Private Sector Participation in Transport Infrastructure Development in Nepal

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Published by
Samriddhi, The Prosperity Foundation

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Kathmandu, Nepal

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E-mail: info@samriddhi.org
Website: www.samriddhi.org

ISBN: 978-9937-8680-1-3

First edition: July, 2012

Price: NRs. 200.00

Contents

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Acknowledgement

This detailed study report on infrastructure, which is one of the five sectors on the Nepal Economic Growth Agenda (NEGA) Report 2012, would not have been possible without the input and help from a lot of individuals and organizations. First of all, we would like to thank all the five research guides working with research assistants preparing five reports like this. We cannot remain without thanking the authors of this report, Mr. Kamal R. Pande and Ms. Sarita Sapkota, for working on this study which remained a pillar behind the preparation of the NEGA Report 2012.

The consistent support shown by Federation of Nepalese Chambers of Commerce and Industry (FNCCI) throughout the process has remained at the core of this initiative. Similarly, this study report has gone through extensive consultations in Kathmandu and five regional centers of Nepal and we are extremely grateful to the individuals who took time to take part in those consultations and provide their input based on their valuable knowledge and experience. We would like to thank the Morang Merchants Association, Chamber of Commerce and Industry-Chitwan, Pokhara Chamber of Commerce and Industry, Nepalgunj Chamber of Commerce and Industry and Kailali Chamber of Commerce and Industry for the indispensable help while organizing the consultation meetings in those regions.

The encouragement shown by the political leaders, business community, government officials, experts, practitioners and other people whom we met during the process has also been instrumental in keeping us going through the long and rigorous process of this study. Finally, a very special thank you goes to the Samriddhi team for the constant encouragement and support.

Samriddhi, The Prosperity Foundation
July, 2012

Preface

The Nepal Economic Growth Agenda (NEGA) Report 2012, which aims at contributing for the creation of an environment for making better informed policy decisions concerning Nepal's economic growth scenario took its first leap in 2011 by working on key sectors that have important roles in initiating growth in Nepalese economy. After rounds of individual and group consultations for months since early 2011, five sectors were selected which were Agriculture, Education, Hydropower, Infrastructure and Tourism. Studies on all the five sectors were then carried out for a few months by a Research Guide and a Research Assistant and five detailed reports like this were prepared. On the basis of these five detailed reports on the five sectors, a single Nepal Economic Growth Agenda (NEGA) Report 2012 was prepared which was released in July 2012 and was handed over to the Nepalese government. With this, we as a policy think tank are making an effort to initiate the necessary change in the economy through the Nepal Economic Growth Agenda (NEGA) Report 2012.

This report, "Private Sector Participation in Transport Infrastructure Development in Nepal" is an outcome of the study conducted on infrastructure for the Nepal Economic Growth Agenda (NEGA) Report 2012, carried out by our Research Guide Mr. Kamal R. Pande and Ms. Sarita Sapkota.

As the issue of economic growth is slowly finding its way into mainstream political discourse and discussion on priority sectors are ongoing, this report presents useful analysis on the current status and prevailing challenges in the sector. In this regard, the effort made through this publication takes the discussion one step ahead as it has made an attempt to look into the details and identify those constraints which have been keeping the sector from growing. The study looks upon the sector from the perspective of economic growth and recommendations are based on how the sector can grow and consequently play a greater role in the larger economic growth of Nepal. Hence, the study has some key focus points.

As access to quality and affordable transport infrastructure is a pre-requisite for generating economic activities, reducing poverty and delivering services to ensure a basic standard of living, transport infrastructure has been taken as one of the five sectors in NEGA Report 2012. However, in the light of the fact that investment in transport infrastructure is inadequate compared to the desired rate of economic growth and utilization is a key issue in road transport sector, focus is set on private sector involvement. Recommendations have been proposed to help transport infrastructure increase economic activities and returns for people and involve private sector to help fulfill the resource gap.

Overall the report outlines the key hurdles impeding growth and provides recommendations to remove the hurdles while introducing new ideas to build on the potential in this sector. We believe this publication will be a key document to refer to in the process of policymaking to encourage growth. Samriddhi, The Prosperity Foundation will be publishing the Nepal Economic Growth Agenda on an annual basis highlighting important issues concerning Nepal's economic growth.

Abbreviations and Acronyms

ADB	Asian Development Bank
BOOT	Build, Own, Operate and Transfer
BOT	Build, Operate and Transfer
DFID	UK aid from the Department for International Development
DoLIDAR	Department of Local Infrastructure Development and Agricultural Roads
DoR	Department of Roads
DoTM	Department of Transport Management
EIRR	Economic Internal Rate of Return
FIRR	Financial Internal Rate of Return
EoI	Expression of Interest
FY	Fiscal Year
GoN	Government of Nepal
ILO	International Labour Organization
LRN	Local Road Network
MoF	Ministry of Finance
MoLD	Ministry of Local Development
MoPPW	Ministry of Physical Planning and Works
PPP	Public Private Partnership
TYIP	Three Year Interim Plan
TYP	Three Year Plan
SRN	Strategic Road Network
VGF	Viability Gap Funding

The Nepali year is based on the Bikram Sambat Calendar and is approximately 57 years ahead of the Gregogrian calendar (2062/1/1=2005/4/14)

List of Tables & Figures

Annexes

CHAPTER I

Introduction

Transport infrastructure is an important aspect of economic growth and is instrumental in dealing with geographical, social, political and economic differences that exist among people of different parts of the nation. Access to quality and affordable infrastructure is a pre-requisite for reducing poverty, delivering services to ensure a basic standard of living and escalating economic growth. Presence of adequate infrastructure has strong multiplier effects such as increase in investment, access to basic services, linkage between products and markets that create movements of goods and services, transfer of knowledge and skills and subsequent rise in income and standards of living.

Together political instability and poor infrastructure pose the two greatest challenges to Nepal's investment climate and growth in the private sector (Afram & Pero, 2012). This, in effect, creates other consequent barriers in economic growth as enterprises, businesses and other economic activities cease to grow resulting in low job creations. Nepalese society is more than familiar to the problem of unemployment as thousands of youth leave the county every month in search of employment opportunities abroad (especially gulf nations). Hence, infrastructure development has long and reeling effects in the socio-economic context of the country. Not only for economic growth, access to quality and efficient transport sector lies at the heart of service delivery such as health, education, poverty reduction and other significant aspects of social well-being.

In case of Nepal, following the People's Revolution in 2006, the process of building a new constitution had brought about new hopes

and aspirations among the people. Among them, growth and prosperity remained at the top. Hence, in order to achieve growth and prosperity that could translate across the lives of people, economic activities need to grow, for which investment is key. To attract investment that could help spearhead Nepal's economic growth, the country needs to be globally competitive in different areas which includes adequate supply of infrastructure among other usual aspects. The Global Competitiveness Report (2011-12), however, ranks Nepal 132 out of 142 countries when it comes to quality of overall infrastructure scoring 2.7 out of 7.

Several examples in the Nepali context demonstrate the lack of adequate infrastructure resulting in creation of bottlenecks in utilizing the economic opportunities in Nepal. Agricultural goods and products have not been able to find markets due to lack of infrastructure. For e.g. Jumla and Mustang apples are two of the most well-known agricultural products of Nepal. However, it's cheaper for consumers in market centers such as Kathmandu to buy apples imported from India, Thailand, China and even Canada. The comparison of prices also owes to the scale of production and technologies in those countries. In the other hand, the Jumla and Mustang apple hardly make it to the market centers due to lack of efficient transport infrastructure. Also, the absence of regular and reliable transport services operating with adequate frequency will effectively condemn remote communities to subsistence production in perpetuity (United Nations Economic and Social Commission for Asia and the Pacific [UNESCAP], n.d.). Thus, this fact can be viewed associating the subsistence nature of agriculture in Nepal where an estimated 60 percent of households cannot meet their own food needs, especially in mountainous areas, and agricultural production only meets food requirements of three-to-eight months per year (Nepal Agricultural Research Council, 2010). In case of tourism, air transport has remained on the weaker sides both in terms of internal connectivity and external. Similarly, many destinations, despite having great tourism potential haven't been able to benefit due to lack of basic connectivity of roads, bridges etc. Considering industrial activities, efficient transport network which reduces the transportation cost of goods is of utmost importance. Infrastructure development also makes significant

impact in poverty reduction as research indicates that the growth generated by infrastructure investment is pro-poor with the income levels of the poor rising more than proportionately to the overall increase in income (Calderon & Serven, 2004). In terms of poverty reduction, the regions where the paved road accessibility is high, the Human Development Index of those regions is also better (Annex VII).

To bring sustainable economic growth and prosperity to Nepal, development of transport infrastructure is a key priority and this report will highlight the status, challenges and necessary recommendations to overcome those challenges in to spearhead the process of the economic growth of Nepal.

1.1 Status of Transport Infrastructure in Nepal

When Nepal made a transition from an autocratic regime to democracy in 1951, Nepal had only 376 km of road network (Singh, n.d.). The self-imposed isolation had resulted into very limited linkage to the rest of the world where other transport infrastructure such as airports, railways etc. were virtually non-existent. However, with the advent of democracy, Nepal tried the path of planned development since 1956. As of 2012, twelve periodic plans (five year and three year plans) have been implemented where infrastructure development has largely remained amongst the top priorities along with agriculture and poverty reduction. The reason for infrastructure being on top priority has been obvious, as without infrastructure other key sectors such as agriculture, effective service delivery in education and health, poverty reduction and economic growth cannot materialize.

Nepal has come a long way in its effort to establish adequate infrastructure to ensure growth and quality of life in the six decades' long experience of planned development by duly giving priority to infrastructure. However, despite these efforts, Nepal's infrastructure remains underdeveloped. This section demonstrates different facts associated with the status of transport infrastructure in Nepal.

Nepal's transport infrastructure mainly consists of roads and civil aviation dominated by the road subsector, which provides for the movement of approximately 90 percent of all passengers and freight within the country (Asian Development Bank [ADB], 2001). Though air transport is also used to transport both passengers and goods into remote areas of the hilly and mountainous areas, it is not an economically feasible option for Nepalese living in those rural areas. Besides the railway line connecting Nepal's inland container depot with India, a single railway facility exits int he country—the Janakpur-Jainagar Railway. Being a landlocked country, Nepal has no direct access to a seaport and the closest and most practical seaport is Calcutta in India. Hence, road based transport accounts for almost all domestic passenger and freight movements in the country. On an international level, most goods are also transported in the country via road through the open border with India. Only some limited high value goods are carried by air.

Some indicators and trends that reflect the status of different types of Transport Infrastructure are presented below.

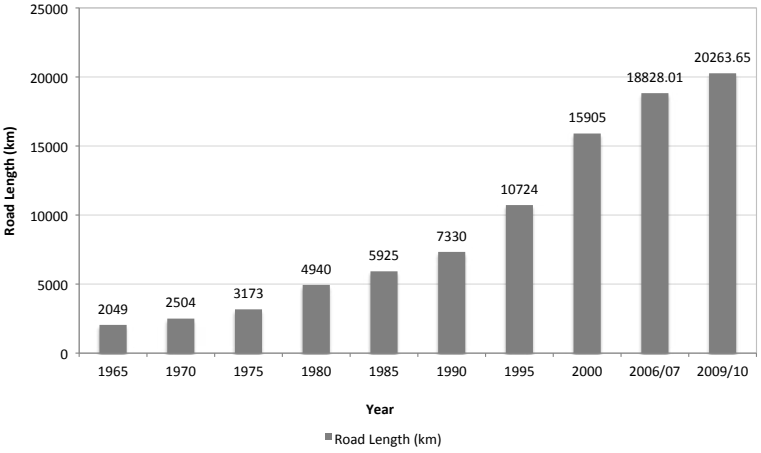
1.1.1 Road Infrastructure

Road Infrastructure in Nepal mainly consists of Strategic Road Network (SRN), District Roads, Rural Roads and Urban Roads. The Strategic Road network (SRN) is made up of National Highways, Feeder Roads, District Roads, Village Roads and Urban Roads. The strategic network is the main artery of Nepal's road system consisting the East West Highway (which runs through the length of Nepal in the southern Terai) and feeder roads that run off of it. Overall, the SRN is administered by Department Of Roads (DoR). The Strategic Road Network (SRN) represents the status of major road infrastructure of Nepal. Annex II shows the growth trend in the length of Strategic Road Network and influenced population and density. The feeder roads are major links to national highways and provide access to the district headquarters and places of national importance such as tourism, industry, power generation, and pilgrimage sites. Rural Roads are administered by Department of Local Infrastructure Development and

Agricultural Roads (DoLIDAR) and are mostly earthen roads and tracks, which generally feed off the strategic roads network and urban roads. Similarly, the urban roads are administered by Municipal administration. Also under DoR are Postal Roads and Mid-Hill Roads.

As of 2009/10, according to Department of Roads [DoR] (2010), the total Road Network of Nepal is 20,264 km Afram & Pero (2012) also point out that including some 1,300 bridges, the total road network to be around 35,000 km. The figure below shows the growth in total road length through the years.

Fig. 1: Growth in total length of road from 1965-2009/10



Source: Department of Roads (DoR), 2010

The figure above shows that the length of road network has been gradually increasing over the years. However, there are still four district headquarters which are not connected by road as of 2009/10 which are Chame of Manang, Dunai of Dolpa, Simikot of Humla and Gamgadhi of Mugu. (DoR, 2010).

At the end of Three Year Interim Plan (TYIP) (2007 – 2010), 19,681 km of all-weather roads have been constructed out of which 10,835 km of

roads have been categorized as extended Strategic Road Network [SRN] where 55% of the roads are paved with bitumen/gravel (National Planning Commission [NPC], 2011).

In case of Local Road network (LRN), around 40,000 km of track has been opened at the end of TYIP of which around 18,000 km of road is in a vehicle drivable condition; 12000 km of mule tracks and 4400 nos. of suspension bridges have been built (NPC, 2011).

As shown by the data of Department of Transport Management, there has been a steady increase in vehicle population at an average annual rate of 17% over the last five years; during the same period, the growth for truck fleet is an average of 8.5% per annum while the growth for the motorcycle is 12%. The total vehicle population in the country now stands at 1.17 million which is a two fold increase over the period of last 5 years. Motorcycles are the major constituents of vehicle population and stands at over 76% of total registered vehicles in Nepal (Department of Transport Management, 2011).

According to Department of Roads [DoR] (2012), the survey on traffic Volume and Vehicle Count has recorded noticeable growth of traffic at the highway location adjacent to the urban centers with significant presence of motorcycles. There has not been any noticeable change in traffic growth in feeder roads. 41% of SRN has traffic level below 100 VPD (excluding motorcycles) and 33% of SRN has traffic level below 50 VPD (excluding motorcycles) (DoR, 2012).

Roads Board is responsible for funding the road maintenance. Currently, it is funding the routine/recurrent maintenance of around 5,900 km of SRN, 500 km of urban roads and around 1300 km of district roads. In addition to the routine/recurrent it is also funding 700 km of periodic maintenance of SRN for the last two years.

As pointed out by The World Bank (n.d.), Nepal's road network expanded by 5%, on an average a year over the last decade, with faster

growth until 2002. Over the 2003-05 period an additional 575 km of roads (equivalent to 3.5 percent of the existing length) were built, focusing on connecting district headquarters with the national network and improving access between rural areas and market centers. Nepal's road network annually increased by 6.7% between FY95/96 and FY03/04, with the largest expansion occurring in roads classified as "district or rural roads", which grew annually by 11% during this period (The World Bank, n.d.).

Nepal's economic activity and growth is focused around limited numbers of growth centers such as Kathmandu Valley, Pokhara, Birgunj, Biratnagar, Dharan, Jankapur, Butwal etc. Moreover, a large portion of economic activities take place between the places in Terai and urban centers such as Kathmandu Valley. Kathmandu Valley, which hosts a population of 2.5 million, is the major market for almost all kinds of products produced in Nepal as well as those entering Nepal. Hence, the Kathmandu-Terai Fast Track is a project that has long been under discussion as one of the major infrastructure development initiatives.

Accessibility, Quality, Reliability and Efficiency of Road Transport in Nepal

Accessibility

According to the Final Report of the Sector Wide Road Programme (SWRP) & Priority Investment Plan (PIP) Study (2007) conducted for the Department of Roads (DoR), Nepal is one of the few countries in the world with a significant proportion of its total population living in areas not served by a motorable road. As pointed out by the report (DoR, 2007), about 39% of the people in hills and mountains were beyond a 4 hour walk to the nearest all-weather road. About 13% of the Terai people were more than 2 hours from an all-weather road. The report also highlights that from the preliminary analysis during the study of the existing data, and of the information available from DoLIDAR, out of 55 districts in hills and mountains, 46 can be classified as having a serious access problem, with over 20% of the population outside 4 hours criteria.

Furthermore, DoR (2007) reveals that, since 2006, 58% of population in Hills has motorable access within a reach of 4 hours whereas 94% of population has a motorable access within a reach of 2 hours in Terai with overall accessibility[1] being 78%. A recent study carried out by Department of Roads on Accessibility has estimated that there has been an improvement in accessibility in Hills from 58% in 2006 to 77.5% in 2011 and in Terai from 94% in 2006 to 98% in 2011 with an overall accessibility of 88% in the dry period (DoR, 2012a). In terms of all-weather accessibility, the overall accessibility is only 80%.

According to DoR (2007), the average walk time to access the SRN ranges from as high as 66 hours in Humla to 2.5 hours in Dhading, the lowest among the worst 25 districts. In other more accessible districts, the average walk time reduces to fractions of an hour, with a national average of 2.4 hours.

Also, as presented in Annex III, Nepal's road density in terms of land and population is both among the lowest in South Asia indicating low access.

Similarly, as of 2006, the existing/operational SRN served a total of 78% of the population and the committed additional SRN links was expected to serve 81% of the population (Annex IV). With the increase in SRN, accessibility will improve in terms of linkage between districts. However, to improve the accessibility situation, it should be complimented by a network of rural roads providing local access. According to DoR (2007), it is estimated that the Local Road Network currently contains approximately 4,460 km of operational roads, comprising 450 individual roads in 62 Districts. There are no operational local roads in 13 Districts[2], although sections of road and parts of the future Strategic Network may be under construction or, in part, operational.

1 Accessibility is defined as reaching motorable road within 4 hours in Hills and 2 hours in Terai.

2 The 13 districts without local roads are: Sankhusabuwa, Solukhumbu, Manang, Myagdi, Rukum, Jajarkot, Dolpa, Jumla, Kalikot, Mugu, Bajura, Bajhang & Darchula.

Hence, the access to road transport is moderate in Nepal with access in the Terai plains being relatively better compared to the difficult terrain in hills and the mountains.

Quality

At the end of the Three Year Interim Plan TYIP (2007–2010), only 55% of the SRN roads were paved with bitumen or gravel (NPC, 2011). Based on Annual Pavement Surface Condition Survey carried out in late 2011, 6.7% of highways, 15% of feeder roads and 30% of urban roads need urgent repair as they fall under the category of poor roads (DoR, 2012). Afram & Pero (2012) mark that the total percentage of paved road is 56 and more than one-third of the road network of Nepal is not in trafficable condition and most of the vehicles are old and obsolete.

According to Asian Development Bank [ADB], UK aid from the Department for International Development [DFID] & International Labour Organization [ILO] (2009)'s publication on Nepal's Critical Development Constraints, Nepal's road density is the lowest in the region, with 0.6 kilometers (km) of road per 1,000 people, compared to 6.5 km in Bhutan, 4.7 km in Sri Lanka, 3.0 km in India, 1.9 km in Bangladesh, and 1.7 km in Pakistan. In terms of road density per square kilometer of area, Nepal ranks higher only than Afghanistan and Bhutan and substantially lags behind Bangladesh, India, Pakistan, and Sri Lanka.

The report on Nepal's critical Development Constraints also highlights that, as of 2007, only 38% of Nepal's 17,282 km of road was black-topped. About 25% of the roads had gravel surfaces and the remaining 47% were only passable in fair weather. At the district or village level, the quality of the road network is even poorer with major portion of the road network being passable only during dry season.

Also, Nepal lags behind in the maintenance of roads, thus contributing to the deteriorating status of the road network. Poor quality of roads and poor maintenance has resulted in cracks and potholes in the major portions of the road network.

Efficiency and Reliability

Owing to the poor quality of the roads, the efficiency and reliability of the roads in Nepal is also very low. However, besides the quality of the roads, there are other factors further contributing to low reliability and efficiency of the roads such as lack of alternate routes, frequent strikes, syndicates and others. The East-West Highway is the main route linking the eastern and western borders; the roads from the main entry points and dry ports all connect to this highway. Due to lack of alternate routes, disruptions in traffic on the East-West Highway or connected roads can lead to losses in trade and shortages of essential commodities. Such disruptions are rather common and mostly due to slides and washouts caused by monsoons or due to transport strikes or protests. (ADB, DFID & ILO, 2009). Another prominent problem has emerged in the road transport sector of Nepal which has contributed in the deteriorating situation of efficiency and reliability of transport infrastructure—the syndicate system. The syndicate system prohibits firms from choosing their own trucking operator and increases cost by 25–30%. While the government of Nepal has recently taken steps toward abolishing the syndicate system, the ILO–ADB–FNCCI 2008 Enterprise Survey suggests that implementation of the abolition remains slow (ADB, DFID & ILO, 2009). Additionally, even a constitutional body like the Supreme Court had shown concern over the practice of syndicates in the sector in 2011. However, the government has failed to implement the directives completely.

According to the Doing Business Report, 2012, the cost of exporting and importing a container is much higher in Nepal than of the regional competitors. According to the report, the cost of exporting a container from Nepal was estimated at $1,960, mostly due to transport cost, which is a rise from the cost of US$1,764 in 2008. In comparison, the cost of exporting a container was US$965 from Bangladesh, US$1,095 from India, and US$660 from Pakistan. Similarly, importing a container to Nepal costs an estimated US$2,095, compared with US$1,370 for Bangladesh, US$1070 for India, and US$705 for Pakistan.

There has been significant and consistent growth in air traffic demand since 2007. Tribhuvan International Airport's passenger movement data reveals that, while the domestic passenger movement grew by 13.1% in 2008, it grew by 32.9% in the following year in 2009 (Civil Aviation Authority of Nepal [CAAN], 2010). In 2011, the seven fixed wing airlines and five helicopter operators together carried 1.58 million passengers from Kathmandu airport and similar number at the 34 operating domestic airports in Nepal (Civil Aviation Authority of Nepal [CAAN], 2012).

1.1.2 Air Infrastructure

In many countries that have a difficult mountainous terrain like Nepal, air transport is an important mode of transport. The recent trend has seen a rise in passenger traffic whereas air cargo traffic has been fluctuating. The mountainous regions and the western side of the country with difficult geographical terrains and no road linkages are connected by air transport.

In the civil aviation sector, there are 55 complete domestic airports and an extra 5 domestic airports under construction (CAAN, 2010). 34 out of the 55 domestic airports are in operation out of which 5 are designated as regional hub[3]. Fourteen domestic airports in the remote areas are practically closed because of the lack of service since the private airlines do not want to operate in the airports where tourist traffic is not sufficient and local people cannot afford the increasing air fare.

Substantial numbers of airports are being upgraded or are in a process of having necessary upgrade due to increase in number of aircraft operating companies as well as the aircrafts.

There have been a total of 60 air operating certificates (AOC) issued so far by CAAN for private domestic airlines but out of this, only 28 are valid till date. Twenty one international airlines including Nepal Airlines Corporation (NAC) are operating to and from Kathmandu.

3 Biratnagar, Simra, Bhairahawa, Nepalgunj and Dhangadi

Major Projects in Development

One of the major projects that have remained under discussion is the Pokhara Regional International airport. 34 years ago Nepal Government acquired 158 hectors of land for regional International Airport. The Government of Nepal is willing to construct this airport with the loan from Chinese Exim Bank (CAAN, 2012).

Similarly, an agreement has been signed between Nepal Government and Asian Development Bank for US$28 million loan and US$6.41 million grant for the development of Gautam Buddha International airport under South Asian Tourism Infrastructure Development project to help develop tourism in Lumbini area and to diversify congestion at TIA. Currently Gautam Buddha Airport (GBA) is operated as a domestic hub airport (CAAN, 2012).

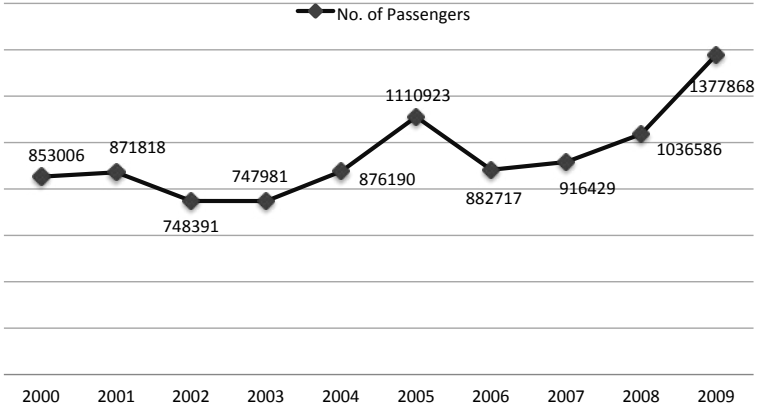
In 2007, Government of Nepal decided to build the Second International Airport (SIA) in Bara, Nijgadh through BOOT (Build, Own, Operate & Transfer) Scheme. As of May 2012, the detailed project report for second international airport at Nijgadh, 76 km away from Kathmandu is now complete under PPP arrangement with Korean Investor. Further award of contract for implementation is now underway.

While most of international goods are imported via Calcutta and through the road network, limited goods are transported through international flights. Post 2007, the recent trend has seen a rise in passenger traffic whereas air cargo traffic has been fluctuating. Figure 2 explains the scenario.

Figure 2 demonstrates that the domestic passenger movement in Tribhuvan International Airport, the main hub of international and domestic air movement, grew by a small amount 3.8% in 2007. However, passenger movements grew rapidly by 13.1% and 32.9% in the years 2008 and 2009 respectively (CAAN, 2010). In 2011, the seven fixed wing airlines

and five helicopter operators together carried 1.58 million passengers from Kathmandu airport and similar number at the 34 operating domestic airports in Nepal (CAAN, 2012). Hence, compared to 2009, the passenger movement grew by more than 200,000 passengers in 2011.

Fig. 2: Tribhuvan International Airport Ten Years Domestic Passenger Movement



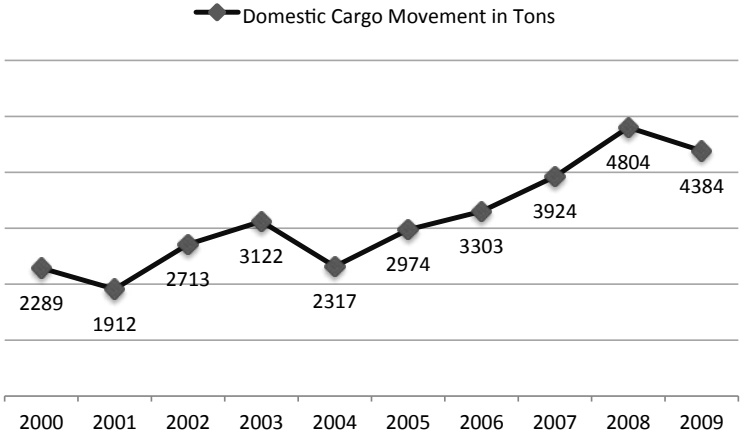
Source: Civil Aviation Authority of Nepal, 2010, Report

The overall growth in the domestic air passenger movement is impressive if we compare the domestic air passenger movement of 853,006 in 2000 with 1,377,868 in 2009 giving an average of 6.8% growth over the period of last 9 years. The average growth of last three year (2007–2009) is 16.6%.

However, the trend is not replicated in terms of movement of goods through air transport and has been fluctuating, which is demostrated by figure 3.

While there was 8.7% decrease in the year 2009, it has been steadily growing since 2005 before it hit a major decline in the year 2004 facing a decrease of 25.8%.

Fig. 3: 10 Years Domestic Cargo Movement, Tribhuvan International Airport



Source : Civil Aviation Authority of Nepal, 2010, Report

For international air traffic, the annual traffic growth for the period (2000–2009) has been 7.98% with the last three years average (2007–2009) coming to 13.6%. International airport at Kathmandu still continues to operate with load penalty due to high elevation, a single runway and without precision approach. These constraints continue to impede for higher growth of international passenger traffic.

1.3 Railway, Waterways and Ropeway

Nepal's network consists of two railways; one connects Nepal's inland container depot with India and the other is a 51 km spur of the line connecting Janakpur with Jayanagar in Bihar (which is a narrow gauge train line of which only 35 km is in operation. The East–West electric railway system, Development of Mass Rapid Transit (Underground and Elevated Railway) System in Kathmandu valley, study on development of Simara-Tamsaria and Tamsaria-Butwal-Madhawaliya-Bhairahawa (Lumbini Electrified Railway) Line along with other various projects to connect

different parts of the nation through railway network has been continuing for a very long time. However, no concrete results have materialized as yet.

Similar is the case with waterways where several possibilities have been studied in the past. For internal transportation, waterways seem feasible in the Terai region, which is a low flat land compared to areas in the hills and mountains where the rivers are larger and have numerous rapids.

Given the geographical terrain of Nepal, ropeways could be effective mode to transport goods. However, currently there are no ropeways in operation in Nepal except the cable car operation mainly serving to religious pilgrims to Manakamana in Gorkha district. Nepal's first modern ropeway between Kathmandu and Hetauda (42 km long), which was in operation since 1964, was closed down in 2001.

CHAPTER II

Policy Review, Legal & Institutional Framework

2.1 Policy Review

Review of different policies, including the periodic five year plans which are fundamental planning documents, reveals the following trend of transport infrastructure development in a nutshell.

2.1.1 Past Strategies 1950 – 1970

This period which lasted from the initiation of planned development until the first three Five Year Plans had given utmost priority to infrastructure development. While targets were missed by wide difference during the execution of these plans, overall strategy focused around :

- Reducing sovereign dependencies on intra mobility (East-West Highway)
- Strengthening accessibility to Zone Headquarters (HQ)
- Facilitation to International trade and commerce.

2.1.2 Past Strategies 1970 – 1990

In the fourth Five Year Plan which began in 1970, Transportation

and communications received top priority with 41.2 percent of expenditures (NPC, 1975). The allocation of budget went down in the sixth Five Year plan in 1980. However, overall strategies during this period centered around :

- Strengthening North South movement
- Accessibility to District HQ
- Completing East West Highway
- Extension of Rural Network

This strategy helped to increase the network as more focus was given on new construction. However, there was nominal allocation for road maintenance. This resulted in the critical state of road infrastructure needing major rehabilitation and reconstruction.

2.1.3 Past Strategies 1990 – 2000

While increasing accessibility and expanding the network had remained the earlier focus, attention was drawn during this period to maintenance activities. Road maintenance is addressed in various policies in Nepal such as Nepal Transport Policy 2058 along with various other transport policies related with transport sector. Similarly DoLIDAR had also prepared National Plan for Rural Road Maintenance in 1999 immediately after its establishment. Hence, during 1990–2000 strategies remained:

- Bringing Network into a Maintainable Condition (Thrust on Rehabilitation/Reconstruction)
- Implementing Planned Maintenance
- Accessibility to District Headquarters
- Extension of Feeder Network

2.1.4 Past Strategies 2000 – 2010

Post 2000, the focus of strategies have been on improving the condition of accessibility to District Headquarters and implementing new development plans such as Mid-Hill and Postal Highway. Therefore, some of the main strategies during this period were:

- All Weather Accessibility to District Headquarters
- Preservation of Asset: Gravel Sealing
- Implementation of Mid-Hill and Postal Highway

2.1.5 Government's Sector Strategy

A Three Year Plan (TYP) for 2010/11 to 2012/2013 was approved by the Government in 2011. The TYP has identified transport sector as one of the seven key sectors for increasing the investment to ensure the availability and continuity of the essential services for the people. The TYP aims to connect all the remaining four district headquarters (Humla, Dolpa, Mugu and Manang) by road. The three year target for the road sector (SRN) is to construct additional 1,493 km, upgrade 3,752 km and apply periodic maintenance to 3,600 km of road network (National Planning Commission [NPC], 2011). Additionally, construction of 200 bridges has been targeted to be completed within the current Three Year Plan period. The major focus of the program is targeted to a) upgrading of 25 feeder roads to district headquarters to bituminous standards b) track opening of 8 North-South trade route between India and China c) track opening of remaining part of Mid-Hill Highway and improvement d) upgrading of the existing SRN to subsequent gravel or bituminous standards e) improvement & upgrading of 640 km of Postal Highway f) construction of additional 200 bridges.

In case of Local Road Network, construction of 3000 km of new earthen roads, upgrading and rehabilitation of 4,767 km roads and regular and periodic maintenance of 18,000 km of roads have been targeted within

the current TYP. In addition, 150 motorable bridges and 1500 suspension bridges (pedestrians) have been planned for construction.

In the Civil Aviation sub-sector, the Aviation Policy 2006 continues to guide the liberal and open sky policy. The Three Year Plan aims at a) increasing current level of one way international seat of 2.14 million per year to 4 million, b) increasing tourist arrival to 2 million per year at the end of the planned period, c) reviewing and revising the existing Civil Aviation Policy, d) continuing to improve the domestic airports to all season standards, e) commencing construction of Second International Airport at Neejgrah and f) continuing the improvement of the International Airport in Kathmandu for the extension of services.

Transport sector continues to be guided by National Transport Policy 2001 and Local Infrastructure Development Policy 2004. It recognizes the need for connecting all the districts of the country as well as developing and extending a local network with a sole aim of bringing the people to reach to the motorable all season road head within four hours and two hours walk in Hills/Mountains and Terai respectively.

The development and extension of Strategic Road Network is based on Strategic Road Master Plan, 2004 and Priority Investment Plan, PIP (2007). The District Transport Master Plan has been instrumental in guiding the selection and construction of District Roads. The government has accorded highest priority in developing sustainable and environmentally friendly roads by mobilizing the communities and specially disadvantaged groups (Dalit, Women, Indigenous, etc.) in districts for their active participation in planning, designing and maintaining local roads.

Private Financing in Build and Operation of Infrastructures Act, 2063 (2006) and Regulation, 2064 (2007) provides legal instruments for attracting private sector investments in the transport sector. The government has listed several infrastructure projects, including Kathmandu Terai Fast Track, to be executed under this Act but desired progress is yet to be achieved. A recently published white paper on Public Private Partnership

(PPP) has listed several constraints in ensuring the private sector investment in the infrastructures in Nepal.

In order to ensure adequate and sustainable funding for road maintenance, Roads Board Nepal was established in 2002. With a review of the current institutional arrangement, a revision to the Act has been proposed and it is under consideration at the Parliament.

The Government of Nepal, Ministry of Physical Planning and Works published a Vision Paper in 2007 with Long Term, Medium Term and Short Term Programmes. As per the vision paper, many medium term and short terms targets have been achieved and many programmers are ongoing. Similarly, in terms of the Long Term Initiatives, the Mid Hill East West Highway, the Kathmandu-Terai Fast Track and other programmes have entered different phases of implementation as well. Annex V lists the major infrastructure initiatives mentioned in the vision paper in the short, medium and long term.

2.2 Legal Framework

Many Acts, rules, laws, regulations and policies have been developed and enacted to create enabling environment for development of transport infrastructure and meeting goals, objectives and targets set out by the periodic plans. The legal framework also attempts to guide the development of transport infrastructure in a planned and focused way. In this respect, some of the major binding legal framework in the sector consists of:

i. Public Roads Act, 2031 B.S. (Amendment 2035 B.S.)
ii. Vehicle and Transport Management Act, 2049 B.S.
iii. Local self-Governance Act 2054 B.S. and Regulations 2055 B.S.
iv. Public Procurement Acts 2063 B.S. and Regulations 2064 B.S.
v. Contract Act, 2023 B.S. and 2058 B.S.
vi. Construction Industry Acts 2055 B.S
vii. Civil Aviation Act, 2015 B.S. (Amendments)

viii. Nepal Civil Aviation Authority Act, 2053 B.S
ix. Public Infrastructure Build, Operate and Transfer Policy 2057 B.S
x. Private Financing in Build and Operation of Infrastructures, 2063 (2006)Act
xi. Roads Board Act 2058 (2002)
xii. Engineering Council Acts 2055 B.S and Regulations 2057 B.S
xiii. Road Sector Policy 1999
xiv. Priority Investment Plan 1997–2007
xv. Priority Investment Plan 2007–2017
xvi. The Department of Roads Strategy 1995
xvii. Road Maintenance Training Policy 2001
xviii. Human Resource Development Policy and Strategy 2002
xix. Bridge maintenance Policy, 2004

With the establishment of the Nepal Investment Board in 2011 enabled by the Investment Board Act, 2068 (2010), big projects are supposed to be implemented under this Act. However, the process of public private partnership is not addressed by this Act.

CHAPTER III

Overall Challenges in Transport Infrastructure Development

Development of infrastructure in Nepal faces several challenges that range from geographical difficulty to lack of resources and many more. Developing infrastructure to serve a population that is spread over one of the toughest geographical terrains is definitely a challenge for a country like Nepal with a diverse landscape and very limited resources. More than half of the total population of the country (50.2%) lives in Terai belt followed by Hill and Mountain belt that constitutes 43.1% percent and 6.7% percent of the total population respectively. Similarly, while an urban hub like the Kathmandu valley hosts a population of more than 2.5 million, a mountainous district like Manang in the North-West has a small population of 6527 with a population density of only 3 person per sq. km (Central Bureau of Statistics [CBS], 2011). Hence, in these diverse demographic and geographical circumstances, other administrative, economic, political and social constraints create several challenges in infrastructure development.

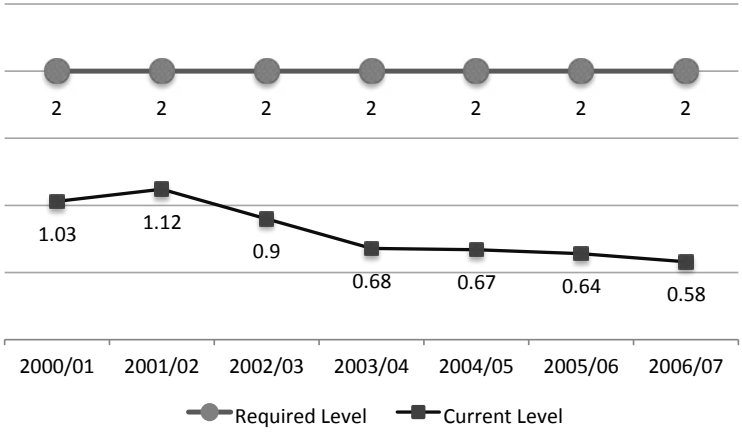
Below are listed few prominent challenges that create serious difficulties in the development of this sector.

3.1 Investment and Funding in Infrastructure

A 2005 World Bank report estimated that Nepal needs to invest at least 2.5% of its GDP in expanding and maintaining its road assets in order to achieve and sustain a GDP growth rate of 6% (ADB, DFID & ILO, 2009).

General pattern shows that expenditures of the developing countries in the road sector is equivalent to 2% of the GDP (Pande, 2009). However, despite demonstrated needs in investing in infrastructure, the expenditures have been low. According to Pande (2009), in Nepal, the total transport sector expenditures amounts around 1% of the GDP. This is further explained by Figure 4.

Figure 4: Transport Sector Requirement and Expenditures



Source: Ministry of Finance (2011)

Hence, one of the main challenges in infrastructure development of Nepal is insufficient funding for maintaining and rehabilitating the network and for constructing new road infrastructure. Compared with the investment needs, the total expenditure including non-development expenditures in 2006/07 was NRs. 6.89 billion or about US$104 million—roughly 40% of the needs (ADB, DFID & ILO, 2009).

Even in the existing infrastructure expenditure, much of the funding is dependent on aid. This poses a question of sustainability in the trend of infrastructure development of Nepal. With many aid providing countries pulling out on aid due to global recession after 2008, it is important to

seek alternative approach in finding the required source for infrastructure development in the Nepal. Typically, 50-70 percent of the road budget has come from foreign loans and grants. ADB's assistance, along with that from the World Bank and Japan is highly significant, each comprising about 25-30 percent of the total foreign assistance to the road sector. PRC, India, Switzerland, former Union of Soviet Socialist Republics, United Kingdom, and United States of America have also provided significant assistance (ADB, 2000).

According to DoR (2010a), as mentioned in the Department of Roads, Business Plan 2010-13, in order to facilitate the 6.3% GDP growth anticipated in the Tenth Plan, it is necessary to invest about 2% of the total GDP (about US$115 million a year) on expanding its road network to remove transport impediments for its economic growth, and another 1% of its GDP (about US$30 million a year) on maintaining existing asset. In sum, it is necessary to invest about 2.5% (about US$145 million a year).

Therefore, coming up with alternative approaches to finance the gap in infrastructure development investment is a key challenge. An alternative which has been widely considered and also encouraged in various policies and programs is Public-Private-Partnerships (PPP). Clearly, what the public sector lacks in this particular sector is what the private sector can offer and hence, PPP is a perfect dovetailing. Despite the government acknowledging the role of private sector in infrastructure development and coming up with acts such as Private Financing in Build and Operation of Infrastructures Act, 2063 (2006), the process of PPP has not emerged and evolved effectively, which will also be discussed in detail in the later part of the report.

3.2 Service Delivery Capacity of the Government in Infrastructure

The government as a service provider of transport infrastructure faces many practical challenges in the process of service delivery. One of the prime challenges is, with the political instability which brings about

unpredictable political appointments in all government sectors, the development priorities change along with the change in political power. As Nepal has remained in a politically volatile state for a long time, decisions are subjected to discretion of the political will. This is a major obstacle in infrastructure planning and implementing process where imprudent planning and implementation result in severe losses and other repercussions. Randomness in strategy and priority shift makes the service delivery process inefficient. Similarly, lack of effective sector monitoring is also a major challenge. Besides this, as technologies and innovation play significant roles in building efficient transport infrastructure, the government has not been able to keep up with the rapid change and development in available technologies.

For example, to mitigate the increasing drinking water crisis in Kathmandu Valley, the GoN initiated the Melamchi Water Supply project in 1997 (Maskey, 2011). However, with hurdles on multiple levels, the project, which was scheduled to be completed by 2008 has been extended multiple times. This is one among the many government programs that face start up delays as well as implementation delays owing to various reasons, of which political interference on high level and local levels are primes.

On February 2, 2012, the then Prime Minister, Dr. Babu Ram Bhattarai had listed more than a dozen important projects, all of them infrastructure development projects, as "Projects of National Pride" in the Immediate Action Plan. However, despite the prime minister's grand plan for infrastructure development, the country's high-priority infrastructure projects are moving ahead slowly, as shown by the Finance Ministry's half-yearly review of the annual budget[1]. The review reveals that in comparison to the target for 2011-12, in the half-year period, three major projects, the Kathmandu-Tarai Fast Track, the Mid-Hills Highway and Melamchi Water Supply have achieved less than 25 percent of the target (Shrestha, 2012). Similarly, due to the fact that there has been no elected local government in Nepal's 3,915 VDCs and 58 towns since 2002 , local governance is

1 http://www.ekantipur.com/2012/02/03/business/national-pride-projects-crawling-ahead/348343/

almost non-existent which further hampers the implementation capacity of government programs at local level.

Transport sector expenditures have increased fourfold over the last five years. In 2005/06, it was NRs. 4,178 million and has reached NRs. 17,000 million in 2009/10 (Economic Survey, 2011/12). Over the last five years resource allocation to Roads Board for road maintenance has increased from NRs. 330 million (2005/06) to NRs. 2,518 million (2010/1011). However, serious questions are being raised on the capacity of road agencies in spending and managing the allocated resources efficiently and effectively. Lately, it has also been observed that the resources which were allocated at the beginning of the fiscal year to the specific targeted programs have been diverted to the non-planned programs at the end of the fiscal year due to under spending.

3.3 Inadequate Maintenance of already constructed infrastructure

According to Shrestha (2006), road asset loss in Nepal is NRs. 1,000 to NRs. 2,000 million annually. Due to inadequacies in maintenance, the already built infrastructure has been less efficient and reliable and in many cases has resulted in injuries and death during accidents. Since road maintenance does not sound as politically appealing as new road construction, the priority in maintenance has been low. There is a need of allocating maintenance resources according to the network usage. Asset management is yet to be applied in SRN. Roads Board is responsible for the funding of road maintenance and currently it is funding the routine/recurrent maintenance of around 5,900 km of SRN 500 km of urban roads and around 1300 km of district road. In addition to the routine/recurrent maintenance, it is also funding 700 km of periodic maintenance of SRN for the last two years. The resources are spread over SRN.

Shrestha (2006) further argues that the constraints in maintenance of already constructed infrastructure are the lack of awareness and seriousness in decision making level on reviewing and preserving the asset

invested in infrastructures. He cites other constraints such as accumulation of backlog maintenance every year due to inadequate fund allocation, lack of database on commercially viable roads and social (baby) roads requiring subsidy among many.

3.4 Supply Side Oriented Transport Infrastructure Planning

With the exception of few local roads, so far infrastructure development has been entirely perceived and implemented as the function and responsibility of the government. The planning process for infrastructure like other aspects of the government service delivery has been based on central planning. The five year periodic plans are the documents that guide the process of infrastructure development in Nepal.

The First Five-Year Plan (1956–61) gave top priority to transportation and communications with over 36 percent of the budget allocations. Similarly, in the second five year plan, transportation and communication again received top priority with about 39 percent of budget expenditures. The third year plan again focused on transport and communications along industrial and agricultural development. In the fourth five year plan, again transportation and communications were considered top priority receiving 41.2 percent of total expenditures. Though the resources allocated for transport and communication were larger in the Fifth Plan, it declined in proportionate terms. In the sixth plan as well, the allocation of budget to the transportation and communication from the total of targeted development infrastructure stood at 19.4 percent. Despite fluctuating allocation, transport development has remained in priority of the development plans.

However, in the process of planning road networks and transport facilities, the planning orientation is on simply connecting the headquarters of the districts without much attention being paid towards the transport network reaping economic benefits to the communities. The Government of Nepal had adopted the policy that people in Terai should reach all weather roads within 2 hours and in hills within 4 hours. With this vision,

simply connectivity has been the priority of the government in this sector. Thus, infrastructure development has been largely driven by supply side rather than demand side orientation. This has resulted in Low Utilization rates of constructed transport infrastructure and limited economic returns on a large investment. For infrastructure investments to give returns for economic growth, the focus should be on generating traffic and more utilization.

3.5 Network Utilization

As infrastructure development is considered a priority sector in the periodic development plans, focus has been given to connectivity. However, while the target has been to connect at least all district headquarters of Nepal with motorable roads, the already constructed infrastructure faces the challenge of utilization.

According to ADB (2000), outside Kathmandu Valley, the highest volumes are 2,500-3,000 vehicles per day (VPD) on the main route to the Indian border. On key links in the Terai, volumes are 300-1,000 vpd, with flows of 100-200 vpd on the main hill roads. Earth roads at the extremities of the network may have traffic volumes of less than 25 VPD (ADB, 2000). Though there has been a steady increase in vehicle population at an average annual rate of 17% over the last five years, during the same period, the growth for truck fleet is an average of 8.5% per annum while the growth for the motorcycle is 12% (Department of Transport Management, 2011). This shows that the available network has not been able to generate the amount of economic activity that it is supposed to. Motorcycles being the major constituents of vehicle population standing at over 76% of total registered vehicles in Nepal (Department of Transport Management, 2011), the road network is mostly being utilized for passenger transport suggesting low economic returns of the existing infrastructure.

Though noticeable growth of traffic at the highway location adjacent to the urban centers has been recorded (with significant presence of motorcycles) (DoR, 2012), many growth centers like Kathmandu receive

loaded trucks but as these goods carriers go back, they go empty which again demonstrates that the infrastructure network is under-utilized. On the other hand, there has not been any noticeable change in traffic growth in feeder roads. 41% of SRN has traffic level below 100 VPD (excluding motorcycles) and 33% of SRN has traffic level below 50 VPD (excluding motorcycles) (DoR, 2012).

From FY 1988/89 to the end of FY 2009/10, number of vehicles in the country totaled 1,015,271, while in the first eight months of the current FY 2010/11, it increased by 11.06 percent, i.e. by 112,320 reaching a total of 1,127,591. By the end of the mid-March of the current fiscal year, the average number of vehicles on per kilometer of road of the country grew to 53 from 45 in FY 2009/10. (Ministry of Finance [MoF], 2011). While bus and truck movements dominate traffic outside Kathmandu Valley, according to ADB (2000), there is a general excess of trucks and buses relative to needs, and most operate on a rotation basis with substantial non-operating periods while waiting for their turn. It is also noteworthy that most hill and mountain areas do not produce large volumes of surplus outputs, and the majority of freight movements in these areas are for transporting food and consumer goods into the hills, and many trucks leave the hills empty.

Therefore, one of the key challenges in the sector clearly stands as low utilization. As infrastructure development projects are high cost ventures, it is imperative to ensure that the investments bring due returns to the people and help increase economic activities which consequently contribute to raising the standard of living of the people.

Hence, the economic viability and sustainability of road transport which depends on the utilization of the roads remains weak when utilization is low. According to ADB (2000), in the hill areas, traffic volumes are inadequate to generate sufficient quantifiable economic benefits from road user cost savings to justify the expenditures needed to upgrade gravel or earth roads to sealed all-weather status, even in combination with savings in road maintenance expenditure. The low traffic volumes and consequent small road user cost savings from road improvements in the hill areas

indicate that the appropriate management approach for such roads would be to focus on asset preservation and the least cost way of ensuring a minimum level of serviceability. High standards, which implies substantial expenditure, are not rewarded commensurately by large user cost savings.

3.6 Anti-competitive practices like Syndicate in the Transport Sector

Syndicate and Cartels on all major highways constraining mobility in specific routes have been one of the major hurdles in the road transport sector. Over the recent years, this has contributed to the rising prices of commodities that are transported across the country. The Competition Promotion & Market Protection Act 2006 does not allow syndicates, route monopoly and anti-competitive practices of all forms. Additionally, even a constitutional body like the Supreme Court had shown concern over the practice of syndicates in the sector in 2011. However, the government has failed to implement the directives completely. Hence, the practice has resulted in high price, low quality transport service where overcrowding in the vehicles have also led to major accidents.

3.7 Support to Other Infrastructure and Growth

Transport Infrastructure is a sector which is important in reference to other sectors such as agriculture, trade, basic service delivery such as health and education, etc. However, the development of transport infrastructure in Nepal has not been integrated to maximize economic opportunities and social well-being. With the absence of master plan or practical vision for tourism, industry, hydropower, etc., there has not been any significant attempt to address the transport infrastructure need. The Agriculture Perspective Plan (1995-2015) had tried to incorporate infrastructure mentioning the distance between farms to market would be that of 4 hours and 2 hours in Hills and Terai respectively. Plans regarding agricultural growth, maximization of economic opportunities etc. have not been able to go along with infrastructure planning. Hence, the development of transport infrastructure remains isolated thus causing low utilization.

3.8 Premature failures

Nepal's topography makes the development of transport infrastructure all the more challenging. Especially the Hill and Mountain regions which cover over 80 percent of the land have a very difficult geographical terrain making it time consuming and costly to develop infrastructure such as roads, railway, airports, etc. Therefore, due to young geology and fragile mountain, infrastructure development faces greatest risk of the premature failures which has economic and social consequences.

Similarly, there has been a prevalence of a phenomenon where road infrastructure building programs are started without proper study and engineering which is the case with most rural roads. This leads to premature failures of infrastructure projects which is one of the key challenges in the sector.

3.9 Trade route and priority (Core Network)

The utilization of the total 10,835 km of Strategic Road Network (SRN) varies across the country. The road network around areas with higher economic activity such as Kathmandu, Biratnagar, Pokhara, Birgunj and other receive greater traffic volume whereas other parts of SRN remain underutilized. Traffic volumes at the stations on the Ring Road are much higher than that at the stations outside the valley (AADT=16,000-48,000 VPD). Itahari, Nagdhunga, Butwal, Kohalpur and Banepa are the locations with the highest traffic volumes outside the Kathmandu Valley (DoR, 2011). The Core network mainly (around 20% of SRN) carries 90% volume of trade and traffic in terms of passenger and freight movement. Therefore, these networks are in need of high priority for development and upgrading.

3.10 North South Transit Route

Development of infrastructure not being an end in itself and simply a means to achieve higher level of economic growth and prosperity for people, it should have strong inter connection with economic activities

such as trade, tourism, industry, agriculture and others. In the Nepalese context, some north-south roads have the potential to be developed as International Trade Route (Onta, 2005). As of 2010, trade between India and China amounted to US$60 billion which is targeted to go up to US$100 billion by 2015 (British Broadcasting Corporation [BBC], 2010). In this context, Nepal has a great advantage of acting as transit point between two of the world's largest economic giants. Not only to take advantage of this strategic geographic location, Nepal needs to develop its North-South Connectivity also to connect the agricultural centers with the market centers, help breach the gap of accessibility that exists between Terai and the hilly and mountainous regions. However, in operationalizing the route there are lots of constraints.

3.11 Promotion of other mode

Development of Transport Infrastructure can take place in different modes in which road transport has remained prominent in the context of Nepal. However, in many instances, the lack of integrated planning is seen where resources are competing. For example, development of waterways have been talked about when most road development had been taken according to the road by the river policy. Similarly, feasibility study of various railway networks at different parts of the country, including Kathmandu has been brought into discussions. In this discourse, the discussion regarding competing and conflicting resources is not looked upon with precision. Hence, without looking at complementarity of road network, promotion of other modes on a random basis is not the best idea. The limited resources available in the transport sector are not best utilized when it is spent on developing competing or conflicting modes of transport while existing transport needs remain in dire need of maintenance.

3.12 Focus on developing primary network

The development of primary network faces a lot of political interference which has contributed to the misuse of resources where roads

have been built to connect villages and settlement adding to extra length of the road at non-justified locations and without proper socio-economic analysis. Most of the primary network, especially feeder roads have been built in such a way. Similarly, non-prioritized projects are carried out by shuffling the budget headings in the administrative process, which is also a challenge to developing efficient and well-connected infrastructure.

3.13 Transport infrastructure maintenance and construction at local level

The institutional review of entities related to transport sector, especially road transport, highlights the important aspect of maintenance and construction of roads at the local level. While the Department of Roads (DoR) is responsible for developing and maintaining the Strategic Road Network (SRN), the Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR) is responsible for the development of local infrastructure. However, the institutional arrangement for the devolution of responsibility for the construction and maintenance of local roads lack necessary implementation. The implementation challenges are caused by lack of resources and facilities along with lack of proper institutional structure for implementing effective monitoring and evaluation.

CHAPTER IV

Public Private Partnership (PPP) in Transport Infrastructure

4.1 PPP in Transport Infrastructure in Nepal: Why?

According to Dailami (as cited in Delmon, 2009) investment needs for infrastructure are generally in the range of 5 to 6 percent of a developing country's GDP and the range is higher—7 to 9 percent—in lower income countries where poverty is more acute. However, in case of Nepal, the total transport sector expenditures, amounts less than 1% of the GDP (Pande, 2009) and the investment is entirely made by the government. The five year plans have been putting infrastructure development in key priority. But despite the priority, investments are inadequate. Pande (2009) notes that in in 2006/07, the resource gap in the transport sector was an estimated NRs. 9 billion and if the major physical infrastructure sectors (electricity, communication and transport) are considered, the resource gap could be to the tune of annually NRs. 20 billion which is equivalent to half of the capital expenditures in the fiscal year 2006/07. Hence, it is not possible for the government alone to fulfill the resource gap as it is unable to dedicate half of its capital expenditure entirely in infrastructure given its sociopolitical and economic situation. Table I shows the resource gap in the road sector.

With Nepal dependent on foreign aid for three-fifths of its total capital budget, the government is already heavily dependent on foreign loans, grants and aid for its development activities, including infrastructure. Hence, in this situation, PPP can be an alternative which will ensure

investment (domestic and international) in the very crucial area of growth and development in infrastructure.

Table 1: Resource Gap in Road Sector

Sector	Available Budget		Budget required as per the Three Year Interim Plan (million NRs.)	Resource gap
	FY	Million NRs.		
Road	2007/08	4438	8836	4398
	2008/09	4882	12123	7241
	2009/10	5370	12123	6753
	Total	14690	33084	18393

Source : Kadariya (n.d.)

Similarly, infrastructure development projects in Nepal are known for their notoriously sluggish implementation period. As mentioned in the challenges, a large portion of the road network suffers from low utilization and inability to reap returns on huge investments. Hence, to address these issues, PPP can be a better alternative. As the public sector is at an underperforming stage marred by bureaucracy, politics and corruption, the private sector can be a better executer of projects where it has incentives to improve efficiency and performance, swift institutional mechanisms that enables decision making in a short time and better overall management.

Overall, PPP has the following advantages:

- Efficiency in terms of cost effectiveness, better management with swift problem solving approaches, innovation, less political interference, value for money
- More Accountability
- Technology, Innovation and Know-How

- Focus on outcome and returns
- Risk Transfer

4.2 Public Private Partnership's (PPP) Definition

A public private partnership is a legally-binding contract between government and business for the provision of assets and the delivery of services that allocates responsibilities and business risks among the various partners (Partnerships British Columbia, 2003). PPP refers to the blending of resources and assets from both public and private sectors with an objective of providing a more efficient and cost effective means of infrastructure and service delivery representing better value to people than traditional direct public delivery. Such partnerships potentially include the design, construction, financing, operation, and maintenance of public infrastructure and facilities or the operation of services to meet public needs. (National Planning Commission, 2011).

The white paper on Public Private Partnership published in March 2011 by the National Planning Commission explains what the government defines as PPPs :

- A contractual agreement between a public entity and private entity
- For the delivery of infrastructure or services in the public interest
- Where the public partner focuses principally on the output and allows the private partner to determine the input
- In which a substantial transfer of appropriate risk takes place to the private party
- Where the private party or parties have investments at risk, although capital investment may not be required in all PPPs
- Where better Value for Money can be demonstrated than traditional public provision

Public Private Partnership (PPP) in infrastructures can take place in various forms such as Build and Transfer (BT), Build, Operate and Transfer (BOT), Build, Own, Operate and Transfer (BOOT), Build, Transfer and Operate (BTO), Lease, Operate and Transfer (LOT), Lease, Build, Operate and Transfer (LBOT), Develop, Operate and Transfer (DOT), Service Contract (SC), Management Contract (MC), and Annuity Contract (AC), Special Project Vehicle (SPV) Contract, User Community or User Group or NGO based contract, etc.

4.3 PPP in Nepal: An Overview

4.3.1 Legal Framework

The Hydropower Act 1992 and Electricity Act 1992 were key legal framework which initiated private sector participation in public infrastructures in Nepal. With policy commitments in the National Transport Policy 2058 (BS), the government has also made the "Public Infrastructure Build Operate and Transfer Policy 2057 (BS)" and "Private Investment in Infrastructure Build and Operate Ordinance 2060 (BS) ". A Local Body PPP Policy 2060 (BS) was also made which Deoja, Adhikari & Pande (2005) argue was "too generic and there were no supporting regulations of directives or standard concession agreement to guide the public agencies to plan and procure PPP projects effectively and efficiently."

The government had made some policy commitments on involvement of the private sector in the development of transport infrastructure with examples such as the National Transport Policy where the policy provisions provided opportunities with BOT schemes and foreign exchange facilities, tax and customs rebates for a fixed period and advance acquisition of land for the development of transport infrastructures. However, implementation aspects of the policy have been very weak.

In the act and regulation on procurement, while conventional contracts and management contracts are two modes, PPP option is also another.

Of the key legal framework enabling PPP, the act titled "Private Financing in Build and Operation of Infrastructures, 2063 (2006)" is a major one. This was followed by The Regulations On Private Financing in Build and Operation of Infrastructures, 2064 (2007). Some features of the act and the regulation are mentioned below.

As per the act, projects under private investment in infrastructure can be implemented under the following modes:

a) Build and transfer,
b) Build, operate and transfer,
c) Build, own, operate and transfer,
d) Build, transfer and operate,
e) Lease, operate and transfer,
f) Lease, build, operate and transfer,
g) Develop, operate and transfer,
h) By other methods of similar kind.

As per the act, Expression of Interest can be invited for any project exceeding, NRs. 20 million that has been deemed appropriate to implement.

From these submitted Expression of Interest (EOI) documents, the government would create a shortlist based on the financial and technical capacity to implement the project, experience in building and operating infrastructure and others. These capacities would be scored in terms of full marks 100 where Technical and Financial capacity would be scored in a total of 40 each and Experience in full marks 20.

After the shortlisting, the Government of Nepal (GoN) could then issue a Request for Proposals (RFP) setting out the details of the implementation in public notices from among the shortlisted candidates. The submitted proposal under RFP are expected to contain the following matters:

a) Preliminary feasibility study of the project;
b) Preliminary engineering design of the project;
c) Cost estimate of the project
d) Proposed financial source of the project;
e) Preliminary environmental study report of the project;
f) Details on the implementation of the project;
g) Possible risks in the implementation of the project and proposed measures to mitigate the risks;
h) Procedures on the implementation of the project;
i) Such other details as prescribed.

A proposal would then be selected within 60 days, on the basis of the financial status, technical capacity, environmental study, amount of royalty to be paid to the Government, proposed amount that the users would have to pay in the implementation process, and other details as prescribed.

Process and Stage of Bidding according to the Act and Regulation

i. Invite Expression of Interest (EOI)
ii. Short List from persons submitting EOI
iii. Call for Proposal
iv. Selection of Proposal within 60 days based on specified criteria
v. Informing the selected Proponent within 7 days
vi. Select alternate Proposal if the fist proponent does not turn out
vii. Submission of bid bond – 1% of the project cost

The act also has provisions of conducting a detailed feasibility study by negotiations whereby, any person can file an application to the government to conduct a detailed feasibility study of the project not having surveyed. The act provides for the implementation of projects through negotiations in specific cases where:

i. If the EOI or proposal cannot be selected in required number
ii. There exists no possibility of competition

iii. Having contained a new concept of technology; or
iv. Having a cost estimate more than two billion rupees; or
v. Recommended by the Committee to implement through negotiations; or
vi. Not having seen, owing to any reason, appropriate to follow other procedures

Provisions for unsolicited proposal are also existent where initiatives are taken by the bidders.

After a proposal has been selected, the Government will sign the letter of understanding with the selected party. The party would then have to submit the Detailed Project Report (DPR) with details relating to the project implementation within the time specified. The Government would then enter into an agreement with the party which outlays the terms and conditions including other implementation details. 0.5 percent of the total project cost should then be submitted as the performance bond. After the agreement, the party will be provided the letter of permission to implement the projects. The validity of the letter of permission would not exceed 30 years. During the period of the project, the project and its properties would not be nationalized.

- The Act has also provided that the priority projects of the government could be implemented under the joint investments of the Government and the private sector, with the condition that the Government's share would not exceed 25 percent of the total project cost.
- A project coordination committee under the chairmanship of the Vice-Chairman of the National Planning Commission would be formed to coordinate and monitor the implementation of the project besides identifying and determining the priority of the projects.

A white paper on Public Private Partnership (PPP) was also issued by the National Planning Commission in March 2011 which acknowledged the role the private sector as a development partner and it had the objectives

of clarifying the concept and definition of PPP in the context of Nepal while proposing institutional arrangements and making recommendations for effective implementation of PPP programs in Nepal.

4.3.2 Policy Framework for PPP

Five Year Plans

The conceptual framework of the eighth five year plan (1992-1997) mentioned that "the government will initiate a process of disengagement and disinvestment from a number of areas that may be managed more efficiently by the private sector without jeopardizing social interests". It had also committed to conduct feasibility studies for the construction of short distance links, like the Hetauda-Kathmandu freeway tunnel, under the principles of Build-Own-Operate-Transfer by involving the private sector.

Keeping in mind the growing demand of electricity in the country and outside, the Ninth Five Year Plan (1997-2002) acknowledged that the public sector alone could not meet the demands. Therefore, the plan encouraged public-private partnership in the hydropower and made an attempt to reduce administrative difficulties faced by the private sector in the area.

The Tenth Development Plan (2002-2007) further encouraged private sector participation in infrastructure development in the construction and maintenance of the road network. It highlighted the importance of policy and legal reforms for the purpose. Through Build, Operate and Transfer (BOT) and Build, Own, Operate and Transfer (BOOT) modalities, investments from the private sector, both national and international were sought. Commitments for easing the procedures for investment, making it transparent and conducting further studies to come up with various ways to ensure private sector participation in road developments were brought about. Also, a privatization cell in the Ministry of Physical Planning was envisaged which would help with the details related to PPP arrangements.

The Three-Year Interim Plan (2007/08-2009/10) had also made commitments of making acts related to PPP simpler and practical while

acknowledging the fact that despite the policies that were formulated to encourage private sector investment in the development of the physical infrastructure, investments have not risen as expected. The Plan also mentions that an autonomous national transport board would be established for strengthening the partnership and cooperation with the private sector in order to bring about effectiveness in the development and management of the transport sector.

The budget for FY 2005/06 had mentioned encouraging investments in the ropeways and railways, including the one connecting the Kathmandu Valley with the Terai in the south under the BOT.

Also, in the budget speech for the FY 2011/12, the Vision and Basic Principles of the Budget mentioned, "to encourage private sector investment in big infrastructure projects on basis of public-private partnership. To make necessary legal framework in order to attract foreign investment in mega infrastructure projects including the hydro power."

The budget also mentioned that "Public–private partnership will be forged for creating conducive environment, to mitigate energy crisis, to expand infrastructure facility and services, judicious management of labor disputes and to promote industries." From creating a pilot education village to initiating a model medical garbage management in Pokhara to the establishment of information technology industries in Information Technology Park in Banepa and establishing animal breeding centers in all the five development regions, the budget had laid focus on using PPP as a medium.

The government's Vision Paper on New Physical Infrastructure as the foundation of New Nepal published in 2007 by the Ministry of Physical Planning and Works also states that "Government's role will be made people friendly by promoting public private partnership and mobilizing the national capital to full extent. Involvement of private sector will be increased in the construction and operation of roads as per the concept of Build Own Operate and transfer (BOOT)."

Ministry of Local Development had also issued a policy called "Public Private Partnership 2060". Deoja (2005) argue that the " policy is very generic and does not address many practical problems such as maximum period of concession agreement, procurement process, amendment or variations in the agreement, responsible institutions, financing mechanisms, and the facilities and protections from the government.

4.3.3 PPP Implementation

Deoja, Adhikari & Pande (2005), note the following past efforts on Transport Infrastructure Nepal regarding PPP arrangements:

The government had initiated, in 1994, efforts on carrying out feasibility study by the private sectors at their own expense for Kathmandu-Hetauda Fast Track Road and an International Airport at Simra. There was no policy or regulation existing at that time on build operate and transfer (BOT) or public private partnership (PPP). The MOUs expired without any progress.

The next attempt on BOT in the transport sector was initiated by invitation of expression interest (EOI) for Kathmandu-Hetauda Fast Track on June 1997. A preliminary concept proposal was requested from the only one firm who submitted EOI. In the absence of neither a policy nor regulation on the BOT or PPP, the proposal could not proceed further until a Public Roads BOT Policy 2055 was issued by the government on February 8, 1999 and GON decided to proceed with the proposer in accordance with the provisions of the policy. This effort also could not succeed even to the point of signing a concession agreement mainly because of the lack of feasibility study, detailed project report and a sound basis for negotiation. In the meantime GON approved a new umbrella policy on public infrastructure build operate and transfer in 2001. This umbrella policy covering BOT for all types of public infrastructure was followed by an Ordinance called Public Infrastructure Build Operate and Transfer 2003, which has been updated in 2004.

There were several unsuccessful attempts by the Ministry of Culture Tourism and Civil Aviation to award the development of Lumbini International Airport on BOT basis. A cargo complex at TIA was completed at a cost of about 65 million rupees in 1998 but the Civil Aviation Authority of Nepal (CAAN) has not been able to award the operation of the cargo complex to a private party even in six years after completion. Lack of clear-cut rules on BOT or PPP under the CAAN regulations is probably the main reason for such a situation.

A 3 km long Mankamana Cable Car from Prithvi Rajmarg to Mankamana Temple, is a very successful private sector venture relating to transport infrastructure. This has been built and operated entirely by the private sector. It is not clear whether it falls in the category of public transport infrastructure and within the jurisdiction of BOT Ordinance since it appears that the Mankamana Cable Car has been licensed under the Industrial Enterprises Act 1992 and no concession agreement or franchising is involved in it. Under the Industrial Enterprises Act 1992, cable car complex falls under tourism industry, public transportation falls under service industry and ropeway falls under construction industry. Road, bridge, railway, trolley bus terminal, tunnel, and flying bridge are other transport related infrastructure classified under the construction industry for the purpose of the Industrial Enterprises Act 1992.

Kathmandu Municipality awarded a 45 year contract in the year 2000 for the development and operation of a bus park, constructed under a foreign grant, to a private party on the basis of a develop, operate and transfer (DOT) system. In the same year, another lease operate and transfer (LOT) and DOT combined type of contract was awarded for the overhead bridges in Kathmandu Municipality for a period of 20 years. These contracts were based on the 33 year old "Contract Act 2023". Criteria for recovering the costs of construction of projects built under grant funds is an issue not covered so far by any of the policies or regulations.

Despite the legal framework and commitments from the government in various instances, there have so far not been specific cases of PPP projects under the Act.

One of the popular PPP projects in Nepal is the Public-Private Partnerships for Urban Environment (PPPUE) which was launched in March 2002. Urban services such as water supply, sanitation, solid waste management, road and urban transport management till a certain degree, etc. came under this. A number of municipalities are pursuing PPP arrangement in service delivery. However, large scale projects are yet to be implemented under PPP. The second phase of PPPUE again started in 2004 -2009.

PPP can be seen in other areas such as the forest user's groups that have preserved and protected the local forests throughout the country. Also the independent power producers who sell to the Nepal Electricity Authority (NEA) their electricity, accounting for one-fourth of the total electricity supplied in Nepal could also be cited as another example of the PPP.

4.3.4 Recent PPP Initiatives in Transport Infrastructure

Kathmandu–Terai Fast Track Project has been a major project identified to be implemented under PPP. However, the procurement process is taking longer than envisaged due to inadequate preparatory works.

In civil aviation, the first PPP project on "establishing operational hanger facilities at TIA" has been successfully launched.

According to Deoja, Adhikari & Pande (2005), a study carried out by Ministry of Physical Planning and Works in 2001 had identified possible BOT projects in the roads sector. Seventeen projects were long listed and were prioritized. Preliminary financial analysis carried out by MPPW for the top five short listed projects in 2001 indicate attractive results for BOT schemes for these roads. Toll charge is the main source of revenue.

CHAPTER V

Challenges in Public Private Partnership (PPP)

As presented in the earlier chapters, despite existing legal and policy framework, investment and service delivery in infrastructure has not risen as expected. At the policy level, PPP is acknowledged and accepted as an important tool of service delivery, including infrastructure. However, PPP faces numerous challenges when it comes to implementation. This chapter will highlight some practical challenges in implementing PPP as a medium of transport sector development in Nepal.

For Private Sector to be encouraged to partner with the public sector for infrastructure delivery, the private sector requires a certain level of assurance of returns which are affected by policy stability, clarity and predictability. Not only this, partnership also means appropriate risk sharing. But the trend has been on trying to lay risks on one side heavily, which is the orientation on both the sides. Below are mentioned the kind of risks that are associated with implementing PPPs and other challenges in the sector.

5.1 Regulatory Challenges

Implementing PPP in Nepal faces of lot of regulatory challenges. The acts and regulations under which PPP were implemented before the introduction of the Private Financing in Build and Operation of

Infrastructures, 2063 (2006) Act were rather inadequate when it came to implementation. With policies such as National Transport Policy 2058 BS, BOT Policy 2057 BS, and Local Body PPP Policy 2060 BS on involvement of the private sector in the development of infrastructure, policy commitments were existent but the implementation aspects of the policy had been weak. Deoja, Adhikari and Pande (2005) note, "the National Transport Policy provides for tax holiday and duty rebate whereas the BOT Policy has no such provision. The Local Body PPP policy is too generic and there are no supporting regulations or directives or standard concession agreement to guide the public agencies to plan and procure PPP projects effectively and efficiently. The existing policies have no provisions to encourage greater roles of local contractors and consultants in the ICB contracts within and outside the country. The lack of continuity of minimum workload has made the use of contractors and consultants' equipment less than optimum and the trend of unhealthy competition is affecting the quality."

In an attempt to address the issues brought about by PPP practices in such regulatory context, the Private Financing in Build and Operation of Infrastructures, 2063 (2006) Act was brought about. However, the act and its regulations also pose some challenges in terms of implementation when broken down in details.

The White Paper on PPP issued by the government presents the review of the Private Financing in Build and Operations of Infrastructures, Act and Regulations. The paper points out the following constraints in the act and regulations.

- In the definition of procurement, other forms of PPPs like service contract, management contracts etc. are not covered in the act.
- In terms of Modes of Procurement, Procurement of availability based and other hybrid PPPs (other than BT, BOT, BOOT, BTO, LOT, LBOT, LBOT, DOT and other similar kind) have not been covered in the act. It also highlights the evaluation problem with the BT mode.

- The act demands Expression of interest only for projects costing more than NRs. 20 million. Lots of overlapping in act and regulation, EOI mentioned only in regulation.
- The act also points out the Preparation of short list within 1 month of the receipt of expression of interest with the criteria: technical 40, financial 40, experience 20. However, there is no detail breakdown of the criteria.
- As mentioned in the act, the information submitted in DPR may conflict with information on RFP. RFP documents costs NRs. 20,000 (related documents at free of cost).
- Criteria for evaluating a proposal such as innovativeness, service quality, new technology, poverty reduction measures etc. are not taken into account
- In the Process and Stage of Bidding – there is a problem in deciding the actual project cost without DPR.
- The act also provides for situations where implementing a Project by negotiations is possible under the given circumstances. However, the criteria for implementing project by negotiation are arbitrary and discretionary power may be misused & may neglect the scope for competition.
- There are conflicting situations in the Evaluation of Proposal - The criteria of using amount of royalty to be paid to the govt. & collecting fees from users is conflicting.
- Submitting DPR - The list of information requested is too long and duplicating with RFP
- Project Coordination Committee - This board does not look after the local level Projects
- Settlement of Disputes - No dispute resolution for EOI and RFP stages.

This may reduce bidders thrust in a fair and regulated procurement procedure.

- Infrastructure Service Fees Review Board - Rather uncontrollable/ discretionary influence on the private infrastructure operator's business case. Risk perception from project financiers, interference of the board may conflict with the conditions of finance.

Similarly, despite the fact that the act is expected to be an umbrella policy on the building and operation of infrastructure using private financing, hydropower PPP arrangements have been receiving different treatments as the Electricity Act 1992 provides for a 15 year income tax holiday and income tax rebate of 15% of the applicable corporate income tax whereas the Private Financing in Build and Operation of Infrastructures Act does not provide for any such provisions.

There exists a lack of coherence between private investment in infrastructure Build and Operate at central level works and local levels. Deoja, Adhikari & Sharma (2005) mention, Local Self Governance Act (LSGA) 1999 has provisions on encouraging the participation of private sector and non-governmental organizations in the service delivery. That is why PPP contracts signed by local bodies are based on Contract Act 2056, which is technically inappropriate to embody the principle of PPP/BOT contracts for infrastructure development.

5.2 Political Instability

Political instability is one of the most cited overarching reasons pointed out in every development and growth sector of Nepal. In the aftermath of a decade long civil war and with a very volatile political climate, the challenges posed by political instability also function at multiple levels in the infrastructure sector.

Firstly, there is a lack of political will in implementing PPP on a larger level. While the government reiterates the importance of private

sector in its five year plans and budget, there is no vision and strong stance on implementing PPP in infrastructure development. In the neighboring India, a certain percent of infrastructure is pre-allocated for PPP provisions. There has been no such concrete vision on implementing PPP in Nepal. Secondly, despite the acknowledgement of the importance of private sector in infrastructure building, there is not enough trust between the private sector and the government, especially when it comes to a public service delivery issue such as infrastructure.

The recent budget speech indicating a shift from focus on the private sector development/participation to Cooperatives has done little to motivate the private sector participation and may further indicate a slight loss of confidence. Finally, the political volatility has not been too encouraging for the investors to invest in infrastructure projects in Nepal which are often long term and require a lot of stability, predictability and guarantee to be able to reap returns. Hence, the political challenge is one of the major problems in the sector.

5.3 Financial Challenges

One of the main problems with the development of PPPs is that sizeable investments require large amounts of capital, which even businesses with strong financial backing are not able to provide. Even with stable inflows and an issuer acceptable to the financial institutions, significant capital inputs are required. In the context of Nepal, the financial provisions for investors are insufficient for long term investments that are required in infrastructure development.

5.4 Market Risk

To attract private investors, PPP projects must be financially viable. That means private investors must be able to collect revenue sufficient to make a commercial risk-adjusted return on the long-term capital investment they have made. In the context of Nepal, where the utilization rate is rather low, the market risk is one of the key challenges for the private sector. A

road transport work could be less attractive for PPP in Nepal because it is difficult to guarantee the traffic level and the minimum revenue.

5.5 Land acquisition

One of the principal challenges in a PPP arrangement is ensuring the right of way (RoW) to make sure the project goes without hindrances. But in case of Nepal Land Acquisition is one of the most time consuming part of the infrastructure development process. While the government has the comparative advantage to do this, the private sector cannot get involved unless the land has been properly acquired and set for the work. But in many cases, even after the PPP contracts have been granted, land acquisition issues remain, causing delay of projects and hence cost overrun.

5.6 Viability

While PPP helps fulfill the gap in investments and enable timely delivery of quality infrastructure, feasibility of PPP project remains a major challenge. As network utilization is one of the key challenges with 41% SRN still having traffic level below 100 VPD (excluding motorcycles) and 33% of SRN having traffic level below 50 VPD (excluding motorcycles) (DoR, 2012) and significant percentage of trucks carrying goods running empty, viability is a key hurdle for private sector in investing in infrastructure. In case of Kathmandu-Terai Fast Track, it is necessary to have a fast track of such standards that the transportation cost is reduced at least to a level that is at par with that of national highways of the neighbouring countries. This requires high initial cost for which equity support of the government up to 25 to 40% of the construction cost would be necessary to attract the private sector.

5.7 Role of Ministry of Finance

One of the primary challenges in implementing PPP is that the implementation requires a certain level of understanding with the Ministry of Finance. The shortfall in the required and actual investment in the

development and maintenance of transport infrastructure can be solicited through PPP and a certain target has to be set in active coordination with the Ministry of Finance. However, the Ministry has no key involvement in the process which has kept PPP from materializing in a successful manner in the context of Nepal.

5.8 Lack of Project Bank

Due to lack of a project bank which looks after the feasibility, structure and other aspects of every detail of the process, PPP has not flourished in Nepal. While few ministries have a PPP cell, they are not functional and many remain without active staff.

5.9 Lack of Capacity

Lack of capacity to plan, design, and implement PPP projects given the lack of skilled human resource in the area is a major challenge, especially with the government. While countries like Malaysia and India gradually moved from implementing unsolicited PPP projects to creating a solid regulatory, legal and institutional framework, it is important to note that these countries had better governance and implementation capacities.

5.10 Ineffective Institutional Arrangement

The Private Financing in Build and Operation of Infrastructures Act, 2006 provides for a Project Coordination Committee to make coordination with respect to the implementation of the projects and give suggestions to Government of Nepal to identify projects and set priority. This committee contains the Vice-chairperson of National Planning Commission as the Chairperson, the Member of National Planning Commission responsible for related sector, Chief Secretary of the Government of Nepal, Secretary of the Ministry of Finance, Secretary of the Ministry of Law, Justice and Parliamentary Affairs, Secretary of the Ministry of Physical Planning and Works, Secretary of the Office of the Prime Minister and Council of Ministers, Secretary of the Concerned Ministry, Secretary of National

Planning Commission Secretariat. It also has a provision for a Technical Committee comprising a maximum of five members including an expert of the concerned subject under chairpersonship of the Secretary at the concerned Ministry to give suggestions to Government of Nepal in respect of the project implementation. These arrangements do not necessarily help in the smooth implementation of PPP process as the committee is a huge bureaucratic conglomerate where even a regular meeting amongst all the members becomes impractical given their bureaucratic positions and responsibilities. The committee often fails to take timely decisions owing to several reasons. Besides, the committee members do not necessarily have enough expertise and experience in the related sector which further adds to delays and confusion in an already lengthy and complicated practice of PPP. The committee is important on an advisory or supervisory role. However, for the smooth flow of day to day operation, the committee is not the appropriate machinery.

5.11 Others

- With the establishment of the Nepal Investment Board in 2011 enabled by the Investment Board Act, 2068 (2010), specific big projects in different sectors and projects having fixed capital more than NRs. 10 billion are supposed to be implemented under the Investment Board. Hence, in this context, the applicability of the existing Act on Public-Private-Partnership or the details of the model of the Public Private Partnership or a Standard Concession Agreement needs to be addressed by the establishment.
- The Private Financing in Build and Operation of Infrastructures Act, 2006 is relatively isolated. PPP demands changes in other acts and policies such as Acts related to forests, industrial acts, FDI related acts, General Procurement Related acts and more. Therefore, proper coordination is missing.
- While conducting PPP projects, the duration given for EIA (Environment Impact Assessment) is maximum of 8 months but in practicality, it takes

around 2 -2.5 years to finish it. In this long duration, ministers change, leadership changes and due to this, the whole planning cripples.

- There is high level of intervention in the executive role by other entities. E.g. Transfers of Officials. Coordination between ministries also stands at a poor state. For e.g. at many instances Ministry of Finance has not sanctioned money in time and sometimes not at all, even for approved projects.
- Another major challenge in implementing PPP as a viable option of infrastructure delivery is the lack of PPP experts with the government agencies even after EoIs are invited and process is taken ahead. This constraint appears at different phases of the process and is a very serious challenge.
- Lack of experience and understanding of each other's constraints by the government and private parties and unbalanced risk sharing is another challenge.

CHAPTER VI

Recommendations

Based on the status review and analysis of challenges mentioned above, the following recommendations are put forward.

6.1 In the context of Nepal where a large portion of the road network remains underutilized, measures should be taken to increase viability which depends on how much extra traffic can be generated or diverted to enhance the transport sector project. This should be considered while infrastructure planning is being done. Focus and priority should be laid on building and implementing viable infrastructure network.

6.2 While the larger focus in on new construction, the utilization is low resulting into lack of sustainability and cheating maintenance burden. Hence, government's priority should be asset management with proper maintenance which requires adequate funding, effective monitoring and providing guaranteed level of service to the road users. Hence, asset management needs to be applied in Strategic Road Network. There is a need of allocating maintenance resources according to the network usage.

6.3 Despite being declared illegal by the Supreme Court and the Competition Promotion and Market Protection Act, 2006, the widespread practice of Syndicates and Cartel on the road transport sector has been a major bottleneck. Enforcing the Act and the decision of the Supreme Court has to be immediately undertaken by the concerned implementing agencies to stop the illegal activities such as rent charging by the syndicates

on specific routes in the name of registration and operating charges, preventing vehicles from outside the syndicate to ply in the route and other constraint creating activities.

6.4 Besides road transport infrastructure, development of other transport modes should be initiated where focus should be laid on making sure the modes are not competing with each other but are based on being complimentary.

6.5 More spending needs be made in infrastructure development. In order to ensure economic growth, the general practice is that the investments are around 5%-7% of GDP (Pande, 2009). While Bhutan spends 2.5% of GDP on transport infrastructure, in case of Nepal, expenditure is around 1% of GDP. Hence, in order to fulfill the gap between available and required funding, focus on working in Public-Private-Partnerships needs to be drawn.

6.6 Nepal's readiness for PPP has to be duly assessed with reference to the Macroeconomic Environment, Business Climate, Financial Environment, Legal Environment, PPP Policy Framework, PPP Capacity and other important criteria.

6.7 To increase private investment in infrastructure development, the investment climate related to infrastructure services should be improved which include legal reforms, innovative approaches to risk mitigation and mobilizing private investment, etc. Also, one of the prime challenges of private sector investment in infrastructure development is lack of guarantees on certain crucial aspects such as policy stability, guarantee against arbitrary action of the government or change in decision, security of project company assets and others. Here, some form of guarantee should be introduced. Also risks should be clearly allocated between the private and the public sector and those risk mitigation measures need to be taken accordingly.

6.8 On one hand while economic and financial viability and sustainability remain major concerns in private sector investment, under the PPP arrangements in many cases the direct users may also not be able to pay tolls or service charges. In these situations, the Government should consider Viability Gap Funding (VGF) to the transport projects where examples can be drawn from cases of India where limitation can be set for VGF (India generally applies 40%). The Government should come up with a clear strategy on investing or mobilizing resources for the creation of Viability Gap Funding. In this, the government makes a direct fiscal contribution to pay for a portion of costs that is not covered by the project revenues. However, in additional to direct fiscal contributions, indirect ways to make a fiscal contribution to a projects exist, such as providing concessional loans, guarantees, or paying for project preparation—often called 'implicit subsidies'.

6.9 For the development of PPPs, sizeable investments require large amounts of capital, which even businesses with strong financial backing are not able to provide. Nepal's financial market cannot meet this high demand with the current structure. In this, the capacity of the financial sector also has to be built to evaluate project viability of PPP projects and provide long long-term and non-resource financing. A mechanism for access for funding and long term financing has to be developed that meets the need of PPP projects with less government control.

6.10 Institutional hub and project bank for PPP has to be created as establishing project bank helps in developing projects and subsequently marketing. However, in the Nepalese context, even for project banks created at the government institutions, the capacity constraints at the government level may restrict the possibility of bringing out project to the nature of private attractions. Therefore, establishing some advisory services (government with private sector)—like in India—could accelerate the process. Hence, the Government should try to encourage private sector to come up with advisory services to support PPP.

6.11 The government needs to do adequate marketing of PPP.

6.12 Existing "Private Financing in Build and Operation of Infrastructures Act, 2063 (2006)" has not served its purpose. Hence, changes in the Act have to be made.

6.13 As transport sector needs other sectorial benefits to justify the financial return developing liberal attitude towards accepting unsolicited proposals for preparing Detailed Project Report is necessary. However, while implementing this, problems from past experience should also be addressed where unsolicited proposals may have very little stakes for the proposer and genuine investors have a possibility of being driven out or blocked by the commissioned agent or broker type proposers. In view of the several permits/license given in the past for fast track, airport, and hydropower etc, this mode has seen such problems.

6.14 Since the environment for smooth and uninterrupted development of work is one of the main concerns of the investors/ builders, minimizing bureaucratic hassles in obtaining and implementing PPPs is of key priority. A dedicated committee to look after day to day functioning of PPP activities which is free of bureaucratic hassles and constraints is required.

6.15 The case of implementation of PPP at local levels by the local bodies and large scale projects need to be addressed specifically in coherence to the acts, regulations and laws such as the Local Self Governance Acts so that conflicting provisions do not exist.

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Annexes

Annex I: Comparative Chart of Total Road Length Influenced Population and Density (1951-2009/2010)

Year	Description	Total length of Road (km)	Influenced Population (no. per km)	Road Density (km./100 sq. km)
1951	Year of Democracy	376.00	21250	0.30
1956	1st (five year) plan	624.00	13609	0.40
1962	2nd (five year) plan	1193.00	7970	0.80
1965	3rd (five year) plan	2049.00	5130	1.40
1970	4th (five year) plan	2504.00	4600	1.70
1975	5th (five year) plan	3173.00	3800	2.20
1980	6th (five year) plan	4940.00	2844	3.40
1985	7th (five year) plan (2042)	5925.00	2840	4.00
1990		7330.00	2579	5.00
1991	8th (five year) plan (2047)	8328.00	2217	5.70
1995		10724.00	1741*	7.30
1998	9th (five year) plan (2054)	13223.00	1398*	9.00
2000		15905.00	11637*	10.80
2002	10th (five year) plan (2058)	16834.00	1375**	11.40
2004		17280.60	1340**	11.70
2006/07		18828.01	1230**	12.79
2009/10		20263.65	1143**	13.77

* Population Census 1991

** Population Census 2001

Source: Department of Roads (2009/10)

Annex II: Comparative Chart of Strategic Road Network Length, Influenced Population and Density (1998-2009/10)

Year AD	Description	Length			Total	Influenced Population	Density km/100
		BT	GR	ER			
1998	9th (five year plan) 2054	2905.00	1656.00	179.00	4740.00	3901.08*	3.22
2000		2974.00	1649.00	171.00	4794.00	3857.13*	3.26
2002	10th (five year plan) 2058	3028.74	1663.84	168.38	4860.96	4762.73**	3.30
2004		3494.73	883.51	614.49	4992.73	4636.23**	3.39
2006/07		4258.20	2061.7	3079.48	9399.38	2463.08**	6.39
2009/10		4952.11	2065.15	3817.76	10835.02	2136.72**	7.36

* = Population Census 1991

** = Population Census 2001

BT – Blacktop

GR – Gravelled Road

ER – Earthen Road

UC- Under Construction

PL – Planned Road

Source: DoR (2010)

Annex III: Comparison of Access to Roads in Selected South Asian Countries (2007)

	Bangladesh	Bhutan	India	Nepal	Sri Lanka
Road Density in terms of land (km/1000 km2 of land)	2,079	93	2,226	121	1,422
Road Density in terms of population (km/1000 people)	1.9	6.5	3.0	0.6	4.7
Paved Roads (% of total)	9.5	62.0	47.4	56.9	81.0
Access to all season Roads (% population)	39	47	61	43	65

Source : World Bank 2009d. as cited in Afram & Pero, (2012).

Annex IV: Accessible Populations to Existing & Extended SRN

	SRN Length km	Population served		
		Hill	Terai	Total
Existing Designated SRN 2006	5,030	5.68 50%	11.07 76%	16.74 65%
Existing / Operational SRN 2006	7,360	6.52 58%	13.70 94%	20.22 78%
Committed Additional SRN Links 2010	8,390	7.08 63%	14.00 96%	21.08 81%
Extended SRN 2016	9,930	7.94 70%	14.21 97%	22.15 86%

Note: Total Population of 25.9 million is divided into Hills 11.3 million & Terai 14.6 million

Source : Final Report of the Sector Wide Road Programme (SWRP) & Priority Investment Plan (PIP) Study (2007).

Annex V: Infrastructure Development Initiatives as listed on the Vision Paper of the Government on Infrastructure: Roads and transport (2007)

Long Term Initiatives

- Constructing the Mid-hill East West Highway in addition to the existing East- West Highway in Terai will reduce the remoteness and inaccessibility of most of the regions of the country.
- In addition to improving the existing Hulaki marga in Terai, parallel roads will be constructed in Inner Terai and the mountain region.
- Nepal will be developed as a transit route between India and China by opening additional boarder points and constructing a network of North- South roads.
- Under SAARC Multi-modal transport system, priority will be given to four roads and two railway lines. Similarly, upgradation of East- West Highway and Terai- Kathmandu- Kodari Highway which is a part of the Asian Highway will be given due priority.
- Road network will be developed in such a way that the nearest road head will be reached within four hours in the hilly region and two hours in the Terai region.
- Alternative transport routes such as electric railway lines, ropeways and waterways will be developed and linked to the roads network.
- Considering the landlocked situation of Nepal and extrovert model of development, a balanced approach will be adopted in maintaining relationship with India and China through an introvert model of development.
- Fast track will be constructed to connect Kathmandu with Terai.
- Accessibility of Karnali region will be improved through development of roads network.

- Roads and Transport Regular maintenance will be carried out on 7000km of road and periodic maintenance will be carried out on 1000 km of blacktopped road.
- In addition to this, periodic maintenance of im portant urban roads and extension of Performance Based Maintenance Contract to Strategic Road Network (SRN) will be done. Efforts will be made to clear the roads during monsoon by deploying equi pment in strategic locations. Programmes for improvement of junctions and provision of traffic lights will continue.

Short Term Programmes

- District headquarters of Bajhang, Sankhuwasabha, Mustang, Khotang and Jajarkot will be connected by road.
- A total of 30 motorable bridges will be constructed.
- Two of the narrow bridges along Pathlaiya- Dhalkebar section of East West highway will be widened to allow two-way traffic.
- Detailed design of 25 bridges will be completed.
- Garbage collection points in the urban roads will be provided with the cooperation of munici palities.
- Completion of road improvement works under Road Network Development Project (RNDP).

Medium Term Programmes (3 years)

- Proposed Martyr Road that connects Gorahi, Nuwagaon, Tila, Thawang, Mahat gaon and Rukumkot and Hilsa- Simikot Road will be completed on a priority basis.
- District headquarters of Manang, Solukhumbu, Dolpa, Mugu, Humla and Bajura will be connected by road.

- Completion of Galchi-Trishuli-Dhunchhe road, which connects the Chinese border. Priority will be given to construction of Biratnagar-Kimathanka road, Janakpur- Lamabagar road, Thori- Narayangarh-Gorkha-Larke pass road, Bhairahawa-Butwal-Baglung-Mustang-
- Lomathang road, Nepalgunj-Surkhet-Humla-Hilsa road, Brahmadevmandi-Jogbudha-Satbanjh-Darchula-Tinkar road and other roads linking north south transit points.
- Construction and improvement of Kathmandu-Birgunj road, Kathmandu-Kakarbhitta-Phulbari road, Kathmandu-Nepalgunj road, Kathmandu-Bhairahawa-Sunauli road which are a part of SAARC multi-modal transport network will be completed.
- Construction of Birgun-Raxaul-Kolkata-Haldia railwayline, Birgunj-Raxaul-Katihar railway line, which are a part of SAARC multi-modal transport network, will be initiated.
- In order to improve traffic flow, narrow bridges in Pathlaiya-Dhalkebar section of East West Highway will be widened.
- The ongoing development works under Sub-regional Transport Facilitation in Bhairahawa, Birgunj and Kakarbhitta will be completed.
- Completion of improvement works of 536 km of road under the first phase and improvement works of 500 km of road under the second phase of Indian cooperation. Survey and contract award of 500 km of road under the third phase will be expedited.
- Construction of bridges along the roads, which connect the district headquarters, will be completed. These include Martyrs Road, Thori-Barpak-Larke pass road, Okhaldhunga, Diktel, Solukhumbu road, Sunkoshi bridge and Harkapur bridge.
- Completion of rehabilitation of 500 km of roads.
- Completion of upgradation of a total of 25 roads.

- Continuation of construction of 600 km in 9 sectors of the proposed mid hill East West Highway.
- Construction of four numbers of large bridges under turnkey (Design and Build) basis.

Long Term Programmes (20 years)

- Transit facilities and dry port along Indian (22 nos.) and Chinese (10 nos.) border will be developed in such a way that it can handle 10 vehicle at once and can accommodate huge volume of goods.
- Construction of 700 km long East West blacktopped road along Inner Terai will be completed.
- Completion of blacktopped 1,774 km long East West Highway along Mid hills.
- Standard maintenance of 95 percent of central level roads.
- Upgradation of SAARC Corridor road.
- Upgradation of part of the Asian highway in Nepal.
- The length of central road network will be extended to 9,704 km. Within 10 years.
- Road access will be provided to the people of remote areas by developing north south road network.
- An autonomous road agency will be established with active participation of road users for efficient management of central level roads.
- Involvement of private sector will be increased in the construction and operation of roads as per the concept of Build Own Operate and transfer (BOOT).
- High priority will be given to East West railway line in the Terai and Raxaul-Kathmandu Lhasa railway line.

- Efforts will be made to connect Kolkata port by waterways by linking Saptakoshi, Narayani and Karnali rivers to Ganga River in India.
- Ropeways will link some of the tourist destination in the mountains and the Himalayas.

Source: Ministry of Physical Planning and Works (MoPPW) www.moppw.gov.np/pdf/VisionPaperinEnglish.pdf

Annex VI: Donor support in Road development

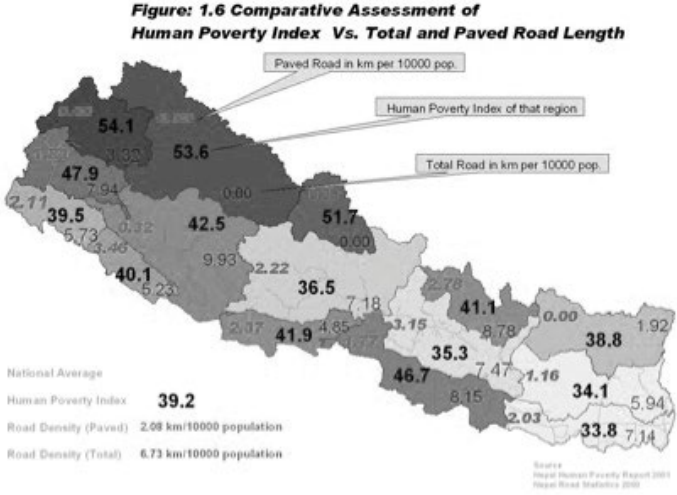
There has been good support from different donor communities towards the development of road sub sector in Nepal. Among the major contributors are India, China, Japan, UK, USA, Switzerland, Germany etc. There is a generous support from Asian Development Bank and World Bank for the development of road networks and also for maintenance/ rehabilitation of existing roads. The following projects are being implemented with donor supports:

- Syafrubesi Rasuwagadhi Road: Grant assistance of Government of China
- Terai Road Project: Grant assistance of Government of India
- Road Improvement Project: Loan from Exim Bank, Government of India
- Banepa Sindhuli Bardibas Road: Grant Assistance from Government of Japan
- Koteshor Bhaktapur Road: Grant Assistance of Government of Japan
- Road Sector Development Project: Grant assistance of The World Bank/IDA
- Road Network Development Project: Loan from Asian Development Bank
- Sub Regional Transport Facilitation Project: Loan from Asian Development Bank

- Kathmandu Terai Fast Track Project Development: Loan from Asian Development Bank
- Road Connectivity Improvement Project: Grant Assistance from Asian Development Bank
- Road Sector Development project preparation: Grant from The World Bank
- Flood Rehabilitation Program: Proposed Grant from Asian Development Bank

Source: Infrastructure Development in Nepal: Opportunities and Challenges for Engineers, Er. Tulasi Prasad Sitaula

Annex VII: Comparative Assessment of Human Poverty Index Vs. Total and Paved Road Length



Source : Pande, K. R (5/21/2012). Strategic Road Network Development. 20 year Master Plan. Ppt presentation.

Samriddhi, The Prosperity Foundation an introduction

Samriddhi, The Prosperity Foundation is an independent non-partisan, not-for-profit, research and educational public policy institute based in Kathmandu, Nepal. As the name suggests, Samriddhi works with a vision of creating a prosperous Nepal.

Initiated in 2007, it formally started its operations in 2008. The specific areas on which the organization works are:

i. Entrepreneurship Development
ii. Improving Business Environment
iii. Economic Policy Reform
iv. Discourse on Democracy

Centered on these four core areas, Samriddhi works with a three-tier approach—Research and Publication, Education and Training, Advocacy and Public Outreach.

As per the above mentioned four core areas, Samriddhi has been performing educational programs and researches—publishing several books, handbooks, articles and other publications. Samriddhi is also known for creating a discourse on contemporary political economic issues through discussions, interaction programs and several advocacy and outreach activities. With successful programs like "Last Thursdays with an Entrepreneur", it also holds regular interaction programs bringing together entrepreneurs, politicians, business community, bureaucrats, experts, journalists and other groups and individuals making an impact in the policy discourse. It also hosts the secretariat of the 'Campaign for a Livable Nepal', popularly known as Gari Khana Deu.

One of Samriddhi's award winning programs is a five day residential workshop on economics and entrepreneurship named Arthalaya, which intends to create a wave of entrepreneurship and greater participation among young people in the current policy regime.

The organization is also committed towards developing a resource center on political economic issues in Nepal with its Political Economic Resource Center (PERC). Besides this, Samriddhi also undertakes localization of international publications on the core areas of its work. Samriddhi was the recipient of the Dorian & Antony Fisher Venture Grant Award in 2009 and the Templeton Freedom Award in 2011.

(For more information on the organization and its programs, please visit www.samriddhi.org)

More from Samriddhi...

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02. Towards Enterprise Building in Nepal (Vol. II)
03. उद्यमशीलता विकासः हाते पुस्तिका
04. Economic Growth: a pocketbook series
    i. आर्थिक स्वतन्त्रता
    ii. उद्यमशीलता विकासमा बजारको भूमिका
    iii. बजारका गुणहरु
    iv. Role of Rule of Law in Enterprise Building
    v. Role of Government in Enterprise Building (Vol. I)
    vi. Role of Government in Enterprise Building (Vol. II)
05. Economic Growth and The Private Sector of Nepal
06. दासत्वको बाटो (Nepali Translation of "The Road to Serfdom")
07. Nepal Economic Growth Agenda (NEGA), Report 2012
08. Critical Constrains to Economic Growth of Nepal
09. Review of Agriculture Sector and Policy Measures for Economic Development in Nepal
10. Review & Overview of Economic Contribution of Education in Nepal
11. Investment Prospects & Challenges for Hydropower Development in Nepal
12. Review & Overview of Economic Contribution of Tourism Sector in Nepal

All the publications are available in Samriddhi, The Prosperity Foundation and major bookstores in the country.

"Private Sector Participation in Infrastructure Development in Nepal" is the detailed study report prepared on transport infrastructure for the Nepal Economic Growth Agenda (NEGA), Report 2012.

The NEGA Report 2012, being a consolidated document suggesting reforms on five key sectors of the Nepalese economy, is based on five detailed reports like this where the other four sectors are agriculture, education, hydropower and tourism.

This study on infrastructure has looked upon the sector from the perspective of economic growth and recommendations are based on how the sector can grow and consequently play a greater role in the economic growth of Nepal. Overall the report outlines the key hurdles impeding growth and provides recommendations to remove those hurdles while introducing new ideas to build on the potential in this sector.

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