

2016/17 KNOWLEDGE SHARING PROGRAM WITH Costa Rica

Center for International Development
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Development of National DB Center for Transport Planning

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Background and Objectives

- ▶ **Costa Rica's transport infrastructure sector has long suffered from insufficient and ineffective investment, resulting in a congested and poor-quality transport network**
 - **Costa Rica faces severe problems for roads, ports and railways**
 - **The road network is extensive but of poor quality, railways are poor condition, seaports quality and capacity are underprovided**
 - **Public transport system overly relies on private road, especially railways are inadequate**
 - **Costa Rica ranks 115th for quality of roads, 95th for railroads, 109th for ports and 60th airports (WEF 2015)**

Background and Objectives

- ▶ **Costa Rica government is aware of the transport infrastructure spending shortfall and making effort to increase economic growth and social welfare by investing transport projects**
 - **National Transport Plan 2011~2035 (MOPT, 2011) calls for annual spending of about 3.7% of GDP to 2035**
- ▶ **The size of the investment productivity depends on the effectiveness and efficiency of the transport planning ; ways of selection and prioritization of the transport projects**
- ▶ **Reliable and consistent (standardized) transport DB is required to enhance the efficiency and credibility of the transport planning**

Background and Objectives

- ▶ **The purpose of this study is to suggest policy recommendations to develop Transport DB in Costa Rica more efficient, consistent and reliable, and to provide suggestions for the establishment of the DB center for Transport Planning in Costa Rica based on the Korean best practices**

- ▶ **Policy recommendations to execute key prioritized activities are delivered**
 - **Foundation of the National Transport DB Commission**
 - **Establishment of the National Transport DB center and it's roles and functions to be a leading source of timely, accurate and reliable transport information**
 - **Database and indicators to develop**
 - **Establishment of solid legal and regulatory framework**
 - **Improvement of decision-making process for transport planning**

Research Methodologies

- ▶ **Conducting diagnostic study on the current situation in Costa Rica**
 - The survey has been done locally in Costa Rica and it is based on a series of interviews with applicable technicians within the Ministry of Public Works and Transportation, and within the institutions that are part of the sector of Transportation and Infrastructure

- ▶ **Conducting case study on Korean best practices and lessons on the transport database development**
 - The study will review Korea's experience and knowledge for establishing and developing the transport data base so that Costa Rica could benchmark Korean best practice
 - Good practices and lessons learned from the Korean cases are provided.
 - Legal and Institutional framework, functions and roles, and DB to develop will be suggested

Current Situation in Costa Rica ; Institutional fragmentation (1)

Institution	Type (budget allocation)	Year of creation	Governing Law	Responsibilities
Institutions with specific responsibility for the transport infrastructure sector				
Ministry of Public Works (MOPT)	Ministry (Central government)	1963	No.3155	Planning agency; issue the National Transport Plan
Technical Civil Aviation Council (CTAC)	De-concentrated agency under MOPT	1973	No.5150	Issuing regulations on air transport and promoting development of airport infrastructure
Road Safety Council (COSEVI)	De-concentrated agency under MOPT	1979	No.6324	Issuing regulations to increase the safety of the road transports
National Concessions Council (CNC)	De-concentrated agency under MOPT	1998	No.7762	Promoting private participation through concessions and PPPs
National Road Council (CONAVI)	De-concentrated agency under MOPT	1998	No.7798	Building and maintaining the road network
Public Transportation Council (CTP)	De-concentrated agency under MOPT	1999	No.7969	Issuing regulations relating to public road transport (i.e. taxis, buses and coaches)
Costa Rican Institute of Pacific Ports (INCOP)	Non-financial public company	1953	No.1721	Port authorities for Pacific ports
Port Management Board of the Atlantic Coast Development (JAPDEVA)	Non-financial public company	1963	No.3091	Port authorities for Atlantic ports
National Railway Institute (INCOFER)	Non-financial public company	1958	No.7001	Managing the railways system (stations, tracks and rolling stock)

Current Situation in Costa Rica ; Institutional fragmentation (2)

- ▶ **The transport planning and decision making processes are highly fragmented among public institutions**
 - **Contribute to excessive policy fragmentation and uncertainty of the projects implementation**
 - **Impose negatively on the overall policy coherence of the transport sector**
 - ex) public transport policy is often the result of individual institutional effort
(Public Transportation Council (CTP))
 - **Lack of enforcement**
 - ex) Though there are guidelines for consistency and common approach, these are only optional to institutions

- ▶ **To overcome institutional fragmentation's problems, a simpler institutional framework is desired**
 - **Pillars for the development of transport DB ; coherence, unity, coordination, integration and enforcement**
 - **A dedicated agency or unit needs to be created**

Current Situation in Costa Rica ; Insufficient and Inappropriate Data

- ▶ **Transport data is used to only monitor fulfillment of national plans**
 - Institutions within the sector of transportation and infrastructure have to send their indicators to the Secretary of Sectorial Planning at MOPT
 - Transport plans come first and then data is collected to validate, or demonstrate that the goals are being fulfilled
 - It is not frequent for data to be used for planning new projects or institution operation
 - There is no data or indicators which help strategic planning link transport infrastructure objectives

- ▶ **Various and comprehensive set of data for (strategic) transport planning and indicators have to develop to identify needs and opportunities**

Current Situation in Costa Rica ; Unreliable Decision-Making Process

- ▶ **Costa Rica heavily counts on qualitative appraisal and does not have a reliable project pipeline as execution**
 - Lack of mandatory guidelines and mandatory procedure for selection and prioritization of the transport projects
 - Lack of quantitative approach such as cost best analysis to decide whether a projects is implemented
 - Expose to political inference for project prioritization and selection, leading to the inefficiency of transport investment

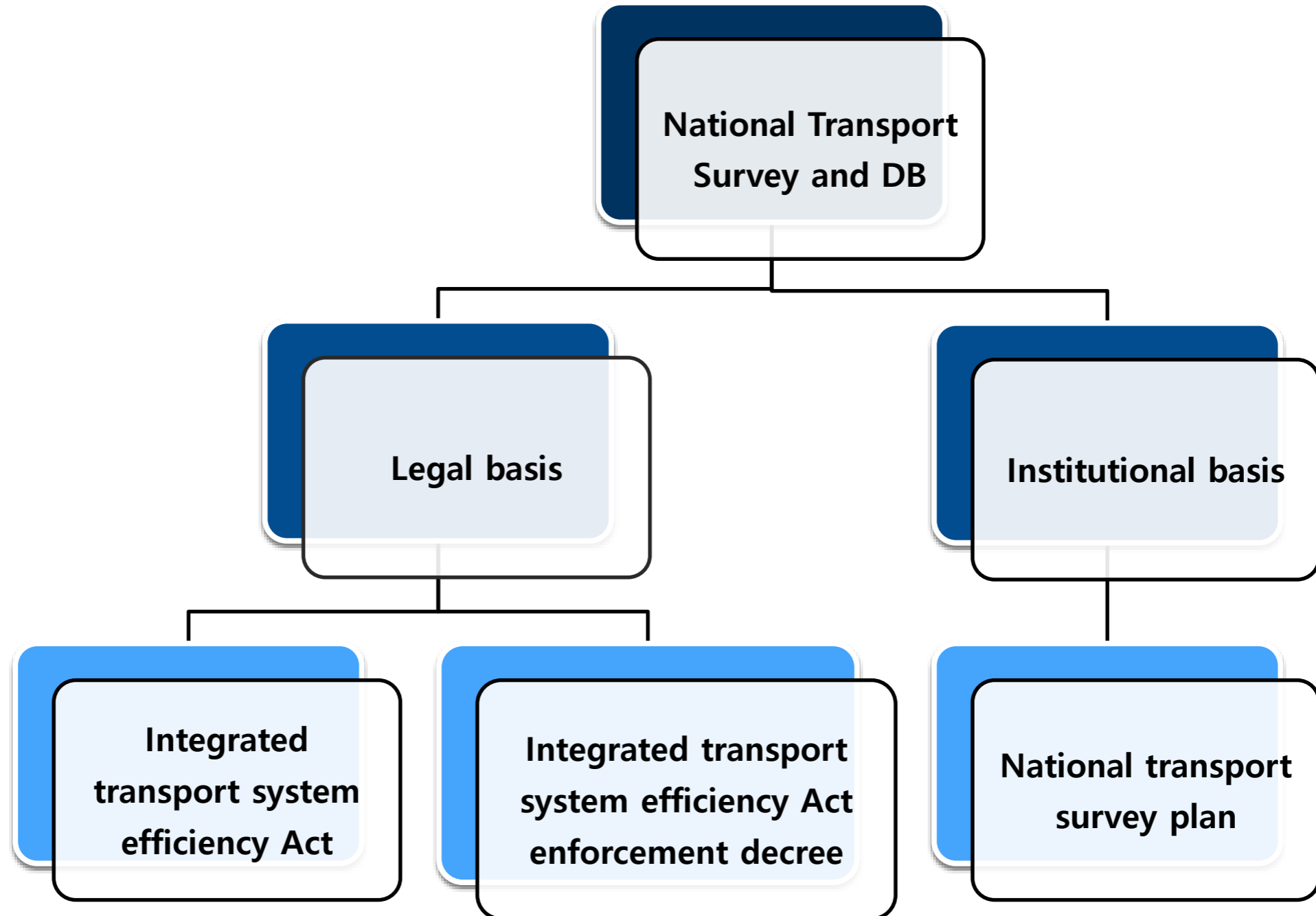
- ▶ **Establishment of transport Database implies not only a way to collect information, but also to give an opportunity to improve the process and way of transport planning**
 - Reliable and consistent transport DB could increase speed and transparency of the project prioritization and selection of the projects, and it enhances the efficiency and credibility of transport planning

Korean Experiences and Implications ; Background of DB Establishment

- ▶ **Unplanned and discrete transport survey**
 - The overlapping and redundant survey
 - The absence of standardized guidelines for survey and analysis
 - The absence of government's comprehensive plan on national transport survey

- ▶ **Transport investment evaluation's validity decline**
 - The lack of transport statistics and standardized data
 - Overestimation of transport demand and underestimation of cost

- ▶ **Lack of transport policy supporting DB**
 - The absence of the information on the external cost of transport (congestion, accident , environment)



Korean Experiences and Implications ; Foundation of KTDB Center

Function

- Gain credibility of basic transport data
- Improve efficiency of transport investments
- Build infrastructure for transport information

Roles

- Building Database with Transport Investigations
- Building Database to Analyze Transport Demand and Predict Future Demand
- Investigation and Analysis of Transport Statistics
- Investigation and Study of Traffic Networks
- Operation and Management of Database Systems and Projects

Responsibilities

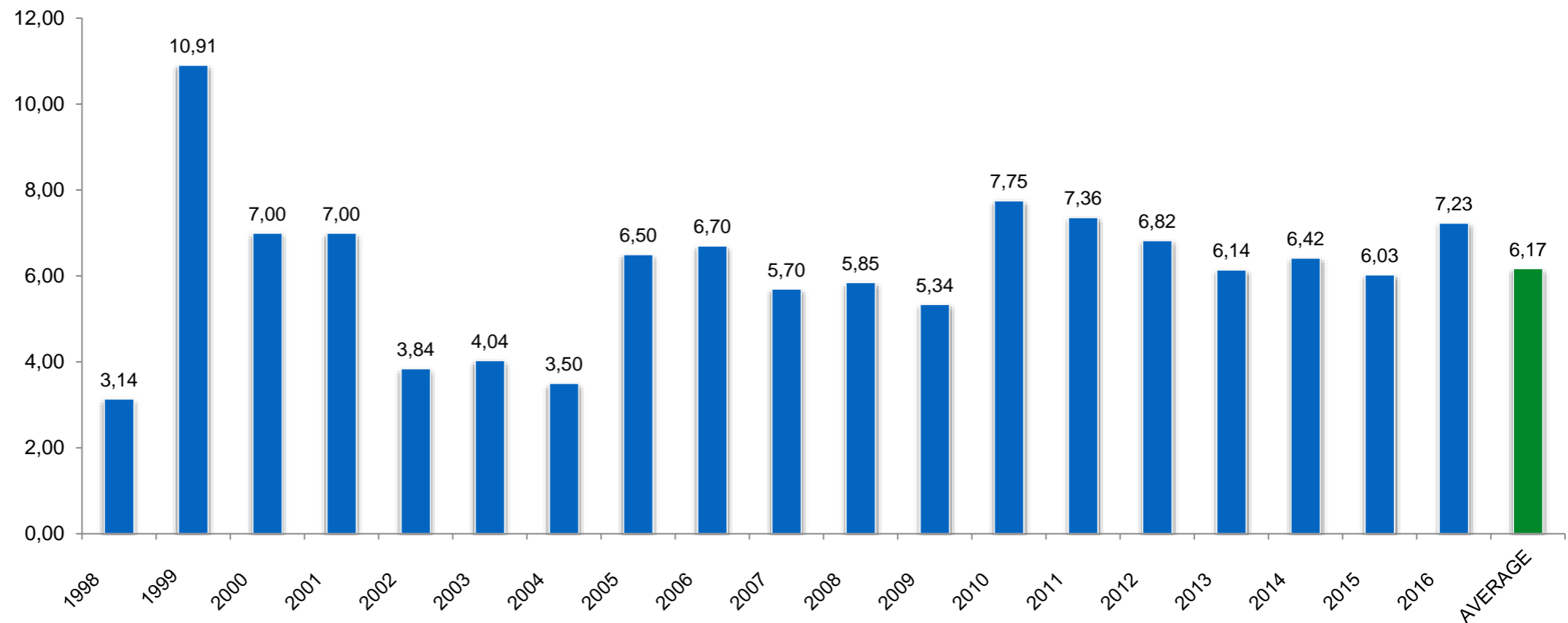
- Organized, advanced, and modernized transport investigation according to the National Transport Investigation Plan
- Improving credibility of investment evaluations by building standardized and consistent time series basic transport data
- Developing indexes to support transport policies and establishing a decision making system

Korean Experiences and Implications ; Budget

▶ Budget trend of KTDB Project

- About 7.2 billion won (around 7.2 million US \$) has spent in 2016 and approximately 6.2 billion won (around 7.2 million US \$) annually

KTDB Project Budget (billion won or million US \$)



Source: KOTI

Korean Experiences and Implications ; Achievements

- ▶ **Increased objectivity and reliability of national transport data**
 - Guidelines promote transparency, consistent and reliability of the transport planning
 - The demand forecasting error was 20 to 300 % before the introduction of KTDB, but the error was reduced to less than 17 %

- ▶ **Reduction of the redundant research(survey) and related budgets by having a standardized analyzing method and data**

- ▶ **Enhancement of the efficiency of the large-scale public investment ; preventing inefficient projects from being initiated and avoiding unnecessary budget spending**

Recommendations; Foundation of the National Transport DB Commission (1)

- ▶ **The transport infrastructure planning and decision making processes are highly fragmented among government agencies in Costa Rica**
 - **The numerous agencies involved in transport infrastructure contribute to excessive policy fragmentation and uncertainty of the transport policy implementation**

- ▶ **To overcome the fragmentation and increase the coherence of transport DB establishment, it is recommend that “The National Transport DB Commission” shall be founded under the executive order or jurisdiction of the Minister of Public Works and Transportation**

Recommendations; Foundation of the National Transport DB Commission (2)

- ▶ **The National Transport DB Commission should deliberate the following matters:**
 - **Establishment and matters on the operation of DB center**
 - **Establishment and modification of the National Transport Plan**
 - **Establishment and modification of the National Transport Survey**
 - **Establishment and development of transport indicators**
 - **Matters subject to the deliberation of the National Transport Commission pursuant to other Acts and subordinate statutes**
 - **Other important national policies regarding the transport system, which are referred by the Minister of the MOPT**

- ▶ **The Minister of Public Works and Transportation appoints the institutions (directors of the board) and external advisers to consist the constituent members**

Recommendations; Foundation of the National Transport DB Commission (3)

- ▶ **To make the commission's decisions realize in the transport planning, the Minister of Public Works and Transportation should clearly explain the background and purposes of the establishment of the commission to the institutions**
 - **If the constituent members agree on the purposes, then it is more likely the institutions will comply with the decisions and instructions made in the commission**

- ▶ **The enforcement of the decisions needs to be strengthened by a certain instrument such as “Executive order” of the Minister of Public Works and Transportation**

Recommendations; Establishment of National Transport DB center (1)

- ▶ **To overcome institutional fragmentation and increase the specialty for the development of transport DB, a dedicated agency or unit needs to be created**
 - **The dedicated DB center would contribute to a more effective and reliable transport DB and could better articulate the transport planning mandate of different agencies**
 - **It is desirable that the National DB center is created as part of the law to secure fund and personal resources for the sustainable operation; however it would take years to be established.**
 - **As an alternative to the new law legislation, the National Transport DB center can be founded by the resolutions of the National Transport DB Commission's or the executive order**
 - **The National Database Center can be operated immediately, provided the Ministry can locate the resources to begin operations. Personnel would have to be found within the Ministry itself, provided the authorities agree**

Recommendations; Roles and Functions of DB center

- ▶ **The National DB Center for Transport Planning should be a leading source of timely, accurate, and reliable information on the Costa Rica transportation systems**
 - **Politically objective supplier of trusted and statistically sound information used to support understanding and decision –making related to the transportation planning**
 - **Gateway to all transportation data, and a help line for each institution for the planning**
 - **Coordinator for transport planning**
 - **Provider of the standardized guidelines and technical assistance for collection and transport planning**
 - **Provider of publications such as the annual report on the transportation statistics.**

Recommendations ; Location of the Transportation DB Center

- ▶ **The most reasonable location for the Database Center would be as part of the Secretary of Sectorial Planning in the MOPT**
 - **The law stipulates the Secretary of Sectorial Planning shall assist the Minister to oversee and coordinate activities with the other institutions**
 - **The Secretary of Sectorial Planning works as liaison with the Ministry of Planning in regard to the transport's goal fulfillment for the execution of the National Transport Plan**
 - **The Secretary of Sectorial Planning also is coordinating with other institutions on some data collection and processing**
 - **The Secretary of Sectorial Planning has prepared many pre-investment feasibility reports, agreements and project prioritizing; therefore they have very valuable experience and factual demand of the transport DB**

Recommendations; Database and Indicators to Develop (1)

- ▶ **Trusted and statistically sound database used to support decision-making related to the transportation planning need to be provided by the national transport surveys**
 - **Traffic, geography of passenger and freight movement , a series of economic accounts such as employment, trans border movement of passenger and freight by mode of transportation**
- ▶ **A meaningful, comprehensive set of performance indicators have to developed to identify needs and opportunities for understanding transport investments needs**

Recommendations; Database and Indicators to Develop (2)

INDICATORS	unit
Rail freight transport	Million tonne-kilometres
Road freight transport	Million tonne-kilometres
Inland waterway freight transport	Million tonne-kilometres
Oil pipeline transport	Million tonne-kilometres
Total inland freight transport	Million tonne-kilometres
Coastal shipping	Million tonne-kilometres
Rail container transport	Twenty-foot equivalent unit (TEU)
Maritime container transport	Twenty-foot equivalent unit (TEU)
Passenger transport by rail	Million passenger-kilometres
Passenger transport by private car	Million passenger-kilometres
Passenger transport by bus and coach	Million passenger-kilometres
Total passenger transport by road	Million passenger-kilometres
Total inland passenger transport	Million passenger-kilometres
Road traffic injury accidents	Number of accidents
Road traffic injuries	Number
Road traffic fatalities	Number
Road traffic fatalities, per million inhabitants	Number
Road traffic casualties (injuries plus fatalities)	Number
Investment in rail transport infrastructure	Million euros
Investment in road transport infrastructure	Million euros
Investment in inland waterway transport infrastructure	Million euros
Total investment in inland transport infrastructure	Million euros
Investment in sea port infrastructure	Million euros
Investment in airport infrastructure	Million euros
Rail infrastructure maintenance expenditure	Million euros
Road infrastructure maintenance expenditure	Million euros
Inland waterway infrastructure maintenance expenditure	Million euros
Sea port infrastructure maintenance expenditure	Million euros
Airport infrastructure maintenance expenditure	Million euros
Total spending on road infrastructure investment and maintenance	Million euros
Total inland transport infrastructure investment as a percentage of GDP	Percentage

source: OECD, ITF Transport Outlook 2015

Recommendations; Establishment of Solid Legal and Regulatory Framework (1)

- ▶ **To effectively introduce and develop transport DB system, corresponding regulatory and institutional bases need to be prepared**

- ▶ **The first priority regarding the development of transport database is to enact relevant law for the actual implementation**
 - **The National Transport Database Center is created as part of law to secure fund and personal resources for the sustainable operation**
 - **Roles and functions are also needed to be specified in the law**
 - **The location of the DB center and the establishment and functions of the National Transport Commission are needed to be described in the law**

Recommendations; Establishment of Solid Legal and Regulatory Framework (2)

- ▶ **The law shall stipulate clear institutional arrangements specifying roles and responsibilities of key players**
 - The law should determine the role and function of all the relevant ministries and institutions to avoid duplicative function and the conflicts of interest
 - The good institutional arrangement would be a key for success and to ensure that the development process in its entirety goes smoothly

- ▶ **Based on the contents of “National Transport System Efficiency Act” of Korea, the law should include the following contents ;**
 - National Transport Survey
 - Establishment, Functions, etc. of National Transport Commission
 - Establishment, Location, etc. of the National Transport Database Center
 - Institutional arrangements specifying roles and responsibilities

Recommendations; Improvement of Decision-Making Process for Transport Planning (1)

- ▶ **Establishment of transport Database gives an opportunity to improve the process and way of transport investment decisions**
 - **Transport DB could increase speed and transparency of the project prioritization and selection of the projects**
 - **Transport DB would strengthen accountability of the transport planning to the public**
 - **Transport DB assists to shift toward quantitative analysis such as cost-benefit and financial analyses from the subjective approach**
 - **Reliable and consistent Transport DB could enhance the efficiency of the large-scale public investment by preventing inefficient projects from being initiated and avoiding unnecessary budget spending**

Recommendations; Improvement of Decision-Making Process for Transport Planning (2)

- ▶ **An effective and efficient decision making process increases the size of the transport investment productivity, and the developed transport DB would be a good instrument to establish the process by consistency and improving accuracy across evaluated projects**

- ▶ **The Secretary of Sectorial Planning with the National Transport DB center could have the sole authority in overseeing the appraisal and selection of the investment projects , and should make the best effort to establish new “Transport Investment Management System”**



THANK YOU



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