



Regional Governance on Transport Infrastructure



SAMRIDDHI
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Prience Shrestha
Yatindra K.C.

Acronym and Abbreviations

BIG	Blueprint for Infrastructure in Gujarat
BOT	Build Operate Transfer
BRT	Bus Rapid Transit
CBS	Central Bureau of Statistics
CM	Chief Minister
DoR	Department of Roads
DPR	Detailed Project Report
DRCN	District Road Core Network
EIAS	Economic Impact Analysis Study
EIRR	Economic Internal Rate of Return
FPTP	First Past the Post
IDO	Infrastructure Development Office
IDD	Infrastructure Development Directorate
IIDS	Institute of Integrated Development Studies
GDP	Gross Domestic Production
GIA	Gujarat Infrastructure Agenda
GIDB	Gujarat Infrastructure Development Board
GoN	Government of Nepal
GSRDC	Gujarat State Road Development Corporation
Km	Kilometer
KPI	Key Performance Indicator
LRN	Local Road Network
MoEAP	Ministry of Economic Affairs and Planning

MoFAGA	Ministry of Federal Affairs and General Administration
MoPID	Ministry of Physical Infrastructure and Development
MoPIT	Ministry of Physical Infrastructure and Transport
MTEF	Mid-term Expenditure Framework
NSTRIPD	North-South Trade Route Improvement Project Directorate
NSW	New South Wales
OECD	Organization of Economic Cooperation and Development
PPP	Public Private Partnership
PRC	People's Republic of China
STMP	State Transport Master Plan
RMS	Roads and Maritime Services
SDG	Sustainable Development Goal
Sq.	Squares
SRN	Strategic Road Network
TID	Transport Infrastructure Directorate
VRCN	Village Road Core Network

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Executive Summary

Despite the efforts of the decentralization approach during the unitary governance in Nepal, the country could not observe visible regionalization of development. The substantial disparity in terms of economic and human development prevailed in the regions of the country afar from Kathmandu. Meanwhile, as the country now transitions to federalism, balanced distribution of prosperity across the country has been advocated as one of its core agendas by the current constitution. As such, the current federal setup now assigns state governments with the task of undertaking regional governance and facilitating regional development in seven demarcated regions of the country recognized as states. Importantly, the task of state governments in undertaking regional governance also includes enabling the development of regional infrastructures including state transport infrastructure, especially state roads. Speaking of such, the constitution delineates certain jurisdictions related to state road transport infrastructure development to state governments, albeit vaguely.

The study of decentralization in infrastructure development in the People's Republic of China, Indonesia, and Cambodia and other prominent theories relevant to the governance of infrastructure development informs state governments to be best suited to carry out regional infrastructure development. The recognition is based on the understanding that regional development efforts are most effective when left to the devices of subnational authorities. Such effectiveness is learned to have appeared as the direct result of allocative efficiency achieved specifically through the delegation approach of decentralization for regional infrastructure development. Meanwhile, the study, based on the principle of subsidiarity also cautions regional infrastructure development to be jurisdictionally beyond the capacity of local administrations and therefore is likely

to be obstructed by the spill over effect when delegated to local governments. The possibility of such is significant with the nature of road transport infrastructure with regional characteristics. And for this matter, the study recognizes and advocates feeder roads, district roads, and state highways that exhibit regional characteristics and cut across multiple local territories within a region to fall under the jurisdiction of the state governments.

However, it is uncertain whether the feeder roads and district roads fall within the jurisdiction of state governments while the constitution and the Cabinet Unbundling Report, 2017 insufficiently specify the nature of roads that fall within the jurisdiction of state governments. As a result, there is a confusion, even among representatives of federal and sub-national governments regarding who handles these roads in the federal setup.

Nevertheless, this study intends to analyse the legislative, executive and strategic provisions of the state governments in developing regional road transport infrastructure and draws recommendations accordingly. In analysing these provisions of state governments, it is observed that there has only been minuscule progress in the legislative and strategic areas and relatively satisfactory progress in the formation of executive provisions. Only three states have managed to formulate mid-term strategy in terms of Mid Term Executive Framework and only two states are in the process of formulating Long Term Transport Master Plan. Likewise, only one state has managed to formulate necessary legislation while two others are following the suit. Meanwhile, six states have formed directorial, divisional, and sectional offices specifically dedicated to road infrastructure development.

Given that there has been only limited progress of state authorities in the formulation of legislative and executive provisions in areas of road development, this study observes the governance framework of the State of New South Wales (NSW) of Commonwealth Government of Australia and the State of Gujarat of the Republic of India to draw practicable way forward for Nepal.

Observation of executive provisions:

In the case of NSW, the NSW Ministry for Transport and Road and NSW Ministry for Regional Transport and Road are two state ministries responsible for the development and management of entire state transport infrastructure. Meanwhile, Transport for NSW, legislatively under the hierarchical authority of the ministries, is the lead functional agency for the development of the transport systems in NSW. The agency heads the development and management of all modes of transport infrastructures, including road services. Under Transport for NSW, Roads and Maritime Services is directly responsible for the development and delivery of state road transport infrastructure projects.

On the other hand, State Departments of Road and Buildings of Gujarat is responsible for the development and management of state public roads in Gujarat. Besides, the department is also responsible for the maintenance and up-gradation of national highways extending in its territory. The department is headed by a secretary who is answerable to the Minister of Road and Building. Under the secretary, other additional divisions exist. Of particular importance within this executive framework is the existence of the Gujarat State Road Development Corporation, which is responsible for framing plans & policies and raising finances for the development and maintenance of State Roads. Furthermore, there also exists Gujarat Infrastructure Development Board, responsible for the planning and implementation of entire infrastructure sectors.

Observation of legislative provisions:

At the legislative front, the NSW Transport Administration Act, 1988 provides the framework, objectives, and functions of all agencies involved in transport development and services in NSW. Likewise, the Transport Administration Act, 1988 also provides a legal foundation for undertakings that involve planning and development of all recognized transport infrastructures. Likewise, the Act also

serves as the founding stone for the NSW Long Term Transport Master Plan. Furthermore, the NSW Road Act, 1993 addresses state road affairs, including providing guidelines and provisions for the construction of state roads.

Likewise, in Gujarat, the Gujarat Highways Act, 1955 calls for the establishment of the State Department of Road and Building and any other relevant department for the development and management of state highways. Essentially, over the foundation of the Act, the state government of Gujarat can categorize roads that fall within its jurisdiction. Meanwhile, Gujarat Infrastructure Development Board Act, 1999 is of equal importance as it provides the legislative framework governing the Build Operate Transfer model for the development of roads within the State of Gujarat. The Act also calls for the establishment of the Gujarat Infrastructure Development Board (GIDB) which was subsequently declared as the apex body in relation to planning and policy-making relating to infrastructures.

Observation of Strategic provisions:

The NSW Long-Term Transport Master Plan carried forward by the NSW Ministries for Transport and Roads in 2012 provides the strategic framework for the NSW government regarding transport infrastructure development. The master plan attempts to fulfil this strategic goal through its step-by-step approach that fundamentally involves integrating transport with land-use planning, identifying significant demographic and economic corridors or hubs, defining transport performance, i.e. infrastructure, required for the identified corridors and finally move towards connected and integrated transport system. In addition, the NSW Transport Long Term Master Plan also provides key principles that shall guide the entire planning and delivery modality of the state transport body.

For the State of Gujarat, the current ten-year long-term plan referred to as Vision 2020 or Blueprint for Infrastructure in Gujarat 2020 provides a comprehensive view of all the infrastructure sectors in Gujarat and seamlessly integrates them into a synergistic and

synchronised plan in order to improve the quality of the life of the people and achieve faster economic. As such, the plan has identified a shelf of state road development projects required across the road sector to be implemented on a priority basis for the inclusive growth of the state. The plan is preceded by the first ten-year plan called Vision 2010 or Gujarat Infrastructure Agenda 2010 conceived for the purpose of establishing Gujarat State Road Development Corporation responsible for formulating plans and policies related to road transport infrastructure development and raise necessary finances.

Recommendations:

The case observations of the executive, legislative, and strategic provisions of the State of NSW and Gujarat provide valuable insights for Nepal's state governments. These observations are briefly listed below:

- Formulating State-level Long-term Transport Infrastructure Master Plan in order to address strategic regional infrastructure needs
- Establishing State PPP units and investment boards specifically for the purpose of state infrastructure (including roads) development
- Building the executive structure and legislative provisions that align with the long-term strategic direction for infrastructure development

Chapter One

Regional Competencies and State Governments

Economic competencies that are unique to regional level and range beyond the domain of local governments require facilitation by state governments.

The Constitution of the Federal Democratic Republic of Nepal, 2015¹ advocates for the economic development and prosperity of the nation through maximum utilization of available means and resources. While doing so, it also promotes the participation and development of public, private and cooperative sectors in all development activities.

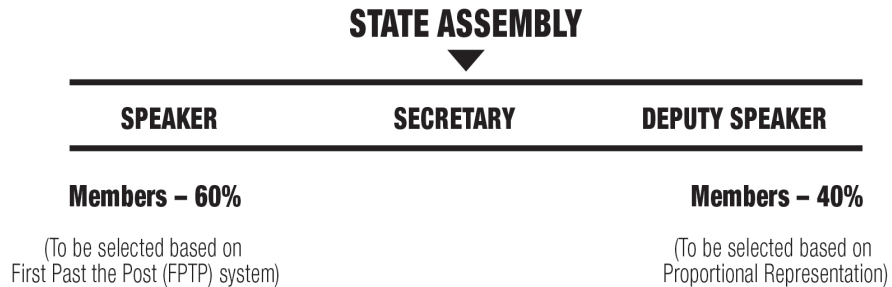
The very transition of Nepal from a unitary system to a federalised one signifies the inability of the erstwhile centralised approach to deliver. As such, this is Nepal's attempt to do development differently i.e. by engaging sub-national units that are closer to and more connected to the people to lead certain aspects of governance. The federal, state and local governments have thus been given legislative and executive powers to ensure that these aspirations of Nepali people are met by the new system.

¹ Hereafter shall be referred to as “the Constitution” unless mentioning other constitutions.

Having said that, the powers endowed upon the local governments are too limited to address regional needs. Therefore, economic competencies that are unique to the regional level and range beyond the domain of local governments require facilitation by state governments. State jurisdictions in developing and managing regional infrastructure (in areas of electricity, irrigation, roads, etc.) are a vital medium to promote industrial and commercial competitiveness of states, which will, in turn, significantly contribute towards the pursuit of prosperity.

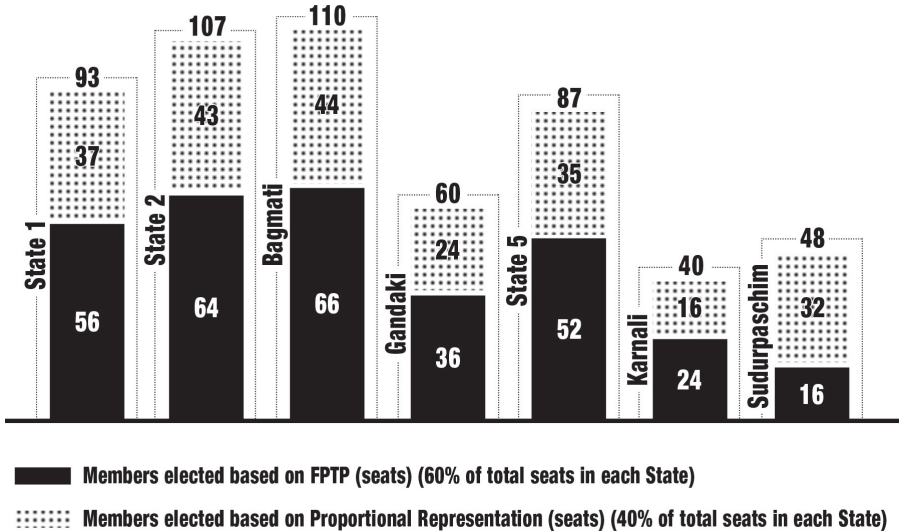
The Constitution provides the founding legislative and executive framework for state governments along with their procedures in Part 13, 14, and 15. While Part 14 and 15 provide framework and procedure for state legislative, Part 13 does the same for the state executive. Likewise, the exclusive and the concurrent jurisdictions of state governments are laid out in Schedules Six, Seven, and Nine of the Constitution.

Figure 1: Structure of State government



Source: Constitution of Nepal, 2015

Assembly members in each State in according to members elected based on FPTP and Proportional Representation



Source: State assembly web portals of all States

1.1 Decentralization for Regional Infrastructure Development

Modern Nepal's venture into a decentralisation model for development began half-a-century ago. However, the de-concentration approach² (administrative decentralisation) wherein district and local administrations functioned entirely below the command of the central authority failed to produce a visible contribution towards the balanced economic growth of the country.

But decentralisation certainly is not limited to just this approach. The decentralization of infrastructure development and management also entails unbundling vast powers of previously centralized agencies responsible for the regional investment and service provision. It

² According to Litvack, Ahmad, & Bird (2006), "Deconcentration occurs when the central government disperses responsibilities for certain services to its regional branch offices." Technically, any transfer of authority to subnational governments is not present.

could unbundle the functions associated with regional/local level infrastructure development and services, and allocate them among these subnational entities (Peterson & Muzzini, 2005).

The subnational governments could thus be authorized to handle vital roles, which are as follows:

- Setting infrastructure priorities and preparing infrastructure investment plans
- Executing infrastructure development projects
- Managing and maintaining infrastructure facilities to ensure sustainability

In this regard, the degree of authority and autonomy assumed by subnational governments in steering these vital functions differentiates the nature of decentralization adopted for regional infrastructure development.

As such, it would be worthwhile for Nepal to review various models of decentralisation practised by other countries and draw lessons on what has worked and what has not and why. Given that Nepal is yet to substantially progress in regional infrastructure development amid acute nation-wide infrastructure deficit³, the lessons from neighbouring Asian economies' experience may prove valuable.

1.1.1 Different Decentralization Methods and their Impacts

In the past, the People's Republic of China (PRC) has also adopted

3 The state of infrastructure deficit in Nepal can be acknowledged from the statistics that recognizes annual capital expenditure (i.e., one of the close proxies to infrastructure investment) in Nepal to be less than 10% of Gross Domestic Production (GDP) for last decade (Ministry of Finance, 2018). Meanwhile, a report of Institute of Integrated Development Studies (IIDS) prepared by Bhandari, Joshi, and Shrestha (2019) estimates 8.66 per cent to 9.85 per cent of GDP (climate-adjusted estimation) to be spent on infrastructure development in Nepal in order to achieve normal GDP growth of five per cent to highly optimistic GDP growth of 10 per cent.

a principal-agent approach ⁴of decentralization in its regional initiatives related to roads and highways, water-supply systems, wastewater collection and treatment systems (Peterson & Muzzini, 2005) whereby the central government assumed the role of setting investment priorities across the regions and even enforced specific guidelines to be mandatorily followed by regional governments regarding revenue management or service charges while the regional governments merely took the responsibility of executing the project and assumed the service-provider role. This model featured upward accountability and regional governments had no authority pertaining to the infrastructure prioritization and planning.

Decentralization of infrastructure development and management entails unbundling vast powers of previously centralized agencies responsible for regional investment and service provision.

On the other hand, Cambodia and Indonesia, during their attempt to leave behind their state of economic backwardness after periods of political struggle took a delegation approach⁵ of decentralization (Peterson & Muzzini, 2005). Central governments delegated complete responsibility to regional governments including the vital task of setting priorities for regional capital projects. Most importantly, in contrast to the PRC's Principal-agent approach, formal accountability was directed downwards towards the needs of the regions. As such, the strategies adopted by these two Southeast Asian emerging economies captured the

4 A decentralization approach to infrastructure development in which the central government plays the role of planning for infrastructure development. The role of development execution, on the other hand, is left to semi-autonomous government authorities.

5 According to Litvack, Ahmad, & Bird (2006), "*delegation refers to a situation in which the central government transfers responsibility for decision-making and administration of public functions to local governments or semi-autonomous organizations.*"

essence of moving the authority closer to the institutions from where the regional economic potentialities could be drawn.

Outcomes

A key observation from the different approaches employed by these three countries is how they yielded opposite results. Approaches that delegated a higher degree of authority to subnational or regional governments saw allocative efficiency while the Chinese approach did not.

Case Box: 1

The episodes of oppressions and conflicts that compromised the development of Southern Asians for far too long

The political history of Cambodia & Indonesia shares some notable similarities with that of Nepal. As such, resolutions undertaken by these two Southeast Asian countries for regional infrastructure development remains relevant for Nepal. Both countries had fallen under the exploitative rule of the foreign imperialists for more than a century; alike what was experienced by the Nepalese people during the tyrannical regime of the Rana aristocrats. Indonesia had heavily suffered the brunt of foreign occupation as the island country witnessed the deaths of hundreds of thousands of Indonesian people during the oppression and war forced by the Dutch East Indies and imperialist Japan (Cotterell , 2014). The loss and conflict, though of a grander scale, is somewhat similar to the suffering of the Nepalese during the oppression and overthrow of the Rana regime. Most importantly, the economies of all three countries were gravely compromised for more than a century amid exploitation and national upheaval.

Following the independence from exploitative regimes during the other half of the 20th century, the two Southeast Asian countries again witnessed a prolonged period of intense atrocities and oppression either from the crackdown of the Indonesian military regime against the randomly accused communists or from the gruesome regime of Khmer Rouge in Cambodia that led to the death of whopping three million Cambodians as a result of Pol pot's radical social engineering experiment (Cotterell , 2014). The unfortunate events of pain and suffering witnessed in modern Indonesia and Cambodia further affected development like what was recently felt in modern Nepal during the three-decade-long oppressive.

Panchayat regime (1960-1990) followed by another decade of Maoist civil war (1996-2006) (Venaik, Acharya, & Regmi, 2018).

As the two Southeast Asian countries finally marched into nation-wide regional Infrastructure development following a period of operation and crisis by the end of 20th century, Nepal as a country recently structured into Federal setup after experiencing period of conflict can learn from the decentralization practices of Indonesia and Cambodia to advance its effort to achieve balanced regional development

Allocative efficiency here signifies that projects that yielded such results also yielded remarkable economic impact measured by a proven method of Economic Impact Analysis Study (EIAS). More specifically, projects developed through the delegation approach in Cambodia and Indonesia scored impressively in the scales of Economic Internal Rate of Return (EIRR)⁶ and Regional/Local Income Multiplier⁷ known to be two vital aspects of the EIAS (Torrens, 2005).

On the contrary, the principal-agent approach adopted in the PRC performed below satisfactorily in generating a necessary impact on the needs of regional user groups. Particularly, this unsatisfactory outcome was observed in a regional drinking water infrastructure improvement project. The central government's plan to prioritize the installation of additional wastewater treatment infrastructure to address the drinking water issue in the cities of Hunan province failed to address signals from the ground. While the real problem was a lack of technical capacity to operate the existing infrastructure over 50 per cent, the decision of the central government to install a new batch of treatment facilities only overloaded the already vulnerable and ill-functioning system (Peterson & Muzzini, 2005).

6 EIRR measures the direct regional economic impact gained through the formation of infrastructure facilities

7 Regional/local Income Multiplier measures the success of a particular infrastructure project to yield economic chain reaction causing additional economic benefits propagating the disposable income in the region.

Lessons

A major takeaway from these projects is that central planning is likely to be unable to recognize and leverage the unique and diverse opportunities and problems of a particular region. On the other

hand, delegation is likely to generate outcomes that substantially contribute to leveraging the diverse regional potentialities.

This study also offers an explanation to why decentralization practiced during the pre-federalism era was unable to secure regional economic progress whereas the approach of decentralization undertaken with federalism is likely to witness allocative efficiency followed by the generation of substantial regional economic impact.

The key element here is that the subnational jurisdiction is at fair proximity to local people and their needs compared to the Federal government, and is better able to address the wider regional potentiality that prevails.

Table 1: Consolidated overview of approach to decentralization for regional infrastructure development of neighbouring Asian economies

Approach to decentralization for regional infrastructure development	Country(s)	Observed project(s)	Role in regional infrastructure prioritization and development planning	
Principal-agent approach	People's Republic of China	City wastewater treatment infrastructure City drinking water supply network infrastructure	Central government involved in prioritization of regional infrastructure projects and planning for the development of prioritized infrastructure projects	
Delegation approach	Cambodia and Indonesia	Regional and local road transport infrastructure Regional and local irrigation network infrastructure	Subnational government units involved in the prioritization of regional infrastructure projects and planning for the development of prioritized infrastructure projects	

<p>Role in development execution and infrastructure operation</p>	<p>Accountability</p>	<p>Outcome observation</p>
<p>Subnational government units responsible for the development of selected infrastructure projects and management of infrastructure services including service fee as per the guidelines provided by the central government</p>	<p>Upward accountability of the subnational government units to the central government responsible for setting strict development and management guidelines</p>	<p>Regional infrastructure projects not able to effectively address the regional needs for development and create visible positive impact for regional development</p>
<p>Subnational government units responsible for the development of selected infrastructure projects and management of entire Infrastructure services as per the decision of the same</p>	<p>Downward accountability of the subnational government units to the needs of user groups and institutions of the regions responsible for leveraging regional economic & commercial competencies</p>	<p>Regional infrastructure projects able to effectively address the regional needs for development and create visible positive impact for regional development (i.e., presence of allocative efficiency)</p>

Chapter Two

Regional Road Transport Infrastructure

State governments are justified for development of regional road transport infrastructure given their ability to address inter-jurisdictional spill-overs and provide regional overview lacked by the central government.

2.1 Addressing Inter-Jurisdictional Spill over

The nature of regional road transport infrastructure projects that span across multiple local jurisdictions is such that they are subject to inter-jurisdictional spill over effects. Speaking of spill over effect as an infrastructural characteristic, Peterson & Muzzini (2005) acknowledge inter-jurisdictional spill over—or externalities—to occur “when the activities of one jurisdiction affect the welfare of people in surrounding jurisdictions.”

Specifically, in terms of road transport infrastructure, such spill over occurs when individuals from other jurisdictions use the road that extends beyond the territory of the immediate jurisdiction (McNaughton, 2016). As an illustration, multiple local jurisdictions benefit from the development of district roads that stretch across more than one

municipality. Such road projects, if carried out by a local municipality, would result in external benefits to other local jurisdictions that cannot be captured by the said local municipality. Therefore, to correct for such spill over effects, the tier of government whose jurisdiction encompasses all the users benefiting from such services should decide on investment priorities and allocate resources for developing and managing such infrastructures.

As a recommendation, there are arguments as to that of the Oats theorem that advises for the complete centralization of road transport infrastructure development and management simply because of the structural inability on part of subnational governments to account for spill over effect while providing such public good. This theorem, that contradicts with the zest of the deliberations in the earlier section, not only applies for national highways and regional roads but also to local roads that are also potentially used by different groups of people arriving from varying jurisdictions. Moreover, the theorem argues that decentralisation for infrastructure development and management should be limited to public infrastructure only if the use of the infrastructure is limited within a particular territory used by geographical subsets of the population (Greco, 2003). In other words, efficiency in the decentralisation of infrastructure development and management is achieved only when the infrastructure does not feature inter-jurisdictional spill over. As such, local infrastructure projects as sewerage and water treatment plants, irrigation, and drinking water facilities may fall partially into such category.

Meanwhile, a trade-off between the ability of the central government to entirely address inter-jurisdictional spill over existent in road transport infrastructure against the marginal gains that can be achieved by delegating authority to subnational units should be decisive in determining the decentralization approach.

In terms of national road transport infrastructures, Peterson and Muzzini (2005) identify effectiveness gained in authorizing the central government to set infrastructure priorities and development to be higher than any observed loss of local accountability. This assertion is bolstered with the assumption that local accountability

and interest are virtually non-existent for the nature of roads that extends far beyond the immediate jurisdiction of a particular local government. It is because extra-jurisdictional impacts that improve infrastructural service delivery elsewhere but cannot be captured by them who develop the infrastructure project are often not within the favour of the local governments (Ministry of Federal Affairs and General Administration, 2015).

On the other hand, in terms of local road development and management, where the spill over effect is virtually non-existent or limited, the trade-off dynamics work exactly opposite. The requirement to uniquely cater to the needs of the local situation over the need to account for infrastructure externalities places local governments in a better position than a central authority to oversee the development and management of local road transport infrastructures. This is because the central government is simply unable, unlike the local government, to account for the varying needs of local municipalities when providing for local public goods.

Case Box: 2

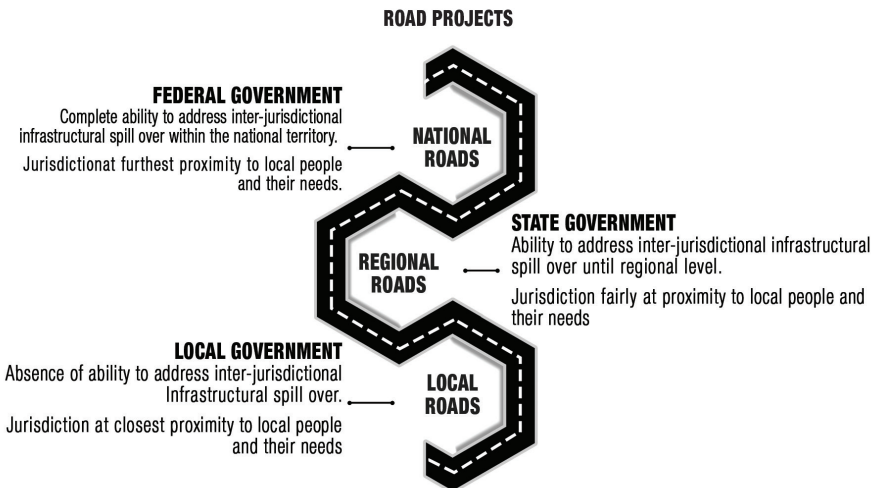
The Case of the Philippines where regional roads are absent amid limited jurisdiction of the regional government

Regional roads in the Philippines account for only 13 per cent of total roads, with more than 70 per cent consisting of city roads or municipal roads. With their own jurisdiction on preference, local governments could have only focused on building local roads that serve their local needs while overlooking the need for the regional road. Moreover, according to Department of Public Work and Highways (2003), only 21 per cent of regional roads were paved in 2000—a proportion much lower than that for national roads (62 per cent), city roads (77 per cent) and even municipal roads (34 per cent) (Peterson & Muzzini, 2005).

In this case, the narrow administrative boundaries of local governments, combined with the limited role of provinces have led to suboptimal investment decisions from a regional perspective. The argument for strengthening the role of provinces in managing road networks, whose benefits accrue to more than one local jurisdiction, is especially compelling in this regard.

Meanwhile, regional road transport infrastructures that specifically fall under the scope of our study cut across several local municipalities and cause inter-jurisdictional spill over for local jurisdictions until the regional boundary. Yet, the nature of regional road transport infrastructure requires addressing unique regional needs and competencies. As such, the role of state governments is justified on the basis of their ability to address inter-jurisdictional spill overs and minimize the trade-off that exists when the central government takes responsibility for providing regional infrastructure (Wrinkler, 1994). Due to their close proximity to local municipalities, unlike the central government, state governments are adept in considering the varying needs and welfare gains of local municipalities. Likewise, the size and the operational capabilities of state governments equip them with the capacity to account for regional inter-jurisdictional spill overs which the local governments lack.

Figure 2: Nature of Road Projects and Suitability for Different Levels of Government



Source: generated by author from study of previous sections

The principle of subsidiarity is another reinforcing idea that advocates the need for state jurisdiction on regional road transport infrastructure development and management. This popular principle for governance emphasises on the need for delegation of authority from the centre to the body best suited to yield maximum efficiency in public service delivery or development.

As such, the maximum benefits of an infrastructural program can be reaped when the level of government that is closest to the end users delivers the infrastructure in question. While some would argue that the principle suggests the delegation of authority in matters pertaining to infrastructure to the lowest possible government i.e. local government, it must be borne in mind that delegation is to be done to the level of government that has the most competence in carrying out a function (Venaik, Acharya, & Regmi, 2018).

In conclusion, the amalgamation of the knowledge obtained from the prior study on decentralization approaches with the study of inter-jurisdictional spill over and the principle of subsidiarity highlights the significance of state governments in regional infrastructure development, also in the areas of road transport infrastructure. Also, it provides an effective response to curtail the doubt raised among the general population regarding the need to create states in the first place.

2.2 Needs and Problems Regarding Feeder Roads, District Roads, and State Highways

As we speak of the suitability of state government to develop and manage regional road transport infrastructure, it remains equally essential to recognize the types of roads that compose the regional roads. As such, it can be assumed that Feeder Roads⁸ (that feed

8 Public Road Act 1974 of the Federal Government recognizes Feeder Road under the classification of Public Roads, and Nepal Road Standards 2070 of Federal Government defines Feeder roads as important roads of localized nature that serve the community's wide interest and connect District Headquarters, major economic centres, Tourism centres to National Highways.

traffic to national or regional highways), District Roads⁹ (that connect multiple local jurisdictions within a district), and State Highways that serve the purpose of a particular region while encompassing the territorial jurisdiction of multiple local governments fit in this category.

Meanwhile, Schedule 6 of the Constitution mentions only the state highways to be within the state jurisdiction. The 'Unbundling Report'¹⁰ submitted by the Cabinet of Federal Ministers in 2017 does not deliberate on the composition of state highways other than elaborating on the functions and authorities of the state government in planning, development, and management of the same. Though the 15th periodic plan approach paper for 2019/20 - 2024/25 pledges to classify and detail standards of state highways as part of its operational plan, nothing is mentioned in regards to authority over Feeder and District roads either.

In all likelihood, it is unclear if feeder roads and district roads, recognized to be best suited within the jurisdiction of the state governments also fall under the definition of State Highways. Consequently, it is also uncertain if existing feeder roads that feed traffic into the pre-existing Strategic Road Network (SRN) fall within the purview of state governments at all. There seems to lack of consistency even among the concerned representatives of state governments regarding the level of government that reserves jurisdiction of feeder roads. While Ministry of Physical Infrastructure and Development (MoPID) of Gandaki recognizes feeder roads to fall within the jurisdiction of the federal government on the ground that such roads meet criteria of SRN of the federal Government (T. Paudel, personal communication, Dec 10, 2019), the MoPID of

9 Public Road Act 1974 of Federal Government recognizes District Road under the classification of Public Roads, and Nepal Road Standards 2070 of Federal Government defines District roads as important roads within a district serving area of production and markets, and connecting with each other or with the main highways

10 see Unbundling/Detailing Report of List of Exclusive and Concurrent Powers of the Federation, the State (Province) and the Local Level Provisioned in the Schedule 5, 6, 7, 8, 9 of the Constitution of Nepal

Sudoorpaschim seems to have already devised State Public Road Act, 2019 that clearly recognizes feeder roads and district roads within the definition of State Highways¹¹. Following suit, Bagmati is also drafting a bill incorporating all possible modes of transport infrastructure (i.e., airways, waterways, and land) and classifies State Roads into certain categories¹² that effectively fulfil the nature and purpose of feeder roads and district roads (N.K. Singh, personal communication, March 5, 2020).

However, given the fact that the Act and the draft bill are only authenticated by state governments and are effective only within the jurisdiction of respective states, it is not a sufficient condition to establish these as state jurisdictions across the Federal Nepal. The likelihood of the state interpretations to hold is also debatable considering that such interpretation has not been authenticated by the Federal Government which holds the residual power.

Meanwhile, a high-ranking official representing Department of Roads (DoR) asserts that the classification of roads in terms of feeder and district roads overall is not applicable anymore according to the mandate of the Federal Government (S.H. Sapkota, personal communication, February 13, 2020). Instead, the Federal Government has enlisted eighty different National Highways¹³ that fall under the purview of the Federal Government. As such, a substantial number of feeder roads of the past has been recategorized as extension of the National Highways (Sapkota, personal communication, February 13, 2020). Nevertheless, the entire function related to the planning, development, and management of all other projected roads that do not fall under the enlisted National Highways automatically fall under the jurisdiction of state or local governments. Sapkota (personal communication, February 13, 2020) opines that non-strategic nature of roads that

11 See Appendix B for detail

12 Personal conversation with Mr. Nabin Singh revealed a draft bill being prepared by the MoPID of Bagmati to classify State Public Roads as State Expressways, State Highways, State Roads, and Urban roads.

13 Document unavailable publicly, Contact authors or Samriddhi Foundation for a copy

connect multiple local government territories can fall under the jurisdiction of states, whereas local roads that connect multiple wards can fall under the jurisdiction of local governments, while other projected roads that are captured in the long-term and mid-term strategy of Government of Nepal (GoN) automatically fall under the exclusive jurisdiction of the Federal Government.

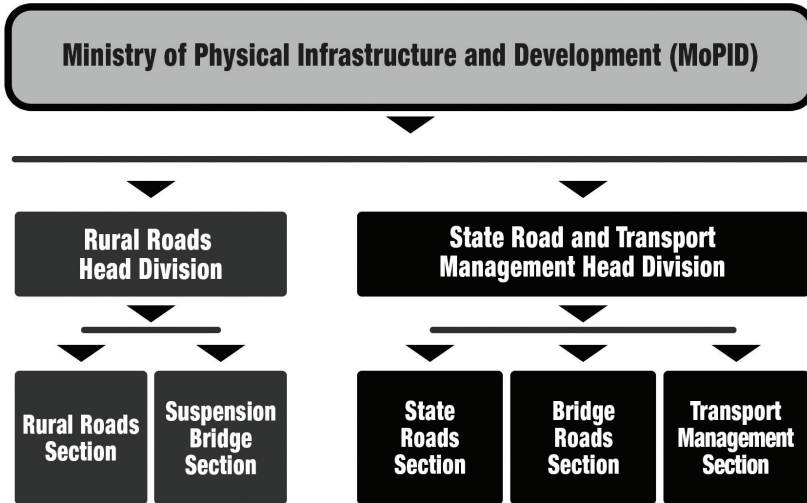
While there has been progress in terms of establishing executive provisions targeted at development and management of State road transport infrastructure, insufficient progress in formulation of legislations, directives, and long-term strategy is seen for the same.

Chapter Three Legislative, Executive and Strategic Status of State Governments

3.1 State Ministerial Arrangement by the Federal Government for State Infrastructure

As per the State Government (Work Division) Regulation, 2018, respective State MoPIDs are responsible for road transport infrastructure development and management across the seven States of the country. Likewise, formulation of policies, laws, and plans related to State Roads along with research and execution of State Road development, maintenance, and data management fall under the purview of these State MoPIDs.

Figure 3: Sectoral outline of prescribed Ministerial Organization Chart



Source: State Government (Work Division) Regulation (2018)

3.2 Overview of Executive Provisions Related to State Road Development

The MoPID of State 1 has devised a ‘Road, Bridge, and Transport Management Head Division,’ seven regional ‘Infrastructure Development Offices’ (IDOs), an ‘Infrastructure Development Directorate’ (IDD), and a ‘Rural Road Network Development Program’.

Meanwhile, the MoPID of State 2 has only devised a ‘Rural Roads and State Roads Head Division’ and a ‘Rural Roads section’ to carry out its state road transport infrastructure development and management function. As such, no Directorate under the said Head Division is observed. Meanwhile, MoPID of Bagmati has devised Rural Roads Head Division containing Rural Roads section and Suspension bridge

section, and State Roads and Transport Management Head Division containing Bridge Section, State Roads Section, and Transport management Section. Other than that, the State also consists of one Transport Infrastructure Directorate (TID) that likely functions in the capacity of Roads Department functioning under the Ministry. Meanwhile, TID of Bagmati also consists of its own Bridge Section, Road Section, Investigation and Quality Section, and Transport Management Section. Likewise, TID of Bagmati also comprises of six regional IDOs that look after road development within the cluster of districts falling under their jurisdiction.

Moving forward, MoPID of Gandaki has not the detailed presence of any Head Division but details the presence of Rural Road Section and Transport Management Section. Moreover, the MoPID of Gandaki also consists of a TID alike to MoPID of State 5, and five regional IDOs in different districts of State 5. In addition to five regional IDOs located in each district assigned to look after State Infrastructure development efforts including State Roads in a cluster of at most three districts present within the jurisdiction of the State, the MoPID of State 5 also consists of two road Division Offices. As such, the five regional IDOs might be possibly functioning under the hierarchical command of Rural Road Head Division, Strategic Road Head Division and Transport Head Division of the Ministry. Likewise, MoIPD of Karnali has devised a Road and Transport Management Head Division accompanied by a Transport Infrastructure Directorate (TID) and three Regional IDOs located in Humla, Jumla, and Surkhet districts. Lastly, MoPID of Sudoorpaschim does not detail any Head Division, Section, Regional offices, or Directorates falling within the Organizational structure of the Ministry.

Table 2#: Executive Provisions of State MoPIDs

States ↓	Head Divisions	
State 1	<ul style="list-style-type: none"> • Road, Bridge and Transport Management Head Division 	
State 2	<ul style="list-style-type: none"> • Rural Roads and States Roads Head Division 	
Bagmati	<ul style="list-style-type: none"> • Rural Roads Head Division • State Roads and Transport Management Head Division 	
Gandaki		
State 5	<ul style="list-style-type: none"> • Rural Road Head Division • Strategic Road Head Division • Transport Head Division 	
Karnali	<ul style="list-style-type: none"> • Road and Transport Management Head Division 	
Sudoorpaschim		

Source: Official websites of State MoPIDs and telephone communication with Information Officers of State MoPIDs

**TID of Bagmati independently consists of Bridge Section, Road Section, Investigation and Quality Section, and Transport Management Section*

#Data as of 1st March, 2020

← Executive Provisions →		
Sections	Directorate	Regional Offices
	<ul style="list-style-type: none"> • One Infrastructure Development Directorate 	<ul style="list-style-type: none"> • Seven regional Infrastructure Development Offices
<ul style="list-style-type: none"> • Rural Roads 		
<ul style="list-style-type: none"> • Rural Roads Section • Suspension bridge Section • Bridge Section • State Roads Section • Transport Management Section 	<ul style="list-style-type: none"> • One Transport Infrastructure Directorate* 	<ul style="list-style-type: none"> • Six regional Infrastructure Development Offices
<ul style="list-style-type: none"> • Rural Road Section • Transport Management Section 	<ul style="list-style-type: none"> • One Transport Infrastructure Directorate 	<ul style="list-style-type: none"> • 5 regional Infrastructure Development Offices
	<ul style="list-style-type: none"> • One Transport Infrastructure Directorate 	<ul style="list-style-type: none"> • Five regional Infrastructure Development Offices • 2 Road Division Offices
	<ul style="list-style-type: none"> • One Transport Infrastructure Directorate 	<ul style="list-style-type: none"> • Three Regional Physical Infrastructure Development offices

Apart from the discussed executive provisions, the recent conversion of fourteen district Road Divisions by the DoR into State-level Road Division offices functioning under MoPIDs of each State also add towards the executive provisions of the State governments in areas of regional road transport infrastructure development and management. As such, DoR had transferred Illam Road Division, Tumlingtar Road Division, Lahan Road Division, Chandranigapur Road Division, Khurkot Road Division, Nuwakot Road Division, Damauli Road Division, Baglung Road Division, Shivapur Road Division, Pyuthan Road Division, Jumla Road Division, Chaurjahari Road Division, Safebagar Road Division, and Baitadi Road Division among seven State MoPIDs.

Table 3#: Former Road Divisions of DoR transferred to State MoPIDs

States	Newly established State Road Division
State 1	Illam and Tumlingtar Road Divisions
State 2	Lahan and Chandranigapur Road Divisions
Bagmati	Khurkot and Nuwakot Road Divisions
Gandaki	Damauli and Baglung Road Divisions
State 5	Shivapur and Pyuthan Road Divisions
Karnali	Jumla and Chaurjahari Road Divisions
Sudoorpaschim	Safebagar and Baitadi Road Divisions

Source: Information retrieved by the researchers from the DoR

#Data as of 1st March, 2020

3.3 Overview of Legislative Provisions Related to State Road Development

To date¹⁴, MoPID of Sudoorpaschim is the only State Ministry to have devised legislation concerning State Roads through to formulation of State Public Road Act, 2019. Likewise, State 2 and Bagmati are believed to have been drafting their first transport infrastructure related

¹⁴ Date as of 1st March, 2020

bill. The State Public Road Act, 2019 formulated by Sudoorpaschim using constitutional mandate classifies and defines State Highways/Roads, and also incorporates the nature of roads that fall into the category of feeder and district roads within the very definition. Meanwhile, the Act also clarifies the responsibility of maintenance of such roads/highways as resting upon the State MoPIDs or any other Directorate to whom authority has been delegated by the State MoPID.

3.4 Overview of Strategy and Plans Developed by State Governments

Budget speeches for 2019/20 prepared by the Ministry of Economic Affairs and Planning (MoEAP) of the respective States mostly represent the annual plans for State Road development and management. However, MoPID of Gandaki and Karnali have prepared the annual development program by extracting the details of projects related to State infrastructure development provided in their respective budget speeches. Moreover, MoPID of Gandaki has even classified the projects by district-wise order. Furthermore, MoPID of State 5 retains the directive document commanded by the Chief Minister (CM) of the State (in the form of annual plan) that requires the MoPID of State 5 to select ten priority infrastructure projects and prepare Detailed Project Report (DPR) for the projects. Besides, the directive also directs the MoPID to build specific stretches of roads classified under the jurisdiction of State 5.

Likewise, medium-term planning for State road sector development and management is only available for State 1, Gandaki, and State 5. The Mid Term Expenditure Framework (MTEF) of these states detail medium-term plans and programs also include Key Performance Indicators (KPIs) used to gauge progress within three years. Meanwhile, MoPID of State 2 and Bagmati are believed to have been drafting a form of State Transport Master Plan (STMP) that specifically

addresses transport infrastructure development at the regional level. Such a Master Plan once drafted shall represent long-term strategy for regional transport and road transport infrastructure development.

Case Box 3: **Snapshot of State Transport Master Plan of Bagmati**

STMP of MoPID of Bagmati shall mostly incorporate three important steps for State Road Infrastructure Development (N.K. Singh personal communication, March 5, 2020). The steps involve clarification of the nature of roads that falls within the jurisdiction of the State government (i.e., Step 1) followed by inventorying the status of the very nature of roads within the territory of Bagmati (i.e., Step 2) and planning for upgradation and development of the roads as required (i.e., Step 3). The third step shall involve capital budgeting required within five years for upgradation and development of identified roads.

Table 4: Planning Overview of all States in relation to State Road Development

State ↓	← Plans →		
	Annual Plans	Medium Term Plan	Long term Plan
State 1	Budget speech for 2019/20	Mid-Term Expenditure Framework	
State 2			
Bagmati			
Gandaki		Mid-Term Expenditure Framework	
State 5*			
Karnali			
Sudoorpaschim			

Source: Official website of State MoPIDs and MoEAPs and telephone communication with Information Officers of State MoPIDs

* MoPID of State 5 also retains Directive of the CM of State 5 of nature of Annual Plan

Data as of 1st March, 2020

Observation

From the above study, it can be recognized that there has been a progression in terms of establishing executive provisions targeted at the development and management of State road transport infrastructure. However, insufficient progress is seen in terms of the development of legislation, standards, and directives that make way for the executive bodies to carry out their functions. Sudoorpaschim is the only state to have formulated legislation followed by ongoing attempts in State 2 and Bagmati. These legislations can serve as a framework for the other four. However, as of now, it can be said that the executive capabilities of the state governments have definitely not been adequately mobilized.

There has been some progress in terms of preparation of short-term annual plans, and only three out of seven states have prepared medium-term plans in the form of MTEF. At least two out of seven have taken the initiation of preparing the long-term strategic plan in the form of STMP.

Such overview hints at significant areas for the recommendation for amendment and development of legislative, executive, and strategic development practices among state governments to expedite regional road development. For that, this paper observes the governance frameworks of two sub-national governments of other federations.

3.5 Governance Frameworks as seen in Other Federations

3.5.1 New South Wales Road Transport Infrastructure Development and Management

3.5.1.1 Executive framework governing NSW for transport infrastructure development

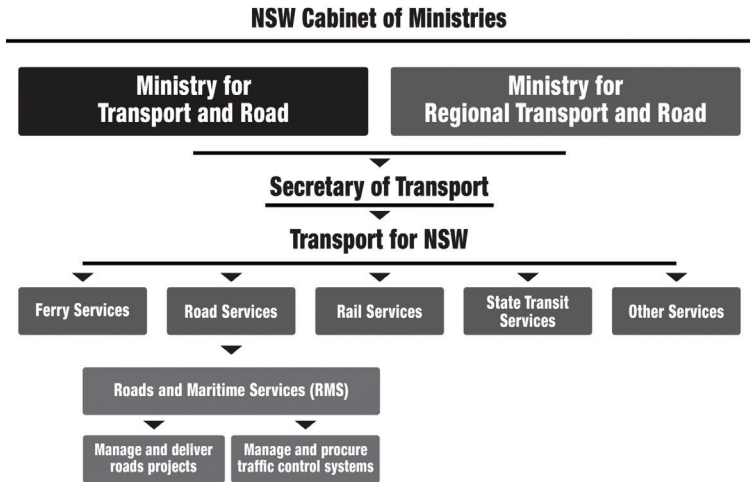
As opposed to the MoPIDs of Nepalese sub-national governments, the current NSW Cabinet of Ministries is composed of Ministries that are specifically responsible for

state transport development. NSW Ministry for Transport and Road is responsible for the development and management of entire state transport infrastructure, whereas the NSW Ministry for Regional Transport and Road is specifically responsible for the development and management of state transport infrastructure lying at the inner territories of the State away from the central metropolitan of NSW.

Though the Public Sector Employment and Management (Departments) Order, 2011 delegates NSW Secretary of Transport as the secretarial authority of NSW Ministries for Transport and Road, Transport for NSW, legislatively under the hierarchal authority of the NSW Secretary of Transport founded on November 2011, is the lead functional agency for the development of the transport systems in NSW. The agency is an outcome of NSW Transport Ministries' whole-of-government reform approach to create one central agency responsible for the coordination and integration of planning and policy for transport, and bringing together a previously disparate group of state agencies to plan and integrate transport across all modes and sectors (Transport For NSW, 2012).

The agency, by the authority Transport Administration Act, 1988, executes development and management of all modes of transport infrastructures through other State agencies responsible for administration of ferry services, rail services, State transit (public bus) services, and road services. Among these, Roads and Maritime Services (RMS) is directly responsible for development and delivery of State road transport infrastructure projects apart from the delivery of maritime infrastructure projects and management of the traffic control system.

Figure 4: Hierarchical outline of NSW Transport Ministries



Source: NSW Transport Administration Act (1988)

3.5.1.2 Legislative provision governing NSW transport infrastructure development

NSW Transport Administration Act, 1988 descriptively provides the constitutional framework of Transport for NSW, along with its objectives and functions that also constitute road development of the State of NSW through another State agency that falls under the directive of Transport for NSW. As such, the Act clarifies the position of Transport for NSW as being under the hierarchical order of NSW Transport Ministries and Secretary of Transport, and above other state transport agencies including RMS (see Figure 4). Likewise, the Transport Administration Act, 1988 also provides a legal foundation for RMS along with its functions that involve undertaking road transport infrastructure planning and development. The Act further details the function of RMS to direct other public authorities, and conduct monitoring function relating to road transport administration. Importantly, the legislation also envisages

financial provisions regarding the financing of Transport for NSW and RMS through the Treasury department of NSW for meeting necessary administrative payments and expenditures.

All in all, Transport Administration Act, 1988 appears to be the founding legislation for the State of NSW providing legal ground for the establishment, regulation, and functioning of the executive transport structure of the state. Likewise, it also makes way for the Long Term (Strategic) Transport Master Plan (provided in Figure 5).

Apart from the Transport Administration Act, 1988, the NSW Road Act, 1993 confers functions to the RMS in relation to State Road development and maintenance. Likewise, the NSW Road Act, 1993 also provides guidelines and provisions for the construction of State Road transport infrastructure in terms of the structuring of roads and classifying them based on their nature of transport function. The Act also discusses the distribution of the functions conferred between RMS and other road authorities for conducting road transport infrastructure development. It also devises executive and financial procedures for works related to bridges, tunnels, and roads, and provisions relating to tolls & charges in tollways. Importantly, provision for land acquisitions (termed as eminent domain), and utilization of land already acquired by RMS for road development are also provided.

3.5.1.3 Strategic Framework of NSW for transport infrastructure development

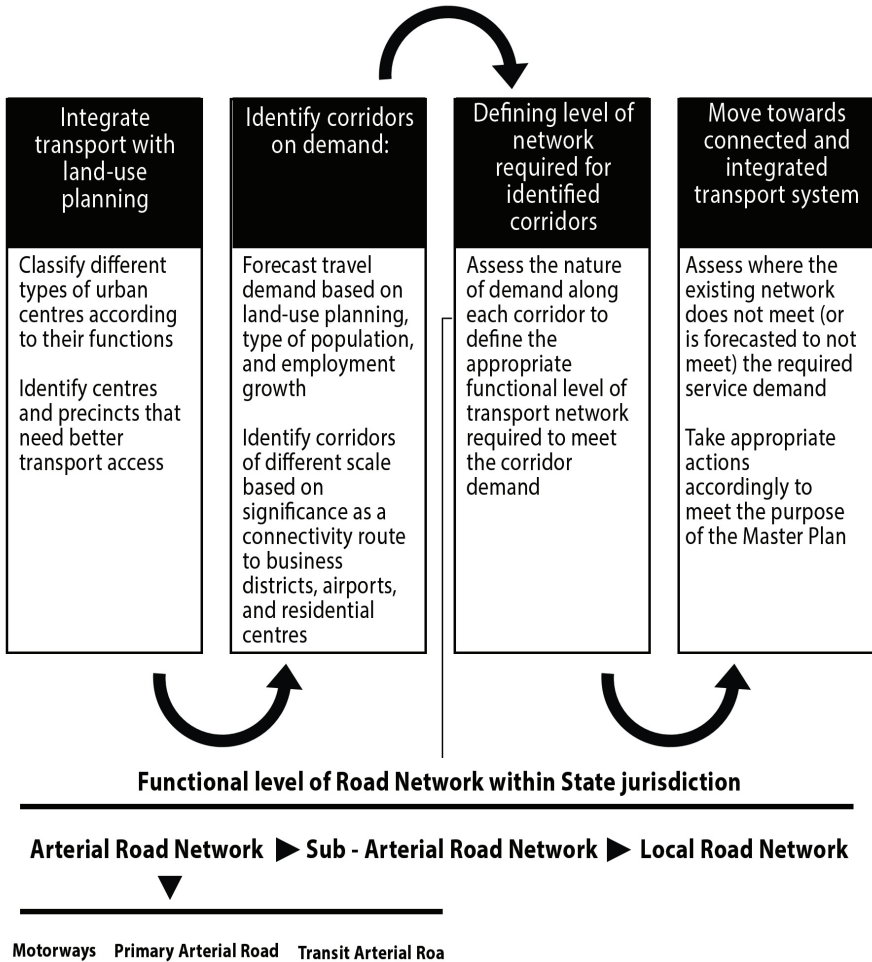
NSW Long-Term Transport Master plan carried forward by the NSW Ministries for Transport and Roads in 2012 provides the strategic framework for the NSW government regarding transport infrastructure development. The long-term plan is primarily devised to fulfil its strategic goal to assist in state-wide economic growth and development by:

1. Supporting employment growth in specialized precincts of NSW by connecting the growing rural population of inner NSW to employment opportunities and economic growth of the NSW metropolitan area.
2. Exposing rural competitiveness present in inner regions of NSW through seamless transport connectivity across the State
3. Reducing the cost of doing business and improving supply-chain efficiency by meeting growing freight transport demand across the State and improving Freight Road transport infrastructure in regional¹⁵ and metro regions of NSW
(Transport For NSW, 2012)

The Master Plan attempts to fulfil this strategic goal through its step-by-step approach that fundamentally involves integrating transport with land-use planning, identifying significant demographic and economic corridors (hubs), defining transport performance (infrastructure) requirement for identified corridors, and finally, move towards connected and integrated transport system (see Figure 5 for elaboration).

15 The term regional in Australian lexicon refers to rural regions of Australia that lies far from the metropolitan areas lying at the coastal regions of the country

Figure 5: Step-by-Step approach to NSW Long Term Transport Master Plan



Source: Transport For NSW (2012)

Apart from identifying the long-term strategic goal, and devising an effective approach to secure the goal, the NSW Transport Long Term Master Plan provides key principles that shall guide the entire planning and delivery modality of the State transport body. The Master Plan explores principles for the development of executive structure, procurement practice, program development, revenue strategizing, and collaboration relating to transport administration and infrastructure development projects.

The principle towards procurement practice addressed by the NSW Transport Long-Term Master Plan advises to create a standard approach to procurement and contracting across a wide array of projects and simplify the tendering process. The principle of collaboration, on the other hand, rests on attracting maximum private sector engagement and partnership by appropriately structuring projects to attract investors, while exploring opportunities for planning jointly with other State and private agencies. Similarly, the principle in relation to revenue strategizing suggests researching innovative tolling regime for state motorway network (Transport For NSW, 2012).

3.5.2 Gujarat Road Transport Infrastructure Development and Management

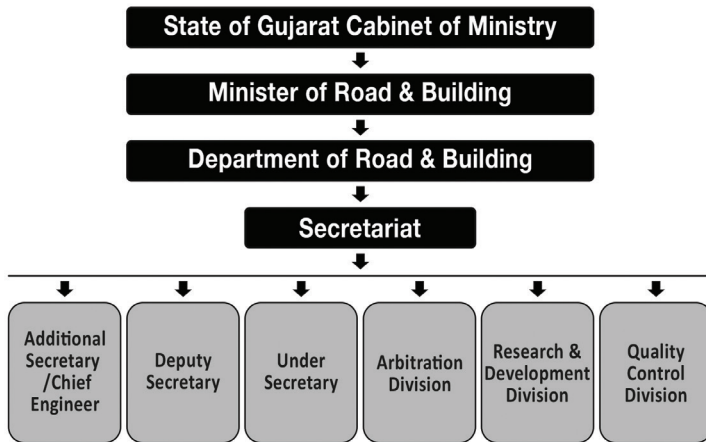
3.5.2.1 Executive framework governing the road transport infrastructure development of the State of Gujarat

With regards to State Highways, the jurisdiction is solely vested upon the State Departments of Road and Buildings as per List II of the Constitution of India. As such, every State of India has a Department of Road and Buildings which is responsible for the development and management of State Highways. The department is also responsible for the maintenance and up-gradation of National Highways falling under its territory by acting as the agent of the Ministry of Road Transport and Highways. However, unlike in the Federal system of Australia and Nepal, State ministries do not exist in India. Rather, separate departments exist for exercising jurisdiction as enumerated in List II.

Likewise, the Gujarat Highways Act, 1955 of Gujarat recognises Department of Road and Building as the sole authority for the development and management of State Highways. The department is headed by a secretary

who is answerable to the Minister of Road and Building. Under the secretary, other additional divisions are found (see Figure 6) who are each responsible for their own division but are answerable to the secretary.

Figure 6: Hierarchical outline of Gujarat Ministry of Road and Building

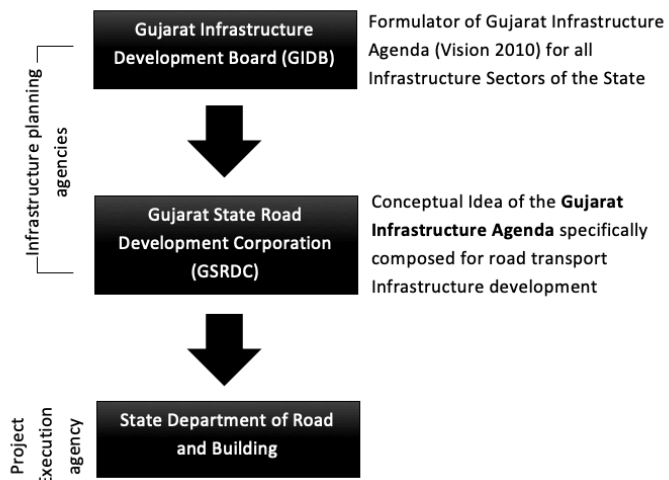


Source: Department of Road and Building (2020) of Gujarat State

Of particular importance within this executive framework is the existence of Gujarat State Road Development Corporation (GSRDC) Limited. Although a corporate body, the GSRDC is an undertaking of the Gujarat Government responsible for framing plans and policies related to State road transport infrastructure development, and also for raising finances for development and maintenance of State Roads (Gujarat State Road Development Corporation, 2020). It was essentially incorporated by the Government of Gujarat to execute the former 10-year long-term Vision 2010 plan also referred to as Gujarat Infrastructure Agenda (GIA) formulated by the Gujarat Infrastructure Development

Board (GIDB). The Company has contributed to completing several projects using the Public-Private Partnership (PPP) model other than through state funding and cross-sharing with the State Railways Department (Gujarat State Road Development Corporation, 2020). While the GSRDC is limited to framing plans and policies specifically for road development other than raising finance for development and maintenance of State roads, GIDB, an apex body in relation to planning and policy-making for state infrastructure projects in Gujarat, oversees the planning and implementation of entire infrastructure sectors (Gujarat Infrastructure Development Board, 2020). Technically, Department of Road and Buildings is then responsible for the execution of road development projects in line with the plans and policies devised by the GIDB and the GSRDC (Department of Road and Building , 2020).

Figure 7: Interrelation between GIDB, GSRDC and State Department of Road and Building



Source: Department of Road and Building (2020) and Gujarat Infrastructure Development Board (2020)

3.5.2.2 Legislative provision governing road development of State of Gujarat

With regards to legislative provision, the Gujarat Highways Act, 1955 that calls for the establishment of the State Department of Road and Building and any other relevant department for development and management of State Highways stands at the forefront. Essentially, over the foundation of the Act, the State government of Gujarat, through the publication in State Gazette, can classify or declare roads as State Highway, major District Road, minor District Road, and Rural Roads.

Meanwhile, GSRDC was established through a resolution of the Gujarat Government in 1999 as a limited company under the Companies Act, 1956 in order to implement the plans laid down in Gujarat Infrastructure Agenda – Vision 2010. Of equal importance here is the legislative framework governing the Build Operate Transfer (BOT) model for development of roads within the State of Gujarat. The legal framework for the BOT model in Gujarat has been provided by the Gujarat Infrastructure Development Board Act, 1999. Essentially, the Act also calls for the establishment of GIDB which was subsequently declared as the apex body in relation to planning and policy-making relating to infrastructures. Within the same legislation lies the provision for the construction of roads by any person other than the government department.

3.5.2.3 Strategic framework of State of Gujarat for road transport infrastructure development

Of remarkable nature is the first ten-year plan laid out by the board which was termed as Vision 2010 or GIA 2010. The plan included development of several sectors within the state of Gujarat. The idea behind such a development plan was to carve out the State of Gujarat as a favourable economy for investments and to become the leading economy within India.

The commendable feature of GIA 2010 is also the establishment of GSRDC for the formulation of plans and policies related to road transport infrastructure development, and for raising finances to carry out infrastructure projects. Through the incorporation of a GSRDC as a limited company undertaken by the State of Gujarat, the state was able to devise innovative mechanisms and models to raise finances for State road development projects. The mechanisms and models involved other state department and private investors to execute PPP models including the famous BOT model. As such, GSRDC in the past has used PPP, state funding, and inter-departmental funding mechanisms as a means to finance projects.

Meanwhile, the current 10 years long-term plan referred to as Vision 2020 or Blueprint for Infrastructure in Gujarat 2020 (BIG 2020) in operation is one which was conceived in 2010. The strategic goal is to make the State of Gujarat as one of the leading economies not just within India but all over the world. As such, the plan provides a comprehensive view of all the infrastructure sectors and seamlessly integrates them into a synergistic and synchronised plan in order to improve the quality of the life of the people and achieve faster economic growth in the State of Gujarat. It has identified a shelf of state road development projects required across the road sector to be implemented on a priority basis for the inclusive growth of the state.

Chapter Four

Findings and Analyses

The analysis of State road transport infrastructure data and indicators essential during the formulation of long-term transport strategies can inform states to engage in road transport infrastructure development as required.

- 1. An important finding from the case observations relates to the idea of developing the State-level Long-Term Transport Infrastructure Master Plan¹⁶ that meets future service demand by incorporating corridor demands.**

This practice of developing Long-term Transport Infrastructure Master Plan as observed in the State of NSW can be considered resourceful learning for planning in Nepal. For instance, urban transport infrastructures as Bus Rapid Transit (BRT) can be planned to specifically address the mobility need of denizens in residential areas whereas special industrial road transport infrastructure enabling mobility of heavy vehicles should be planned to address logistical the needs of industries and factories.

Formulating State-level Long-term Transport Infrastructure Master Plan is

¹⁶ Hereafter State-level Long-term Transport Infrastructure Master Plan will refer to State-level long-term transport or road-related strategies, vision, direction, or plans.

also important for state governments to remain informed about the nature of road development required to address needs of a particular region. As such, the analysis of State road transport infrastructure data and indicators¹⁷ essential during the formulation of long-term transport strategies can inform some states to engage in road transport infrastructure development. For example, State 2 and Sudoorpaschim might require new roads while other states need to upgrade existing ones, like converting unpaved roads into paved roads (applicable to Bagmati and Gandaki). Importantly, becoming informed regarding the necessary course of road transport infrastructure development can effectively assist State MoPIDS to design the portfolio of road projects for mid-term and annual transport plans as per the strategic need. Ultimately, coherence in different levels of planning can also be achieved.

Moving forward, long-term strategic infrastructure plans will enable the formulation of effective approaches to procurement, projects selection, and collaboration with private investors and other government authorities to plan, finance, and execute infrastructure development. Regarding collaboration with private investors for State Road development through the formulation of long-term plans, the practice of the Gujarat Government remains exemplary. As such, through GIA 2010, the State of Gujarat has been able to establish GSRDC tasked for devising innovative financing strategies for State Road development and maintenance with adequate involvement of private parties. The corporation has contributed to developing innovative PPP financing models (including the famous BOT model) that have powered multiple State Road projects in Gujarat.

It is not that Nepal does not maintain any avenue to engage private investors in infrastructure development. In fact, PPP legislation already exists at the federal level with detailed provisions related to the functions of the conceptualized PPP unit, modes of PPP, and competitive bidding practice. Regardless, it must be noted that although the legislation was made after the inception of federalism,

17 Appendix A provides a general road infrastructure-related data analysis for all 7 States.

very little aspect of federalism is seen. For instance, the PPP unit itself is a federal entity with the responsibility to assess and approve any project to be conducted through the PPP model proposed by governments of all levels. As such, centralization in the legislative and executive provisions related to private investment for infrastructure development at the regional level is also apparent. Therefore, it would be more efficient if the PPP unit and investment board for dealing with regional infrastructure could be devised at the state level. And unlike the federal provision, private parties may as well be engaged in the formation of such State PPP units and investment boards.

Likewise, strategy formulation for State Road infrastructure development is also required in order to build protocol of communication and working modality between State MoPIDs and other government authorities and relevant stakeholders. Such protocol is necessary in order to avoid inter-jurisdictional conflict with other levels of governments, and also with the agencies within the State-level government (N. Bhatta, personal communication, November 22, 2019). Importantly, it shall expedite the infrastructure development works with maximum stakeholder integration and limited bureaucratic interruption.

Last but not the least, it is also learnt that State-level transport infrastructure Master Plan is needed to create and uniformly abide by an effective approach for procurement practice and project selections, and also to envisage collaboration with private entities for State transport infrastructure financing, development, and management. This recommendation is relevant amid observation that reform in public procurement practice and inception of private investment in infrastructure development for development projects is long due and requisite (Sapkota C. , 2019).

2. Another important finding from the case observations relates to the practice of developing executive arrangements for the state transport sector from the principle prescription present in the State-level Long-term Transport Infrastructure Master Plan.

After learning that development of transport infrastructure of NSW was the result of a lean approach to the formation of the state executive order prescribed by the NSW Long Term Transport Master Plan 2011, we now know that strategy does not always follow from the executive government arrangement. In fact, similar observation from the study of the governance framework for State of Gujarat whereby special planning agency (in the form of corporation) was established through a 10-year long term plan to specifically formulate plans and financing strategies/models for State Road transport infrastructure development, confirms the need to consider the potentiality for the executive framework of the government to be evolving in nature based on the need to most effectively bolster the changing long-term strategic direction for State transport development.

Interestingly, this approach to the formation of executive governance completely differs from the ongoing practice of forming a state-level executive government framework that also includes governance for the regional infrastructure sector in Federal Nepal. The current practice of forming state executive framework tends to follow the model prescribed by the federal government and does not reflect the state-level long-term vision or strategy for transport infrastructure whilst one also does not exist. As such, States may be advised to follow the practice of building executive and legislative structure for all sectors on the basis of its relevance towards long term strategic framework than subscribe to the uniform model structure prescribed by the Federal Government. The authenticity of this advocacy also comes from the observation that the advantage of forming a state government in addressing regional development comes from their ability to maintain a unique regional perspective (and forming governance framework accordingly) than following a centrally prescribed uniform model of governance.

State governments of Nepal were found to lack sufficient expertise in building governance framework in the initial days of federalism, and therefore the idea of central administration prescribing executive and legislative models to States was deemed necessary. Having said that, the prescription is not mandatory, and state governments reserve their authority to carve their own executive models as provided in the Constitution of Nepal [specifically provided in Article 162(2) of the Constitution]. As such, state governments may and can be advised to carve their own executive and legislative frameworks that support their area-specific strategic direction in the future. State MoPIDs will have to eventually and then frequently engage in organizational restructuring process guided by their own strategic direction. Such can be inspired by the Organizational Management Restructuring (ONM) process that DoR itself is phasing in for reorganizing its divisional capabilities across the country.

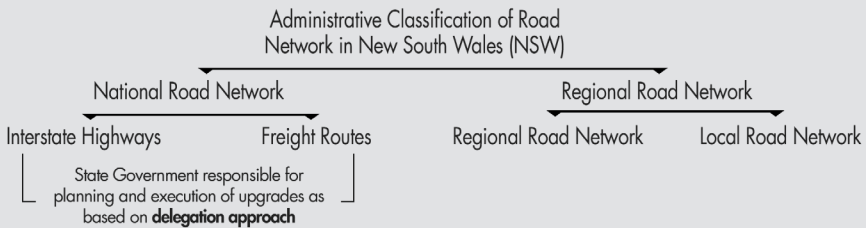
3. Likewise, there is a need to develop relevant legislation to regulate and facilitate executive bodies for the execution and management of road transport infrastructure projects.

As such, fundamental transport-related legislation that are devised and timely amended to align with evolving strategic direction seem to have provided sufficient guideline and regulatory foundation for relevant transport-related state agencies of NSW to plan and execute State road transport infrastructure development. MoPID of Sudoorpaschim as come closest to this idea through the formulation of State Public Road Act, 2019. The Act significantly resembles the NSW Road Act, 1993 of the NSW State government or the Gujarat Highways Act, 1955 in terms of defining state roads under state jurisdiction, and facilitating regulations and guidelines regarding its development, operation, and maintenance.

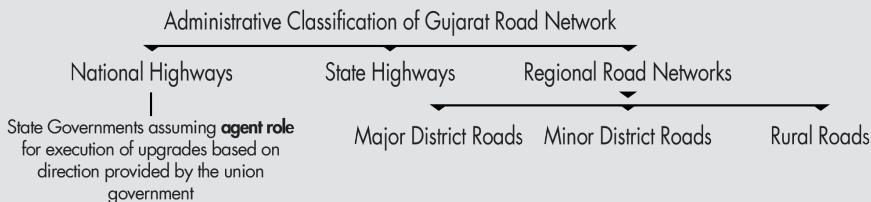
However, given the observation that other State governments have not formulated any legislation related to State infrastructure development and management, it can be assumed that significant regulatory gaps at State level may need to be addressed in near future.

Case Box: 4 **Delegating the jurisdiction of National Road to State Governments?**

Case studies of New South Wales (NSW) and Gujarat recognized that states were delegated with authority and responsibility to upgrade sections of Interstate Highways falling within their territorial jurisdiction. Government of Commonwealth of Australia grants specific funds for the development of the portion of Interstate Highways falling within the territory of the State, while the State engages in planning and executing the upgrade of the portion of the Interstate Highway network (Transport For NSW, 2012).



However, unlike in Federal System of Commonwealth of Australia, the Union Government of India seems to assume the role of planning the development of National Road networks while the Gujarat Government assumes the role of an agent for the Federal Government to build, upgrade, and maintain National Highways falling within their territorial jurisdiction (Road and Building Department of Gujarat, 2019).



Likewise, given the jurisdictional authority of the state governments of Nepal for transport-related tax revenues as provided by the Intergovernmental Fiscal Arrangement Act, 2017, the discussion on whether development and management of National Road Network may also be authorized to State governments in some form is relevant. As such, the effectiveness of such authorization and the nature of delegation will be based on the significance of the need for the National Road network to address regional context versus the need of National Road network to address inter-jurisdictional spill over and leverage economies of scale preserved by the federal government regarding national-level infrastructure projects.

Here, the effectiveness of such delegation will rely on the capacity of state governments to assume the additional load of projects with national significance. Considering the spirit of the Constitution of Nepal, this (capacity building) should then be a priority, moving forward.

To begin with, State governments should at least be authorized for further progress and management of the North-South Corridor Initiative [i.e., DoR project previewed by North-South Trade Route Improvement Project Directorate (NSTRIPD)] as it is vital for the corridor projects to address regional context and economic capabilities. These corridor projects do not require leveraging the capacity of the Federal government to address inter-jurisdictional spill over as a significant portion (i.e., about 80 per cent) of the corridor falls within the territory of a single State.

Chapter Five

Recommendations

1. State MoPIDs need to expedite effective state road transport infrastructure development by building State-level Long-term Transport Infrastructure Master Plan as they enable state governments to:
 - a. Plan for future need of regional roads
 - b. Undertake informed course of road development by incorporating analysis of road statistics and indicators that addresses the actual strategic transport infrastructure need and build coherence among different levels of planning for state transport infrastructure development.
 - c. Build protocol of communication and working modality with all relevant government authorities and stakeholders in order to expedite the development works related to regional infrastructure with limited bureaucratic interruption.
 - d. Build procurement mechanism that guarantees effectiveness and efficiency of the development works
 - e. Build suitable governance executive framework and legislative provision that supports the achievement of the strategic goal
2. States could be allowed to establish their own PPP units and investment board specifically to approve State infrastructure (including road transport infrastructure) development projects proposed to be financed via PPP model. Since the current PPP unit is a federal entity responsible for overseeing and approving projects to be implemented through PPP model in all states, an argument can be made that a lot of time will be spent in pre-award administration leading to potential cost-overruns when projects are finally implemented.

3. There is a need to build executive structure of the State MoPIDs that aligns with the long-term strategic direction for infrastructure development. The application of the recommendation would begin as the State MoPIDs have formed their long-term strategic direction and have gained substantial experience to build governing framework.
4. Last but not the least, it remains necessary for the State MoPIDs to build essential legislation. As witnessed from our observation, only a few States have done it. As such, it is advisable that State MoPIDs develop legislations that guide and facilitate State road development, and directorates and divisions that work towards such. Most importantly, the development of legislations for State public road is also necessary to encourage federal government to concisely classify feeder roads and district roads within the jurisdiction of State governments as they are best suited to administer development and management of such roads.

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Appendices

A. Road Statistics in the Federal Context of Nepal

Table 5 presents the road data of all seven states. The data is brought to uniform ground of comparison by the indicator of (a) road density and (b) number of people served by per kilometre (km) of road. The comparative evaluation depicts Sudoorpaschim to constitute lowest density of road in compared to others.

Likewise, State 2, 5 and Sudoorpaschim are serving higher number of people with per km of road compared to national average. State 2 serves twice the number of people per km of road than the national average.

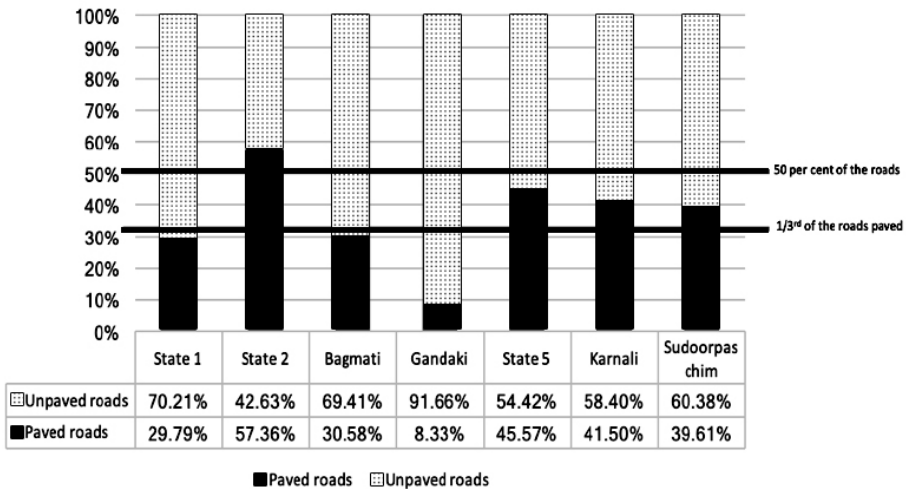
Table 5: State-wise road statistics and indicators

State	Road length* (Km)	Land Area (km ²)	Road Density (km/100 sq. km) [#]	Total Population*	number of people served per km of road
State 1	14,084	25,906	84.83	4,534,943	322
State 2	7,049	9,661	55.99	5,404,145	767
Bagmati	17,223	20,300	59.07	5,529,452	321
Gandaki	12,080	21,832	77.96	2,403,757	199
State 5	10,370	19,734	56.64	4,499,272	434
Karnali	4,636	30,209	29.06	1,570,418	339
Sudoor- paschim	5,033	19,539	25.76	2,552,517	507
National Statistics	70,475	147,181	47.88 ^{##}	26,494,504	413 ^{**}

Source: Nepal in Data (2018) & Department of Roads (2018)

- #* The Road length composes of entire SRN and Local Road Network (LRN) across each State. SRN constitutes of National Highways and Feeder Roads, whereas LRN constitutes of network of village roads [i.e., Village Road Core Network (VRCN)] and network of district roads [i.e., District Road Core Network (DRCN)] (Bhandari, Joshi, & Shrestha, 2019). The Road lengths constitutes of all nature of roads [i.e., paved roads (or all-weather roads that constitutes of bitumen and gravelled roads) and unpaved roads (or fair-weather roads that constitutes of earthen roads)]
- # Road density may have been adjusted by assigning different weights to each nature of road during the calculation
- * The total population is obtained from Population Census 2011 conducted by Central Bureau of Statistics (CBS)
- ##Figure denotes rounded up Figure of number of populations
- ** National statistics represents the average of the State statistics

Figure 8: Proportion of paved roads in all states



Source: Bhandari, Joshi, & Shrestha (2019)

The observations of State road transport infrastructure statistics provide an important overview that recognizes the unique need for States to prioritize nature of road transport infrastructure development that may differ from each other. As such, State 2, Karnali and Sudoorpaschim should prioritize construction of new road transport infrastructures, whereas Bagmati and Gandaki need to prioritize upgrading existing roads.

With respect to the jurisdiction provided to State governments in areas of road sector by the Constitution, the recognized prioritization for road transport infrastructure development can be addressed in the annual plan or mid-term/long-term strategy of the concerned State.

Importantly, the resultant improvement in the status of state road transport infrastructure through the effort of State governments shall also contribute towards uplifting the national average of selected indicators relating to road transport infrastructure that falls under the target of Sustainable Development Goal (SDG) as provided in Table 7.

Table 6: SDG national indicator on road transport infrastructure

SDG indicator	Current national average	Fiscal Years		
		2022	2025	2030
Road Density (km/100 sq. km)	47.88	135	141	150
Paved Road Density (km/100 sq. km)	15.78	12	17	25

Source: National Planning Commission (2016) & Bhandari, Joshi, & Shrestha (2019)

B. Nature of State Roads as per the State Public Road Act, 2019 of Sudoorpaschim:

The State Public Road Act 2019 of the Sudoorpaschim elaborates the nature of the State Public Roads of which the authority is granted to the State governments by the Constitution with the enlistment of “State Highways” in the Schedule 6 of the Constitution that enlists autonomous jurisdiction of the State Governments.

The State Public Road Act, 2019 elaborates State Public Rods to compose of

I. State Public Roads

- Roads that connect two or more than two districts of the State
- Roads that stretch across the borders of the State from either direction
- Feeder roads, State Feeder roads, and Special purpose roads of non-strategic category that connects to Strategic Road Networks (SRN)

II. State Feeder Roads:

- Roads that connects National Highway or State Highway with Local-level Roads
- Roads that connect State capital with local-level centres
- Roads that connect District Headquarter with local-level centres
- Roads that connects multiple local-level centres

III. Special Purpose Roads:

- Roads that connect with industrial, market, religious, educational, historical, touristic, special agricultural production and processing centres
- Roads that are constructed for special purposes

This paper titled “**Regional governance for Transport Infrastructure**” delves into the importance of decentralization or delegation of the entire authority and responsibility related to the role of development of transport infrastructure of regional nature to the government of regional jurisdiction. And, during the current context of federalized governance structure of Nepal, such regional authority is claimed by seven State Government of regions demarcated across the country.

This study finds that the need to sufficiently delegate the role of transport infrastructure development and management to State governments arrives from the principle of subsidiarity and the nature of transport infrastructure that features spill-over effects and externality. Meanwhile, this study does not find sufficient authority granted to the State governments by the Constitution of Nepal and other legislative provisions regarding regional transport infrastructure development as demanded by the literatures concerned by the study.

However, as States can be nonetheless expected to own more authority and duties for development of regional transport infrastructure in the course of future, this study also analyzes the current legislative, executive, and strategic capabilities of all State Governments to undertake such responsibilities. This analysis is followed by necessary recommendation for State governments of Nepal to build necessary capabilities following the study of practices undertaken by the two different State of federal countries that have progressed impressively in areas of regional transport infrastructure development.

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