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**Improving Rural Connectivity and its Impact on Sustainable Development Goals (SDGs) – Case of
Nepal Findings & Recommendation**

(Presentation for EST Plenary Session 3 of the Provisional Programme)

Final Draft

This presentation has been prepared by Mr. Kamal Raj Pande, Transport Expert for the Tenth Regional EST Forum in Asia. The views expressed herein are those of the author only and do not necessarily reflect the views of the United Nations.

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Improving Rural Connectivity and it's Impact on Sustainable Development Goals (SDGs) – Case of Nepal Findings & Recommendation

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14-16 March 2017, Vientiane, Lao PDR

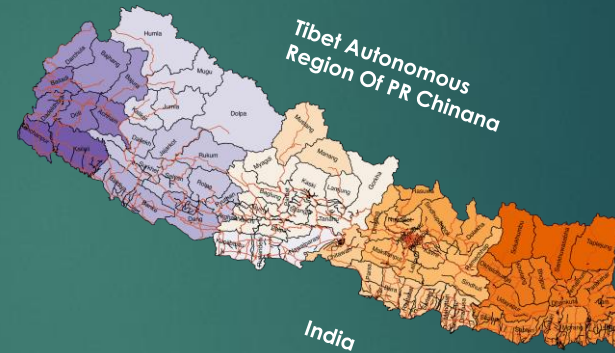
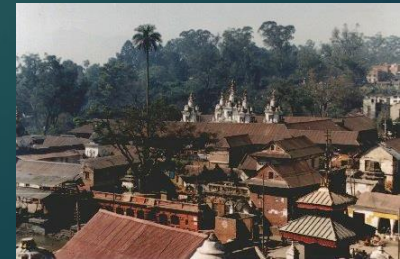
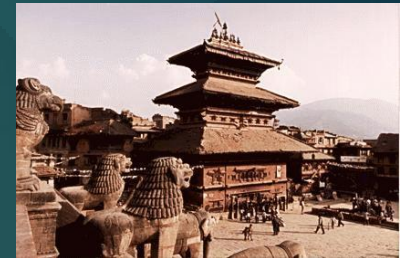


Nepal at a Glance

Federal Democratic Republic Nepal

Three Tier of Governance

Central, Provincial & Local Level



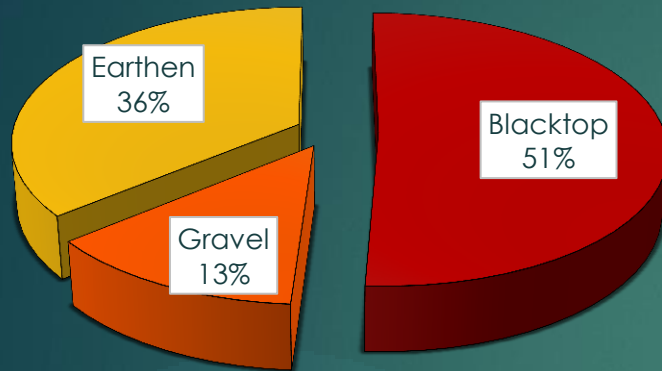
Total Area 147181 Sq Km
 Population 26.2 Million
 Rural population 82%
 Urban 18%
 Per Capita Income: US\$ 762 (2015)

Geographical Division	Land	Population
Himalayan region	35%	7.45%
Hills and Mountain	42%	44.46%
Low land Terai	23%	47.49%

Total Annual Budget: 10 billion USD (2016/17)
 Transport Sector Share: 10 % (approx.)
 Rural Transport Share: (1/3rd of Transport Sector)

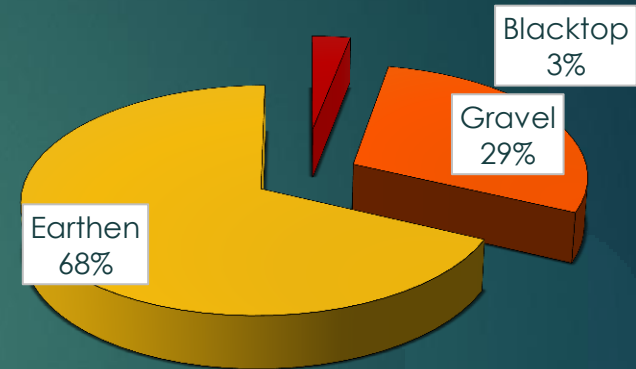
Nepal Road System

Total SRN Length 12494 km



■ Blacktop ■ Gravel ■ Earthen

Total LRN Length 50,943 km

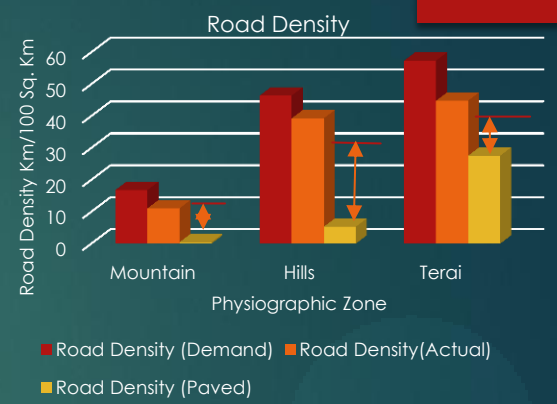


■ Blacktop ■ Gravel ■ Earthen

Road Class	Km (2012)	Description	Respective Network
National Highways (NH)	12,493	The Main Arterial Route	DOR
Feeder Roads (FR)		Important Roads with a more Localized Nature	
District Road Core Network (DRCN)	23,136	Roads Connecting Village HQ (economic centers)	DDC
Urban Roads	3,000	Roads Within a Municipal Boundary	Municipality
Villages Roads	>27,000	Non-through roads linking single villages to roads of a higher class.	VDC

Issues & Challenges

- ▶ **Operational Rural Roads**
(55% non-operable)
- ▶ **Accessibility**
- ▶ **Development on Stages**
- ▶ **Resource for Maintenance**
- ▶ **High Cost**



22% Population yet to walk 4 hrs. in Hills/ Mountains & 2 hrs. in Terai to reach reliable road network.

- Track Opening
- Fair Weather Road
- Provision of Bridges
- Paved (All Weather Road)
- Creation of District Road Maintenance Fund

Major Initiatives

- ▶ **District Transport Master Plan**
- ▶ **District Road Core Network (Priority)**
- ▶ **Local Road Bridge Program**
- ▶ **Local Road Improvement Projects**

- Rural Access Program (RAP)
- Strengthening National Rural Transport Programme (SNRTP)
- Local Road Improvement Project (LRIP):
- Decentralized Rural Infrastructure and Livelihood Project (DRILP-AF)
- UNNATI
- EEAP
- RRRSDP

Impact of Improved Rural Road

▶ Nepal Living Standards Surveys:

- ▶ Increased household accessibility to Primary Schools, Local Markets, Primary Healthcare etc.

▶ Rural Road Improvement Impact Study (ADB)

- ▶ Operationalization of regular rural transport services
- ▶ Travel time reduced by 58%
- ▶ 19% reduction on VOC
- ▶ Reduced poverty by 21% in project area
- ▶ the per capita income of the population increased by 102% with the introduction of access roads.

Percent of household within a reach of 30 minutes			
Facility	Nepal Living Standard Survey		
	1994/95	2003/04	2010/11
Primary School	88.4	91.4	94.7
Secondary School			71.5
Higher Secondary School			56.3
Health Post/Sub-health Post	44.8	61.8	61.8
Public Hospital			33.6
Private Hospital/Clinic			53.4
Bus Stop	33.1	53.0	66.2
Paved Road	24.7	37.2	51.4
Dirt Road Vehicle Passable	58.0	67.6	79.8
Dirt Road Vehicle Impassable		94.3	97.1
Local Shops/shops		86.2	92.0
Haat Bazaar	41.4	60.7	64.0
Market Center	24.2	34.4	44.7
Agriculture Center	24.5	31.9	42.8
Cooperatives	25.9	33.7	53.9
Bank	20.7	27.8	39.9

Impact of Improved Rural Road

- ▶ Increased access to finance at local
- ▶ Funds provided to the community supported and sustained over 130 savings and credit companies.
- ▶ A surge in employment was recorded in the areas as the locals participated in construction of the road networks. Marginalized community are seen as major beneficiaries.
- ▶ A process of empowering both the women and disadvantaged groups.



Impact of Improved Rural Road

- ▶ The return on investment of any road is greater to a country than individual households.
- ▶ Labor-based roads V/S equipment-based roads – 30% more return on investment
- ▶ By introducing critical rural link, the cost of transporting goods has found to have reduced by almost seven times.

Impact of Improved Road

Table 14. Impact of DRSP Roads

Impact	Indication	Link to
Access to Roads	<ul style="list-style-type: none"> • The proximity to road increased (i.e., to four hours or less walk to road) for about 100,000 of the population residing around the six roads • Half of the beneficiaries are under one hour of the road. 	Connectivity
Access to Services	<p>95% of the sampled population using access roads to reach district headquarters.</p> <p>55% of the population used the access roads to travel to the regional markets with small retail shops being set up along the roads.</p> <p>Increase in the number of women accessing health posts for antenatal care.</p> <p>Women could travel and come back the same day.</p> <p>Education facilities were opened nearby.</p>	Access to Market, Education and Health Facilities
Transport Services	<ul style="list-style-type: none"> • Heavier vehicle such as buses, cars were more common. • Fare prices were in the range from NPR 2.6/km in Kavre and Sindhupalchowk to NPR 6.9/km in Okhaldhunga 	Affordability

Impact of Improved Road

Impacts of Roads on Rural Livelihoods	<ul style="list-style-type: none"> Although importance of agriculture has declined, it remains the main source of income followed by non-agriculture wage labor, micro-enterprises, etc. 	Support to Agriculture
Impact on Agriculture Sub-Sector	<ul style="list-style-type: none"> Increased productivity of cereal crops with increase in the cropped area for all crops, excluding maize. Commercialization of potatoes and oranges with increase in access to markets 	Support to Agriculture
Impact on Off-Farm Activities	<ul style="list-style-type: none"> Increase in off-farm income from 7% to 17% Increase in livelihood diversification of the population in the disadvantaged as well as non-disadvantaged groups. New skills related to masonry and gabion weaving were acquired through road construction due to which the population with the skills could earn higher wages. 	Support to Agriculture and skills development
Migration and Remittance	<ul style="list-style-type: none"> After roads were constructed, remittance contributed to only 2% to the household income. Agriculture and local employment remained more important for income than remittances. 	Local income
Changes in Household Incomes	<ul style="list-style-type: none"> Average increase in the income since the roads were constructed was 25% with Janajati and non-advantaged groups benefiting the most. Many disadvantaged groups were not able to have a substantial improvement in their agriculture productivity or diversify their livelihood strategies. 	Increase in average income

Impact of Improved Road

Changes in Household Expenses & Savings	<ul style="list-style-type: none"> • Only 55% of the surveyed population said household produce was only sufficient for six months in a year • 25% of household expenditure was spent on buying food grains, which was followed by expenses on children's school fees and buying vegetables, oils and spices. • 75% of the respondents were part of at least one savings and credit group with majority of them being women. 	Increase in household savings
Changes in Living Standards	<ul style="list-style-type: none"> • Increase in latrines from 7% to 65% for disadvantaged groups and from 41% to 80% for non-disadvantaged groups. • Significant increases in the use of metal roofing sheets. • Access to the national grid due to grid expansion with the advent of the roads. 	Access to better sanitation
Gender Empowerment	<ul style="list-style-type: none"> • Increase in security for women as they could travel to their destination and return on the same day. • Equal pay and work during construction of roads empowered the women • Formation of groups gave opportunities to share knowledge about women's health, education, etc. 	Gender equality

Impact of Improved Road

Economic Impact and Benefits	<ul style="list-style-type: none"> • The economic rate of return (based on traffic growth) of the Dolakha-Singati road, Sindhulimadi-Bhimsenthan road and Ghyangdanda-21kilo road is greater than the projections of the development banks. • Increase in the value of land in closer proximity to the road. • The economic rate of return (based on agricultural production, land and social benefits) of the Dolakha-Singati road, Ghyangdanda-21kilo road and Sindhulimadi-Bhimsenthan road are in the range 33-39%. 	Economic return	
Impact on Governance	<ul style="list-style-type: none"> • The DRSP transparency tools helped to provide fair opportunities for the poor and women. • Public audits and public hearing helped in smooth running of the project. 	Support to good governance	

Conclusion & Recommendation

- ▶ Current Rural Road Programs are targeted to some extent to support and achieve SDGs
- ▶ The rural transport extensions remains a challenges. Around 5,000 km is yet to be built to connect remaining village economic centers.
- ▶ Sustainable Maintenance Fund for rural road: consolidation and bringing the network in a maintainable condition.
- ▶ Network upgrading to sealed all-weather roads to ensure affordability, reliability and safety.



Conclusion & Recommendations

- ▶ **Policy Formulation:** Strengthening the policy guideline to reflect and monitor SDGs contributed by improved rural roads connectivity.
- ▶ **Planning & Design:** Reflecting and incorporating lessons learned so far in designing and implementing future rural road programs
- ▶ **Investments:** District Transport Master Plan followed, resource allocated and DTMP periodically updated.
- ▶ **Research and development:** on maintaining the serviceability of the rural road particularly in hills and mountains.



Thank You for the Patience

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