

SECTOR ASSESSMENT (SUMMARY): AGRICULTURE, NATURAL RESOURCES AND RURAL DEVELOPMENT

Sector Road Map

1. Sector Performance, Problems, and Opportunities

1. **Country background.** Nepal is a landlocked country with three distinct physiographic areas: the mountains in the north bordering the People's Republic of China, the hilly and Siwalik regions in the middle, and the *terai* (southern lowland plains) in the south bordering India. Nepal is one of the least developed countries in the world with a gross domestic product (GDP) per person in 2016 equivalent to \$729.50 and is among the lowest 25 countries in the world in terms of GDP per capita. The steady growth of Nepal's economy, at 4.0%–5.0% annually, was disrupted by the April–May 2015 earthquakes and fell to 3.4% in 2014–2015 and to 0.8% in 2016. Nepal's economy has recovered to a healthy growth rate (5.6% expected in 2017) after the slowdown from the devastating earthquake of 2015 and is projected to be growing in the 5.0%–6.0% range compared to the 4.0%–5.0% growth range prior to 2014.¹ While the economic growth rate is trending upwards, it is much lower than that of its neighbors.²

2. The agriculture sector contributes to one-third of Nepal's GDP and is important for employment and income, as well as poverty reduction as high proportions of the population and of poor people live in rural areas. Through its cropping, livestock, fishery, and forestry subsectors, agriculture contributes 35% of GDP and supports 65%–70% of the population. Nepal's agriculture suffers generally from low productivity. There is potential to double the productivity but several factors constrain increasing productivity, among which is poor accessibility. Nepal's three distinct agro-ecological zones of terai, hills, and mountains influence agricultural production and define opportunities and constraints facing farmers. While the geography creates difficulties, the wide range of agro-ecological zones and micro climates makes possible the production of a broad range of agricultural outputs. This creates the potential to improve agricultural productivity and farm incomes, and meet demands of domestic, regional, and global markets. The government has made major investments to support farmers.

3. Major constraints on improving agriculture include the following: (i) little integration and few linkages between agriculture and other sectors, largely because the road network providing all-weather access is limited, especially in hills and mountains, and is generally poorly maintained; (ii) small average farm size focused on subsistence production; (iii) very modest commercialization of farming; (iv) undercapitalized and inefficient markets and marketing for both inputs and outputs; (v) limited agribusiness operations and services; (vi) ineffective research and extension services to support farmers in modernizing production and marketing, mostly because of shortages of skilled people, equipment and materials, and operating funds; and (vii) poorly elaborated and unclear policy to those most affected by it, i.e., the stakeholders comprising those who invest in agriculture and its derivatives, and those employed in it. Nepal reduced the proportion of its population in extreme poverty and hunger by more than half from 1990 to 2015. Over 90% of the reduction in poverty since 2008 has occurred in rural areas. Continuing growth of farm incomes, which is likely to remain one of the main means of reducing rural poverty in the near future, depends on rises in factor productivity and rural households responding to the market and selling more produce commercially. Widening connectivity, promoting agribusiness, and increasing commercialization across the sector are essential to raise factor productivity to achieve

¹ ADB. 2017. *Asian Development Outlook 2017*. Manila.

² Economic growth rates estimated for 2017: India 7.4%, Bhutan 8.2%, Bangladesh 6.9%, and People's Republic of China 6.5%

the goals of economic and social progress. The rural economy is increasingly affected by very large volumes of remittances from Nepalis working abroad, with the remittance income forming almost 32% of GDP in 2016³ and remittance incomes have been increasing at an annual growth rate of 21.8% from 2012-2016. Much of this flows to rural families and is likely to have two major impacts. First, it will increase cash available to very large numbers of families and thus reduce poverty. Second, it may provide funds for capital spending on improving farms, or for investment in small or large enterprises along value chains. The government's development strategy includes harnessing the remittance income in productive sectors in rural areas and agricultural development. Improving rural accessibility will help achieve this. Remoteness is the greatest constraint on growth and prosperity in Nepal, especially so if agricultural growth is to be led by commercialization of perishable high-value commodities. Enhanced connectivity is the necessary condition to overcome this constraint. Road connectivity of smallholder farmers, scattered around the interior parts of the country, is at a level far from what is needed for them to engage in diversified and commercial agriculture. An average household needs to spend more than 3.5 hours to reach the nearest bus stop and more than 2.0 hours to the nearest market center. Nearly 40% of rural households live more than 2 hours from paved roads, more than 25% live 2 hours from the nearest bus stop or a telephone booth, while a little less than 33% are 2 hours away from a market center. The terrain and transportation constrict the market circulation of bulky products.

4. Nepal has the lowest road density⁴ in South Asia, and around 22% of the population is still disconnected from road access. The share of other surface modes such as railways and inland waterways is negligible. Nepal's road network is classified into the strategic road network (SRN) managed centrally by the Department of Roads under the Ministry of Physical Infrastructure and Transport, and the local road network (LRN), which includes rural roads managed by the Department of Local Infrastructure Development and Agricultural Roads (DOLIDAR) under the Ministry of Federal Affairs and Local Development (MOFALD). The SRN consists of 12,494 kilometers (km) as of FY2014, 5 of which 3,460 km are national highways and the remainder are feeder roads. Of the total SRN, 51% is paved, 14% graveled, and 35% earthen. About 84% of the SRN is assessed as being in fair to good condition and the remaining 16% requires urgent repair. There are still two districts which do not have SRN road access and six districts with no black-topped road access. The LRN consists of 57,632 km, of which 27% consists of all-weather roads and the remainder are fair-weather roads.⁶ About 3.5% of the LRN is black-topped, 22.2% gravel, and the remaining 74.3% earthen. The LRN is made up of two types of road networks: the district road core network (DRCN), which links the villages to the district headquarters; and the village road core network. The DRCN has a total length of 25,728 km and the village road core network 30,904 km. Of the 3,157 village development committees, 2,789 are connected by the LRN, and 368 are still not connected by the LRN. The LRN, which provides the basic access to the rural population, needs substantial investment to make it accessible all year as only 27% is all-weather road. Substantial expansion of the DRCN is needed to provide access to all villages. The poor road network also results in poor public transport services and high rates charged for passenger and freight transport, thus restricting agricultural inputs and the marketing of agricultural products and thus economic opportunities for the rural population.

³ Government of Nepal, Ministry of Finance. 2016. *Economic Survey 2015/16*. Nepal.

⁴ Road density in Nepal is about 44.4 kilometers (km) per 100 square km (km²), and that of all-weather roads is about 16 km per 100 km² which is well below that of other countries in the region.

⁵ Government of Nepal, Department of Roads. 2014. *Statistics of Strategic Road Network 2013/14*. Kathmandu.

⁶ Government of Nepal, DOLIDAR. 2016. *Statistics of Local Road Network 2016*. Kathmandu.

5. **Maintenance of rural roads.** Rural road maintenance is currently undertaken through the district development committees and the district technical offices with DOLIDAR providing the overall administrative, technical, and program support. There is an established maintenance planning and budget allocation system in Nepal with the district development committees preparing an annual road maintenance plan (ARMP); budget is allocated based on the ARMP. Rural communities are involved in road maintenance activities through road maintenance groups (RMGs). Rural road maintenance in Nepal is also supported by development partners. Currently, the World Bank-funded Strengthening National Rural Transport Program (5,400 km) and the Department for International Development-funded Rural Access Program 3 (2,100 km) undertake road maintenance using RMGs, and provide training to RMGs. The challenges in rural road maintenance include (i) inadequate budget resources to upgrade the roads to maintainable condition, (ii) the majority of the LRN is earthen roads which become inaccessible during the rainy season and are difficult and costly to maintain, (iii) technical capacity and quality control, and (iv) lack of awareness and lower priority given to asset preservation. The annual maintenance funding requirement to keep the LRN in maintainable condition (about one-third of the LRN) is estimated at about \$90 million per year, which is about 25% of the average annual budget allocation from 2013-2017. The consultation with DOLIDAR has indicated that with ARMPs, maintenance needs of upgraded roads are fully met. A broad assessment of maintenance requirements and budget allocation indicates that the current level of budget allocation can fund sustainable maintenance of rural roads if all LRN roads are in a maintainable condition. However, with less than one-third of the LRN in a maintainable condition, the major focus has been on rural road construction and, along with this, asset preservation has to be given highest priority.

6. **Road safety.** There were 1.92 million vehicles in Nepal as of March 2015 and this number has been growing at 15% per annum since 2005. With the increase in road traffic in Nepal and poor road safety features, road accidents increased threefold from 2003 to 2013, with a fourfold increase in vehicular volume during the same period.⁷ In 2013, there were 12 fatalities and 90 accidents per 10,000 vehicles, which is much higher than in India (8.7 fatalities and 30.7 accidents per 10,000 vehicles). To address road safety issues, the government prepared the Nepal Road Safety Action Plan (2013–2020), in line with the global action plan for road safety improvement led by the United Nations Road Safety Collaboration. The World Bank is providing technical assistance to implement the road safety action plan.

2. Government's Sector Strategy

7. Nepal was one of the signatories to the 2030 Sustainable Development Agenda agreed by the members of the United Nations in September 2015. The government has set strategies and priorities to ensure that the long-term planning horizon is consistent with the sustainable development goals. The government's medium-term vision is to graduate from least-developed country status and the long-term vision is to develop as a middle-income country by 2030. The National Planning Commission has identified the key drivers of the growth as agriculture and small businesses, physical infrastructure, tourism, energy, and services such as finance and retail trade. The sustainable development goals adopted by the country⁸ aim among other things to promote sustainable agriculture and develop quality, reliable, sustainable and resilient infrastructure to support economic development and human well-being. For the agriculture sector, the target is doubling agricultural productivity and incomes of small-scale food producers and

⁷ A. J. Thapa. 2013. *Status Paper on Road Safety in Nepal*. Europe-Asia Road Safety Forum and the 67th Session of the Working Party 1 (WP 1) of UNECE. New Delhi, India. 4–6 December.

⁸ Government of Nepal, National Planning Commission. 2017. *Sustainable Development Goals, Baseline Report*. Kathmandu.

ensuring sustainable food production systems and implementing resilient agricultural practices. For the road subsector, the targets and indicators for 2030 are to increase road density from the current 0.44 km per square km (km/km²) to 1.50 km/km² and connect all districts and villages by road.⁹

8. The government took a bold step to bring in much-needed development to the agriculture sector by signing the Agriculture Development Strategy in 2015.¹⁰ The government recognized that dramatic changes were needed if the sector was to perform to its potential and raise the sector's long-term annual growth rate from 3% to the government's goal of 5%. The Agriculture Development Strategy recognizes access as a major constraint on developing commercial agriculture value chains. Nepal's geology and topography, combined with its rural population distribution, restricts and complicates efforts to provide all-weather road connectivity to rural communities. Bringing the entire LRN to a maintainable status requires a huge investment requiring large external resources and support. Improved rural access is a key requirement for reducing poverty incidence as it will increase the rural population's access to economic development opportunities. The government is working with several development partners in the rural road subsector. Support from development partners has brought about many capacity development initiatives to strengthen the rural road development and maintenance capacity.

3. ADB Sector Experience and Assistance Program

9. ADB has been a principal development partner in Nepal's agriculture sector and began its engagement in the irrigation subsector in 1971. Total investment in agriculture using funds from ADB is over \$250 million. In the current country partnership strategy, 2013–2017 for Nepal,¹¹ ADB is supporting investments in agriculture and rural sector development, including exploring innovative investment models for expanding rural road networks and water management improvement to expand irrigation and mitigate risks of flooding. The approach is consistent with the findings of a review of ADB's performance in Nepal's agriculture and natural resources sector by ADB's Independent Evaluation Department in 2011, which recommended that ADB (i) reduce subsector spread and focus on priority areas, and (ii) increase investment in rural infrastructure.¹²

10. ADB has funded several projects focusing on agricultural value chain development. These include the Commercial Agriculture Development Project, the High Mountain Agribusiness; and the Livelihoods Improvement Project. These projects have focused on production, marketing, and processing of high-value crops. Learnings include that to capture the full potential benefits of the value chain approach, greater emphasis needs to be placed on the whole value chain, from producer to final consumer, and on supporting the essential involvement of the private sector in key aspects of value chain development. ADB's sector experience also includes rehabilitation and upgrading of rural roads through the Rural Reconstruction and Rehabilitation Sector Development Project, and the Decentralized Rural Infrastructure and Livelihoods Project. ADB's experience in the rural roads subsector in Nepal provides key lessons that need to be addressed. These include the district administration's lack of a maintenance culture and limited funding to undertake road maintenance, road safety, and weak implementation capacity. The project includes technical assistance to address these issues and to also extend the contract to cover a 3-year maintenance period by the contractors.

⁹ Two of the 75 districts and more than 400 village development committees are yet to be connected by road.

¹⁰ Ministry of Agricultural Development. 2015. *Agriculture Development Strategy 2015 to 2035*. Kathmandu.

¹¹ ADB. 2013. *Country Partnership Strategy: Nepal, 2013–2017*. Manila.

¹² ADB. 2011. *Sector Assessment Performance Evaluation: Agriculture and Natural Resources Sector*. Manila.

Problem Tree for Agriculture and Rural Transport

