



Workshop Report

**CAREC Road Asset Management:
In-Country Workshop and
Maturity Assessment**

Kyrgyz Republic

June 2023

Disclaimer

This report is the outcome of the CAREC Institute's in-country RAM training and maturity assessment for the Kyrgyz Republic that took place from 23-26 May 2023. This report was drafted by Dr. Ian Greenwood, CAREC Institute Infrastructure Consultant, and is edited by Dr. Eisakhan Ayoob Ayoobi, CAREC Institute Chief of Capacity Building Division.

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Overall, this project would have not been possible without the support of Dr. Iskandar Abdullaev, CAREC Institute Deputy Director Two, Dr. Lyaziza Sabyrova, Director, Regional Cooperation and Operations Coordination Division (CWRC), ADB, Dr. Roman Mogilevskii, Senior Economist, CWRC, ADB, Ms. Dildar Zakir, Capacity Building Specialist, CAREC Institute, Ms. Honey Guerzon, Associate Knowledge Management Officer, CWRC, ADB, and Ms. Aidana Berdybekova, Regional Cooperation Coordinator, Kyrgyz Republic Resident Mission, ADB and Mr. Gary Huang, eLearning Specialist, CAREC Institute.

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Glossary

Abbreviation	Description
ADB	Asian Development Bank
AM	Asset Management
AMIS	Asset Management Information System
AMP	Asset Management Plan
CAREC	Central Asia Regional Economic Cooperation
CI	CAREC Institute
IIMM	International Infrastructure Management Manual
MOTC	Ministry of Transport and Communications
O&M	Operation and Maintenance
PIC	Production and Innovation Center
PMS	Pavement Management System
RAM	Road Asset Management
RAMIS	Road Asset Management Information System
RAMS	Road Asset Management System

Executive Summary

In May 2023, a four-day workshop was held in Bishkek, the Kyrgyz Republic, on the topic of Road Asset Management (RAM). Funded by ADB TA and conducted by the CAREC Institute, the workshop was delivered through a combination of in-person and virtual trainers to 23 participants representing various ministries, departments, technical universities, and kindred organizations involved in the management of the national road network of the Kyrgyz Republic.

The workshop was effectively the third stage of RAM engagement between the CAREC Institute and the CAREC member countries. The first stage occurred in 2020 and consisted of an online training program in RAM; and the second stage occurred in 2021 and was focused on the completion of a self-assessed RAM Maturity Assessment. This third stage built upon that earlier work to:

- move to a combination of in-person and virtual training (rather than 100% virtual as per the earlier stages);
- deliver a more focused training program based on specific needs (prioritized based on the proposed action plan drafted as part of the earlier maturity assessment); and
- produce an updated maturity assessment and associated RAM Improvement Plan.

The workshop achieved a very high satisfaction rating with 100% of participants rating it “Excellent” or “Good”, with an overall average of 4.6 out of 5.

The workshop received strong coverage in the Kyrgyz Republic media, with a segment appearing on the national news and strong coverage on the Ministry of Transport and Communications channels.

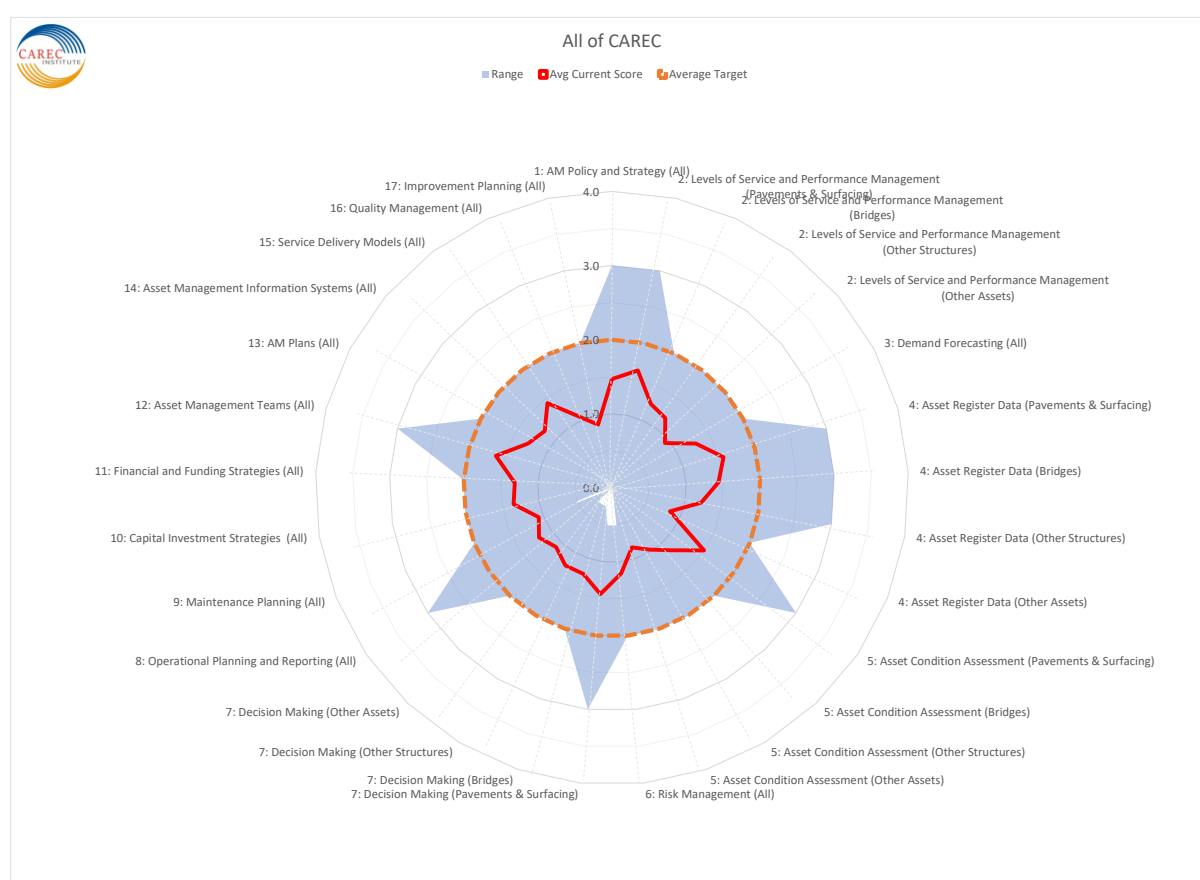
Introduction

Background to Workshops

Since 2020 the CAREC Institute, in collaboration with the Asian Development Bank (ADB), has been supporting the CAREC member countries in a range of Road Asset Management (RAM)¹ initiatives from online training program delivery through to country specific RAM maturity assessments² and the use of RAM to address a range of other challenges such as cross-border transportation needs and climate change adaptation.

During 2020/21 a RAM maturity assessment was attempted to be completed via self-assessment for each CAREC member country, with the results indicating a significant range of competency both across the various aspects of RAM and also across the member countries.

Figure 1: Summary from 2021 Maturity Self-Assessments.



Source: CAREC Region Road Asset Management, Maturity Assessment, Final Report. CAREC Institute, 2021.

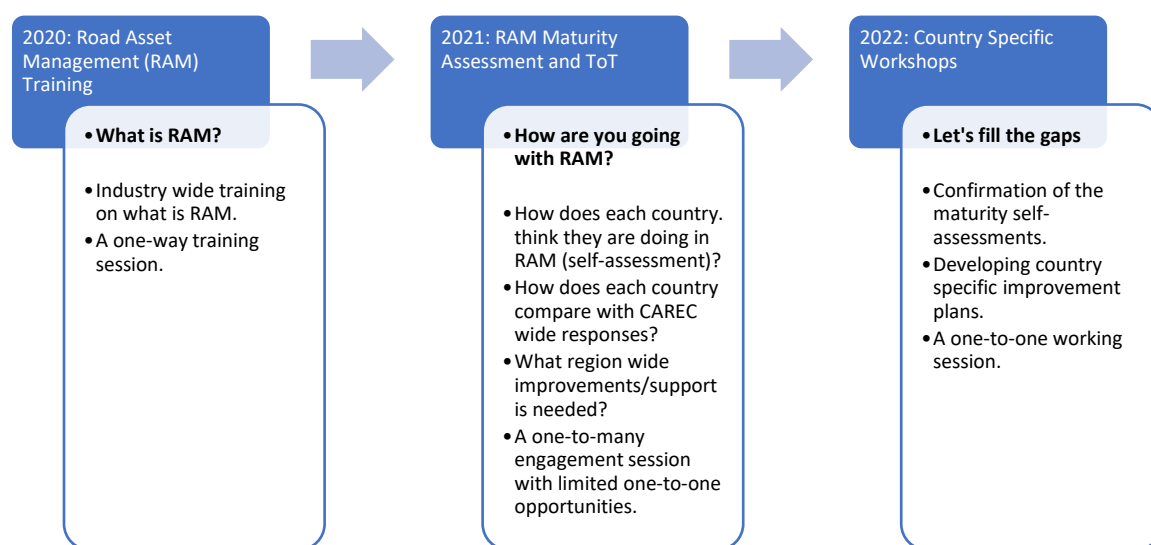
The in-country workshop ties in with the prior online training and RAM maturity assessment initiatives, taking the RAM discussions from a regional level down to the country level. The 2020 training was really about awareness raising and for many participants was their first encounter with the full range of RAM activities. The training was not customized to any one country, and besides Q&A sessions it was a one-way delivery. In 2021 the maturity assessment was a more focused

¹CAREC Institute E-Learning Platform: <https://elearning.carecinstitute.org/learning-modules/workshops/124.html>

²CAREC Institute E-Learning Platform: <https://elearning.carecinstitute.org/learning-modules/workshops/160.html>

exercise, with a smaller group of participants from each country and much more of a two-way interactive session – although not all countries completed the maturity assessment.

Figure 2: Stages of Road Asset Management Capacity Building Activities.



Two countries were included in the first round of Country Specific Workshops conducted in September 2022 – Azerbaijan and Georgia. In May and June 2023, a further two countries were completed, namely the Kyrgyz Republic and Tajikistan.

The core objectives of the workshops were:

- i. to carry out a country review on the implementation of RAM and to further develop the target participants' knowledge and skills on asset data collection, management and maintenance;
- ii. to introduce the road related Greenhouse Gas (GHG) emissions and countermeasures as well as to produce country specific improvement plan in GHGs reduction;
- iii. to enhance member countries capabilities for bridging capacity gaps among member countries on RAM and promote cooperation among experts, policymakers and influencers;
- iv. to create a core group of competent asset managers within each CAREC country and ultimately across the CAREC region who can support each other in RAM; and
- v. to facilitate and further enhance knowledge and best practices sharing among CAREC member countries for effective and sustainable regional development under the CAREC Program.

The workshops are expected to achieve these outcomes:

- i. the country review on the implementation of RAM achieved and to target participants' knowledge and skills on asset data collection, management and maintenance is improved;
- ii. the road related Greenhouse Gas (GHG) emissions and countermeasures as well as country specific improvement plan in GHGs reduction are introduced;
- iii. CAREC member countries specific capacity needs are addressed and capacity gaps among member countries on RAM are bridged and cooperation among experts and policymakers and influencers are promoted; and
- iv. knowledge and best practices sharing among member countries for collective sustainable regional development under the CAREC Program is further enhanced.

Presenters and Facilitators

The CAREC Institute provided the facilitators for the workshop, with key staff being:

- Dr. Iskandar Abdullaev, Opening address and Keynote Presentation.
- Dr. Ayoob Ayoobi, Overview of training.

Figure 3: CAREC Institute Staff.



The workshop training was delivered by:

- Dr. Ian Greenwood (in person, and overall workshop lead).
- Dr. Theunis Henning (via video link).
- Mr. Serge Cartier (via video link).

Other key participants include:

- Ms. Dildar Zakir, CAREC Institute.
- Mr. Gary Huang, CAREC Institute.
- M. Aidana Berdybekova, Regional Cooperation Coordinator, Kyrgyz Republic Resident Mission, ADB.
- Mr. Giorgi Japaridze, Team Leader, Project Preparatory Consulting Team, IRRIP in Kyrgyz Republic.

Participants

There were 25 participants registered for the workshop as per the table below.

Table 1: List of Workshop Participants.

<i>List of Participants</i>
1. Mr. Aitbek Usenbekov, Deputy Director of State Authority “Production and Innovation Center”, under the Ministry of Transport and Communications, Kyrgyz Republic
2. Mr. Bekzhan Zholoev, Head of Legal and Organizational Operation of Road Fund under the Ministry of Transport and Communications, Kyrgyz Republic
3. Ms. Mairamgul Suvankul kyzy, Leading Specialist, Road Department, Ministry of Transport and Communications, Kyrgyz Republic
4. Mr. Baatyr Stalbekov, Specialist, Road Department, Ministry of Transport and Communications, Kyrgyz Republic
5. Mr. Temirbek Kydyrmyshev, Leading Specialist, Road Engineer, State Enterprise “Kyrgyzavtojol” under the Ministry of Transport and Communications, Kyrgyz Republic
6. Mr. Bekbolot Kambarov, Road Engineer, Investment Project Implementation Group (responsible for ADB projects), Ministry of Transport and Communications, Kyrgyz Republic
7. Mr. Kanat uulu Naken, Head of Transport Vehicles’ Control Unit, State Authority “Production and Innovation Center,” Ministry of Transport and Communications, Kyrgyz Republic
8. Mr. Ruslan Tursuniiazov, Head, Accounting and Diagnostics of Highways Division, State Authority “Production and Innovation Center,” under the Ministry of Transport and Communications, Kyrgyz Republic
9. Mr. Mallabek uulu Ernis, Chief Specialist, Asset Management Division, Road Administration Department, Ministry of Transport and Communications, Kyrgyz Republic
10. Mr. Tulan uulu Tynar, Chief Specialist, Asset Management Division, Road Administration Department, Ministry of Transport and Communications, Kyrgyz Republic
11. Mr. Nurzhan Madanbekov, Vice Rector of Digitalization, Administration Department, Kyrgyz State Technical University named after I.Razzakov
12. Mr. Alaibek Kurbanbaev, Head, Highways and Railways, Bridges and Tunnels Department and Associate Professor, Kyrgyz State Technical University named after I.Razzakov
13. Mr. Mukhtar Apsemetov, Associate Professor, Highways and Railways, Bridges and Tunnels Department and Kyrgyz State Technical University named after I.Razzakov
14. Mr. Kanybek Satkynaliev, Docent, Highways and Railways, Bridges and Tunnels Department, Kyrgyz State Technical University named after I.Razzakov
15. Mr. Aleksei Prikhodko, Superior Lector, Highways and Railways, Bridges and Tunnels Department, Kyrgyz State Technical University named after I.Razzakov
<i>Special Guests</i>
16. Mr. Talant Soltobaev, First Deputy Minister, Ministry of Transport and Communications, Kyrgyz Republic
17. Mr. Mirlan Chynybaev, Rector, Kyrgyz State Technical University named after I.Razzakov
18. Ms. Kanokpan Lao-Araya, Country Director, Kyrgyz Republic Resident Mission, ADB
19. Mr. Mirdin Eshenaliev, Senior Project Officer, Kyrgyz Republic Resident Mission, ADB
20. Mr. Piouslin Samuel, Team Leader/RAMS Specialist, RAMS Phase II in the Kyrgyz Republic
21. Mr. Giorgi Japaridze, Team Leader, Project Preparatory Consulting Team, IRRIP in Kyrgyz Republic
22. Mr. Ibragim Oserov, Deputy Team Leader/RAMS Phase II in the Kyrgyz Republic
23. Mr. Nursultan Ormonov, ADB Consultant, Project Preparatory Consulting Team, IRRIP in the Kyrgyz Republic
24. Mr. Meder Turgunbekov, Advisor to CAREC NFP, Kyrgyz Republic
25. Ms. Aidana Berdybekova, Regional Cooperation Coordinator, Kyrgyz Republic Resident Mission, ADB

Figure 4: Workshop Group Photograph.



Agenda

The workshop agenda was as follows, with all sessions held at the Campus named after N. Isanov of the Kyrgyz State Technical University named after I. Razzakov (former building of Kyrgyz State University of Construction, Transportation and Architecture). All training materials were provided in both English and Russian languages, with electronic copies made available via the CAREC Institute e-learning platform <https://elearning.carecinstitute.org/learning-modules/workshops/2087.html>.



**Country-Specific Workshops / ToT
on
Road Asset Management – Kyrgyz Republic**

23-26 May 2023
Bishkek, Kyrgyz Republic

AGENDA – KYRGYZ REPUBLIC

DAY 1 (TUESDAY, 23 MAY 2023)

08:30-09:00	Registration
09:00-09:30	Welcome and Opening Remarks <ul style="list-style-type: none">• Iskandar Abdullaev, Deputy Director II, CAREC Institute• Talant Soltobaev, First Deputy Minister of Transport and Communications of the Kyrgyz Republic• Mirlan Chynybaev, Rector, Kyrgyz State Technical University named after I.Razzakov• Kanokpan Lao-Araya, Country Director, Kyrgyz Republic Resident Mission, ADB
09:30-10:00	Keynote Presentation: Performance of CAREC Corridors Presenter: Iskandar Abdullaev, Deputy Director II, CAREC Institute
10:00-10:15	Overview of the Training Presenter: Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute
10:15-10:30	Tea/Coffee Break – Photo session
10:30-11:00	Refresh on RAM Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
11:00-11:20	Current RAM Practice Presenter(s) (1 or 2) from relevant parts of government to cover off: <ul style="list-style-type: none">1. Funding, budget allocation cycle2. Prioritization of road maintenance and renewal needs3. Method of delivery of road maintenance and renewal works
11:20-12:00	Ongoing and Planned RAMS Phase I, II, III in Kyrgyz Republic Presenter: Mirdin Eshenaliev, Senior Project Officer, Kyrgyz Republic Resident Mission, ADB Presenter: Piouslin Samuel, Team Leader / RAMS Specialist, RAMS Phase II in Kyrgyz Republic Presenter: Giorgi Japaridze, Team Leader / Transport Economist, Project Preparatory Consulting Team, IRRIP in Kyrgyz Republic

12:00-13:00	Lunch: Training venue
13:00-14:00	Road Funding Presenter: Serge Cartier, Cartier Consult
14:00-14:15	Tea/Coffee Break
14:15-15:15	Developing Service Levels for All Asset Types Presenter: Theuns Henning, Senior Lecturer, Civil and Environmental Engineering, University of Auckland
15:15-16:15	The AM Team – including potential to outsource Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
16:15-16:45	Wrap-up of Day 1 • Ayoob Ayoobi, Chief of Capacity Building Division, CAREC Institute

DAY 2 (WEDNESDAY, 24 MAY 2023)

08:30-09:00	Registration
09:00-09:45	Asset Register – Developing and Maintaining <u><i>Develop Guidance on Minimum Data to be Collected for Major Asset Types</i></u> Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
09:45-10:30	Asset Condition Data Collection for Major Asset Types <u><i>What to Collect, With What and How Often</i></u> Presenter: Theuns Henning, Senior Lecturer, Civil and Environmental Engineering, University of Auckland
10:30-10:45	Tea/Coffee Break
10:45-11:30	Lifecycle Decision Making & Pavement Prediction Modelling Presenter: Theuns Henning, Senior Lecturer, Civil and Environmental Engineering, University of Auckland
11:30-12:00	Operations, Maintenance, Emergency, and Capital Works Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
12:00-13:00	Lunch: Training venue
13:00-18:00	Site Visit

DAY 3 (THURSDAY, 25 MAY 2023)

08:30-09:00	Registration
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09:00-09:45	Asset Management Plans Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
09:45-10:30	Asset Management Information Systems, and Decision Support Tools Presenter: Theuns Henning, Senior Lecturer, Civil and Environmental Engineering, University of Auckland
10:30-10:45	Tea/Coffee Break
10:45-12:00	Service Delivery Models <i>Force Account, Outsourced, PBCs</i> <i>Build on Review of Current Contract Templates in Use</i> Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
12:00-13:00	Lunch: Training venue
13:00-15:00	Carbon Emission Modelling, Policies and Integrating Climate Change into RAM Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand Presenter: Theuns Henning, Senior Lecturer, Civil and Environmental Engineering, University of Auckland Presenter: Ayooob Ayooobi, Chief of Capacity Building Division, CAREC Institute
15:00-15:15	Tea/Coffee Break
15:15-16:15	Developing a RAM Policy Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
16:15-16:30	Wrap-up of Day 3 • Ayooob Ayooobi, Chief of Capacity Building Division, CAREC Institute
DAY 4 (FRIDAY, 26 MAY 2023)	
08:30-09:00	Registration
09:00-10:30	Produce Country Specific Improvement Plan Presenter: Ian Greenwood, Chartered Professional Engineer, and a Fellow of Engineers New Zealand
10:30-10:45	Tea/Coffee Break
10:45-12:45	Review of Training / General Q&A
12:45-13:00	Final Wrap-up and Workshop Close • Iskandar Abdullaev, Deputy Director II, CAREC Institute

Site Visit

A site visit was made to the Production and Innovation Center (PIC) where participants observed the data collection equipment currently in use to measure road conditions and monitor traffic, along with inspecting the newly established road sign manufacturing team. The site visit provided an ideal opportunity for ongoing discussions between the ministry and academia about how to work together to further enhance the capacity of the RAM sector in the Kyrgyz Republic.

The PIC is thanked for their arrangement of the site visit, including making key staff available for discussions with the workshop participants. A selection of photos from the site visit is included in the table below.

Table 2: Photos from Site Visit.



Dr. Greenwood inspecting the PIC's Road data collection vehicle.



Participants discussing various aspects of RAM alongside the road.



Visiting the PICs materials testing laboratory.



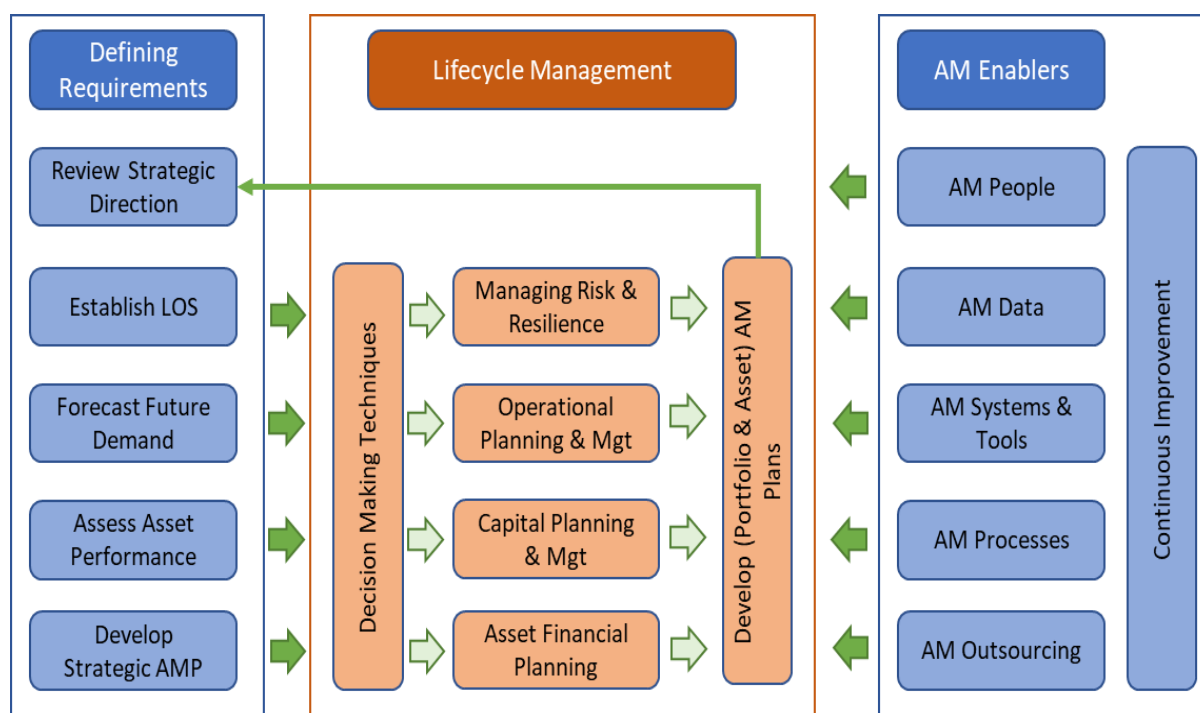
PIC showing their radar-based traffic counters, which can classify vehicles based on length.

Maturity Assessment and Improvement Plan

The maturity assessment followed the overall RAM process diagram (refer to Figure 5) that is based upon the International Infrastructure Management Manual (IIMM), which has been used as the basis of the training for the past 2-years.

The 2021 RAM Maturity Self-Assessment was provided by the ministry in 2021 and is presented in Figure 6. for the Kyrgyz Republic, while the current status of RAM appears very weak, there are currently numerous initiatives underway to make significant improvements in capability. The major initiative is under the ADB funded RAMS I (currently completing implementation) and RAMS II (commencing) projects, with RAMS III in the planning stage. Collectively these projects should result in a major step change in capability across many of the steps in the RAM process.

Figure 5: Asset Management Process.



Source: International Infrastructure Management Manual.

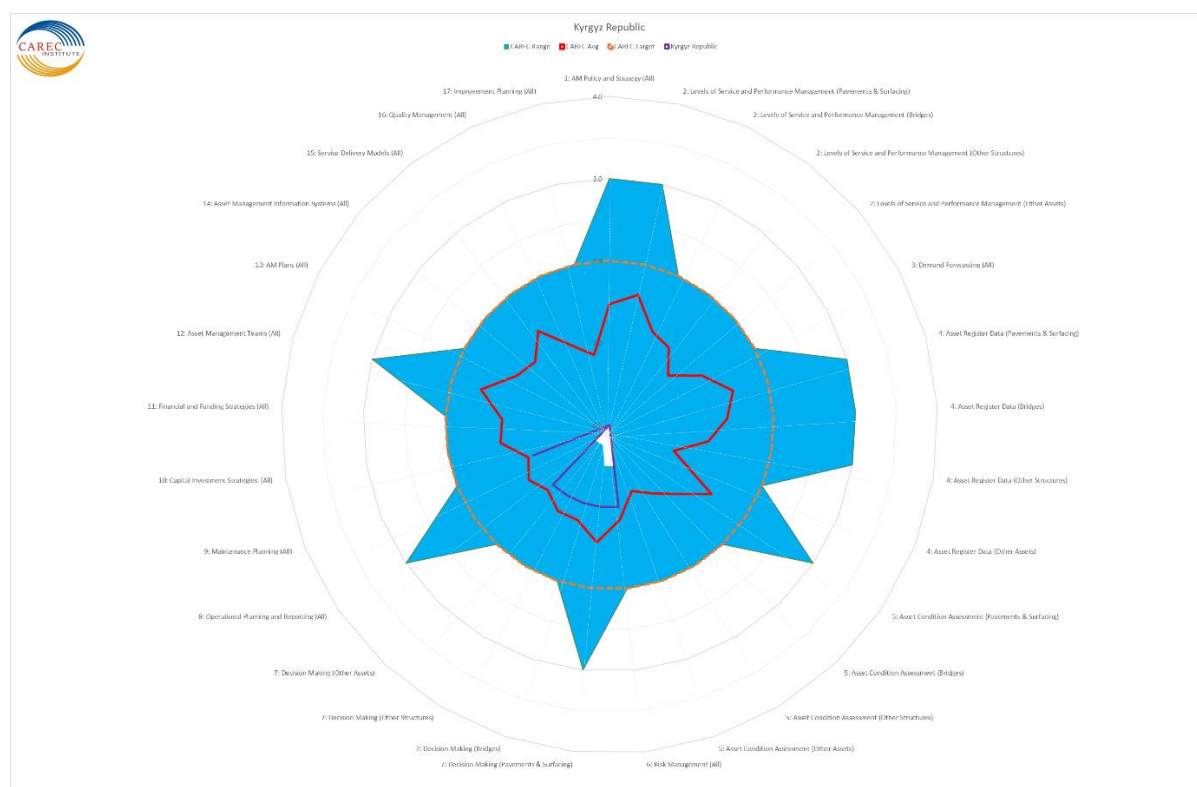
For each component of RAM, a score was assigned as follows:

- 0 = Aware
- 1 = Basic
- 2 = Proficient
- 3 = Advanced
- 4 = Advanced +

The results of the assessment are shown in Figure 6 below, with the following legend:

- Target (orange line): this has been set at a maturity level of 2 = Proficient.
- CAREC Avg (red line): this is the average result from the submitted self-assessments from the 2020/21 maturity assessments.
- Blue shading: Range of CAREC results.
- Kyrgyz Republic (purple line).

Figure 6: 2021 RAM Maturity Self-Assessment.



From the results of the maturity assessment, an improvement plan was drafted to lift the minimum maturity rating to a level of 2 (proficient). For each improvement action (one action per component of the RAM Process), a priority has been set based on the following timeline:

- High = completion within the next 1-2 years.
- Medium = completion within the next 3-5 years.
- Low = completion within the next 6-10 years.

The improvement plan was developed in close collaboration with the ADB RAMS III consultant representative, such that it is anticipated that the actions will be implemented in a reasonable timeframe.

Table 3: Recommended Improvement Plan.

RAM Process	Improvement Initiative
Strategic Direction	<ul style="list-style-type: none"> • Develop a RAM Policy and Strategy and have these authorized by the Minister of Transport and Communications and the Minister of Finance. • The RAM Strategy should clearly articulate the steps of improvement for RAM up till 2030, including the costs associated with implementing the Policy and Strategy.
Levels of Service	<ul style="list-style-type: none"> • Need to develop and implement Customer Satisfaction surveys. • Need to develop a full range of Service Levels and Performance Measures – beyond just road roughness (i.e. travel time reliability, road safety etc.). • Ensure public reporting against the measures occurs. • Enhance call center to have analytical capabilities such as number of missed calls, hang-up etc.

Future Demand	<ul style="list-style-type: none"> • Develop a national traffic monitoring strategy that includes a combination of permanent and temporary sites, and covers both traffic volumes and vehicle loading data. • From the strategy then determine the additional equipment (beyond the current 5 portable radar systems) that is required to meet the needs of the strategy. Likely will need a combination of additional portable counting systems, permanent weigh-in-motion sites, and portable scales.
Asset Performance	<ul style="list-style-type: none"> • Refer comment under Data on additional equipment requirements. • JICA bridge assessment information is approx. 10 years old. All the staff trained in the system have moved on. Need to ensure there is a mechanism for keeping the data up to date.
Asset Management Plan	<ul style="list-style-type: none"> • Prepare an AMP and publish this publicly. • Use the AMP as the primary justification for the overall works program, and to keep track of progress against the RAM Policy and Strategy.
Decision Making Techniques	<ul style="list-style-type: none"> • Determine how to blend risk based 'climate resilient' type needs into the more deterministic capital works program. • Introduce non-monetary prioritization indicators into planning process relevant to population, access social services, tourism, healthcare, education, etc.
Risk and Resilience	<ul style="list-style-type: none"> • Prepare a formal risk assessment methodology and conduct a full climate resilient study of the network. • NB: With 70% of roads in mountains, it was noted that many roads and bridges are damaged by landslides.
Operational & Maintenance Planning	<ul style="list-style-type: none"> • Develop a robust estimate of the maintenance costs for the network, including a focus on tasks such as crack sealing, shoulder maintenance and drainage that will all be critical to providing a climate resilient solution. • Develop emergency response plans for when unplanned road closures (landslides, accidents or similar) occur.
Capital Planning	<ul style="list-style-type: none"> • Need to determine the appropriate mix of system (HDM-4 or similar) and practitioner input to the development of the annual works program. • Initially this could be the use of HDM-4 at a strategic level to determine the appropriate quantum and mix of work into each of the 7 Regions, then the practitioners determine the location of those works. • Develop a rolling 5-year works program for all resurfacing and rehabilitation/reconstruction works.
Asset Financial Planning & Valuation	<ul style="list-style-type: none"> • Complete an asset valuation in 2025 (once further data collection has occurred under RAMS I/II).
Portfolio AMPs	<ul style="list-style-type: none"> • Complete as necessary for critical infrastructure items – major tunnels, bridges etc.
People	<ul style="list-style-type: none"> • Establish linkages between MTC/PIC and the university sector to both address issues of concern, and to build future capacity in the RAM space.
Data	<ul style="list-style-type: none"> • Establish Long Term Pavement Performance (LTPP) sites, ideally with other CAREC countries using a common evaluation format and open sharing of data across borders and with university sector. • Equipment needs: <ul style="list-style-type: none"> ○ Traffic counters. ○ Weigh-in-motion. ○ Portable weigh scales. ○ FWD (they have one at present that is needing repair and should be considered for repair).

	<ul style="list-style-type: none"> ○ Ground Penetrating Radar – not supported as not a routine data collection tool. If needed to populate missing inventory data then that can be procured as a one-off survey. ○ Skid Resistance – they have existing equipment that isn't used (not even for safety black spots). ○ Roughness equipment – current operates at 40km/h. Need more capacity (highway speeds) and ability for unpaved roads. The existing system could be considered for additional sensors to give a rutting profile. A Walking Profilometer or similar would be useful for calibrating the high-speed equipment and surveying small road sections. ○ Bridge inspection equipment – align with needs of JICA inspection methodology.
Systems and Tools	<ul style="list-style-type: none"> • Refer to RAMS I/II/III initiatives that have examined this in detail. • Update of Bridge Management System. • Develop expertise in GIS.
Processes	<ul style="list-style-type: none"> • Business map all current RAM processes.
Outsourcing	<ul style="list-style-type: none"> • Refer any suggestions under RAMS I/II/III for inclusion of the private sector in RAMS activities. • Formalize links with tertiary sector to help study (post-graduate research) topics of interest to MOTC.
Improvement Planning	<ul style="list-style-type: none"> • Adopt an improvement plan with timelines and fund it, and report on overall progress within the AMP.

Media Outreach

The workshop was featured on both national TV news, and on the Ministry of Transport and Communications channels, with the links below being to the respective items:

<https://youtu.be/4cG8uoe90lk>



Транспорт министрлигинин кызматкерлери эл аралык сертификатка ээ болду

https://m.facebook.com/story.php?story_fbid=pfbid032SNmcDmzvPmk4jCcaCfTbceb2X9itNsRbDTFOXtHwJAES9hpsUjSJQUndHXKoMEI&id=100068962653354&sfnsn=mo&mibextid=VhDh1V

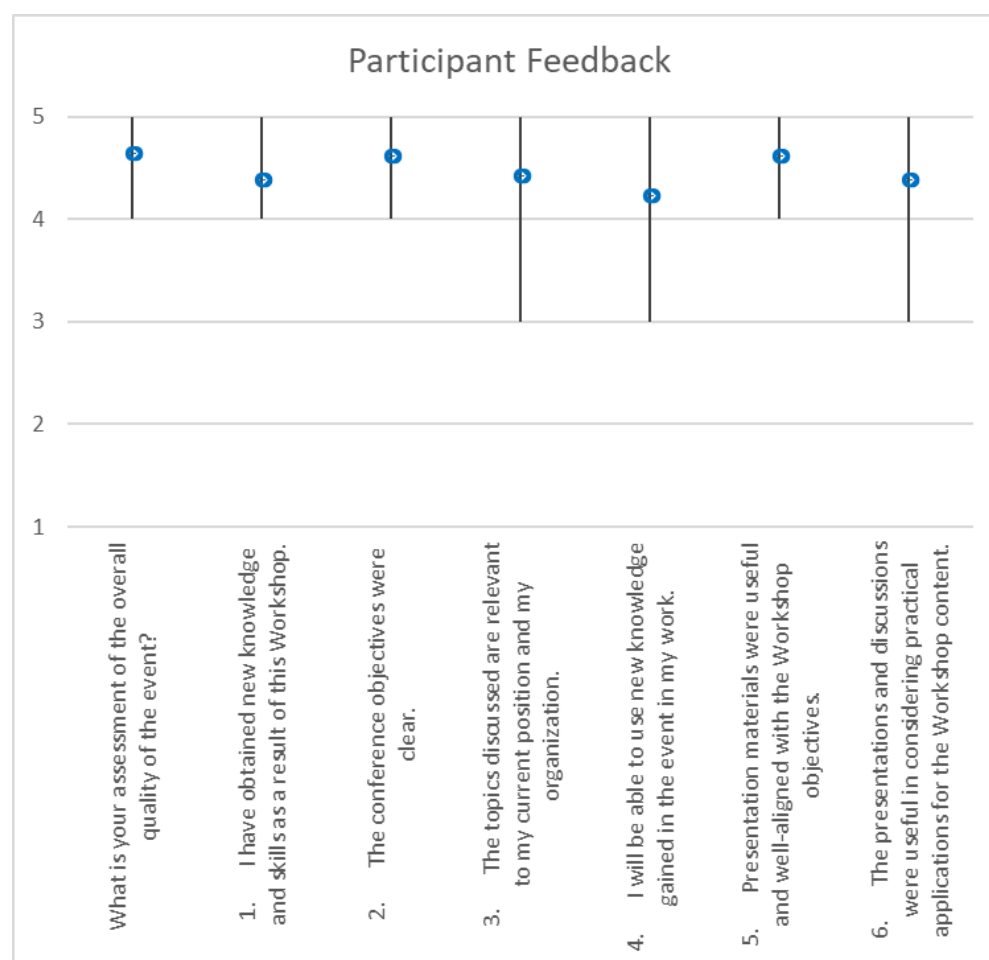


Feedback from Participants

At the end of the workshop, participants were provided with a feedback form. Responses were received from 15 participants.

The overall results are very positive, with the suggestions of areas for future workshops worth noting.

Figure 7: Workshop Evaluation by Participants.



Written feedback was also provided by a number of participants. These comments are grouped below through representative statements, into ways to make the current training program better, and what additional training areas the participants would like to see offered.

Ways to improve the current training:

- Widen the range of participants. Bring in heads of departments, along with bringing in more university professors.

Future training areas:

- Include RAM in the University courses.
- Repeat the course once the RAMS I/II/III is operational, to have more practical application of the coursework for the participants.
- Conduct experiential learning study tour to countries where RAM is well implemented.