

**Intergovernmental Tenth Regional Environmentally  
Sustainable Transport (EST) Forum in Asia  
Regional Seminar on Inclusive and Sustainable Transport  
&  
Vientiane International Mayors Forum  
14-16 March 2017**

**Mainstreaming Disaster and  
Climate Risks into the Road  
Sector in Lao PDR**

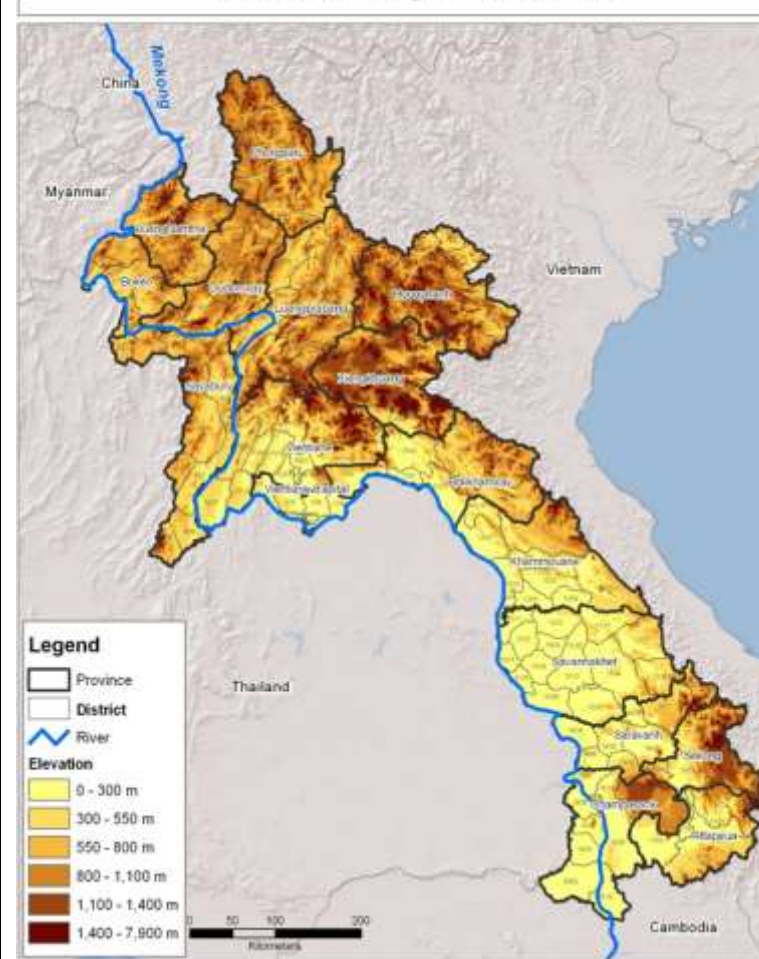
- 1. BRIEF OVERVIEW OF LAO PDR**
- 2. LAOS ROAD NETWORK**
- 3. ANNUAL LOSS OF TRANSPORT INFRASTRUCTURE CAUSED BY NATURAL DISASTER**
- 4. MAINSTREAMING DISASTER AND CLIMATE RISKS INTO THE ROAD SECTOR IN LAO PDR**

# 1. BRIEF OVERVIEW OF LAO PDR

## Administrative Boundary of Lao PDR



## Elevation Map of Lao PDR



## STATISTICS

<b>Province:</b>	<b>18</b>
<b>Area:</b>	<b>236.800 km<sup>2</sup></b>
<b>Population:</b>	<b>6.492.228 (2015 census)</b>
	<b>Density 27,4 / km<sup>2</sup></b>
<b>GDP (PPP)</b>	<b>2016 estimate</b>
● <b>Total:</b>	<b>US\$ 40,962 billion</b>
● <b>Per Capital:</b>	<b>US\$ 5.718</b>
<b>GDP (Nominal)</b>	<b>2016 estimate</b>
● <b>Total:</b>	<b>US\$ 13,761 billion</b>
● <b>Per Capital:</b>	<b>US\$ 1.921</b>

## 2. LAOS ROAD NETWORK

### CURRENT STATUS OF ROAD NETWORKS

<i>Type of road</i>	<i>Concrete</i>	<i>Asphalt</i>	<i>DBST</i>	<i>Gravel/Earth</i>	<i>Total</i>
<i>National Road</i>	<b>75,82</b>	<b>635,35</b>	<b>5.146,91</b>	<b>1.590,38</b>	<b>7.448,46</b>
<i>Provincial Road</i>	<b>47,01</b>	<b>65,90</b>	<b>1.140,72</b>	<b>7.123,06</b>	<b>8.376,69</b>
<i>District Road</i>	<b>9,46</b>	<b>7,50</b>	<b>439,63</b>	<b>5.946,43</b>	<b>6.403,02</b>
<i>Urban Road</i>	<b>164,25</b>	<b>97,22</b>	<b>912,86</b>	<b>1.545,99</b>	<b>2.720,32</b>
<i>Rural Road</i>	<b>1,45</b>	<b>4,00</b>	<b>300,70</b>	<b>23.531,95</b>	<b>23.838,10</b>
<i>Special Road</i>	<b>12,63</b>	<b>4,33</b>	<b>331,42</b>	<b>2.462,05</b>	<b>2.810,43</b>
<i>Total length (Km)</i>	<b>310,62</b>	<b>814,30</b>	<b>8.272,24</b>	<b>42.199,86</b>	<b>51.597,02</b>
<i>Percentage (%)</i>	<b>0,60</b>	<b>1,58</b>	<b>16,03</b>	<b>81,79</b>	<b>100</b>

### 3. ANNUAL LOSS OF TRANSPORT INFRASTRUCTURE CAUSED BY NATURAL DISASTER

<b>Year</b>	<b>Type of Disaster</b>	<b>Affected Properties</b>	<b>Affected Value in Billion LAK (Million USD)</b>	
<b>2011</b>	Flood, Landslide	Roads and Bridges	554,27	(68,43)
<b>2012</b>	Flood, Landslide	Roads and Bridges	402,94	(49,75)
<b>2013</b>	Flood, Landslide	Roads and Bridges	323,79	(39,97)
<b>2014</b>	Flood, Landslide	Roads and Bridges	573,95	(70,86)
<b>2015</b>	Flood, Landslide	Roads and Bridges	794,15	(98,04)

## **4. MAINSTREAMING DISASTER AND CLIMATE RISKS INTO THE ROAD SECTOR IN LAO PDR**

### **4.1 ROAD SECTOR VULNERABILITY TO CLIMATE CHANGE AND NATURAL DISASTERS**

- ▶ Lao PDR is presented with a number of primary natural hazards, including flooding, drought, landslides and windstorms, as well as human induced hazards such as fire.
- ▶ The frequency and intensity of hydro-meteorological extremes is likely to increase.
- ▶ Typhoon Ketsana killed 28 people, and affected 200,000 others, causing widespread damage to crops, housing and infrastructure. Tropical storms Haima and Nock- Ten In 2011 struck, 300,000 people were affected and 26 died.

## 4.2 ROAD CHARACTERISTICS

- Road transport currently represents more than 90% of total passenger-kilometers traveled and more than 80% of weight-kilometers of freight moved in the Lao PDR.
- The country depends primarily on road transport and, to a lesser extent, on river and air transport.
- Motor vehicles are the dominant mode of transport, carrying more than 80% of total freight ton-kilometers and more than 85% of total passenger-kilometers.



## 4.3 INSTITUTIONAL AND PLANNING FRAMEWORK

- ▶ The national socioeconomic development plan includes four main objectives: (i) sustainable economic growth; (ii) achievement of the Millennium Development Goals by 2015; (iii) graduation from Least Developed Country status by 2020; and (iv) sustainable economic, social, and environmental development.
- ▶ Priority is placed on creating an efficient transport system to favor conditions for sustainable growth, poverty reduction, and regional integration to graduate from a landlocked to a land-linked country.

## 4.3 INSTITUTIONAL AND PLANNING FRAMEWORK (CONT.)

### *Strategy*

- ▶ The *transport strategy* up to 2020, the government articulates its aim to facilitate the transition of GMS highway corridors to economic corridors by integrating road development with industrial areas and other economic drivers.
- ▶ The *main strategies* are to develop strategic roads that are important for (i) national economic development; (ii) national economic defense and local economic development; (iii) national and public security; and (iv) national policy- alleviation of poverty.

## 4.3 INSTITUTIONAL AND PLANNING FRAMEWORK (CONT.)

### **Goals**

1. All weather road access for poor districts and focal areas;
2. Strengthen transport linkages with neighbouring countries;
3. Institutional capacity building;
4. Road maintenance;
5. Road use regulation;
6. Protect the environment and ensure social equity;
7. Road Safety;
8. Private sector participation; and
9. Community participation.

## 4.3 INSTITUTIONAL AND PLANNING FRAMEWORK (CONT.)

### ***Development Plan***

The Road Network Development Plan (2011-2020) plan has defined the vision for national roads as “spear head, comfortable, safe, modern, connectivity and transparent in implementation of 2 strategies.

## 4.4 LEGAL AND REGULATORY FRAMEWORK

*There main legal documents:*

1. Road Law;
2. Road Traffic Law; and
3. Road Transport Law.

The Road Law (1999) establishes the powers and responsibilities of various agencies for road planning, design, construction, and maintenance at the national, provincial, district, municipal, and village levels. The Road Law also provides the framework for setting technical standards and requirements.

## 4.4 LEGAL AND REGULATORY FRAMEWORK (CONT.)

**Article 15**, In relation to environmental management, requires that road construction shall be undertaken in accordance with public safety and environmental protection considerations. This clearly requires environmental protection during road construction and imposes duties to monitor environmental impacts on MPWT and local government agencies.

**Article 31** gives the ministry in charge of roads the power and function to “set up the organization, management, control, planning, survey, design, construction, maintenance, repair, and use procedure of the road throughout the country.”

## 4.5 KEY CHALLENGES ON MAINSTREAMING DISASTER AND CLIMATE RISK MANAGEMENT

1. Sustained Improvement;
2. Financial Constraints;
3. Building Capacity and Unified Road Management Framework (URMF);
4. Needs for Road Maintenance;
5. Road Maintenance systems; and
6. Prioritization.

**Khop Chai**

**Thank you**