



#### 16th Meeting of the CAREC Transport Sector Coordinating Committee

17-19 May 2017 • Tbilisi, Georgia

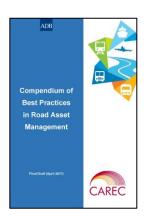
16-е заседание Координационного комитета ЦАРЭС по транспортному сектору 17-19 мая 2017 года • Тбилиси, Грузия

# Road Asset Management in the CAREC Region

Compendium of Best Practices

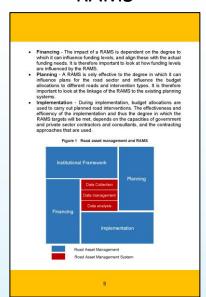


#### Compendium of Best Practices

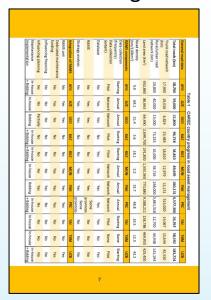


#### Four main sections

## Introduction to RAMS



## RAMS in CAREC Region



## Best Practices in RAMS Development

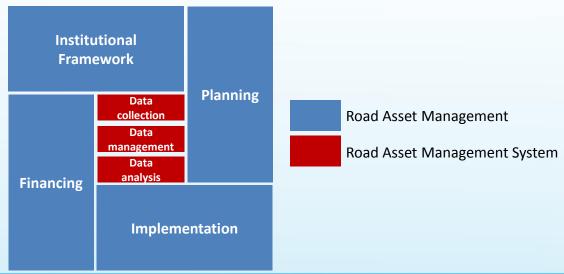


#### Country Status Reports

Land area	2,699,700 km²	Trunk road netwo	rk: 23,485 km
Road network	96,718 km	Road density	3.6 km/100km²
road density. The Committee of Ro Development (MII s responsible for Routine summer enterprise Kazaki	trunk road networ oads (COR) undo D). There is also a day-to-day mana and winter maint navtodor, while ro t. Performance-ba	ical size, Kazakhsti k falls under the re er the Ministry of a road manager, Ka agement of the tru venance is carried sutine, mid-term ar sed maintenance of	sponsibility of the Investment and azavtozhol, which nk road network. out by the state nd capital repairs
and is focused on are not yet compa supporting the de- retrofitting of su- ongoing. It is likely become responsit- already have surv	surface defects. atible for use in a velopment of a R/ rvey equipment. y that the oblast le ble for data collect ey vehicles. A lim ollected in 2016	ays. This is based of the format and reliferance. RAMS. The World MS, including the A network invention, since many of titled amount of road assible.  A road date assible.	ability of the data Bank is currently procurement and tory is currently is under COR will hese laboratories condition data is
management and Kazavtozhol and	data analysis. the research ins	h regards to respo Possible candidate stitute KazdorNII ablished, with part	es include COR, A National Road
88. Road mair	and has decrease	comes from the Re	



- Optimizing the <u>level</u> and <u>allocation</u> of maintenance funding in relation to medium- to long-term results on road conditions and road user costs
- Change from maintenance implementation to asset management
  - From: Repairing as much damage as possible with a given budget (short term)
  - <u>To</u>: Achieving a specified service level at the lowest cost (medium- to long-term)
- RAMS as a basis for road asset management





- Six CAREC countries are in the initial phases of developing a RAMS
  - Piloting data collection, database development and data analysis
- Four CAREC countries have an operational RAMS in place
  - Regular data collection, proper data management and quality control, regular data analysis
- One CAREC country has integrated its RAMS
  - Fully institutionalized data collection, management and analysis
  - RAMS analysis used as a basis for maintenance planning and for determining funding levels and budget allocations



## RAMS in the CAREC Region

ROAD NETWORK	AFG	AZE	GEO	KAZ	KGZ	MON	PAK	PRC	TAJ	TKM	UZB
Trunk road network (km)	17,900	19,016	6,824	23,485	18,810	12,979	12,131	515,000	14,067	13,644	42,530
Total roads (km)	38,700	59,000	21,800	96,718	34,810	49,695	260,131	4,577,300	26,767	58,592	183,724
Road density (km/100km²)	5.9	68.1	31.4	3.6	18.1	3.2	33.7	48.8	19.3	12.5	43.2
RAMS COMPONENTS	AFG	AZE	GEO	KAZ	KGZ	MON	PAK	PRC	TAJ	TKM	UZB
Data collection (frequency)	Starting	Annual	Annual	Starting	Starting	Annual	Annual	Annual	Starting	-	Starting
Data collection (extent)	Pilot	Network	Network	Pilot	Pilot	Network	Network	Network	Pilot	-	Pilot
Database	-	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes	-	Yes
Data analysis	-	Yes	Yes	-	-	Yes	Yes	Some provinces	-	-	-
INTEGRATION OF RAMS	AFG	AZE	GEO	KAZ	KGZ	MON	PAK	PRC	TAJ	TKM	UZB
RAMS unit	-	Yes	Yes	-	-	Yes	Yes	Yes	-	-	Yes
Dedicated maintenance funding	-	Yes	-	-	-	Yes	Yes	Yes	-	-	Yes
Influencing financing	-	-	-	-	-	-	Yes	-	-	-	-
Influencing planning	-	-	Partially	-	-	-	Yes	-	-	-	-
Maintenance implementation	In-house + Bidding	In-house	Bidding	In-house + Bidding	In-house + Bidding	In-house	Bidding	In-house + Bidding	In-house	In-house	In-house + Bidding

## Best Practices in RAMS Development

- 1. Limit the data to be collected (fewer data and improved quality control procedures)
- 2. Make the database easy to use *(properly structured with web-based access)*
- 3. Start with simple RAMS software (use off-the-shelf software with local language interface)
- 4. Institutionalize RAMS from the start (put RAMS unit in place before project start)
- 5. Publish annual performance statistics (institutionalize data analysis and improve transparency)
- 6. Integrate RAMS into business processes (use RAMS analysis as basis for planning and budgeting)



- 7. Provide sufficient and predictable funding (avoid strong variations in budgets and introduce dedicated funding)
- 8. Separate management and implementation (use RAMS as a tool for strategic management, not for implementation)
- 9. Ensure high-level support to RAMS (convince high-level decision makers of the benefits of RAMS)
- 10. Continue development support to RAMS (ensure long-term coordinated support from development partners)
- 11. Develop the works implementation capacity (support contracting industry to improve periodic maintenance capacity)



## Next Steps in CAREC Support to RAMS Development

#### 1. CAREC strategy for RAMS development

Define clear goals to be achieved in the CAREC region by its member countries, the timeframe for doing so, the approach to be applied, and the support to be provided by development partners
 (e.g. by 2025 all CAREC countries will have an operational RAMS in place and at least half the CAREC countries will have integrated it into planning and financing procedures)

#### 2. CAREC country guidelines for RAMS development

 Define detailed set of steps to by followed by each CAREC country in further developing RAMS, with a timeframe for completing each step, and with proposed support to be provided by development partners

#### 3. Coordinated support to RAMS from development partners

Develop coordinated development partner approach to supporting the CAREC
 RAMS strategy and guidelines with framework programs for each CAREC country