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Scaling up Road Asset Management in the CAREC Region

Replicating Best Practices

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Structure of the presentation

- What is Road Asset Management?
- What is the current status of Road Asset Management in the CAREC Region
- What are the main factors affecting success?
- Next steps





What is Road Asset Management?





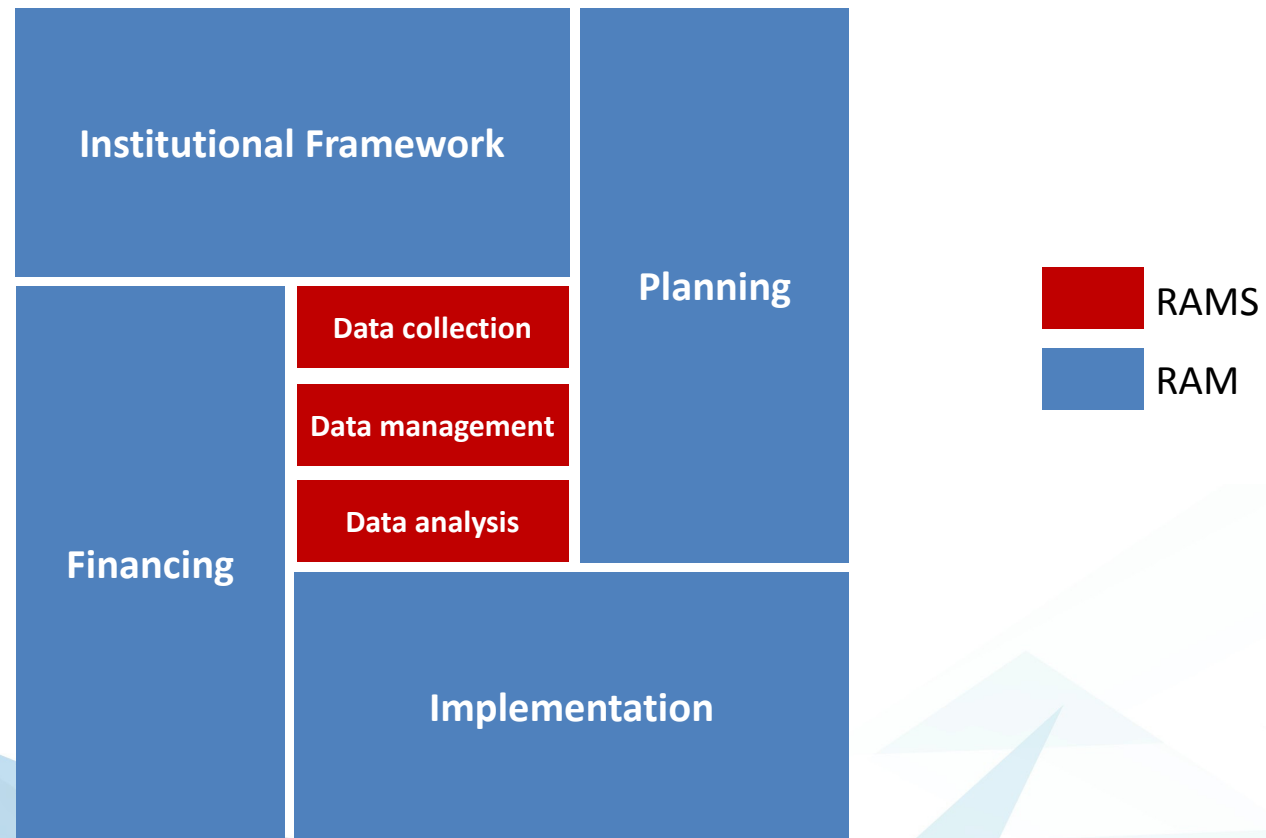
What is Road Asset Management?

- Optimizing the level and allocation of maintenance funding in relation to medium- to long-term results on road conditions and road user costs
 - Level of funding
 - Allocation to priority roads, intervention types (and implementation modalities)
 - Medium- to long-term results
- Change in focus from maintenance implementation to asset management
 - From: Repairing as much damage as possible with a given budget (short term)
 - To: Achieving a specified service level at the lowest cost (medium- to long-term)
- Based on an analysis of road data
 - Road inventory, road condition, traffic, unit costs, deterioration models
 - Aimed at reducing road transport costs for the country
 - Complemented with other objectives (e.g. connectivity)



Road Asset Management

- **Road Asset Management System:** Any system that is used to collect, manage and analyze road data for road planning and programming purposes
- **Road Asset Management:** Integration of the RAMS into the institutional framework, planning procedures, financing systems and implementation modalities





What is the current status of Road Asset Management in the CAREC Region?





Current Status in the CAREC Region

- Six CAREC countries are in the initial phases of developing a RAMS
 - Piloting data collection, database development and data analysis
- Three CAREC countries have a RAMS in place
 - Regular data collection in format suitable for RAMS
 - Proper data management and data quality control
 - Data analysis carried out regularly
- One CAREC country has integrated RAMS (full Road Asset Management)
 - Data collection, management and analysis is fully institutionalized
 - Data analysis forms an input for maintenance planning
 - Data analysis influences funding levels and maintenance budgets
 - Implementation is outsourced in line with maintenance plans
 - This is the result after 20 years of supporting RAMS development – at provincial level it is facing similar problems as the other CAREC countries



Current Status in the CAREC Region

ROAD NETWORK	Afghanistan	Azerbaijan	China	Kazakhstan	Kyrgyz	Mongolia	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
Trunk road network (km)	17,900	19,002	494,700	23,485	18,810	11,200	12,131	14,067	13,644	42,530
Total roads (km)	38,700	59,002	4,356,218	96,718	34,810	49,200	260,131	26,767	58,592	183,724
Road density (km/100km ²)	5.9	68.5	46.7	3.6	18.1	3.2	29.5	18.9	12.5	43.2
RAMS	Afghanistan	Azerbaijan	China	Kazakhstan	Kyrgyz	Mongolia	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
Data collection frequency	Intermittent	Regular	Regular	Starting	Intermittent	Regular	Regular	Intermittent	-	Intermittent
Data collection extent	Pilot	Network	Network	Pilot	Pilot	Network	Network	Pilot	-	Pilot
Database	-	Yes	Yes	-	Yes	Yes	Yes	Yes	-	Yes
Data analysis	-	Yes	Some provinces	-	-	Yes	Yes	-	-	-
ROAD ASSET MANAGEMENT	Afghanistan	Azerbaijan	China	Kazakhstan	Kyrgyz	Mongolia	Pakistan	Tajikistan	Turkmenistan	Uzbekistan
RAMS unit	-	Yes	Yes	-	-	Yes	Yes	-	-	Yes
Dedicated maintenance funding	-	Yes	Yes	-	-	Yes	Yes	-	-	Yes
Influencing financing	-	-	-	-	-	-	Yes	-	-	-
Influencing planning	-	-	-	-	-	-	Yes	-	-	-
Maintenance implementation	Force account (+ Bidding)	Force account	Force account + Bidding	Force account + Bidding	Force account (+ Bidding)	Force account	Bidding	Force account	Force account	Force account + Bidding



What are the main factors
influencing success?

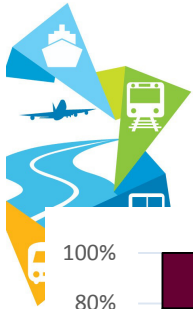




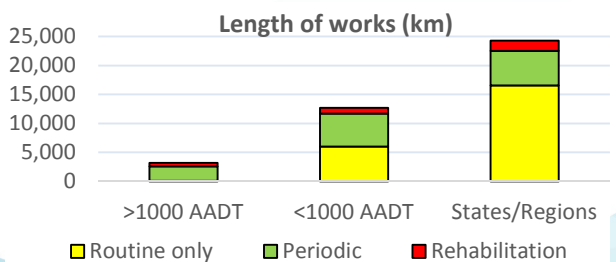
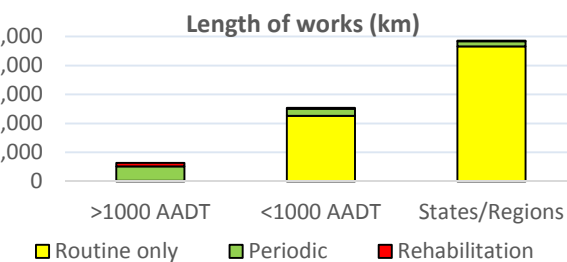
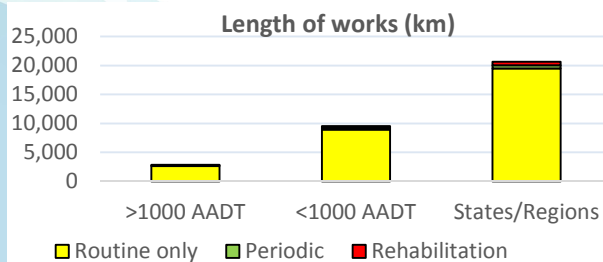
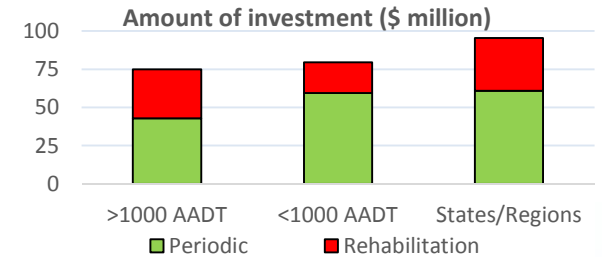
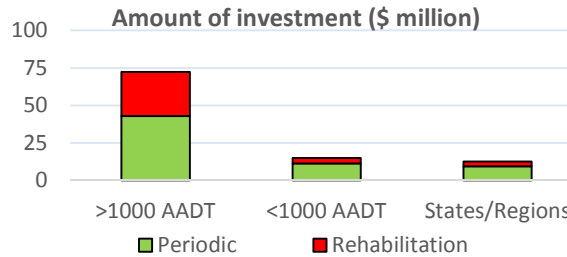
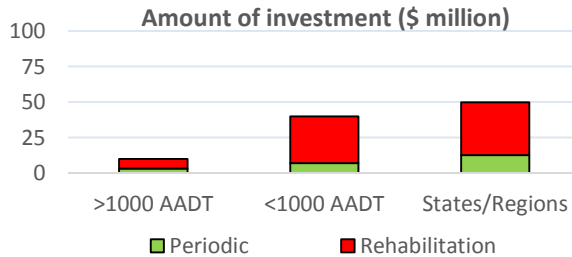
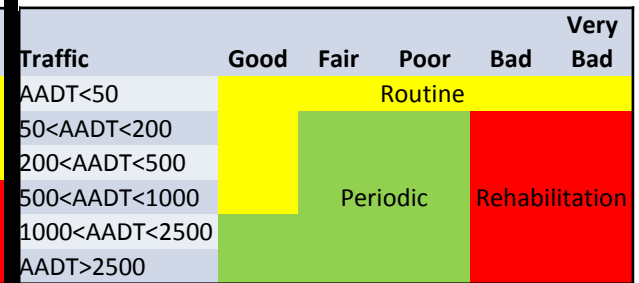
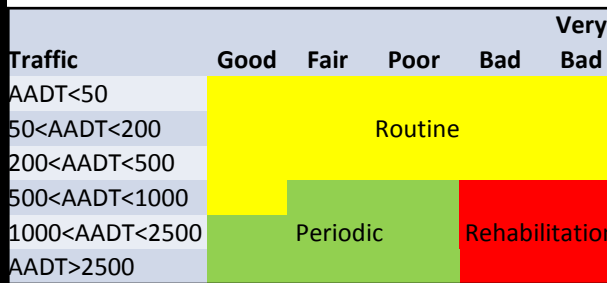
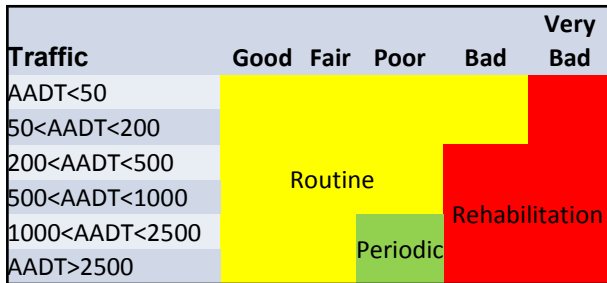
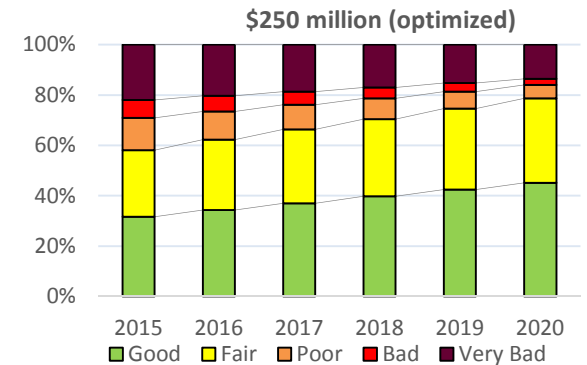
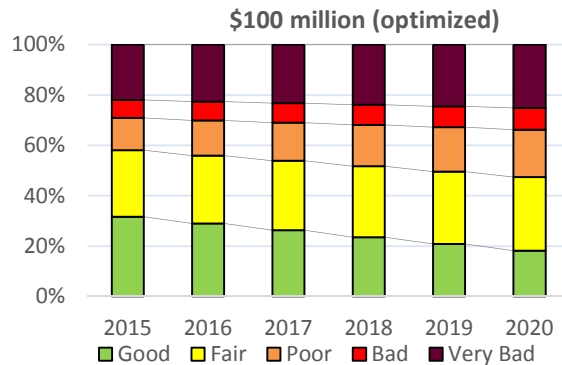
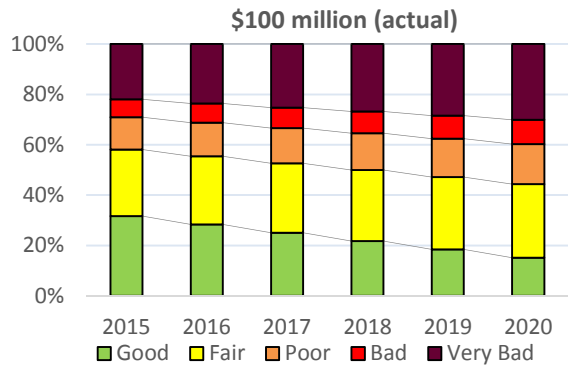
1. High level support from government

- Many CAREC countries lack high level support, limiting RAMS effectiveness and sustainability
- High level support is needed to ensure integration of the RAMS
 - Ministry/authority responsible for roads, MOF or planning ministry
 - Not strictly necessary at the start, but as soon as possible
- Initial focus should be on demonstrating potential results of RAMS
 - Budget needs and impacts on road conditions
 - Intervention priorities and comparison with current practices

- ❖ Pakistan: National Highway Authority, Road Maintenance Account linked to RAMS
- ❖ China: Ministry of Transport pushing for RAMS (difficult due to decentralization)
- ❖ Kazakhstan: Ministry of Finance requiring results-based budgets



Example - Myanmar





2. Separation between management and implementation

- Most CAREC countries lack clear institutional separation between maintenance implementation and road management
 - Focus still on fixing as much damage as possible with a given budget rather than achieving a specified service level at the lowest cost
- Separate the functions of management and implementation
 - Make RAMS a tool for the road management functions to determine the annual maintenance programmes
 - Use other tools for the day-to-day organization by the implementation units

- ❖ Pakistan: National Highway Authority complemented by contractors
- ❖ Uzbekistan: Republican Road Fund complemented by Uzavtoyul
- ❖ Kazakhstan: Kazavtozhool complemented by Kazakhavtodor and contractors



3. Institutionalization of the RAMS from the start

- Most CAREC countries lack institutional structure to support RAMS
 - Many projects focus on the RAMS, and leave institutionalization till the end – this should be the other way round
- Introduce institutional responsibility from the very beginning
 - Identify specific unit(s) with operational budgets
 - Involve their staff in the data collection, management and analysis
- World Bank study: RAMS more successful in countries where it was institutionalized at an early stage

- ❖ Pakistan: Road Asset Management Directorate in the National Highway Authority
- ❖ Azerbaijan: Road Data Management Unit in Azeryolservis
- ❖ Tajikistan: Economic Analysis and Forecasting Department in the Ministry of Transport
- ❖ Kazakhstan: Separate budget line and allocation for instrumental surveys



4. Focus data collection on required data

- Many CAREC countries spend time and money collecting data that is not required, that is unreliable, or that is in a format that is not useable
- Limit the types, frequency and detail of data to what is strictly needed for planning and monitoring
 - Start simple: basic inventory, roughness, surface distress, traffic
 - Detailed data for design purposes needs to be collected for only a few roads
 - Survey equipment to reduce costs and increase reliability (not for more data)
- Ensure proper data quality assurance
 - Precision vs Reliability

- ❖ Mongolia: Reducing the data collection in annual surveys
- ❖ China: Use of automated survey vehicles has reduced costs and improved reliability
- ❖ Azerbaijan: Standards for data quality control and processing



5. Publication of annual performance statistics

- Some CAREC countries provide annual statistics on the performance of the road sector
- Publication of statistical yearbooks or performance reports can institutionalize the collection and analysis of data
 - Road condition, maintenance expenditure, maintenance implementation, etc.
- Setting targets to be achieved in future years (and linking this to budgets)
 - Output targets: e.g. length of maintenance implemented
 - Outcome targets: e.g. road network condition

- ❖ China: Highway Performance Assessment Standards
- ❖ Kazakhstan: Results-based planning, budgeting and reporting



6. Use of appropriate technologies for the RAMS

- Several CAREC countries have introduced technologies that are costly and difficult to use, undermining the sustainability of the RAMS
- Technologies should be selected that are appropriate to the stage of development of the RAMS
 - Start simple – All RAMS are further developed over time
 - Ensure an appropriate language interface

- ❖ Kyrgyz Republic: Use of MS Excel for the initial database with Russian language interface
- ❖ Mongolia: Development of a Mongolian language front-end to dTiMs software



7. Integration of the RAMS into the business processes

- Most CAREC countries have not integrated the RAMS into planning, budgeting and reporting procedures
 - Maintenance plans are prepared by decentralized units that lack access to RAMS
 - RAMS output format does not link up with existing planning procedures
- RAMS needs to be incorporated into the decision-making process
 - Make RAMS outputs available at start of planning cycle
 - Amend planning and reporting procedures to incorporate RAMS outputs

- ❖ Pakistan: Annual Maintenance Plans and Road Maintenance Account based on RAMS
- ❖ Azerbaijan: Analysis suggests funding sufficient, but allocation needs to be improved
- ❖ Kazakhstan: Results-based budgeting and reporting highly supportive of RAMS



8. Continued support to RAMS development

- Project support in CAREC countries generally too short
 - If support is not sufficiently long, the RAMS tends to fall into disrepair
- RAMS development should foresee continued support for at least 5-10 years
 - Ensure stepwise support in consecutive projects
 - Piloting and awareness raising
 - Strengthening and capacity development
 - Mainstreaming
 - Don't aim to achieve too much in too little time
 - Ensure coordination between different development partners

❖ Pakistan: Continued support for 20 years, now directed towards provincial level



Next Steps





Next steps

1. Develop an accurate assessment of the current status and obstacles
 - Desktop study had limited access to information (incomplete, out-of-date)
 - CAREC countries to review the study results and conclusions (who?)
 - Complement the desktop study with specific questionnaires or interviews with CAREC countries (who?)

2. Develop a “Compendium of Best Practice for Road Asset Management”
 - Short 20-30 page document
 - Based around the main factors for success and presenting best practices
 - Summarizing the current status of Road Asset Management in each CAREC country





Next steps

3. Develop support programmes for interested CAREC countries
 - Piloting data collection, database development and analysis
 - Improving and expanding data collection to full network and consecutive years
 - Improving data quality control and management
 - Developing data analysis tools and capacity
 - Institutionalizing RAMS (creating and training RAMS unit)
 - Integrating the RAMS into existing planning systems
 - Using RAMS outputs to determine appropriate financing levels and sources
 - Adjusting implementation modalities to become more efficient and effective
 - Exchange visits, conferences, training, capacity building, etc.



Thank You

