations.

67 The Industrial Revolution of the nineteenth century laid the foundation for the rise of a new culture “enriched” by machines and money. However, the growth of economies across the world resulting from use of machines had a great impact on our environment. This kind of development had both positive and negative impacts on the environment.
met to discuss environmental issues and their implications for future development of the world (Chaps. 3 and 8). The Summit concluded that if these gaseous emissions are not controlled, the result will be disastrous consequences to contemporary economic development and the environment (Chaps. 3 and 8). It was also concluded that making economic development less problematic requires the use of the twenty-first century’s greener technology\(^{68}\) that helps to minimize the amount of throughputs. Since then many developing countries including Nepal are attempting to reduce the atmospheric carbon through international financing under the REDD+ (reducing emissions from deforestation and forest degradation) programs (Chap. 8). It is hoped that there will be climate justice and payments for forest restoration and protection from donor agencies. In the past, the conservation of tropical forests was seen as the responsibility of tropical countries alone, but now there is international interest to ensure the regeneration and conservation of tropical forests (Chaps. 3 and 8). Reducing emissions and sequestering carbon have become a new business opportunity; however, the local communities need to be involved in these activities. REDD+ provides an opportunity for international communities, namely, developed countries and companies, to maintaining carbon stocks above and below the ground, while creating new sustainable livelihood opportunities for the locals. However, very often resources targeted for REDD+ are not going to the people who actually conserve forest resources but are going to the people at the top of the hierarchy. The current challenge is to reverse the pyramid of benefits so the people at the base will be receiving more than those at the top. Local communities could become shareholders in carbon credit schemes; thus, they could benefit from new and successful projects (see Chaps. 3 and 8). If incentives are not provided to the people who are actually involved in carbon credits, disgruntled politicians may capitalize on sentiments of the poor mass to create political instability\(^{69}\) (Yungman 2019) which would hamper

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\(^{68}\)Many developing countries are benefitting from the use of genetically modified crops that are requiring much less water, fertilizer, or pesticide while enhancing the crop productions. However, farmers growing hybrid crops are required to buy costly new seed every year. Because of the higher cost of seeds, many fertile farmlands are left barren, and the economic rate of return from land has gone down. As a result, the challenge to feed millions of people who are starving is still unsolved. The “Green Revolution” has doubled the size of grain harvests.

\(^{69}\)Merely catching the sentiments of disgruntled people does not address the real causes of poverty. Poverty is intertwined with multiple causes such as the lack of affordable housing, lack of health care, and lack of a living wage. Current government of Nepal has started unpopular program of gathering taxes. This is a good step that might help to correct income disparity in the long-run like in many Socialistic Nordic countries; however, the government of Nepal fails to provide facilities for the taxes it gathers. Moreover, corruption is deeply institutionalized. High taxes without improving the living conditions of people make the lives of low-income people very difficult. People without resources are compelled to overcome the rules and regulations and use natural resources while disregarding the government regulations. The government might criminalize such activities and punish people or catch the agitating motives of people and rally against the government. Similar cases in the American society has created further poverty. For example, “Mass incarceration and hyper-criminalization serve as major drivers of poverty” (www.tinyurl.com/ya42m49g) because people with criminal records are disqualified to take responsible jobs and they lose faith in the government. It deprives people from the main venture of economic development. Similarly, this may be the case in Nepal as government often criminalizes people based on political faith rather than based on reality.
economic development. Therefore, it is essential to reform the institution, involve local communities in economic development, alleviate poverty, and improve the environment. Unless poverty is alleviated, the struggle between bourgeois and proletariat, the former seeking to enrich themselves and the latter fighting for equality, will continue in an ongoing struggle for social transformation.

Prevailing income inequality around the world has affected the goals of sustainable development and environmental conservation (UN 2015a, b). Throughout the world, the income inequality (Fig. 7.5) has been a serious challenge to sustainable development and environmental protection. In Asian countries, since the 1990s, the inequality rates decreased, yet it is lower than in parts of Latin America and sub-Saharan Africa (Fig. 7.6). Among the worst affected are Bangladesh, Cambodia, China, India, Laos, Nepal, and Sri Lanka (Herro 2006). The ADB claims the widening gap in the urban-dominated economic growth and the lack of investment in backward (rural) areas to creating opportunities in rural areas as inspired by PURA (Mohita n.d.); this has fueled high levels of migration to cities. Income inequality between rural and urban areas and among wealthy and the poor (Herro 2006) have created further inequality. For example, in 2005, the wealth of all US millionaires totaled $30 trillion, more than the gross domestic products of Brazil, China, the European Union, Japan, and Russia combined (Herro 2006). In Asia, the ADB recommends that more money be spent on education, training, and health care, if the governments wish to decrease disparities between the rural and urban areas. Until recently, education, health care, and these components have been dealt with individually. As a result, no proper policies are crafted to narrow the gap between the rich and poor, and the low-income people are suffering due to the lavish activities of the wealthy people which have not only has accelerated the deterioration of the contemporary environment but have also worsened the repercussions of climate change.

7.4.1 Income Inequality and Its Impact on Contemporary Environmental Conditions

Since the early 1990s, there has been a growing concern on environmental issues due to the increasing inequality in society. Questions were raised as to whether or not the inequality and disparity have led to any environmental problems. If so, to what

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70 A country that is in a politically unstable condition will not be able to attract necessary investors and businesses both within and outside the country. A local investor with the resources to establish a business may prefer to take his or her money elsewhere, to a country with a reasonably stable government.

71 Dr. APJ Abdul Kalam, Indian President, suggested the concept of providing urban amenities in rural areas (PURA) to develop India by 2020. His vision was to provide rural amenities similar to urban areas by the proper identification of village clusters with growth potential and improving the transit system and power supply, IT services, educational facilities, and market connectivity.
extent? In this section, we explore how the income inequality becomes a major factor of contemporary environment. We also discuss if income inequality becomes the factors for increasing environmentally inequitable outcomes. This will allow us to identify the confounding problems associated with the contemporary environmental conditions.

Inequality has been increasing throughout the world. An analysis of 2010 statistics shows that the per capita income of the developing countries housing for almost ¾ of the global population, have only 1% of the total global income. A large portion of the population lives in low income (Fig. 7.5). The developed countries housing 16% of the global total population with more than $12,476 per capita hold over 55% of the total global income (Sharma 2015), whereas the world’s poorest countries housing 10% of the total global population have only 2–7% of the total global income. The richest 10% of people in these poorest countries hold over 40% of the total incomes. In other words, 43% of the total global income is in the hands of 1% of people, whereas 80% of the total population hold only 6% of the global income.

Fig. 7.6 (a–d) Income inequality among selected countries and regions of the world
Around 200 years ago, the richer countries were 3 times richer than the poorer countries, but today the rich countries are 80 times richer than the poor countries (Sharma 2015). In the developed countries like the United States, the gap between the rich and poor is widening where 10% of the total population controls about 75% of the total income, but the poorer section of the population holds only 2% of the total income (Sharma 2015). Today, the debate has been on how to alleviate the gap between the rich and poor because the income levels of people vary widely across the world (Figs. 7.5 and 7.6a, b).

Almost 43% of the world’s poor and an estimated 437 million people living in South Asia survive with an income of $1.90 a day, whereas three-fourths of the total population survives with an income between $1.60 and 3.20 a day (Fig. 7.5). “It is disheartening to say that 237 million people in South Asia live at a risk of dying before the age of 40 years” (Sangroula 2019) mainly due to the lack of proper nutrition. Almost 867 million people in the South Asian region do not have access to basic sanitation, and more than 300 million people live undernourished which even violates Human Rights issues (Sangroula 2019: 316, 322). For example, citing reports from the National Commission for Enterprises in the Unorganized Sector (NCEUS), Sangroula (2019) states “75 percent of Indians are poor and vulnerable, 79 percent are unorganized sector workers, 88 percent scheduled caste and scheduled tribe population, 80 percent are backward class people, and 84 percent of Muslims belong to the segment of the poor and vulnerable populations in India” (322–323) (Fig. 7.6a–c). Nepal’s situation is no different where many people from Provinces 2 and 6 are far below the average poverty line, a situation worse than in South Korea, Afghanistan, the Maldives, and Pakistan (Fig. 7.6d).

Among the Asian countries, between 1990 and 2010, the Gini coefficient index increased from 0.23 to 0.46 (an increase in 40%) (Fig. 7.6d). During this period, the Asian economy grew by 17%. Between 1990 and 2010, the overall poverty in Asian countries decreased from 54% to 22%, yet the gap between the rich and poor further widened. Political economists view economic growth very critically and argue that merely the GDP figure (averaging the total incomes by the total population) does not depict the true picture of poverty alleviation and income inequality. If it had been the case, 240 million people would not have been living below the poverty level in Asian countries. However, decreasing income inequality would have rather reduced the poverty as the income has increased. The sub-Saharan Africa is a perfect example of this and shows that despite high economic growth rate, the gap between the rich and poor is widening (Fig. 7.6b, c). In contrast, in China, the poverty level has decreased with high economic growth rate (Fig. 7.6a, b). Critiques from Western countries and some university faculty who visit Chinese universities very often and travel the countryside have expressed that China’s economy is not transparent and the reality might be different from what has been claimed by the Chinese government; however, we do not have any evidence to justify either way.

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72 Some individuals suspect that since China limits visitors and owns Chinese nationals to use the Chinese versions of media, such as Viber, WhatsApp, Facebook, and Messenger and many Chinese newspapers publish only censored news, the reality might be different from what has been claimed by China on the internal economy.
How to measure inequality and its impact on the environment is a big question because it is difficult to measure individual incomes, existing poverty, inequality, and details of multi-property ownerships. Likewise, the method that has been in practice since the 1990s to measure development based on the GDP, level of education, health, and income status has not been helpful to measure the level of development, inequality, and environmental conditions. There are some controversies in economic development and human rights and vice versa. For example, in some countries where the economic growth is high, the human rights index has been low and vice versa. In some countries, a higher human development index has not been able to capture the status of income, education, health, and social services and environmental conditions. Having seen these discrepancies, since 2010, researchers have started including the status of income, education, health, and social services while determining the human development indices and assessing the quality of contemporary environment (UN 2015a, b). It is necessary to measure the level of human development and environmental conditions because in many developing countries, the income inequality has decreased the human development indices due to an unhealthy living environment. For example, records from Asian countries suggest that in 2014, due to an income inequality, access to health, education, and other inequalities, the human development indices have decreased by 30% indicating that there are other factors besides the economic growth (Fig. 7.7) that determine the human development indices (Sharma 2015).

![Conceptual framework of environmental sustainability](https://soapboxie.com/social-issues/The-Environmental-Economic-and-Social-Components-of-Sustainability)
7.4.2 Income Inequality in Nepal

Despite over six decades of long planning processes, Nepal has continued to be in the category of least developed country (LDC). Though some progresses were seen in the 1990s in terms of per capita income after the liberalization of the economic policy (Pradhan 2009; Fig. 7.1), the human development index has been very low. In 2017, Nepal’s human development index was 145th out of 177, which was even lower than the human development indices of many sub-Saharan African countries. There is a vast difference in per capita income and economic growth and human development indices. Economic growth alone has a rare impact on the livelihood of the majority of the people; if it was not the case, over 8 million young Nepali would not have emigrated to 59 countries for remittance and finding a means of living (MyRepublica 2017a, b).

Actually, in Nepal, the study of income inequality started from 1977, two decades after the planning started in 1956. The 1977 studies found the Gini index for rural and urban areas almost equal to 0.59. After the economic structural reform in the 1980s, the inequality increased by 7%, which was higher than in other Asian and African countries. The household survey of 1984 by the Nepal Central (Rastra) Bank revealed the Gini coefficient at 0.57 in Nepal (0.55 in rural areas and 0.85 in the urban area). This study indicated Nepal’s precarious situation in income inequality. With the help of the UNDP, three surveys were conducted on the living standard and income inequality between 1995/1996 and 2012. Findings from these surveys are presented in Table 7.6.

Table 7.6 Changes in the gap between the poverty and income

| Level | Geographic area | Fiscal years | Percent change (1996–2012) |
|-------|-----------------|--------------|---------------------------|
|       |                 | 1995–1996    | 2003–2004     | 2010–2011     |                  |
|       |                 |              |              |              |                  |
|       | Percentage of poor below the poverty level |              |              |              |                  |
| Nepal | 41.8            | 30.9         | 25.2         | −40          |
| Rural area | 43.3            | 34.6         | 27.1         | −39          |
| Urban area | 21.6            | 9.6          | 15.5         | −28          |
| Income inequality (Gini coefficient) | 0.342          | 0.414        | 0.328        | −4           |
| Rural area | 0.308          | 0.349        | 0.314        | +2           |
| Urban area | 0.427          | 0.436        | 0.362        | −15          |
| Per capita income ($) | 76.90         | 151.62       | 416.59       | 4.42         |
| Share of 20% poorer in total income percent | 5.3           | 5.3          | 4.1          | −23          |
| Share of 20% richer in total income percent | 50.3          | 53.4         | 56.2         | −12          |
| Per capita expenses ($) | 68.2         | 158.48       | 358.29       | 4.42         |
| Share of 20% poorest percent in total income | 7.6           | 6.2          | 7.6          | 0            |
| Share of 20% richest percent in total income | 45            | 53.4         | 45.1         | 0.4          |

Source: Nepal Living Standard Survey (2011–2012); Sharma 2015
The Rastra Bank’s survey of 2010/2011 showed that almost 25% of the total population of Nepal was below the poverty level. In 2011, 15.5% of the total urban population was below the poverty level as compared to 27.1% in the rural areas. The survey statistics revealed that in Nepal, the poverty level has decreased by 40% between the period of 1996 and 2011. 56.2% of the top 20% of resources are controlled by the rich, whereas 20% of the poorest section of the society have access to 4.1% of the resources (Fig. 7.8). The gap between the rich and poor is further widening with a large section of the middle class joining the poor class, which should have been an upward mobility. The low-income groups have been deprived of various government facilities, which is hindering the development processes where the rich are holding power. However, the Gini coefficient does not show any significant difference. In the rural area, the Gini coefficient was 0.314, whereas in the urban area, it was 0.362 indicating a 15% higher gap for urban areas. In 1996, the urban inequality seems to have decreased by 17%, whereas in the rural area, it has increased by 2%. Among the Asian countries, in 2011, the average Gini coefficient of rural and urban areas in Nepal was 0.33 as compared to 0.30 in Pakistan, 0.32 in Bangladesh, 0.38 in Bhutan, 0.34 in India, and 0.42 in China (Sharma 2015). Between 1996 and 2011, the share of the poorest 20% in total income had decreased by 23%, whereas the share of the richest 20% had increased by 12% suggesting that the gap between rich and poor is further widening in Nepal (Sharma 2015).

A comparative analysis of the Gini coefficient between 1996 (0.57) and 2011 (0.75) reveals that the difference has increased by almost 32% (Sharma 2015).
Agriculture has been the economic backbone of Nepal, and the income from agriculture determines the income differences. Unfortunately, there is a wide variation in the ownership and quality of arable land. The Gini coefficient in landownership and quality of land in 1991 was 0.52, while it was 0.54 in 2001, while the same coefficient between the rural areas was 0.53, and for urban area, it was 0.642. If all agricultural components such as buildings, vehicles, loans, birds, and other domestic animals are taken into consideration, the Gini coefficient may be different; however, in Nepal, as of today, this has not been in practice. Remittance is another factor that also influences the Gini coefficient. For example, in 2011, families with remittances were 21% of the poverty level, whereas those without remittances were 36%. In other words, families without remittances were 20% poorer than families with remittances. Likewise, in terms of the Gini coefficient, income differences among families without remittances were 0.0345, whereas among the remittance-receiving families, it was 0.397; simply put, the Gini coefficient was 17% age higher among the remittance-receiving families as compared to no remittance-receiving families. Among the remittance receivers, 12% belong to the absolute poverty level, whereas 32% belong to the very rich category. The poorest families are getting $28.30 per person of remittance per year, whereas the richer families are getting $214.33 per person per year. The difference between poor and rich families receiving remittance amount differs by 7%, which is attributed to the level of education, an endogeneity factor. In other countries such as Ghana and Egypt, the remittance has increased the income differences, and a higher level of education has helped in higher income, whereas in China and Vietnam, remittance has helped in reducing the income differences (Sharma 2015; UNDP 2015).

The UNDP from 2010 has initiated a study on the effects of education on health, employment and income, and other social and environmental conditions; however, the combined effects of these factors have not been studied in the context of Nepal as of now. Although it has been a global practice to use the Gini coefficient to measure the income differences and environmental conditions, in Nepal with many social stratifications, it is very difficult to take the Gini coefficient as a measuring rod of income differences on environmental quality. In many countries, the income differences have been one of the causes of political instability and environmental deterioration, especially in the Middle East and Latin American countries. Stewart and Daga (2017) concluded that income inequality contributed to the escalation of the Maoist insurgency and Madheshi uprising in Nepal. In Nepal, 46% of the Dalits and 41% of the Muslims are among the poorest, whereas only 18% of the Brahmin and the least number of Newar are among the poorest. Such variations obviously contributed to the mass participation in the Maoist insurgency by the Dalits and lower-class communities. A further analysis of the data revealed that the Dalits and Janjatis of the Mountains and Hills are poorer than the Dalits and Janjatis of the Tarai Region. The 2003/2004 and 2010/2011 surveys have revealed that the income differences in Dalit and Janjati are decreasing really slowly compared to the income inequalities among the Brahmin and Newar. Sociologists have attributed such differences in the reduction of income differences due to wide variations in the social stratification among the Dalits and Janjatis. Though some Dalits and Janjati
are in high-earning jobs both within and outside Nepal, their numbers are very few as compared to the Brahmin and Chhetri. Thus, to see a change in the living conditions of all Dalits and Janjati, in average, it takes a much longer time. Many of the Dalits and Janjati who have no access to remittance live on the extractive economies and are often blamed for the degradation of the environment.

Income differences have been a serious challenge to almost every country around the world. It is essential to work towards economic growth and employment opportunities to improve the conditions of infrastructures, improve the social justice system, modernize education, and plan for short-, medium-, and long-term goals. In Nepal, first, the social stratification has to be minimized, the educational system has to be reformed, and programs of employment generation have to be implemented. The Nepal Government needs to work on reducing income level on personal property rather than the national income which can be done by imposing progressive taxes. Some of the steps that need to be addressed to decrease income inequality include (a) a reduction in the quality and area of land ownerships through progressive land reform policies; (b) improvement in the human capital through the modernization of education; (c) employment generation to tap the growing labor force; (d) implementation of a social security program; (e) progressive property tax; and (f) planning for sustainable development within the framework of United Nations’ Sustainable Development 2030. Economist Robert Chambers once has suggested, “the rich people should satisfy their quench for wealth even with medium income and help the poor to raise their living standard” (2006). If taken seriously, these advises could have helped in lowering income inequality and improving the living conditions of people while maintaining peace and stability and a good and healthy environment in a society. South Asia has 23% of the world’s population and 43% of the world’s poor and undernourished people with low life expectancy, low literacy rates, and a higher degree of gender discrimination with associated deaths from violence (Shrestha 2014). Sangroula (2019) argues that only the Chinese economic model can alleviate inequality because the Chinese model embraces activities emphasizing the goals for the common people rather than the selfish goals of limited few who have access to resources. However, the situation of Nepal is different from the Chinese context despite having a government of communist party with 2/3rd majority.

Can Communism Alleviate Inequality?

Since 2017, Nepal has an elected Communist government for 5 years (2017–2022) that has the support of a two-third majority elected members in the federal parliament, and a complete majority in six of the seven provincial parliaments. The Nepal Communist Party (NCP) came to power with anti-Indian sentiments. The unilateral economic blockade by India just after the promulgation of Nepal Constitution of 2015 and before the general election of 2017 provided favorable environment for NCP’s to cultivate anti-Indian sentiments. The election environment was almost divided between anti-Indian and those who have soft corners towards India. Seeing
the overwhelming support from the majority of the people while raising anti-Indian slogans, CPN made too many promises during the elections.\textsuperscript{73} The election environment was such that irrespective of the difficult geography, Nepal will be connected with the nearest Chinese Seaports by a bullet train constructed by China. The Communist Party of Nepal was successful to impress people that the long-lasting dependence on India will be over for ever with the trade agreements between Nepal and China. Nepali people were excited to vote for the NCP to change the face of Nepal and to be relieved from the Indian hegemony. However, the Nepali Congress Party’s warned Nepali people that Communism has failed everywhere, and will create a terrified environment in Nepal if it forms a majority government after the general election. The Nepali Congress further warned that if NCP forms a majority government, people with noncommunist faith will have no means to express their concerns and live peacefully. Either they will have to leave the country or live under duress while the communist supporters will have all sorts of impunities. Nepali Congress left no stone unturned to inform the fellow citizens that all constitutional institutions including the anti-corruption body, courts, election commission, police, military, civil administration, educational institutions, and health institutions will be filled unilaterally by communist believers and those with non-communist faith either will have to live under duress under the communist tyranny or have to leave the country. The Nepali Congress Party further warned that Nepal will suffer from several unplanned developmental activities. These unplanned activities will be crafted to create jobs to the communist cadres and the country will suffer from environmental disasters. Despite these warnings, the majority of the Nepali people ignored the appeals of the Nepali Congress Party because of its poor past governance, rampant corruptions, and inefficient political organizations. People overwhelmingly voted in favor of NCP in the Westminster’s model of bicameral parliament.

Marxist scholars regard the Communist rule as the heaven for poor and helpless people because it creates an environment where everyone will have equal access to resources. However, a review of literature reveals that even within the communist reign, there is an increasing social inequality. For example, Horner (2014) studied the case of Cuba where he observed “Castro’s family and elite members of the

\textsuperscript{73}Some of the major election promises of the Communist Party (United CPM-UML and Maoist) include, but are not limited to: (a) equal access to all the state resources for everyone with guaranteed job opportunities; (b) bringing home all the emigrated youths (about 8 million) with employment opportunities who have left the country for remittance purposes; (c) high quality free education up to 10+2 with snacks and clothes for students coming from low income families; (d) full scholarships for the first-generation students; (e) electrification of entire Nepal and exporting electricity to India, Bangladesh, and China and to other countries to enhance Nepal’s economy; (f) organic farming and making Nepal self-sufficient in food and nutrition; (g) zero tolerance to corruption, hunger, and homelessness; (h) efficient transportation and seamless communication; (i) well facilitated apartments for low-income families who cannot afford to have own home; (j) $50 per month per citizen who are above the age of 70, and for widows and single moms of 60+ years; (k) allowances to disabled people; (l) guaranteed clean environment to public, otherwise, they will be compensated for the damages caused by the polluted environment, and (m) connecting Chinese seaports by electric rails.
military live like Kings while the rest of the Cuban population live like rats” (p. 1). In Nepal, after 32 months in office, Nepal Communist Party’s government has done very little towards alleviating the social inequality. The majority of the Nepali Communist leaders have the most lavish life, while many poor are suffering from a lack of proper accesses to food and basic medicines. Top-ranking Communist leaders often spend their family vacations in the most lavish hotels of the Gulf, Southeast Asian, East Asian, European, North American, and Oceanic countries. Poor suffer from the lack of very basic resources.

The Communist ideologues heavily criticize the capitalist world, but at present, it is very difficult to see any distinction between the Nepal’s Communist ruling system and capitalist system. Looking at the various regimes of Nepal over three centuries, it reveals that neither the capitalism nor the communism brings complete prosperity and equality. Neither of these systems, everyone would have equal or easy access to resources. Nepal’s current conditions of Communist reign with a 2/3 majority rule is not different from what Horner (2014) remarked on Cuba.

In the words of Horner (2014), the “purpose of the Marxist economies is to put all the wealth under the control of the rich [Communist] elites so that it will be possible for the elites to control all labor and economic output to ensure the masses of people stay poor and the elites stay rich” (p. 1). Hoarding resources and power have become a craze in Nepal with every successive government. The Nepali Congress Party that ruled for many years from the 1990s remains defamed because of poor governance during its ruling. Despite the rising unpopularity due to poor performances of the government, the ongoing internal political bickering, and group politics within the ruling Communist Party, the opposition party of the Nepali Congress is unable to establish itself as an alternative political force. The current Communist government has done no significant difference to alleviate inequality from the previous governments. Rather, the current Communist government has made many unprecedented decisions that have negatively affected the life of people. Income disparity is widening. For example, though it might be with good intentions to expedite development processes in Nepal while following the Singaporean model of development under Lee Kuan Yew, Xi Jinping’s model of China, and Modi model in India, Prime Minister K. P. Oli has concentrated all the power under him. The PM and his cabinet coterie are authorized to award million dollars contracts through negotiations without following the competitive bidding processes. Further, laws are modified, but they are becoming more favorable for corruption. The anticorruption body Commission for the Investigation of Abuse of Authority (CIAA) has become defunct to take action against the wrong doing by the Cabinet. The activities of CIAA have been very unfair that selectively takes actions against the cadres of certain political parties, and gives impunity to selected few. The intentions of the PM Office might be good to expedite the development process in Nepal, but results so far have revealed only disappointments. Institutionalized corruptions have increased rather than following the footsteps of Lee Kuan Yew of Singapore and Xi Jinping of China. Horner (2014) argued that the Chinese Communist Party operates under the ideologies of Marxism-
Leninism, Mao Zedong Thought, and Deng Xiaoping Theory. Deng Xiaoping (1904–1997) pushed the Chinese Communist Party through reforms after the death of Chairman Mao in 1976 and opened China to the Western world to bring the twenty-first-century technology into China. Deng Xiaoping was successful in making a tremendous success in Chinese economics within a short time period. Before the Deng’s policy, the Mao’s policies of forced collectivization of Chinese agriculture in the 1950s created massive famine that claimed tens of millions of lives. “It was the greatest single crime in the history of the world” (Horner 2014:2). Deng Xiaoping pushed through a reform plan and called it “socialism with Chinese characteristics,” and “it has produced a state-directed form of market capitalism” that created the world famous “Rising China” (Horner 2014:3). Today, the Communist China—“probably has the most unequal income distribution of any of the world’s major economies” (Horner 2014:3). In terms of inequality, it is not only among the people, but there are also great regional disparities.

The Chinese economy, the second largest of the world after the United States, is considered one of the most successful ones by various media including by the Nobel Laureate Stiglitz (Stiglitz 2014 in Caixin, Economic News, April 2). Interestingly, Horner (2014) questioned the views of famous economist, Stiglitz, and critically viewed the Chinese media, which are controlled by one party that rarely exposes the difference between the origins, causes, consequences, and remedies the government may take to alleviate “inequality.” Instead, Horner (2014) prefers to rely on media “operating within a constitutional democracy with competitive elections” with no media “controlled by one-party regime” where independent university faculty and media persons can freely express their opinions unlike in China (p. 3). Horner’s (2014) arguments are that in order to know the reality of a country, there should be free media. Though media are free in Nepal, oppositions are suspecting that the Communist reign of Nepal might regulate media under the strict control of the government.

Current Communist Government of Nepal dreams to establish socialism. However, Nepali socialism suffers because political leaders feel secured by owning private properties; they operate several businesses, educational institutions, and hospitals against the [inter]national norms of the Communist Party. Current Nepali Communist ruling is more or less similar to what Horner (2014) has observed elsewhere where Communist leaders control almost every institution “to steer the economy in the direction that the Party wants it to go” (Horner 2014:3). This has allowed the system to “amass enough [resources] to lubricate the system as a whole” (Horner 2014:3). Today, Communist leaders in Nepal have shares on top-ranking hospitals, hotels, banks, educational institutions, shopping complexes, and recreational parks, and the corruptions is deeply rooted. The Chinese President Xi Jinping has taken courageous steps to seize “assets worth at least 90 billion yuan ($14.5 billion) from family members and associates of retired domestic security tsar, Zhou Yongkang, who has been at the center of China’s biggest corruption scandal for more than six
decades...[...]. More than 300 of Zhou’s relatives, political allies, protégées and staff have also been taken into custody” (Horner 2014:4). Instead, in Nepal, the Communist Party command and subcommands defend the top political leaders’ misdeeds arguing it as a media bias to defame Communist leaders. Some of the arguments have no basis to justify, for example, the land scandals in the Lalita Niwas (Kathmandu Valley), wide body, narrow body, Gokarna Resort, Ncell, and 4G and 5G scandals under the Communist reign.

Nepal’s recent developments, the arguments by top-ranking leaders, and their lifestyles are the most frustrating bitterness in the Communist reign, and thinking about equality seems to be a daydream. The Communist patronage network extending all the way into the top ranks of the Nepal Communist Party is too long and includes both from the erstwhile Maoist and Communist Party of Nepal—Unified Marxist-Leninist. Almost all the state-owned enterprises are under the control of Communist leaders in Nepal ostensibly creating a stronger and more consequential Communist-controlled Nepal. Living in Nepal, one must acclimatize in this way, but it is not without long-term huge costs at the so-called slogans of “equality” and “socialism” under the Communist reign where there is a lack of robust opposition, at least within the current political circumstances. Despite these institutionalized corruptions and sufferings, at least for now, the Centrist Nepali Congress Party does not appear to stand as an alternative political source because of its past where some top-ranking leaders and their family members were embroiled in massive corruptive activities, and many of them even have faced jail sentences. However, the majority of the media have reported that many wrong doers of the communist cadres have been given protective legal immunity. We do not have any means to cross check such claims.

It is hard to find logical evidence to state that recent approaches taken by the NCP government are in any way congenial for the alleviation of poverty and inequality and the modernization of Nepal. The gap between the rich and poor in Nepal has widened, and the disparity between the urban and rural population has become deeper. The “uppermost 20 percent of the population has access to 57 percent of GDP whereas the 20 percent bottom-line population is forced to live with access to only to 3 percent” (Sangroula 2019:293). The Communist China has accepted open market as an essential component of its socialist system, and this system has allowed the private sector to exist as an integral part of the socialist economy system. Over the past 1–2 decades, China has made tremendous progresses because President Xi Jinping has boldly taken initiatives to eliminate corruption. Nepali politicians need to develop systems to eliminate corruptions from the country.

In such a political environment, talking about equality is merely a hypothetical scenario. The inequality issue neither arises in a year or two nor its alleviation is possible in 1 or 2 years; at least, the Communist party-led government in power with the absolute majority in three tiers of government should have shown indications as the proverb goes “morning shows the day.” Unfortunately, the ongoing personal greed for private property and the involvement of Communist leaders in businesses, educational institution, and hospitals do not indicate a good future for accomplishing the slogan of “Prosperous Nepal, Happy Nepali.” The Communist Government has a
The current situation is bleak, all provinces have inequality, and Provinces 2 and 6 suffer from multidimensional poverty (Fig. 7.10a). In Provinces 2, 5, 6, and 7, the human development indices are relatively low (Fig. 7.10b). Present and future government must pay attention to these issues to alleviate poverty and inequality in Nepal.

Unfortunately, the remittance-dependent tepid economy of Nepal (Fig. 7.11) suffers from corruption\textsuperscript{75} (Trading Economics 2018). Almost 8 million youth...
working in many parts of the world (MyRepublica 2017a, b) remit to Nepal, but in 2016 alone, Nepal remitted $3.22 billion to India. This ranks Nepal in the 7th position to “pay remittance to India” (Sangroula 2019: 317). Over 10 million Indians are working in various parts of Nepal and remitting back to India. It is suspected that many “Indians have taken Nepali citizenship certificates” (Sangroula 2019:317). Since many of the Indian nationals who are residing in the Tarai and urban areas of Nepal are engaged in businesses, it is expected that these Indian nationals are among the top 20% highest earning population of Nepal who control 57% of the national income (Sangroula 2019: 317–318).

Almost 79% of the remittance money comes from the Gulf countries. Of these countries, Saudi Arabia contributes 26.56%, Qatar 29%, Kuwait 3.84%, Bahrain 0.03%, and United Arab Emirates contributes 11% of the total remittances. Nepal received an average of $14.9 million as remittance income on a daily basis in the fiscal year 2013/2014. The remittance growth in recent years was one of the driving forces behind rising inflation. The rise in remittance flow has increased people’s purchasing power, which leads to an increase in demand for commodities (Figs. 7.1 and 7.2).

A huge amount of capital flies outside the country. In 2018/2019 alone, Nepali traveling abroad spent a total of $670.94 million, which was $580.34 million in FY2017/2018, an increase of 16.4% (MyRepublica 2019). The spending in 2017/2018 was 8% higher than 2016/2017 (MyRepublica 2019). There is a growing trend of Nepali going abroad for vacation. Almost $350.44 million goes to education by students going abroad and the remaining amount goes in journey by outbound Nepali travelers or workers going for foreign employment (Myrepublica 2019). This is one of the many worrisome situations for all of Nepali. The rise in travel payment is higher than the growth of travel earnings. The rise in travel payment has created a deficit of $109 million in 2018/2019, which is $29.3 million higher than 2017/2018 (MyRepublica 2019).
Many Nepali are going to Thailand, the Philippines, Malaysia, and Singapore along with several European countries for vacations. The Nepal Rastra Bank (NRB) has lowered the limit of foreign currency exchange to $1,500 from $2,500 for outbound Nepali. The NRB has also made permanent account number (PAN) mandatory for those who want to get foreign exchange facility of over $5000 for education, immigration, and health purpose. As the Nepal Rastra Bank has lowered the amount of foreign currency, Nepali travelers are redirecting remittance money from their relatives and friends to where they visit or stay for various reasons. According to the central bank data, the gross foreign exchange reserves fell to $95.2 million in mid-April 2019 from $100.8 million as of mid-July 2018 (MyRepublica 2019).

There is a declining per capita income share of the poor from 10% in 1995/1996 to 7% in 2003/2004 (Sangroula 2019). The share further decreased to 4.1% in 2010/2011 (Fig. 7.8). The 10% richest population shared 25% of income or wealth in 1985. The figure had hiked up to 34.9% in 1996, 37.7% in 2004, and 39.5% in 2011 (Sangroula 2019). This extreme inequality of income and wealth in Nepal is an outcome of governments’ total failure to distribute the national economy pie (Sangroula 2019). Persistent corruption and misuse of government coffers in the past (Sangroula 2019) and present at an individual level by top hierarchy and institutionalized corruption through various settings in all three levels of the government during the Communist government since 2017 have been the major causes for the widening gap between the richer and poorer people. The situation is so precarious that the poor are deprived of needed nutrition and pregnant women including the unborn child often suffer from malnutrition. There is a fear that the “stunting effects” in the younger generation will continue in Nepal (Rasul et al. 2017) despite so many changes and sacrifices people have made.

Various NGOs have injected money in many poverty-stricken rural areas of Nepal. Almost $230 million has been spent in 22 Tarai districts of Nepal by 74 various nongovernmental organizations (INGOs) through 745 projects during 2016/2017 fiscal year (Sangroula 2019: 365). South Korea, Taiwan, and many Western countries are directly involved in the operations of various Christian churches (Sangroula 2019). These NGOs are more active in establishing churches than in real development at a time when Nepal aims to graduate from a least developed country to developing country by 2022, a mid-income level country by 2030, and developed country by 2040. Nepal needs double-digit economic growth at least for a decade and to improve the annual per capita income to $1500 by 2022; $5000 by 2030; and $15,000 by 2040. In order to build Nepal’s economy stronger, the Nepal Government aims to build well-designed infrastructure including highways, railways, and waterways with a view to enhancing internal and cross-border

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616 7 Impacts of Economic Growth, Transportation, and Tourism on the Contemporary...
connectivity to expedite the pace of national development. Nepal wants to connect with India on the south as well as China on the north with railways to benefit from these fast-growing neighboring economies because good transportation infrastructure is one of the major perquisites for economic development.

7.5 Transportation

There was a time when distances were measured in hours or days of walking rather than kilometers traveled. Pilgrims used to visit Pashupatinath Temple from India on foot by traveling the historic trade route passing through Kulekhani, Chitlang, Chandragiri Pass, and Thankot for many days. The first Prime Minister of the British liberated India, J. L. Nehru, in the 1950s stated, “we have had from immemorial times, a magnificent frontier the Himalayas” as the northern border security of India (Bhasin 1970:25). It is difficult to trace the exact period when the connectivity started with India. In the early nineteenth century, the East India Company did not see any profit extending road and railway to Kathmandu as Nepal was seen as the only place to “recruit Gorkha regiments” and “tea plantations” (Stiller 1973:28). By the middle of the “twentieth century, Kathmandu first became connected with traffic coming from the Indian border” (Campbell 2010:268).

Roads services in Nepal started in the 1950s with the opening of the Tribhuvan Highway, formerly known as Byroad that connects Naubise, 25 km (16 mi) west of Kathmandu with the Indian border at Birgunj/Raxaul. The road was constructed in 1956 in memory of King Tribhuvan (1906–1955) with Indian assistance. It came into operation in 1959 and remained the only inland road service to India until the 1970s. Another road named after the Gorkha King, Prithvi Narayan Shah, the Prithvi Highway (174-kilometer long~108 mi) was constructed between 1967 and 1974 with the assistance of China. It connects Kathmandu with the tourist city Pokhara in the west and joins Tribhuvan Rajpath at Naubise.

The East-West Highway is also known as Mahendra Rajmarg runs from East (Mechi Nagar, Jhapa of Province 1) to the West (Bhim Dutta Mahakali of Province 7). Before the construction of this road, the Hulaki Sadak (Postal Highway) built during the Rana regime used to provide limited road services to the east and west. The Hulaki Sadak runs almost parallel to the East-West Highway but along the Nepal-India border. Hulaki Rajmarga (Postal Highway) connects eastern Nepal to the “Far-Western Region” (Sudur Pakshim Province-‘7’)

Mid-Hill Highway (Madhya Pahadi Lokmarga) connecting 24 hill districts is under construction. Crossing various districts in the hilly regions of Nepal, it runs all

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77Speech from Mr. Jawaharlal Nehru in Parliament on international situation and the policy of the government of India in relation thereto New Delhi, December 6, 1950. Nepal’s Prime Minister B. P. Koirala immediately objected this statement, and Indian P. M. Nehru extended his deepest apology to B. P. Koirala and Nepal Government.
the way from Chiyabhanjyang (Panchathar) (Province 1) in the east to Jhulaghat (Baitadi) (Province 7) in the far west covering about 1765 kms. This highway runs somewhat parallel to the present East-West Highway (1,024 km). About 1,000 kms of Mid-Hill Highway is already in existence with different names [after the names of various political leaders including the founding leader of the Communist Party of Nepal, Pushpa Lal Shrestha], whereas above 750 kms is new construction of which all tracks have been opened already.

Located 25–30 km south of Pushpa Lal Highway, Madan Bhandari Highway, which was informally called the “Chure Highway,” was built as an alternative highway to the East-West (Mahendra) Highway. It was named after the late Communist leader Madan Bhandari who was killed in a jeep accident in the Chitwan District on May 16 1993. This Madan Bhandari road covers a 1,200-kilometer length that extends from Shantinagar of Jhapa in the east to Rupal of Dadeldhura in the west. It will be completed by 2027. Table 7.7 presents a list of roads that are in operations and under constructions with some being in the pipeline [proposed] for Nepal. Since political parties name and rename many of the roads and some sections of roads in the names of their political leaders, it is difficult to keep track of their names. Even the list presented in Table 7.7 might change in a few days because their labeling is often done at the whim of political leaders in power.

After roads were constructed, “space distances” and travel times were compressed. Roads helped extend connectivity, economic development, and market relations into “remote” areas (Campbell 2010). With improved connectivity, economic and social development literally moved into the connected areas (Campbell 2010). After villages were connected to nearby cities and Madhesh, farmers have been able to explore prospects to improve their livelihood through the commercialization of their agriculture. However, the rising cost of transportation has become a major concern. The high cost of transportation and the lack of unique products hinder Nepal’s economic growth (Athukorala and Sharma 2006).

Although the road network is increasing (Fig. 7.12), these roads are creating several environmental problems, due to landslides. Many roads run through landslide-prone areas. In many places, loose mud creates the vulnerability for landslides in monsoons. Nepali bio-engineers have made many efforts to prevent the landslides happening in some places, but in many places, due to various types of vibrations from earthquakes, blasting, and the use of bulldozers to construct roads and other development infrastructure, many roads often are blocked during the rainy seasons. Incessant high-intensity rainfall contributes to various road damage. Road maintenance costs have been very high in Nepal. Many sections of the road are very unsafe. Many sections along the highway have roughness and undulation, which make them unsafe to drive thereon. As the population residing on both sides of these highways are increasing, many anthropogenic activities area added to the road. These activities often cause various risks to road transportation.

Constructing and upgrading the “road network” in the rural areas of Nepal have brought about major obstacles (Shrestha 2014). Though roads have contributed to some extent to alleviating poverty and changing the “life quality of people” (Li and DaCosta 2013), Nepal has been facing unaccountable environmental problems from
the construction of roads. As most of the rural road network is earthen, due to its surface condition, many roads remain closed during the wet seasons (the monsoon season, which usually goes from June to October) making access to rural areas very difficult. To improve the conditions of roads and minimize environmental catastrophes, earthen roads need to be upgraded to firmer surface levels (gravel or asphalt). However, the financial and technical constraints and increasing corruptions become

| Name of highway     | Length (km) | Starting point | End point               |
|---------------------|-------------|----------------|-------------------------|
| Mahendra Highway    | 1027.67     | Mechi Bridge, Jhapa | Gaddachowki Border, Kanchanpur |
| Tribhuvan Highway   | 159.66      | Tribhuvan Statue, Kathmandu (Tripureshwor) | Sirsiya Bridge, Birgunj, Parsa |
| Kathmandu Kodari Highway | 112.83    | Maitighar, Kathmandu | Friendship Bridge, Kodari Border |
| Prithvi Highway     | 173.43      | Naubise, Dhading | Prithivi Chowk, Kaski    |
| Madan Ashrit Highway | 1200.00    | Narayanghat, Chitwan | Mugling, Chitwan         |
| B. P. Koirala Highway | 205.88     | Bhittamod Border, Mahottari | Dhulikhel, Kakhrepanchok |
| Mechi Highway       | 391.06      | Kechana Border, Mechi | Taplelung               |
| Koshi Highway       | 390         | Rani Border, Morang | Kimathanka, Sankhuwasabha |
| Sagarmatha Highway  | 178.97      | Kadmaha, Saptari | Solusalleri, Solukhumbu |
| Siddhartha Highway  | 146.94      | Sunauli Border | Prithvi Chowk           |
| Rapti Highway       | 168.68      | Ameliya, Dang | Musikot, Rukum          |
| Ratna Highway       | 113.08      | Jamuniya Border, Banke | Bangesimal, Surkhet     |
| Kamali Highway      | 233         | Surkhet, Bangesimal | Jumla, Kalikot          |
| Mahakali Highway    | 415.15      | Mohane Bridge, Dhangadhi Border | Darchula               |
| Seti Highway        | 65.96       | Syaule, Dadeldhura | Samuwagad               |
| Kathmandu Ring Road | 41          |                |                         |
| Postal Highway      | 1005        |                |                         |
| Pushpa Lal Highway  | 1776        | Chiyabhanjyang, Panchthar | Jhulaghat, Baitadi     |
| Sabha-Brahmdev      | 13.30       |                |                         |
| Kathmandu-Tarai Fast Track | 81.80   | Khokana, Lalitpur | Nijgadh, Bara           |
| Kathmandu Outer Ring Road | 72.00   |                |                         |

Source: Department of Road (2019); Census Bureau of Statistics (2019); Setopati (2015–2019); Onlinekhabar (2017–2019)
the major problems for upgrading the road network because the monsoon repeatedly damages the road infrastructures (Shrestha 2014). Paving the road with gravel or blacktopping becomes essential. If roads are not properly graveled or blacktopped, the operation cost becomes very high due to the high consumption of fuel on the rough surfaces and while repairing vehicles. Upgrading road surfaces helps in minimizing operating cost and emission levels. Nepal’s hills and mountains are susceptible to extreme precipitation, earthquakes, and landslides that result in severed connectivity, loss of life, and damage to property (Chap. 3). Robust construction, better maintenance, and improvements in the capacity to respond to possible damages will help Nepal adapt to unforeseen events. In order to improve the road conditions, Nepal needs many resources. Sangroula (2019) suggests seeking a “package of financial assistance from the Government of China” (p. 369) for this purpose.

An efficient transit system is obviously important for economic development. Good transportation brings economic growth to homes, creates jobs, facilitates trade, saves travel time, supports clustered and agglomerated settlements, and helps increase the productivity of farmland and industry. An increase in the industrial production is possible with a good transit systems because roads enhance labor movement, opens new markets for businesses, and enhances supply chain efficiency (Dowell 2017). Though not all transportation projects generate such benefits, some investment is considered a strategic driver of development (Dowell 2017).
Effectively planned transportation can overcome distances and reinforce agglomerations by allowing more people to come closer together in higher density developments. Cluster settlements may help overcome land encroachment and environmental degradation. The right transportation investment can sustain clusters of industries and businesses by supporting their closer proximity to each other, by improving productivity, and by creating clusters of activities. Increasing worker and business productivity can in turn increase the productivity and economic growth of an area. Simply put a good transit systems improve access to markets, goods and services, employment, housing, health care, and education, while reducing the cost of moving people and goods (Dowell 2017). Poor infrastructures often invite multiple traffic accidents.

7.5.1 Road Accidents

On average six people are killed in a day from vehicular accidents in Nepal (Setopati 2016a, b). Each time, promises are made to improve the transit system, but these accidents are repeated each day, month, and year. For example, 8406 road accidents were recorded in 2013/2014, 9145 in 2014/2015, and 10,013 in 2015/2016 (Dhungana 2016). Road traffic injuries cause considerable economic losses to the victims, to their families, and to the nation as a whole. These losses arise from the cost of treatment (including rehabilitation and incident investigation) as well as of those killed or disabled by their injuries and for family members who need to take time off work to care for the injured. Some of the major causes of accidents in Nepal include (a) driver negligence (70%); (b) roads and bridges without walkways and other required road safety features; (c) narrow bridge approaches; (d) poor visibility at blind corners; (e) faulty designed side drains; (f) inadequate safety barriers at steep vertical drops; (g) unscientific location of passing bays in single lane roads; (h) lack of climbing lanes; (i) very steep gradients at numerous sections; (j) drunk driving (DUI); (k) random roadside parking; (l) reckless pedestrian crossing; (m) poor road conditions; and (n) lack of awareness of traffic rules by stakeholders (NRSAP 2013).

Provinces have been experiencing accidental deaths at various rates; some examples include 446 deaths in Province 1, 166 deaths in Province 3 mostly in the Kathmandu Valley, 228 deaths in Province 4, 691 deaths in Province 5, 520 deaths in Province 6, and 121 deaths in Province 7 in 2016–2017. Most of these accidents are with motorbikes followed by cars, jeeps and vans, buses, trucks, tankers, tractors, and tempo accidents (Setopati 2016a, b). The Government of Nepal (GoN) is hoping to improve the road conditions of major cities to minimize accidents and emissions, first starting from the Kathmandu Valley 78 (Ghimire 2019) and then moving on to different cities.

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78Nepal’s Government has acquired 300 Chinese-made buses (at a cost of $162,000/bus) operating with electricity making minimum noise. Air-conditioned, 40-seater buses are designed to suite the road conditions of the Kathmandu Valley, for example, 10.5 m long, 8.5 m long, and 7.5 m long
7.5.2 Connectivity with China

Nepal has a close relationship with China; though it cannot be as close culturally with China as it is with India due to the topography and different cultural settings, yet Nepal dreams to be closer with China and India for trade and transit using the twenty-first-century technology. Using the twenty-first-century technology, Switzerland, which possesses similar topographical and geospatial situation as Nepal, has become economically prosperous by utilizing her natural beauty and to further advance her technology. Being neutral in her foreign policy, Switzerland maintained good relationships with neighboring European countries. Nepal also desires to be economically prosperous by benefitting from economic dynamism without being very dependent on China and India and utilizing her natural resources, but this reality is yet to come.

The economic and political linkage between Nepal and China dates back to the seventh century, the era of ancient Nepal when Bhrikuti, the Nepali princess, was married to the Tibetan King, Srong-Chan-Gampo (Ojha 2016). The Jokhang Monastery in Lhasa, constructed at the initiation of the Nepali Princess Bhrikuti, still stands as the living testimony of this relationship. Bilateral trade and movement of people across the Himalaya have been a part of Nepali life since that time. However, the modern-day relationship between Nepal and China needs to keep with the demands brought by the globalization and development of modern transport and communication tools using the twenty-first-century technology.

The lack of connection with China by way of a reliable road has been the major impediment to greater economic and commercial links which might very well break the monopoly of India (Ojha 2016). The Chinese connection will ultimately help Nepal to establish linkages with the Pacific Rim countries as well as with the Central Asian countries, via the Chinese territories.

Looking at the cooperative atmosphere between India and China, as seen in Chinese President Xi Jinping’s 2014 visits to India and Indian PM’s visit to China in 2015, both countries have shown their willingness to work together for the promotion of trade and the settlement of the long-standing border problem. Despite a 73-day standoff at Doklam, a trifunctional point between Bhutan, China, and India in the Himalayan frontier, Wuhan informal summit between the Chinese and Indian leadership gives enough hope to believe that China and India are coming closer than before. Deng Xiaoping had expressed his desire to see the settlement of the bodies. Different bus charging facilities are established, where charging would be completed within 2 h. Additionally, Nepal is also importing mobile Super Charge Machines, which will charge a bus at a faster rate than the current charging facility. In addition to the 40 seats, additional 30 passengers can travel in a standing position. Each bus is user-friendly even to disabled people with automated doors services and reserved seats for elderly and disabled people with special signage. Bus accepts smart cards or cash. Despite operated from the electricity, these buses can make good pickups in the uphill. Bus fare is much cheaper than diesel- and petrol-operating buses that consume a liter of petroleum product ($1.20/liter) to cover 3–5 km distance. These electric buses are expected to last much longer than the traditional buses that last for 20 years.
Sino-Indian border problem once for all, through accommodation and understanding. Nepal needs a charismatic, strong, selfless political leader like B. P. Koirala, oriented towards the people and the country to keep Nepal free from foreign interferences in order to establish a good relationship with China as B. P. Koirala did in 1959 despite India’s unwillingness. Nepal’s current political leaders are yet to show such boldness (Bista 2015).

By establishing good links by road and railway with China, Nepal can be a golden link between South Asia and East Asia—undoubtedly rising global economies. As a “land bridge,” Nepal can take huge advantages to make herself economically prosperous while standing within the five principles of international peaceful coexistence. India and China have both made progress in utilizing their plentiful amount of human and natural resources and modern technology. They have advanced models to move steadily towards the status of developed countries. China has been making rapid progress following the development principles of Deng Xiaoping and has become the second largest economy after the United States. India too is moving forward with various innovative approaches under the strong and bold leadership of Narendra Modi. Nepal can take ideas from both countries and move ahead to lift it to a higher status by focusing on its own priorities.

Though China is very much concerned with her “One-China Policy” and keeping Tibet out of any outside political activities, for businesses, China has increased connectivity with Tibet by a bullet train service from Shanghai to Shigatse. The Government of Nepal would very much like to link Shigatse with Kyurung and to Kathmandu79 (Fig. 7.13). In order to make this railway project effective, much homework is needed with poor coordination between the planning commissions of each country. Institutionalizing this effort will provide continuity to this project even

79Nepal plans to develop Kyurung-Kathmandu and Kathmandu-Pokhara-Lumbini railways. The talk about linking Nepal with the Chinese railway network has been going on for nearly a decade since former Prime Minister Pushpa Kamal Dahal “Prachanda” chose China for his maiden foreign visit as the head of the government in 2008 and proposed with Chinese leaders to make Nepal a “dynamic bridge” between China and India. China linked Tibet with the national rail network with the possibility of extending the railway to Nepal. During former Prime Minister KP Sharma Oli’s visit to China in 2015 and Nepal’s President Bidhya Devi Bhandari’s visit to China in 2019, bilateral agreements were made at different levels between China and Nepal. China assumes that this railway would be a part of China’s Belt and Road Initiative (BRI) and it would help China to make the China-Nepal-India economic corridor by means of the Nepal-China railway. Nepal’s Government is hoping that China would connect Tibet’s second largest city of Shigatse to Kyurung, some 540 km long railway, with a view to extending the railway to Nepal border to link Kathmandu with Kyurung. Every planner has been curious as to how Nepal would be able to manage her huge trade deficit with China and the lack of necessary investment fund for the railway. Politicians are claiming that Nepal can link Kyurung-Kathmandu railway as a part of the BRI project seeking investment from the Asian Infrastructure Investment Bank (AIIB) and other international financial institutions. Others argue that Nepal and China can also emulate the project financing model such as the one adopted by India and Japan in the construction of the Ahmedabad-Mumbai high-speed railway.
if the governments change. The road connectivity through various transit points (Shrestha 2015) between China and Nepal will improve livelihoods of the Nepali people. In 2004, the Asian Development Bank has expressed interests in building a series of roads in the northern districts of Nepal in the name of poverty alleviation. One of such roads is connecting Kathmandu with the Chinese network via the Rasuwa District (Campbell 2010). Such connectivity in the northern border could have a high significance in alleviating the levels of poverty and promoting market integration and cross-border tourism and the exchange of agricultural products (Anushree 2019; ADB 2006). Under the Belt and Road Initiative (BRI), China has proposed to connect Nepal through various networks. These networks include the

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80 These border points are in high locations. These include Olangchung Gola (Tiptala Pass, 5095 m); Kimathanka (Lengdup 2248 m), Lamabagar (Lapchi, Phalek 2050 m); Gorkha Larke (Lajyang Pass, 5098 m); Mustang (Korala, 4871 m); Mugu (Nagcha, 6495 m); and Humla (Hilsa, 5092 m).

81 The World Bank has projected that in 2019, Nepal’s economic growth would be 7.1% based on the services and agricultural sectors. If incomes from business, hotel, and restaurant were also included, the annual economic growth would be 7.5%. The agricultural sector alone would contribute 5%, and the average growth of the past three decades was 3.1%. During the period, the industrial growth would be 8.1%. The connectivity with China would help in agricultural trade promotion.
Nepal-China Trans-Himalayan Multi-dimensional Connectivity Network, including the Nepal-China cross-border railway.82

7.5.3 Belt and Road Initiative (BRI)

In 2019, in Beijing, China announced a 38-point declaration in a conference participated by representatives from 150 countries. In Annex 1 of this “declaration, [China] includes Inspiration for Economic Corridor number 23, where Nepal-China Cross Border Railmart (railway) crossing the Himalayas is mentioned” (Sangroula 2019). China is strategically proposing these linkages.

Over the last 3–4 decades, China has made miraculous progresses in economic, infrastructure, industrial development, and agricultural transformation (Sharma 2014; Sangroula 2019). Former Czech President Vaclav Havel once said, “it had happened so quickly that we have not yet had time to be astonished” (Allison 2017: xvii). Industrial production increased beyond the actual demand. As a result, economic progresses slowed down. Hoping to increase demands by neighboring countries, China embarked on the Belt and Road Initiative (BRI)83 aiming to (a) increase multi-model connectivity through railway, road, air services, communication, energy generation, and high-speed Internet; (b) exporting of high-quality unique products; and (c) establishing financial institutions such as the Asian Infrastructure Investment Bank (AIIB). China is developing people-to-people contact through culture, science, technology, and arts. China also wants to build an India-Nepal--China economic corridor (INCEC). This INCEC would give access to the Indian markets of Bihar and Uttar Pradesh. Likewise, India would be able to link to the Asian market, including Mongolia and Russia through roads. This might create a new connectivity, such as India-China-Mongolia-Russia Economic Corridor (ICM RCEC). However, India is not willing to join the Chinese BRI’s scheme. The general unwillingness of India to join the BRI is because of the suspicion that the gravitational force of the large and dynamic Indian economy to pull all SAARC states and having a path of collective prosperity at India’s leadership might be derailed with the operation of BRI. The other unwillingness of India to join BRI is because the China-Pakistan Economic Corridor (CPEC) passes through the disputed territory. India says, “no country can accept a project that ignores its core concerns on

82 Belt and Road Cooperation: Shaping a Brighter Shared Future, Joint Communique of the Leaders’ Roundtable of the 2nd Belt and Road Forum for International Cooperation, April 27, 2019, Beijing, China. A joint communiqué issued at the end of second conference includes among others a list of 283 deliverables, launching of the Belt and Road Initiative, International Green Development Coalition, and a new Belt and Road Sustainable Cities Alliance. China’s Ministry of Finance issued a Debt Sustainability Framework with the aim of denting criticism on China’s debt as a strategic weapon. https://fmprc.gov.cn/mfa_eng/zxxx_662805/t1658766.shtml

83 At the beginning, China had already set aside $40 billion for funding for the purpose of BRI. This will provide enough financial security for China.
sovereignty and territorial integrity.” However, China and Pakistan claim, “China-Pakistan relations are characterized as higher than the Himalayas, deeper than oceans and sweeter than honey” (CPEC 2017).

The intra-regional trade among the SAARC countries has increased very slowly (Lohani 2013) because of the cold shoulders between India and Pakistan. Economists are pursuing India to join BRI with the argument that since almost a billion Hindus live in India, they might be interested to visit Kailash-Man Sarobar. Similar to the Buddhist Circuit what Indian Prime Minister Modi has suggested during the 18th SAARC Summit in 2014 held in Kathmandu, the BRI might develop an India-China-Nepal-India (ICNI) corridor for the Hindus. This will be a win-win project for the SAARC countries and China. Currently, China and India’s annual trade is close to $1000 billion (Sharma 2014). Since China is advancing to high tech products, which are relatively expensive, Indian goods might find medium level Chinese markets and vice versa.

Nepal joined the BRI project in May 2017; however, many have warned that Nepal needs to be cautious not to fall in a “debt-trap diplomacy.” Nepal needs to review the terms and conditions very carefully to escape from the debt trap. Through the BRI strategies, China has planned to become a leading investor in infrastructural projects that promote greater connectivity and trade among the South Asian, East and Southeast Asian, African, and Eastern European countries. Many BRI countries in Asia, Africa, and East European countries are not only resource-rich or strategically located but are oftentimes struggling with weak social, political, and economic institutions. These countries desperately need an economic boost through mobilization of internal and external investment opportunities. They lack the needed infrastructures to facilitate trade, generate energy, promote the movement of goods and people, and stimulate societal growth, among other things.

Nepal, which has a history of dependence on foreign aid, suffers from uncontrolled corruptions and a slow pace of development. It is important to evaluate the risks of participating in projects under the BRI because of the possible inability to pay back loans in this crippling economy, which might weaken the sovereignty. In various developmental activities under CPEC, Pakistan has been paying a 5% interest rate on $63 billion loan from AIIB, of which $33 billion is invested in infrastructure projects. Likewise, Myanmar needs to pay back the $4 billion debt to China that incurs an interest rate of 4.5%. The debt has caused the Myanmar government to scale back parts of the Myanmar-China Economic Corridor (MCEC) project that has an estimated cost of $10 billion. Among the critics of the BRI, Sri Lanka has become an example of how developing countries fall into China’s “debt trap.” In late December 2017, Sri Lanka handed over its Hambantota Port along with 15,000 ha of the surrounding land to China on a 99-year lease to pay off $1.1 billion in debt (New York Times 2017). Many fear that such big projects

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84 Under “debt-trap diplomacy,” borrower countries are unable to pay back to creditors their hefty loans with interest, and creditors come into a position of being able to exert influence over national matters.
might put a country in a debt trap and many projects might become white elephants like the China-funded Mattala Rajapaksa International Airport (MRIA) of Sri Lanka. Some are urging China to join the Paris Club to solve the ongoing debt problems. Despite these “debt traps,” Nepal is willing to borrow a loan from China. Leaders of the Communist Party of Nepal argue that the criticism about debt trap vis-a-vis China-funded projects often originate from the Western media. This expression from China was likely a counter response to the US Vice President Mike Pence who criticized China for drowning borrower countries in debt from loans they could not afford (NY Times 2017). However, China has countered this argument to promote free trade in Asia. Debt trap is definitely an important consideration for Nepal as it joins the BRI. Nepal’s foreign debt in 2018 comprised of 16.9% of the total GDP. This loan is owed largely to multilateral institutions like the World Bank and the Asian Development Bank followed by Japan, China, and India. Thus, Nepal should cautiously handle the debt issue while joining the BRI and borrowing money for the construction of a railway line connecting Kyurung to Kathmandu.

7.5.4 Railway and Economic Development

Connectivity is essential for Nepal to enhance its economic development. Transportation by railway is the cheapest among other overland transits that are possible on Nepali land. Literature reveals that since the 19th century, the railway brought on an economic revolution in the United States. Railway in the United States contributes not only to the transportation mobility and economy, but also to the employment and cultural interactions. Several European countries are interconnected by bullet trains. Likewise, the Chinese east coast is connected with the western Tibetan areas; the Trans-Siberian Railway Line of Russia connects Vladivostok in the east to St. Petersburg near the Gulf of Finland. Likewise, the Sishen-Saldanha Railway Line of South Africa (861 kilometers ~535 miles with 382 wagons) connects many iron and steel parastatal compared to the coastal areas. Many European countries are planning to use rail transit to carry at least 25% of their heavy goods, because railway transit had proven to be cheaper than transportation by trucks and buses and rail services are environmentally benign. Indian experiences suggest that rail transportation becomes cheaper while carrying goods to over 600 km in distance. Given the

85The Paris Club is a “non-institution” institution comprising of 22 permanent members that are largely western, creditor nations. Its objective is to “find workable solutions to payment problems faced by debtor nations” who borrow money from the Asian Infrastructure Investment Bank (AIIB) to implement prescriptive suggestions of the International Monetary Fund’s (IMF) for economic reforms.
undulated terrain of Nepal, using train would be relatively cheaper even to export goods within 100–200 km. Railway transit becomes cheaper because of the low coefficient of friction between railway line and railway wheels, which is around 0.001, whereas the trucks and buses have friction between 0.006 and 0.10 while carrying the same weight. This means a truck uses six to ten times more energy than a train does. Thus, the goods ferried by a truck when compared to a train not only becomes 6–10 times more expensive, but also carbon emitted by diesel engines would be 3.5 times more harmful to people (Devkota and Nyaupane 2019).

China and India, as two powerful forces in Asia, are working aggressively to find the gravitational pull towards their economies. China’s economy has been on a high-growth trajectory for over two decades, and the Chinese do not have to do much to make their presence felt, but India needs to be with the twenty-first-century technology. The growth of the China’s economic size means that even if the Chinese do not do anything deliberately, they are still becoming a factor in all countries around the world, more or less like the United States. “China’s size, dynamic economy, and the perception of great future potential has a built in advantage, it means that other countries, especially its neighbors, will feel its presence even without deliberate design.” China is working to “surpass the US economy in terms of total output in the next twenty years” (Lohani 2013:1). The Covid-19 pandemic became a blessing in disguises for China to leave the United States of America behind in economic recovery.

Nepal has been rapidly expanding its trades with India and China, while at the same time, its trade deficit is increasing unsustainably (Fig. 7.2). The Chinese aggressive economy and its export pattern is causing anxiety and concern in South Asia, especially to India. Like the gravity model, it is easy to see the growing size of the Chinese economy and its increasing focus on investments in provinces bordering South Asian countries. China’s massive program to improve transport infrastructure has facilitated trade with neighboring countries. That means its gravitational pull is increasing in every successive step, even if “Nepal ignores the political dimension.” Nepal will be heavily influenced by the Chinese economy especially when the railway from Tibet is extended to the Nepali border. This is another worrying case to India. “Nepali policymakers, even those belonging to ideologically different parties, are almost unanimous about extending the Chinese railway network from Lhasa to the Nepali border with the ultimate objective of opening a new land route for trade between China and India” (Lohani 2013:1). Improving the transit facilities that includes both rail and road transport in provinces bordering South Asia, including Myanmar, means that the cost of transferring goods from China to its neighbors will decrease significantly in the future. For the smaller South Asian countries, China is now definitely emerging as a country with a new and powerful gravitational pull factor. “This is where economics interacts with politics” (Lohani 2013:1).

86The Janakpur (Nepal)-Jayanagar (bordering city of Nepal-India) railway line came into operation in 1957 in Nepal. Later from 2009, the construction of railway lines in Nepal started with a vision of constructing a 1500 km railway line by 2025, about 2500 km by 2035, and 4000 km by 2050. Nepal Government dreams to construct east-west electric railway and then Kathmandu-Pokhara, Kathmandu-Birgunj, Kathmandu-Pokhara-Lumbini, and Kyurung-Kathmandu.
Nepal’s trade deficit with India is also soaring in an unsustainable manner. This cannot continue for long. Both countries must implement policies to reduce this “yawning trade deficit” (Lohani 2013:1), focusing on products where Nepal has a “comparative advantage” (Lohani 2013:1). Many Indian and Nepali scholars have suggested that both agricultural and industrial production units could be set up in Nepal with Indian help and facilitation to supply products to northern neighbor and northeastern markets in India. Similarly, as India advances in the IT industry, Nepal too has the potential of a thriving IT industry of its own, so that regional growth leads to regional prosperity. For these activities, a rapid transit system, especially the railway, is important. Studies have shown that railways are less polluting than other vehicles and even airplanes.

The Proposed Kyurung-Kathmandu-Lumbini-Birgunj Railway

The Railmarg between China-Nepal crossing the Himalayas has become a hot debate recently. Although the dialog between China and Nepal about the railway and road communication started during the time of Nepal’s erstwhile Prime Minister G. P. Koirala in 2001, this was not moving ahead. Rather, the discussion was looming around the road connectivity between China through the Rasuwasgadi-Syafrubeshi-Kathmandu highway. Later, in 2001, China expressed her desire to extend railway line to Kyurung, to help Nepal in her economic development and to facilitate the importance of petroleum products through China. India reacted sharply with this approach (The Indian Express Dec 3, 2001). Serious debates on the China-Nepal cross border railway started in 2016 during the China visit of Nepal’s Prime Minister K. P. Oli. In 2018, when PM K. P. Oli re-visited China after being re-elected in 2017, detailed discussions were held on the Trans Himalaya Multi-Dimensional Connectivity Network. Then, China integrated the theme of a China-Nepal cross border railway connectivity with the Belt and Road Initiative (BRI).

In an attempt to move population to the west, China has been expanding her railway connectivity to the west. China is extending the bullet train services up to Lhasa. In 2014, another 214 km lines were extended to connect Lhasa with the Tibetan Mountain City of Shigatse, and China is planning to expand this railway connectivity to Nepal. Kyurung (bordering area of China-Nepal) is 528 km southwest of Shigatse. China is interested to connect Kathmandu with Kyurung by a 73-km railway line. It is estimated that the Detailed Project Report (DPR) for the railway construction from Kyurung to Kathmandu will cost over $25 million, and it would require about a year to prepare this DPR. Because of the undulated terrain, it will take over 15 years (Devkota and Nyaupane 2019) to complete this project. Once the railway comes into operation, Kathmandu can get goods from the Chinese
seaports within a week (Acharya 2018). Through this railway, China wants to link Nepal with many Asian countries such as Pakistan, Iran, Thailand, Cambodia, Laos, Vietnam, and Myanmar. Since China is already connected with Mongolia and Russia and with some Eastern European countries by a bullet train, once the Kyurung and Kathmandu railway line comes into operation, a bullet train will come to Nepal from China. Kathmandu will also be connected with Pokhara and Lumbini by a bullet train. This connectivity will open Nepal’s inland businesses with many Asian countries. These connectivities would help to attract Chinese tourists. Over 35 million Buddhists living in China are interested to visit Lumbini. Kyurung-Kathmandu-Lumbini railway will definitely attract many Chinese tourists. In addition, over 30 million tourists annually visit Tibet. After the construction of this proposed railway line, if at least 5% of tourists visit Nepal, it would be helpful for Nepal’s tourism economy. This proposed railway service also would help China to meet her goal of promoting her once lost religious and cultural traditions during the brutal Long March in the name of Cultural Revolution in the 1960s in China under the Chairman Mao’s regime. The Kathmandu-Pokhara-Lumbini railway will also connect the Kathmandu-Raxual railway line at Chobhar (Fig. 7.13). This will give Tibet (China) several opportunities to have trade with Indian states of Uttar Pradesh and Bihar and to expand China’s businesses with South and Southeast Asian countries.

Within India, the transport infrastructures at the bordering areas, though have been recently upgraded, remain old fashioned—narrow, congested, and poorly maintained. These factors created the gravitational pull of the Chinese economy and encouraged trade with China. In view of the twenty-first century’s technology making the high elevation mountainous routes accessible to link between China and Nepal, perhaps the time has come for Indian policy makers to review their bilateral focused mindset with neighboring countries and begin to conceptualize the whole South Asian region as one economic hub thereby working in tandem with East and Southeast Asia together. First, it is necessary to view South Asia as one economic region with India taking the lead to promote and encourage regional economic integration and industrialization for collective prosperity. Second, based on new theories of product fragmentation and the supply chain mechanics in international trade, the private sector, with support from the government, could be encouraged to build up new production capacities in all the smaller countries in the region. A

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87 Before signing the formal agreements in 2015 with China, India was the only country providing transit facilities for Nepal through its ports of Kolkata and Haldia and 15 road corridors and 1 rail on Nepal-India border. China has agreed to allow Nepal to use four seaports and three land ports for the third country trade. These seaports include Shenzhen, Lianyungang, Zhanjiang, and Tianjin. These are the nearest seaports at a distance of around 3300 kilometers from the Nepali border. Likewise, Nepal has been allowed to use Lanzhou, Lhasa, and Shigatse land ports (dry ports). China also is granting access to Nepal through six checkpoints of Rasuwa, Tatopani (Sindhupalchok), Korala (Mustang), Kimathanka (Sankhuwasabha), Yari (Humla), and Olangchung Gola (Taplejung). The Transit Transport Agreement with China, signed in March 2016 during Prime Minister KP Sharma Oli’s China visit, will come into force once the protocol is exchanged following the high-level visit from one of the two neighboring countries.
two-pronged strategy of this nature could lead to a balanced relationship between India and other East and Southeast Asian states. At this point, Nepal's tilt is towards China, more so with India, and 2/3rd majority government of the Nepal Communist Party finds a comfortable political niche with China. Moreover, China's past non-interference behaviors also help the Nepali Communist government to convince general public to easily accept the Chinese aid.

Recently, the construction of the Kyurung-Kathmandu railway line has been seriously debated. Many are questioning the utility of this railway line, and some are comparing it with the Hambantota Seaport of Sri Lanka that was constructed with a Chinese loan, while others have questioned the priority of this railway line over multi-lane roads in hilly Nepal. For 3 years, now railway cabins have been stacked in Gonghou to Shigatse aimed for Nepal. If constructed, the Kyurung-Kathmandu railway will include many underground tunnels and bridges.

There are several geographical barriers to construct the Kyurung-Kathmandu railway line. Kyurung is located at an elevation of 2700 m above sea level, and Syphrubeshi is at 1500 m height, while Kathmandu is located at 1300 m elevations; the railway will have to cross several undulated barriers abruptly descending 1000 m while coming to Syabrubesi from Shigatse via Kyurung (Acharya 2019a, b). If successfully brought into operation, after its construction and its completion of railway line, there will be several advantages because transporting goods through trucks from Shigatse to Kathmandu would require 10 days, but a train would do it within 2–3 days. Any Chinese goods if brought through the Kolkata port will require about 35 days while crossing distances from China to Kolkata to Kathmandu. Once the railway line between Sichuan and Lhasa connects, it would reduce the distance from the Chinese seaport to Kyurung by 1500 km.

Though railway construction would be expensive at the constructional phases, for the long-term sustainable inland operation, railway transportation becomes relatively cheaper. The Kyurung-Kathmandu journey is 46 miles (~73 km) in distance. The estimated cost per mile for a railway line construction in Nepal's hilly terrain is between $50 and 55 million. That means in order to construct 46 miles, the total cost comes between $2570 and $3500 million depending upon the topography, terrains, and construction of structures such as bridges, tunnels, and ground-based railway. Using the rate of return at 5%, total annual benefit would be around $1.15 million. Nepal needs to borrow money from international banking institutions for the construction of this railway, which generally lends at a 5% interest rate. Borrowing money at this interest rate would cost $115 million as the fixed cost (Devkota and Nyaupane 2019). To construct such a railway line of a European standard, for its maintenance, the per mile expenditure is estimated at $140,000 per year (total of $64.4 million per year) for 46 miles. The estimated cost to travel each mile would be around 30 cents; thus, the total cost for 46 miles would be $13.8. If 200,000 people use this railway each year, the cost of operation/revenue generated would come around $2.76 million for one way, and for the round trip, it would come to $5.52 million.

One railway wagon can carry 100 metric tons of goods, and one engine can pull 50 to 140 wagons, but in Nepal, the railway would have only 30 wagons due to an
undulated terrain. Due to the undulating surface, the Nepali railway would operate at 60% efficiency. With 60% efficiency, one wagon would carry only 3,000 metric tons of goods. If a rail between Kyurung and Kathmandu can carry 6,000 tons in round trip, it would carry around 2.2 million tons per year. According to the international standard, the maintenance cost per mile would require 1.5 cents per mile per ton. The total cost to carry or transport 2.2 million tons per year would cost $3.036 million. The total cost of an annual operation of 46 miles railway would cost in average $13.00 million (Devkota and Nyaupane 2019).

At the international level, it would cost 2.5–3 cents to a ton of goods per mile. Assuming this cost as the basis for transportation, it would require about 2.75 cents per mile per ton, and the cost of ferrying 2.2 million tons would cost $5.57 by a train. Using a train to transport goods would emit a minimum amount of carbon, which would alleviate 41,195 metric tons of carbon dioxide that would have been emitted from the operation of trucks. The railway would emit only 3530 metric tons of carbon. Accordingly, a train would avoid 37,665 metric tons of carbon. When compared to air transport, rail transport would emit 803 metric tons of carbon. According to REDD+ and the carbon sequestration concept, in general, it costs about $50 to sequester a ton of carbon. Nepal can save about 38,468 (37,665 + 803) tons of carbon which is equivalent to $1,923,387 by using a train. In terms of road security, it costs 3 cents per traveler per mile. Using this fact, the 46 miles long railway would save $552,000. Alternatively, instead of railway line, if motor roads were operated between Kyurung and Kathmandu, the opportunity cost for the journey of travelers would be $276,000 (Devkota and Nyaupane 2019).

Using a railway line would also alleviate road jams. Generally, it costs 7.5 cents per person per mile. Overall, the Kyurung-Kathmandu railway line would benefit $920,000, but using the road would benefit only $460,000. In terms of fuel, as per the Nepal Transportation Rule of 2071, a 6-wheeler load carrier truck would carry 9.6 tons, a 10-wheeler truck would carry 16.5 tons, 12 wheelers would carry 21 tons, and 14 wheelers would carry 25 tons of load. Nepali roads are too narrow for such heavyweight vehicles, and it would be very expensive to construct roads to ply these vehicles. A train wagon would carry 100 tons of goods. Eleven six-wheeler trucks are needed to carry the same weight; 6 trucks of 10 wheelers; 5 trucks of 12 wheelers; and 4 trucks of 14 wheelers. Given the topography of Nepal, only 5 of the 12-wheeler trucks would be able to carry a wagonload (Devkota and Nyaupane 2019).

According to the comparison made by the American transportation services, 1 liter of diesel is needed to transport a ton of goods for 23 miles (37 km), whereas a train wagon can carry a ton of goods for 87 miles (~139 km) in distance with a liter of diesel. These calculations reveal that using a train would be 3.92 times cheaper than using road transportation. This calculation matches with the rules of the Department of Road of 2001, amended in 2015. Given the topography of Nepal, a train with 30 wagons would replace 333 trucks of 12 wheelers that would carry 3000 tons. To cover 46 miles in distance, 333 trucks would consume 13,745 liters of diesel, whereas the rail would consume 2207 liters of diesel. Accordingly, as per the rules of the Road Department of 2001, in order to transport 3000 tons of goods from...
Kyurung to Kathmandu, it would cost $20,870, whereas to transport the same weight by a train for the same distance, it would cost $3913. If electricity were used in lieu of diesel, the cost would be 25 to 35% lower for train transportation, which would make the goods 20% cheaper. If 2.2 million tons are exported each year, it would cost $15,297,391 as compared to $2,868,260 fix by a diesel using train. Yet, electric railways would cost only $1,975,913. Overall, transporting by rail using diesel would benefit $124,29,130, but if the railway lines were operated by electricity, the benefit would be $13,321,478.

Operating a railway line would also help to increase agricultural production by 0.5%. It will also help to increase off-farm activities by 0.75%, and overall economic growth would grow by 0.67%. The increase in 0.67% of agricultural production means the total profit would be $199.5 million. Operating the railway line would bring about $30 million profit per year even if the annual increase in inflation is 0.1% each year. Thus, operating a railway by diesel would benefit between $261.54 million and $271.55 million each year. Even after subtracting all the expenses, a diesel-operated railway would derive benefit of $131.59 to $141.59, and an electric-operated train would return higher than these amounts per year.

7.5.5 Connectivity with India

Almost 70% of Nepal’s total trade takes place with India, and over 90% of goods comes to Nepal from India. In order to facilitate trade with India, the government is now pushing several cross-border railway projects on the southern border including Jayanagar-Janakpur-Bardibas, Jogbani-Biratnagar, Jalpaiguri-Kakarbhitta, Nautanwa-Bhairahawa, and Rupaidiha-Nepalgunj. Nepal and India had signed a MoU in 2010 to build the abovementioned railway lines, and the work on those projects is in progress now. In 1927, the first cross-border railway 30 miles (~48 km) long Raxaul-Amlekhgunj line with 46 km (~28.5 miles) on the Nepali side had been built by the British during the reign of Rana Prime Minister Chandra Shumsher. Another short stretch—Jayanagar-Janakpur railway—was built in 1937 and was in operation until 2014, when it was closed for its upgrading. However, the upgrading has faced various snags because of resource crunch, lack of expertise, and concerns about safety and a control system. As a result, the transportation infrastructures at the bordering areas are mostly very old and need upgrade to suite the present mode of transportation. The national highways of India do not pass through the Nepal-India border. Most of the roads crossing at borders are narrow, congested, and poorly maintained. The preferences provided to Nepal under the Nepal-India bilateral trade treaty is now falling behind and giving way to South Asian Free Trade Area (SAFTA) standard. Thus, there is an imperative for both India and Nepal to bring the treaty back on track with SAFTA-plus provisions. Similarly, the “treaty of transit” signed 35 years ago needs to be revisited. Various international legal instruments are now available to modify the provisions of transit and enhance connectivity. The GATT Agreement, Almaty Programme of Action,
and WTO Trade Facilitation Agreement are some of these instruments. Both the
countries discussed hereby should be prepared to revisit past treaties in the spirit of
trade promotion and address emerging challenges (Ojha 2014) that affect the
contemporary environment. Connectivity issues, trade facilitation, removing some
tariff barriers, controlling informal trade, and promoting collaboration on tourism
and energy are some important areas where Nepal and India need to revisit to
improve the contemporary environment. Recently, the Motihari-Amlekhgunj petro-
leum pipeline (69 km. ~ 42.25 miles) has been completed, and it will facilitate the
smooth transfer of petroleum resources to Nepal.

The Proposed Raxaul-Kathmandu Railway

Since 1957, a 51-km, ~ 32 miles long, Janakpur and Jayanagar railway has been in
operation, but its service has been very ineffective because of its operational
irregularity, slow speed, dilapidated railway, and its outdated wagons. The newly
proposed East-West Railway Line extends 430 km ~ 267 miles passing through
Kakarbhitta via Bardibas-Lalbandi to Butwal. The construction between the
Bardibas and Lalbandi section which covers 48 km ~ 30 miles is in progress.
India has promised to extend its broad-gauge rail services up to the bordering
towns of Nepal. These include Nepalgunj, Bhairahawa, Janakpur, Biratnagar, and
Kakarbhitta. Additionally, two railways between Jayanagar-Janakpur-Bardibas
(111 km ~ 69 miles) and Jogbani-Biratnagar (13 km ~ 8 miles) are under construc-
tion, for which the Government of Nepal (GoN) must acquire land.

In 2018, Nepal and India agreed to a railway line connecting Kathmandu with
Raxaul, an Indian town near Nepal’s southern border. The approximate length of the
railway is (135 km ~84 miles) (Ghimire 2019). This broad-gauge railway will pass
through Nijgadh of the Bara District which will be almost running parallel to the
Kathmandu-Nijgadh fast track road. The Konkan Indian Railway Company also has
proposed another route with 190 km ~ 118 miles to connect Kathmandu with
Raxaul. This route passes through the Chitwan District and runs almost parallel to
the East-West, Chitwan-Mugling, and Prithvi Highways (Fig. 7.13). The Konkan-
Railway Company also has stated that though two proposed railway lines of different
lengths are proposed, both will take the same time duration to reach their destina-
tions i.e. Chobhar in the Kathmandu Valley. However, it has warned that the shorter
railway line may face several topographical problems. As of now, no real DPR or the
tentative cost estimate has been prepared for both the proposed railway lines.
Assuming $50 million per mile of construction of railway line, the total cost
would range between $4000 and $4500 million. According to the Indian Konkan
Railway Company, the shorter railway line will have a 45 km ~ 28 miles long tunnel
and 35 bridges. However, looking at the geographical terrain of Nepal, the tunnel
should not be more than 35 km ~ 22 miles, but a detailed DPR will reveal the reality.

This proposed railway is a broad-gauge type despite Nepal proposing to have a
standard gauge (Ghimire 2019). The recent studies have shown that this proposed
railway is easier to construct than the proposed Kyurung-Kathmandu line because of
the less sensitive geomorphology; however, the Chure section would be equally challenging (Ghimire 2019). Given the daunting seismic issues, the construction of the proposed railways face serious challenges. It will be best if tunneling portions can be minimized though tunnels will reduce the total distance. It will be worthwhile to learn from Japan’s test incident where on December 2, 2012, the Sasago Tunnel constructed in 1977, by using the twenty-first-century technology, collapsed because of seismic vibrations (Ogura 2012). Despite the use of quality materials, the tunnel collapsed, probably, due to some structural engineering calculation failures. Nepal’s geology is sensitive to earthquakes; thus, while designing a tunnel, it is essential to pay attention to the possible design calculation failures, traffic, vibrations, and landslide and fault lines inside the mountain through which the various tunnels pass. The starting point of the Kathmandu-Raxaul railway line is Birgunj, a key customs point of Nepal, accounting for over 60% of Nepal’s international trade, especially coming from the Kolkata Port (Chalise 2016).

### 7.6 Air Transportation and Environment

In 2017, over 4.1 billion passengers traveled by air worldwide, which was 7.2% higher than in 2016 (ICAO 2017a, b). In 2016, the international airfreight represented around 87% of total air flights, and Asia/Pacific operated nearly 40% of the scheduled international flights.

“Asia/Pacific remained the largest region with 34 percent of world traffic, with a 10.7 percent growth in 2017, followed by Europe with 27 per cent of world traffic and a growth of 8.6 percent. North America, which accounts for 23 percent of world traffic, grew at 4.1 percent. The Middle East region, representing 9 percent of world traffic, recorded a growth rate of 6.5 per cent. The Latin America/Caribbean region accounted for 5 percent of world traffic and grew at 7.4 percent. The remaining 2 percent of world traffic was undertaken by African region airlines, which recorded a growth of 7.2 percent.” (ICAO 2017a, b. p1)

The growth of air traffic with financial profit in 2017 is attributed to the improvement in aircraft facilities and engines in term of passengers’ comfort and fuel efficiency including long-distance haulage in successive years. Subsequently, the total number of passengers increased by 7.5% in 2018 resulting into $56 billion

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88 Nine people lost their lives while passing through Sasago Tunnel in Japan that collapsed on December 2, 2012. Fire broke out after the tunnel caved. Japan is prone to large earthquakes, and experts are suspecting the structural failure for the collapse. Nearly 150 concrete ceiling panels collapsed, crushing three vehicles, including a van. The fallen panels were 20 cm (7.9 in) thick and weighed 1.2 tons each. The tunnel is located at 1.2 miles distance from the Tokyo-side exit and spanned a length of 50–60 m (160–200 ft).

89 India has established an Integrated Check Post (ICP) 13 km ~ 8 miles inside India from the current custom office at Raxaul at the Nepal-India border point. This ICP provides all the services required for export-import trade, including customs, immigration, quarantine, and banking. The ICP located 13 km in India has been in operation since 2016; Nepali businesspersons, however, are facing some administrative problems while working through this ICP.
profit (ICAO 2017a, b). By the end of 2019, over 4.1 billion passengers traveled by over 40 million flights. Based on the recent projection, by 2040, around 10.0 billion passengers would use the air services by over 100,000 flights per day. Despite the improvement in the air service, this industry is contributing over 2% of the total global emissions (Tomphan 2019) with the possibilities of increasing further gaseous emissions. However, some airlines might operate more or less a carbon efficient plane such as an electric plane (under test now). With the expected growth in the number of air passengers by over 7.5% by the end of 2019, it was likely that the global share of aircraft emissions would have increased by more than 2% if it was not a Covid-19 pandemic. By utilizing data received from Lee (2016), Tomphan (2019) concluded that “a long-haul flight emits more carbon than the dozens of small flights around the world” (p: 1). In fact, aircrafts contribute more CO₂ emissions than the ground transportation does to travel the equivalent distance; however, the level of emissions will depend upon the types of a plane and fuel it uses. Using the standard fuel type, a plane flying from London to New York and back generates about 986 kg of CO₂ per passenger. A relatively short return trip from London to Rome carries a carbon footprint of 234 kg of CO₂ per passenger—more than an average CO₂ amount produced by a citizen of 17 countries annually while traveling the equal distance by a ground transit (Tomphan 2019). In addition, the emissions figure from an aircraft includes only the CO₂ generated by burning jet fuel, but not any emissions embedded in the construction of the plane or any other greenhouse gases that is produced, such as the water vapor mixed with various gases (Tomphan 2019). The “increase in traffic has historically outpaced the improvements in technology” (Tomphan 2019). “The International Civil Aviation Organization (ICAO) — the UN body responsible for limiting the carbon footprint from international air travel — is introducing a scheme aiming to offset emissions by allowing airlines to purchase carbon credits rather than burn less fossil fuels” (Fig. 7.14) (Tomphan 2019).

In addition to the improvement in engines, the seamless connectivity aided by the newest technology in bag handling and security screening has made many major airports capable of accommodating large air service dynamics though many have reached their limits. Globalized business depends on aviation, and the increasing airport congestion and delay unprecedentedly increase operational costs. Adding airport facilities is a challenging task on environmental and financial grounds. Involving multiple stakeholders in decision-making and improving airports’ qualities lessen future conflicts. Airport quality also indicates the status of a country. An airport balanced with open space and unparalleled global shopping facilities having ultra-modern shopping environment augmented by the modern travel technology handles contemporary aviation challenges with the least amount of environmental problems. Nepal dreams to embark to this route. Its dreams of bringing over 2 million

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90 Prof David Lee at Manchester Metropolitan University

91 Dr. John Broderick, climate policy and international transport researcher at the University of Manchester
tourists in “Visit Nepal 2020.” Plan has been paralyzed by Covid-19. With the Covid-19, the majority of the Nepali aircrafts are either remaining ideal or are operating very limited number of flights.

### 7.6.1 Airports in Nepal

Nepal airports provide services to both domestic and international flights. The only airport of international standard is Tribhuvan International Airport (TIA) that provides services to 15 national and 23 foreign airlines and serves over 6 million people annually.

20 different airlines fly in and out of Kathmandu, linking Nepal to Bahrain, Bangkok, Calcutta, Delhi, Dhaka, Frankfurt, London, Munich, Osaka, Paris, Rangoon, Shanghai, Singapore, and other cities. In the past few years, ten private airlines in Nepal went defunct. However, the number of airlines providing air service to Nepal increased. Currently, the international airlines serving Nepal are Air Arabia, Air China, Bahrain Air, Biman Bangladesh, China Southern, Dragon Air, Druk Air, Etihad Airways, GMG Airlines, Gulf Air, Indian Airlines, Jet Airlines, Jet Lite, Korean Airlines, Pakistan Airlines, Qatar Airways, Silk Air, and Thai Airways International.

The Nepal Airlines Corporation (NAC), which is a public enterprise, has the most extensive flight links to foreign destinations. It also provides domestic flights to different parts of the country. Nonetheless, it has constantly experienced financial losses over the years. Many domestic airlines provide services to different parts of Nepal. Recently, more domestic airfields have been established, including some in very remote areas, thus creating a wider network of airfields. The Nepal Airlines Corporation no longer has a monopoly over domestic flights. Several private airlines now provide service, leading to significant improvements in the reliability and frequency of flights within the country. In addition to regular flights, some of these airlines offer “mountain view” (e.g., Mount Everest) charter flights for tourists.
each year. Recently, however, it has become overcrowded in both sky and on the
ground. Aircraft crews are forced to hold planes in the sky for a longer time than
anticipated to get their turn to land. Pokhara airport in the Kaski district and the
Gautam Buddha International Airports in the Rupandehi district (Fig. 7.15) are under
construction. These two airports will provide international services at the regional
level such as among the SAARC, East Asia, Southeast Asia, and Gulf countries.
Additionally, these airports are located in seismically sensitive locations. Thus,
another international airport is needed urgently to provide uninterrupted services.

Nepal’s undulating physiography has only 973,921 ha of land (~7% of Nepal’s
total area) within 3% slope suitable for the construction of airports. Of the 7%, only
19.28% land is within 3% slope in Province 1, 30.87% in Province 2, 6.99% in
Province 3, 3.81% in Province 4, 22.96% in Province 5, 2.87% in Province 6, and
13.27% in Province 7. These locations also are not contiguous. Nepal has 47 airports
(Fig. 7.15) connecting 37 out of 77 administrative districts; 13 airports in Province 1,
three airports in Province 2, six airports in Province 3, five airports in Province 4,
four airports in Province 5, six airports in Province 6, and 10 airports in Province 7.
Provinces 3 has TIA. The under construction, Pokhara International Airport is in
Province 4, and Gautam Buddha International Airport is in Province 5.

In an attempt to construct an alternative new international airport, a densely
forested area of the Bara district located between the Bakaha (East) and Pashaha
(West) rivers (Fig. 7.15) was identified in 1995 among other seven alternatives to
construct the proposed Nijgadh International Airport (NIA). This airport is expected to complement the TIA (GoN 2019). However, as of today, the NIA proposal has remains dormant and the Government of Nepal (GoN) has never disclosed the other seven alternatives. Currently, the GoN is committed to build NIA at the cost of $6.6 billion, making it the largest mega project in [South] Asia. It is targeted to complete by December 2025 and expects to serve 9.2 million air passengers annually by 2030 in one of [South] Asia’s hubs.

The proposed NIA is chosen in a very environmentally sensitive area without proper analyses of its environmental impacts. Environmentalists are seeking answers as to why over 8000 ha of the only remnant dense forest (Charkoshe Jhadi) has been chosen without revealing its detailed Environmental Impact Assessment (EIA), while many of the international airports have been handling a large number of passengers in much smaller airports. Environmentalists are also questioning whether this NIA would become like the Mattala Rajapaksa International Airport (MRIA) of Sri Lanka because of the lack of passengers. These questions are raised because the proposed NIA is located close to the Indian border. Without having an agreement to use the Indian sky immediately after a plane takes off and descends to land, it might become defunct if India objects its operations. Several other environmental questions are also raised including the destruction “of the only hardwood forest with the richest biodiversity.” Of this richest biodiversity area, the government of Nepal is planning to clear cut 8000 ha and remove 2.5 million mature hardwood trees. Though the government claims to have planned to plant 25 saplings per tree felled from the proposed NIA site, Nepal does not have enough land even to plan ¼ of the 62.5 million (2.5 million times 25 proposed) to plant hardwood species, which are needed to sequester the increasing amount of carbon. Clear cutting of such a huge hardwood forested area will create unaccountable environmental trouble not only

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93 The Government of Nepal (GoN) argues that a fast track will connect Nijgadh with Kathmandu by 76.2 kilometers (km) ~45 miles distance long road in lieu of the 155 miles ~250 km long highways. The cost of construction of fast track will be around $11.2 million. This fast track will help alleviate the air passengers’ pressures at the TIA because this fast track will connect the proposed NIA with TIA. This fast track will have 87 bridges of which 16 will be long ones with almost 6 miles ~10 km long. Three tunnels on the fast track will reduce the total length by 0.9 miles ~1.37 km.

94 Many international airports are efficiently managing on lesser spaces (area hectares) than the proposed NIA areas with respect the number of passengers they are serving. For example, Amsterdam—2787 ha; Bangkok—3240 ha; Chicago—3087 ha; Cairo—3700 ha; Dubai—2900 ha; Dulles (US)—6963 ha; Delhi—2066 ha; Denver—13,570 ha; King Faisal (Saudi Arabia)—77,600 ha; Paris—3200 ha; and Shanghai—4000 ha. Mumbai and London’s Gatwick airports handle 50 million passengers within 700 ha; even smaller Singapore airport serves 60 million annual passenger movements efficiently in less than 1300 ha.

95 The proposed NIA site has been identified as a rich biodiversity area (Article 14, Convention on Biological Diversity 1992; Section 9 of Nepal Treaty Act 1990). The clear felling of this densely forested area also conflicts with the Section 68 (Nepal Forest Act 1993), Nepal Forest Act 1995 and Forest Rules and Regulations 1997 (Appendix 4). A rich biodiversity area of proposed NIA generally receives very heavy rainfall; if converted into a concrete floor, not only it will inundate 6260 ha farmlands of downward community, but also restricts underground water recharge creating several environmental problems. The proposed NIA also destroys the ecological niches for species
in the Tarai of Nepal, but also in the neighboring Bihar State of India, which will have regional climatic ramification. Destruction of such a large hardwood forest also will have direct impact on the Himalayan glaciers (see Chaps. 3 and 8).

Nepal needs an international airport to serve the increasing number of tourists and to develop the foreign currency yielding tourism industry, but indiscriminate clear-cutting of tropical hardwood will have serious ecological consequences such as the loss of carbon sinks and deposition of harmful substances in the ecosystem during and after the construction of such a gigantic airport. It will increase carbon emissions. Though the Nepal Government (GoN) aims to make this proposed NIA as one of its international hubs, with the improvement in aviation technology, an AirBus-350 and Boeing-787 can easily fly for 16–18 h non-stop\textsuperscript{96} (Shrestha 2019), and it is questionable which air services would make Nepal, with a meagre population of 30 million, an international hub. It seems like Nepal is working with a tenuous research idea. Many international airline hubs are only 4–5 h away from the proposed NIA like Bangkok, Singapore, Dubai, and Kuala Lumpur. In such situations, Nepal really needs to do more homework before dreaming the proposed NIA as a global air service hub.

Nepal’s location between two Asian economic giants—China and India—also makes the proposed NIA a flawed idea. A report from the World Economic Forum predicted that China would have the biggest aviation market by 2022. China is currently building eight new big airports in strategic locations. Not only is the number of airports in China growing, but also Chinese airlines such as Air China, China Southern, and China Eastern are expanding at an unprecedented rate. This clearly indicates that China will soon emerge as a new international transit hub. Similar progress, albeit at a slower pace, is taking place in India. Currently, Dubai is a hub for Emirates, Bangkok for Thai Airlines, Hong Kong for Cathy Pacific, Singapore for Singapore Airlines, and Doha for Qatar Airlines (Shrestha 2019). “On that basis, the proposed NIA should be an obvious hub for Nepal Airlines—the Nepali national flag carrier. Making a hub for the incompetent Nepal Airlines, which is an epitome of mismanagement and corruption and is currently unable to find new destinations for recently purchased wide body fleets, seems like a complete waste of resources” (Shrestha 2019:1).

Nepal also needs to make her airport security trustworthy to travelers. For example, Nepal’s nearest neighbor, India, has established her own security point

\textsuperscript{96}In April 2019, Singapore Airlines set a record of 19 h non-stop flight from Singapore to Newark, and some 20+-hour non-stop flights are underway.
within Nepal’s International Airport because of its mistrust of Nepal’s air security\(^\text{97}\) (Prasad 2017). The only economic rationale behind building the proposed NIA is an expansion of the tourism industry—which is primarily ecotourism.

Nepal’s developmental partners and donor communities have been supporting the efforts of environmental conservation for decades, yielding some notable results. On this basis, many may seem to portray protection of the environment as a foreign agenda (Shrestha 2019) and promote ecotourism. Though ecotourism is an eco-friendly step of promoting tourism while conserving and promoting the nature, the sustainability of nature conservation based on such a foreign agenda would not be sustainable. Preserving environment is an inherent component of sustainable development goals set by the United Nations (UN 2015a, b). Felling 8000 ha of hardwood forest would send a negative message to the outside world that would negatively affect the tourists’ inflow into Nepal. These days, because of the growing urgency of addressing climate change, people are more sensitive to nature than ever before. At present, there is a race towards making things “green” globally, even in the aviation industry. Airplane makers are competing to make fuel-efficient and eco-friendly planes. Previously built airports such as Chiang Mai Airport in Singapore are transforming themselves by increasing greenery and reducing the carbon footprint. India has recently completed the world’s first solar-powered airport (Shrestha 2019). Nepal’s goal to promote its ecotourism industry by cutting 8000 ha of tropical forest seems a backward step for sustainable development.

### 7.7 Tourism

“Tourism has been embraced as a source of post-industrial employment and foreign currency to promote development. Given Nepal’s geography and state of underdevelopment, its attractive natural scenery promises adventure tourism as a viable economic activity to develop remote areas” (Bhattarai et al. 2005: 669). Tourists visit various areas in Nepal, especially the national parks, wildlife reserves, mountains, religious shrines, and other tourist attractions (Fig. 7.16). Many tourist attraction centers are connected by roads, air services, and cable cars, and in many places, tourists can ride horses and trek on foot.

Nepal’s geography restricts many new developments due to the lack of resources, despite many rhetorical expressions by the Government of Nepal (GoN). There are even some efforts being made by new developments, and they are creating many environmental challenges, and hundreds of people have been rendered homeless. However, without much dependence on the outside world, tourism could be one of

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\(^\text{97}\) Indian Airlines flight 814 was to fly from Tribhuvan International Airport in Kathmandu, Nepal, to Indira Gandhi International airport in Delhi, India, on December 24, 1999. At 17:30 Indian Standard Time (12:00 GMT), the plane was hijacked by five gunned men belonging to the Harkat-ul-Mujahideen, a Pakistan-based extremist group, upon entering Indian Airspace.
the options where Nepal can commoditize her mountains and undulated scenic terrains and location-specific organic farm products to offer tourists a homestay environment in a bucolic lifestyle. Tourism offers opportunities to create “geocapital” or the cumulative economic value derived from the commoditization of “geographical attributes/features, including place-specific locational advantages or cultural traditions” (Bhattarai et al. 2005: 669–670). In view of the country’s diverse geographical features, adventure tourism could be one of the sustainable approaches for rural development of Nepal (Zurick 1992) that would be benign environment. Given the inequality and disparities the ongoing economy has created, tourism can add little to those living in rural areas, who can provide wonderful experiences to visitors. Tourists may enjoy the unique location-specific cultural traditions embedded in such bucolic environments that have the least western influences. This will also challenge Kathmandu’s long-standing myopic neglect of rural constituencies, its cumbersome bureaucracy, and its political corruption, all of which work against expanding the network of adventure tourism due to concentrated development in and around the Kathmandu Valley (Table 7.8; Fig. 7.17). Ecotourism and homestay (a type bucolic pleasure) could be an answer to the ongoing urban biases and uneven development process (Myrdal 1968) that the neoliberal mantra of the World Bank has emphasized to develop the market-led economic growth since the 1980s (Bhattarai et al. 2005; Panday 1999; Fig. 7.18).

Since being opened to the modern world in 1951, the number of tourists coming to Nepal has increased in successive years except for the period of 1996–2006...
MoCTCA 2017) at the peak of the Maoist insurgency and in 2015 when Nepal was hit by deadly earthquakes that took over 9000 lives. However, these incidences rarely affected the tourists coming from the SAARC region because many of them

Table 7.8  Tourist facilities (hotels) in the Kathmandu Valley and outside the valley

| Description | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
|-------------|------|------|------|------|------|------|------|------|------|------|
| Kathmandu Valley | 334  | 335  | 345  | 362  | 422  | 464  | 503  | 522  | 557  | 449  |
| Five star    | 7    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    | 8    |
| Four star    | 7    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Three star   | 13   | 12   | 12   | 11   | 11   | 13   | 15   | 15   | 15   | 15   |
| Two star     | 30   | 30   | 30   | 27   | 27   | 28   | 29   | 29   | 26   | 26   |
| One star     | 29   | 29   | 29   | 26   | 26   | 26   | 26   | 24   | 24   | 24   |
| Non star     | 248  | 254  | 264  | 288  | 348  | 387  | 423  | 442  | 482  | 424  |
| Out station  | 269  | 272  | 274  | 307  | 314  | NA   | NA   | NA   | NA   | NA   |
| Five star    | 1    | 1    | 1    | 2    | 2    | NA   | NA   | NA   | NA   | NA   |
| Four star    | –    | –    | 0    | –    | NA   | NA   | NA   | NA   | NA   | NA   |
| Three star   | 5    | 5    | 5    | 6    | NA   | NA   | NA   | NA   | NA   | NA   |
| Two star     | 6    | 6    | 6    | 4    | 4    | NA   | NA   | NA   | NA   | NA   |
| One star     | 12   | 12   | 12   | 11   | 11   | NA   | NA   | NA   | NA   | NA   |
| Non star     | 245  | 248  | 250  | 285  | 291  | NA   | NA   | NA   | NA   | NA   |

Source: Ministry of Culture, Tourism, and Civil Aviation (2017)

Fig. 7.17  Locations of National Parks and Reserves, restricted areas, and potential cable car sites in Nepal

(MoCTCA 2017) at the peak of the Maoist insurgency and in 2015 when Nepal was hit by deadly earthquakes that took over 9000 lives. However, these incidences rarely affected the tourists coming from the SAARC region because many of them
were the religious pilgrims. Nepal can learn from her past and use tourism as one of the means to earn foreign currencies from westerners while conserving her environment.

History shows that visiting tourists themselves have acted as best advertising ambassadors to spread the words of Nepal’s natural and cultural paradise around the world. For example, in the 1950s, when first few foreigners arrived in Nepal, Nepal’s cultural heritage and natural beauty enchanted them. Tourists were mesmerized by the simple agrarian life devoid of amenities that served as a nostalgic reminder of mediaeval times. When they returned to their respective countries with exotic tales of a hidden Shangri-La nestled in the Himalayas, they acted as a stimulus prism through which the world viewed the country so that many tourists visited Nepal. The first ascent of Mt. Everest in 1953 further enhanced the alluring image of the country. Since then the volume of tourists coming to Nepal from various parts of the world has increased (Fig. 7.19). Many tourists from South Asian countries came on religious pilgrimages, and their number remained an all-time high (Fig. 7.19) despite severe political turmoil in Nepal. Successive events added a new dimension to the growing “lore,” and tourists from all over the world (Fig. 7.19) were lured to visit Nepal, eventually giving longevity to contemporary tourism. Many westerners have enjoyed the rugged mountain terrain with the towering snow-clad peaks and bucolic life. These attributes subsequently became exalted throughout the world in the 1960s so that Nepal acquired an aura of mysticism (Bhattarai et al. 2005). For many mountain climbers, researchers, and tourists, it soon emerged as a popular destination for adventure tourism, including trekking, rafting, and wildlife observations (Bhattarai et al. 2005; Chand 2000; Shrestha 1998), and such activities contributed to foreign earnings (Fig. 7.20). Though only 6000 tourists landed in 1962, by 1970, the

![Fig. 7.18 Number of hotels and their distributions in Nepal](source: MoCTCA (2017))
total had risen to 70,000. The international tourist flows began in earnest in the 1970s, when the United Nations Development Programme (UNDP), in collaboration with the International Labour Organization (ILO), assisted in various projects for Nepal’s development. After the 1970s, some industrial developments started in Nepal including the country’s carpet and apparel industries, and the number of tourist arrivals increased from 300,000 in 1990, 464,000 in 2000, 530,000 in 2007, 620,000 in 2010, to 750,000 in 2016 (Figs. 7.19 and 7.20).

Since many tourists visit Nepal, their curiosities have increased further; many even daring to visit restricted areas located adjacent to the Chinese border without special permission from the Ministry of Home Affairs of the Government of Nepal (GoN). These areas were opened to visitors in 2008 with a special permission from the Department of Immigration and with the payment of special fees (Puri 2019a, b). The more tourists that visited

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98Places that need special permissions to visit include Rasuwagadhi, Kanchenjunga, Keemathanka, Chepuwa, Hatiya, and Pawakhola of Sankhuwasabha District; Nangpala of Solukhumbu; and Lamabagar and Gaurishankar of the Dolakha District. Other restricted areas include Timure (Rasuwa); Chum Valley and Manaslu (Gorkha); Toche (Manang); Tilicho Lake and Lomanthang (Mustang), Upper Dolpo, Lower Dolpo, Moloko Mugu, and Dolpo of Dolpa District; Simikot and Yari (Humla); Saipal (Bajhang); and Byash (Darchula). The cost per person to visit these places is $500 for the first ten days and then $50 per day per tourist. In Manaslu area, a tourist has to pay $100 for a weeklong journey and $15 per day per tourist.
Nepal, the more tourists that entered restricted areas. For example, in 2015, only 9679 people entered the restricted areas, and then it was 28,876 tourists in 2018 and 29,993 in 2019 (Department of Immigration 2019).

Tourists come to Nepal from various parts of the world for various reasons, such as holiday vacations, pleasure, pilgrimage, business, trekking, and mountaineering (Fig. 7.20). The peak period of tourist arrivals in Nepal is either before the monsoon or after the monsoon (Fig. 7.21). About 70% of the tourists visit Nepal for holiday pleasure, 8% for trekking and mountaineering, 7% for business, 15% for pilgrimage, and 7% for various purposes (Magar 2018). Generally, a tourist spends between $54 (in 2016) and $55 (in 2017) per day. An analysis of 400,000 visits reveals that the average length of stay of foreign tourists in Nepal has dropped by 6%, 12.6 days in 2017, as compared to the average length of stay 13.4 days in 2016 (Magar quotes Nepal Tourism Statistics 2017). The average length of stay was 13.16 days in 2015, 12.44 in 2014, 12.60 in 2013, 12.16 in 2012, 13.12 in 2011, 12.67 in 2010 (Magar 2018), and 7.92 in 2002 when the Maoist insurgency was at its peak (Koirala 2012).

In 2018, of the 28,876 tourists, 10,814 visited Humla district followed by Manaslu (7371), Mustang (4116), Chum Valley of Gorkha (3030), Lower Dolpo (1222), Kangchenjunga (970), and Upper Dolpa (525).
The Government of Nepal is making a determined effort to increase the length of stay of tourists at least to 14 days. However, lack of proper facilities despite the increase in the number of hotels of various capacities (MoCTCA 2017; Onlinekhabar 2019a, b, c, d), increasing pollution, and other obstacles including safety issues has posed serious challenges to this endeavor.

The arrival of a large number of tourists for various purposes is attributed to the global trends of increasing ease of international transportation and communication and the rise of leisure activities in affluent post-industrial societies of the west. Most of the early tourists come from Western countries and Japan and recently from China. Their arrivals in Nepal also reflect that there are good economic conditions in the abovementioned respective countries, and recently, the Chinese economy has been growing rapidly, and many people are looking for places to visit. China contributes the largest number of outbound tourists worldwide. In recent years, Chinese tourism has grown dramatically. China’s tourism has risen from 5.3 million in 1997 to 130 million in 2017. In year 2017, Chinese tourists poured $258 billion into the global economy. This puts their spending at double that of US tourists and triple that of German ones. It is projected that China will generate more than 220 million tourists per year (Rees 2018). The story of the SAARC countries’

![Fig. 7.21 Tourist arrivals by month](source: MoCTCA (2017))

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100 Many five-star hotels in Nepal are operating at their 60% capacities. The occupancy rates have decreased from 65% in 2018 to 60% in 2019. Many hotels have been added in subsequent years. There are 15 five-star hotels, 8 four stars, 37 three stars, 43 two stars, and 33 one star, and other tourist-operated hotels are 1125. The hotel occupancies have varied in different years, for example, 61% in 2014; 35% in 2015; 65% in 2016, 2017, and 2018; and 60% in 2019. Because of the earthquakes in 2015, the number of tourists decreased, but after that the number of tourists is increasing. For example, 790,118 tourists arrived in 2014, 538,970 in 2015, 753,300 in 2016, 940,228 in 2017, and 1,173,072 in 2018.
tourists is different, because tourists from the SAARC countries are coming to Nepal for multiple reasons, including religious purposes, and their number was at an all-time high even in 2015, when deadly earthquakes hit the country.

The increase in tourists’ visits from the European countries in the recent years has been impressive. Prior to 1925, only “55 Europeans had gained access to Nepal, primarily as invited guests of state” (Rankin 2004:172). The arrival of tourists from India, France, Germany, Japan, and the United States topped the list, followed by several other Western and Mediterranean European countries (Fig. 7.19). Recently, however, the number of Chinese tourists arriving is encouraging, which will also bring more businesses (Ojha 2016). 101

During the 1990s, tourism was the third largest industry in terms of foreign exchange earnings, surpassed only by the carpet and garment industries. The open economy also encouraged the international businesses and tourist arrivals in Nepal. In fact, “the increasing flow of tourists as well as air-freight at the height of the carpet boom turned Kathmandu into one of South Asia’s busiest air transportation hubs” (Rankin 2004:172). With the increasing facilities in the aviation industries, more tourists came to Nepal by air than by land transportation (Fig. 7.22). Records show that many male tourists within the age range of 30–45 are coming to Nepal

101 The flow of Chinese tourists coming to Nepal has increased over the last few years, reaching 123,000 in 2014, but this is a minuscule figure considering that in the same year, 107 million Chinese visited other countries. The six border posts across the Himalayan passes are designated as overland trade routes, but not one of these has infrastructures suitable for international trade. The development of railway links up to Lhasa in 2006 and further on to Shigatse in 2014 has opened opportunities for extending the railway up to the Nepali border and then further may be into the country bring many Chinese tourists. Nepal provides gratis visas to visitors from China. This was done to attract Chinese tourists. This will also offer a wonderful opportunity for Nepal to establish itself as a land bridge between its two neighbors, positioning the landlocked country to benefit from their prosperity.

![Fig. 7.22 Tourist arrivals by air and land transits and total earnings (2003–2016)](image-url)
In the past, the emphasis was merely on the earnings of foreign currency, but recently many tourists are coming to Nepal to enjoy the natural beauty and how culture and livelihood are tied to the surrounding environment (Shrestha 1997:157–172; Shrestha 1998). With the increasing arrivals of tourists to see natural beauty, environmental conservation is gaining momentum. Tourism linked with nature conservation is called “ecotourism.” New ecotourism is emerging in Nepal with various homestays and organic farming. Thus, today’s tourism is offering environmental conservation, public awareness, foreign exchange earnings, employment generation, and organic farming.

7.7.1 **Tourism as a Source of Foreign Exchange Earnings and Employment Generation**

Today, tourism has great potential to improve the economy of Nepal that generates the most jobs in the country’s transportation and accommodation sectors. The Government of Nepal has declared Nepal Visit Year 2020 and aims to bring 2 million tourists with a great emphasis on ecotourism, a component of the green economy that is environmentally friendly (Anup et al. 2017). While prioritizing employment and income generation, the GoN is also emphasizing ecotourism and homestays. The result of a survey of 192 tourism establishments that combine tourism with homestay and environmental conservation located in Jhapa, Kathmandu, Bhaktapur, Lalitpur, Chitwan, Kavre, Kaski, Banke, Kailali, and Rupandehi districts revealed that on average, every six tourists create one job in Nepal. Though this rate is lower than UN World Tourism Organization (UNWTO) estimates, which is 12 employments per
tourist (Kantipur 2014), at least the homestay is contributing to both environmental conservation and organic farming. This survey showed that in 2014, over 797,616 tourist visits generated 138,148 jobs as opposed to the estimated figures of 178,000 direct jobs by the Economic Survey 2013. Except for the trekkers and aviation pilots, the salary ranges in the tourism sector were between $100 and $200 per month per person (Kantipur 2014).

Trekking has made Nepal globally renowned, especially after the first conquest of Mt. Everest by Edmund Hillary and Tenzing Norgay Sherpa in May 1953. Today, there are 326 peaks open for “scaling.” While the climbing permit fee or royalty depends upon the altitude of the peak that a specific expedition plans to conquer, the fee can be as high as $60,000. Since six of the world’s ten tallest peaks, including the highest massif Mt. Everest, are in Nepal, trekking has been, and will remain, popular in Nepal and is considered as the Mecca of mountaineering, unsurpassed by any other country. These peaks are making Nepal a stairway to the Tibetan plateau (Bhattarai 2003; Chand 2000; Hagen 1994). Plus the trekking sector employs the largest number of people, especially the Sherpas, by tourist standard hotels, travel agencies, star hotels, and international airlines.

The Tourism Employment Survey revealed that 1636 trekking agencies provided 50,004 jobs, 625 tourist standard hotels provided 26,808 jobs, 2112 travel agencies provided employment to 25,238 people, and 105 star-rated hotels employed 13,459 persons in 2014. Likewise, the 29 international airlines employed 12,822 people, and 15 domestic airlines operating in the country employed 5903 persons (Kantipur 2014). Similarly, 226 homestay establishments employed 2738 people, 49 rafting companies employed 735 people, and 60 paragliding and ultralight companies employed 440 persons in the same year (Kantipur 2014).

Until the 1950s, trekking (walking on foot) was the only mode of transportation in the Himalayas, but now it has become a post-industrial leisure activity and pilgrimage. It is the Hindus who form the vast majority of religious tourists, followed by Buddhists most of whom come from Japan, Sri Lanka, and Southeast Asia to visit Lumbini, the birth place of Buddha, and other prominent shrines in the Valley such as the Swayambhnu Stupa. There are over 900 million Hindus in the world, most of whom reside in the Indian subcontinent. A large number of them undertake religious tours/pilgrimages every year. In 2002, there were approximately 300,000 pilgrims, with over two-thirds originating in India and 66,000 going to Nepal where their destinations covered revered shrines and temples both within the Valley and beyond, for example, Manakamana, Gosainkunda, Mukti Nath, Devghat, and Triveni (Bhattarai et al. 2005). Situated at the top of a hill in the district of Gorkha, the Manakamana Temple alone attracts over 12,000 pilgrims annually. The temple’s popularity has been greatly enhanced since the installation of a cable car leading to it (Gurung 2003). 

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102 Fifty-eight percent of all the employees were Janajati, 33% Brahmin/Kshetri, 5% Dalit, and 3% Tarai/Madhesi. Around 19% of the employees were highly skilled, women’s engagement was 20% of which 78% had secondary or a higher level of education, and 47% have completed intermediate level of education. Aged between 20 and 40 years, 76% were regular employee and 24% seasonal.
Recently, another cable car has been under construction between Birethanti and Mukthinath (Fig. 7.16). Yet, a very popular cable car is also operated at Chandragiri hill in the Kathmandu Valley. It has become a very popular tourist destination, and thousands of tourists visit the area each year.

Once complete, the Birethanti and Mukthinath cable car will be the longest one in the world with a crow fly distance of 81.4 km. having 19 cabs. This under construction cable car will have 746 gondolas and 447 towers and is expected to be completed by 2025. The six stations of this cable car include (a) Birethanti to Ghorepani via Tikhedhunga of Kaski District; (b) Ghorepani to Tatopani; (c) Tatopani to Lete via Ghansa and Kobang; (d) Lete to Kobang; (e) Kobang to Jomsom via Marpha; and (f) Jomsom to Kagbeni-Muktinath. Each 19 cable car, paced at 30 minutes intervals, would have the capacity of ferrying 10 people at one time and will provide services to 1000 people per hour in one direction. The cable car also will have additional nine intermediate substations besides six stations and ten technical stations for repair, maintenance, and rescue. This cable car will have great impact on the tourism industry of Nepal with the least impact on the environment.

An Australian special plane, equipped with a radar capable of gathering spatial LiDAR\textsuperscript{103} data, is used to survey and develop a detailed project report (DPR). Italian, Australian, and Nepali experts are involved in the construction of this cable car (Puri 2019a, b). After this cable car comes into operation, it will generate 10,000 jobs each day operating 10 h a day. Passengers will be ferried only during the daytime, and in the night time, these cabs will carry goods. The cable car would require 13 megawatt of energy to operate. The total cost of construction is estimated at $500 million. The completion of the DPR would cost $35,000 of which 55% will be shared by proprietors and 45% by shareholders.

\textsuperscript{103}LiDAR or Light Detection and Ranging is an active remote sensing system used to measure terrain height across wide areas. It has become very handy recently to remotely estimating key characteristics over large areas because it takes very long time otherwise to go to the ground and measure every object. LiDAR is used to capture information about the landscape over which the cable car would pass through. It record things that are useful to estimate conditions and characteristics of the landscape. LiDAR also measures vegetation across large areas using automated sensors. It helps in identifying structure including vegetation height, density, and other characteristics across a landscape. In a LiDAR system, light is emitted from a rapidly firing laser. This light travels to the ground and reflects off things like buildings and tree branches. The reflected light energy then returns to the LiDAR sensor where it is recorded. A LiDAR system measures the time it takes for emitted light to travel to the ground and back. That time is used to calculate distance traveled. Distance traveled is then converted to elevation. These measurements are made using the key components of a LiDAR system including a GPS that identifies the longitude (X), latitude (Y), and height (Z), location of the light energy, and an inertial measurement unit (IMU) that provides the orientation of the plane in the sky.
7.8 Conclusion

This chapter presented (a) an historical account of Nepal’s economic development, succinctly describing why despite changing from a mixed economic system to liberal economic system, Nepal’s deficit trade balance is increasing; (b) a theoretical debate describing the nexus between income inequality and disparity with the sustainability and environment; and (c) the existing and future plans to improve road, railway, and air transit systems and their nexuses with the tourism industry and contemporary environment.

Open to the outside world after the 1950s, Nepal’s international trade was mainly with India until Nepal was connected with China by the Kodari Rajmarg (Fig. 7.16) in the 1960s. Though Nepal exports some agricultural products, carpets, and ready-made products, these exports are too miniscule at countering the large volumes of imports of electronic and other finished products. After the economic liberalization, it was expected that there will be an increase in basic services and facilities with the favorable environment for foreign direct investment. However, positive changes in this area are yet to be seen. The liberal economy has created more inequality and disparity than before. Despite the claim that the poverty level has decreased from 45% in 1985 to 15% in 2010, inequality between rich and poor is widening. For example, currently, 20% of the top richest of Nepal’s population is controlling over 54–56% of the resources, while poorest 20% of the total population is barely accessing just around 4% of the resources. In such a disparity, environmental conditions are deteriorated and most of the developmental activities are concentrated in urban areas. The bulldozer engineering to construct roads in sloped and erodible areas has victimized many people. The ecosystem services are damaged beyond repair. A large number of working age population are leaving the country, almost 1500 people a day. About 8 million young Nepali are working all over the world in various hostile environments. Many of these remittance aspirants who hoped to improve their future are returning in boxes. Back home, social fabric is broken and Nepali culture has been seriously injured. After the pandemic COVID-19, many young people are returning home from 59 countries because of the unemployment due to increasing economic recession in those destinations (Bhattarai et al. 2020).

From 1996 to 2016, the country faced political instabilities, and Nepal saw 23 different coalition governments. The remittance-dependent economy became very unstable. Despite being geographically located between two Asian giants, Nepal is yet to benefit from contemporary economic dynamisms in the neighborhood. In order to change Nepal from a landlocked into a land-linked country, efforts are being made to link the two major economies of Asia by railways. However, the difficult topography and resource scarcity have become the major impediments to the implementation of these developmental plans. Many national-level projects are not implemented because of the seismic nature of Nepal’s location between the Tibetan/Eurasian and Indo-Australian Plates. Nonetheless, with some improvements in air and ground transportation, the tourism industry has emerged as one of the major bases of Nepal’s economic prosperity. It is also hoped that ecotourism will help to
generate employment and promote organic farming to offer the unique tests of locally grown food to tourists in various homestays in a bucolic style. In order to promote tourism, Nepal needs to improve the transit systems with good roads, railway, and air services. Improved air connectivity, road infrastructure, and planning for railways will attract FDI. Likewise, it is high time for Nepal to develop various infrastructures such as cable cars to improve accesses to various tourist sites in many remote frontiers having unique natural beauty. Nepal has promoted Visit Nepal 2020 and aimed at bringing at least 2 million tourists in 2020 and beyond. However, COVID-19 has completely paralyzed this Visit Nepal 2020 program beyond imagination.

Without creating opportunities to millions of Nepali, who have emigrated to different parts of the world for remittances purposes, talking about the improvement in contemporary environmental issues sounds like rhetoric jargon. Nepal must bring back home her lost semi-skilled and highly skilled labor, who are languishing in various hostile working environments in the Middle East, East Asia, and Southeast Asia. Long-term planning for sustainable development with the creation of income equality while preserving the contemporary environment would create a win-win situation in Nepal, which will improve the ecosystem services and restore the culturally rich social fabrics.

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