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**TENTH REGIONAL ENVIRONMENTALLY SUSTAINABLE TRANSPORT (EST) FORUM IN ASIA,**  
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## **Rural-Urban Connectivity in Achieving Sustainable Regional Development**

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

**Final Draft**

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This presentation has been prepared by Mr. C. R. C. Mohanty, UNCRD 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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# Rural-Urban Connectivity in Achieving Sustainable Regional Development

*C.R.C. Mohanty, Environment Unit, UNCRD*

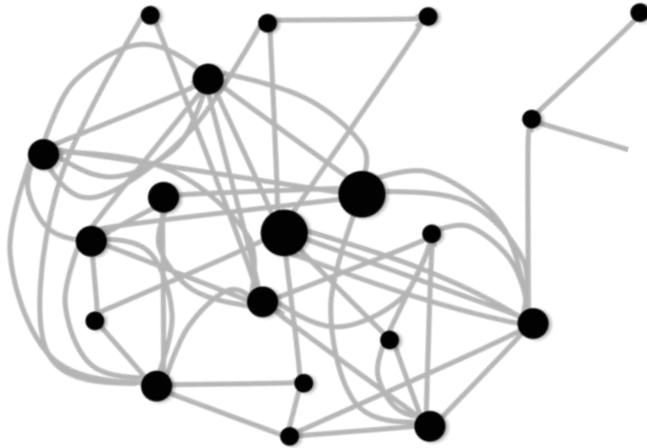
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*Madan B. Regmi, Transport Policy Development Section*

*Transport Division, ESCAP*



# Connectivity



- The capacity for areas and people to be connected, either physically or non-physically, through transport or communication
- The level of connectivity depends on the number of connections between nodes, which can have a considerable impact on the economic development of a region

Trade and  
transport  
Connectivity

People-to-  
people  
Connectivity

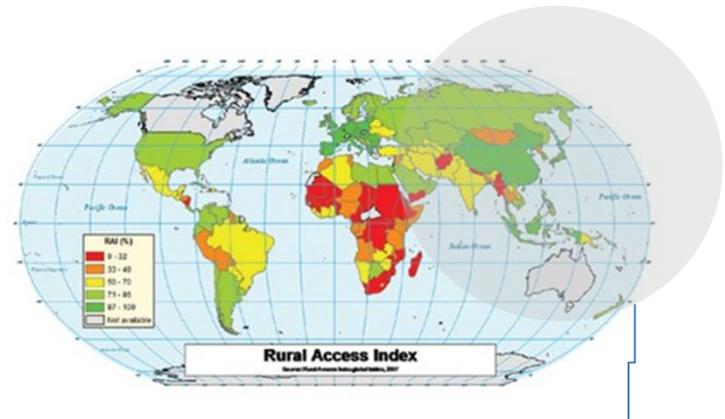
Energy  
Connectivity

Information and  
Communications  
Connectivity



# Connectivity Status Asia Pacific

- The Rural Access Index (RAI) is a measure of rural road access defined by households within 2 kilometers of an all-season road.
- Areas lacking connectivity are more likely to be economically disadvantaged and have higher poverty incidence.
- The rural-urban transport connectivity is often in poor condition in many developing countries in Asia. Many remote villages are still isolated and yet to be connect with national corridors and highways.



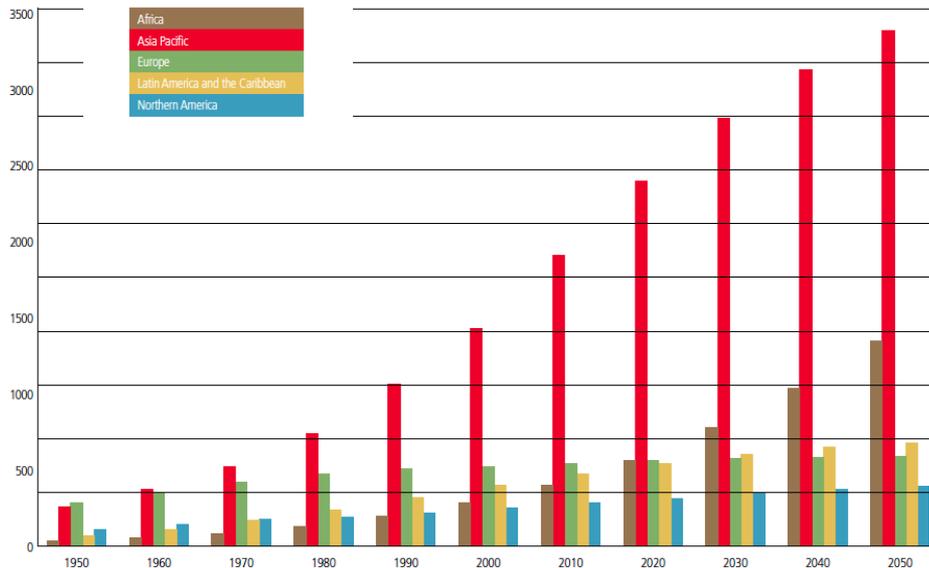
**40% of the Asia Pacific region or 700 million people do not have all-weather road access (ESCAP, 2015)**

- As a result, the economic growth and productivity between the rural and urban regions is widening significantly - adding to the increasing inequality in the region.



# Patterns of Development

Urban Population growth 1950 – 2050 (thousands)



Source: World Urbanisation Prospects: The 2014 revision, File F03

- Since 2008 more people live in urban areas than rural areas.
- Asia and the Pacific has experienced huge urban growth alongside economic development over the past few decades.
- 80% of the region's GDP is produced by 40% of the region's urban population.
- Contribution to urban growth from rural migration is between 25-40%.
- 1 in 3 urban dwellers lacks proper access to shelter, safe drinking water or sanitation.
- Urban-rural disparity is increasing.

Improving transport connectivity between rural and urban areas can stimulate economic growth outside of cities and reduce the push factors of migration.



UNCRD

SUSTAINABLE  
DEVELOPMENT  
GOALS

UNITED NATIONS  
**ESCAP**  
Economic and Social Commission for Asia and the Pacific

# Transport Connectivity

- Improving rural people access to essential utilities and basic services requires adequate and efficient rural-urban connectivity via road, rail, water, air, and non-motorised transport.
- Better transport connectivity can contribute to poverty eradication and food security through economic activities, agriculture productivity, women empowerment and social development, which contribute substantially to the rural communities for achieving the sustainable regional development.



## Rural-urban connectivity and the Sustainable Development Goals

- Poverty Eradication
- Hunger Elimination
- Access to Basic Utilities and Services
  - Education
  - Water and Sanitation
  - Energy
  - Health Care
- Reduced Community Inequalities
  - Gender equality
  - Economic disparity
- Reliable and rural-urban connectivity
- improved Economy through Market Access
  - Employment opportunities
  - Administrative facilities
  - Climate Adaptations



## Good Examples and Case Studies

- Study shows that the introduction of the Rural Infrastructure Program II of Bangladesh helped to increase of 197% in household income in addition to reduction in travel costs and increases in secondary school and healthcare service attendance (Sieber & Allen, 2016).
- Khandker and Rosenzweig (1993) analysed large survey databases in India with many variables, where they found that the roads transport contributed directly to agricultural production by 7%.



# Transport Modes for Rural-Urban Connectivity



Road



Inland  
waterway  
transport  
(IWT)



Rail

Intermodal  
transport

Use modes  
of transport  
to their full  
potential



Children going to school in  
Plempungan, Indonesia



# Road Investment

Creating new connections

Improving existing connections



- Research in the Asia Pacific and Africa shows that investment in new roads has greater impact on development than improving existing connections.
- In Laos PDR new roads significantly decreased poverty incidence<sup>1</sup>.
- In China, road access increased off-farm work thereby increasing household incomes and reducing push factors to migration<sup>2</sup>.
- Road investment outcomes depend on current road density and connectivity status within a region.

1 - Warr, 2007

2 - Qiao et al., 2014



# Considerations for Road Development



## Road Safety

The Asia Pacific region accounts for 58% of traffic fatalities worldwide. Road safety and protection of VRU in road investment should be prioritized.

## Regulation

Regulation of intermediate modes of transport and transport services should be improved without compromising the mobility of rural inhabitants.

## Maintenance

Maintenance of new and existing roads is essential to the sustainability of road connectivity. There is a need for institutional capacity building to support this.

## Transport Services

In order for road connectivity to reach the most vulnerable people accessible, affordable and safe transport services must be provided.



# Inland Waterway Transport (IWT)

National (freight)

Local (passenger)

- Cost-effective, environmentally friendly, safe and efficient.
- Supported by much natural terrain in the region as well as man-made waterways.
- Provides connectivity between urban areas and isolated rural areas left unconnected by roads and rail.
- An indigenous form of transport that is sustainable, socially accepted, locally operated, homegrown and adaptive to technology.
- IWT not used to its full potential in the Asia Pacific.



# Considerations for IWT Investment



## Environment

IWT should be viewed as part of the wider water system to avoid compromising water use for other purposes. Pollution must be combatted for sustainable IWT.

## Investment

IWT investment needs to be prioritized through raising the profile of IWT and placing emphasis on policy and planning integration between the relevant stakeholders.

## Regulation

Regulation should focus on implementing safety measures and ensuring convenient services that are integrated into the wider transport network.

## Sustainability

Accessibility needs of users and existing modes of transport should be carefully considered, including factors such as cost, location, access and design inclusivity of disadvantaged groups.





- Cheaper alternative to road transit with less congestion, higher levels of safety, lower energy consumption, lower CO2 emissions and less air pollution (except diesel).
- Provides large-scale rural-urban connectivity but depends on intermodal connections to stations.
- Can promote economic growth and investment in rural areas.
- High speed rail can be inaccessible to the poorest communities due to high prices, which can lead to reduced economic and social ties as migrants stay in cities.



# Recommendations for improving rural-urban transport connectivity

- Integrate rural-urban connectivity with rural development plans
- Strategically expand connectivity of the transport network
- Improve measures of connectivity
- Encourage long-term investment into IWT for rural-urban connectivity
- Develop sustainable and accessible transport services



**Thank you !**