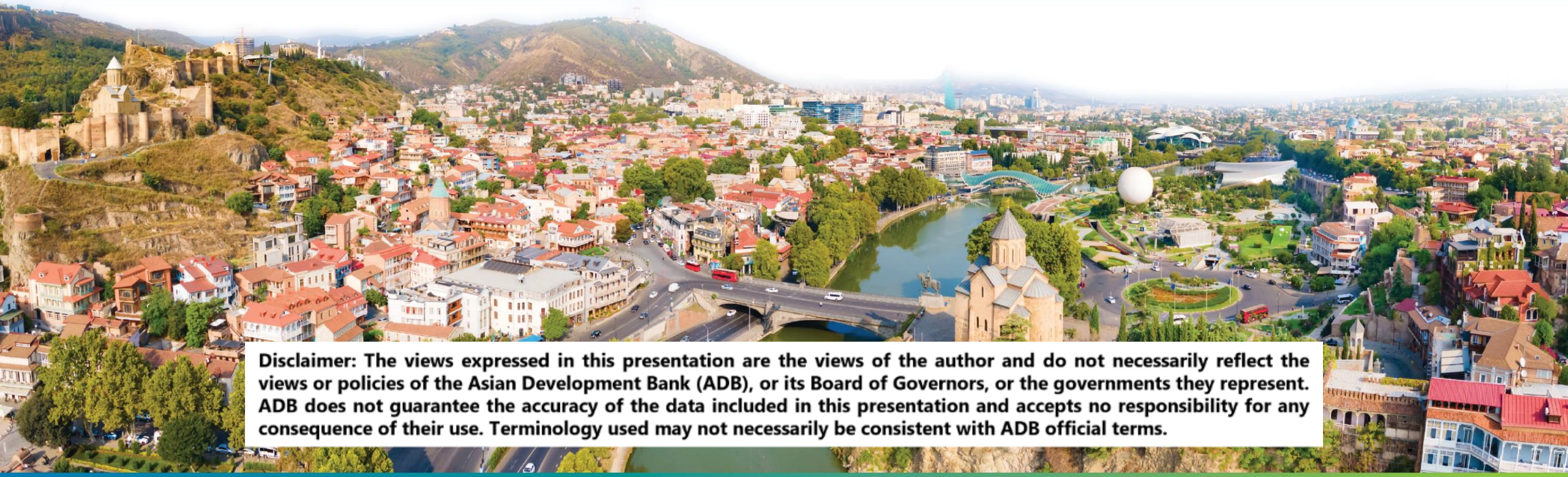
Environmental Safeguard Conference and Environmental and Social Framework Orientation Workshop

FOR CENTRAL AND WEST ASIA, AND EAST ASIA REGIONS

29 September–2 October 2025 | Tbilisi, Georgia



Disclaimer: The views expressed in this presentation are the views of the author and do not necessarily reflect the views or policies of the Asian Development Bank (ADB), or its Board of Governors, or the governments they represent. ADB does not guarantee the accuracy of the data included in this presentation and accepts no responsibility for any consequence of their use. Terminology used may not necessarily be consistent with ADB official terms.

Session 2: Safeguards by Design — Embedding Environmental Compliance and Accountability into Procurement

- Procurement determines the strength of safeguard implementation — clauses and BOQs must be enforceable - *Safeguard measures are most effective when clearly specified in contracts and BOQs*.
- The Karachi BRT and Georgia's Liveable Cities Project showed that when compliance is tied to payment, contractors pay attention."
- We now move from paper to practice — how EMPs are budgeted, monitored, and enforced during implementation.
- CAPs = Adaptive Management, not punishment.
- Link to Payments makes compliance real.

Session 3: Operationalizing EMPs — Budgeting, Monitoring, and Accountability in Implementation

- Safeguards implementation weakens with staff turnover unless embedded in permanent units.
- An EMP without resources / ample budget is just wishful thinking — budgeting and monitoring make it real
- Corrective action plans are the currency of accountability: find, fix, verify
- Next ,we'll see how institutions themselves must be structured to hold safeguards capacity over time, beyond individual projects

Session 4: Making Grievance Redress Work — Strengthening Risk-Based Approaches Across ADB-Funded Projects

- A credible GRM is more than a desk — it's a risk management tool that can reshape project design.
- Case studies showed that listening and adapting, even dropping a component, builds legitimacy and safeguards compliance.
- The message across all sessions: safeguards only deliver when they're designed into contracts, resourced in EMPs, embedded in institutions, risk-proofed by design, shared across stakeholders, and ultimately validated by communities.

Today's sessions

- **Session 5:** Resilient and Nature-Positive Design: Enhancing Safeguards Implementation in Challenging Project Environments
- **Session 6:** Driving Shared Responsibility: Managing Cross-Cutting E&S Risks and Building a Culture of Compliance
- **Session 7:** Strengthening Institutional Arrangements for Effective Safeguards Implementation

Session 5:

Resilient and Nature-Positive Design: Enhancing Safeguards Implementation in Challenging Project Environments

Duration: 90 minutes

“Safeguards can’t just minimize harm. They must shape infrastructure that is resilient and nature-positive. Every design choice either locks in risks or builds resilience.”

Why this matter? Most safeguards stop at “do no harm.”

Climate, disaster risks, and biodiversity loss require design that anticipates risks and delivers positive outcomes.

Case Study:
The Destruction of M6 Road by Natural Hazards:
A Starting Point for Developing a Risk Matrix Methodology

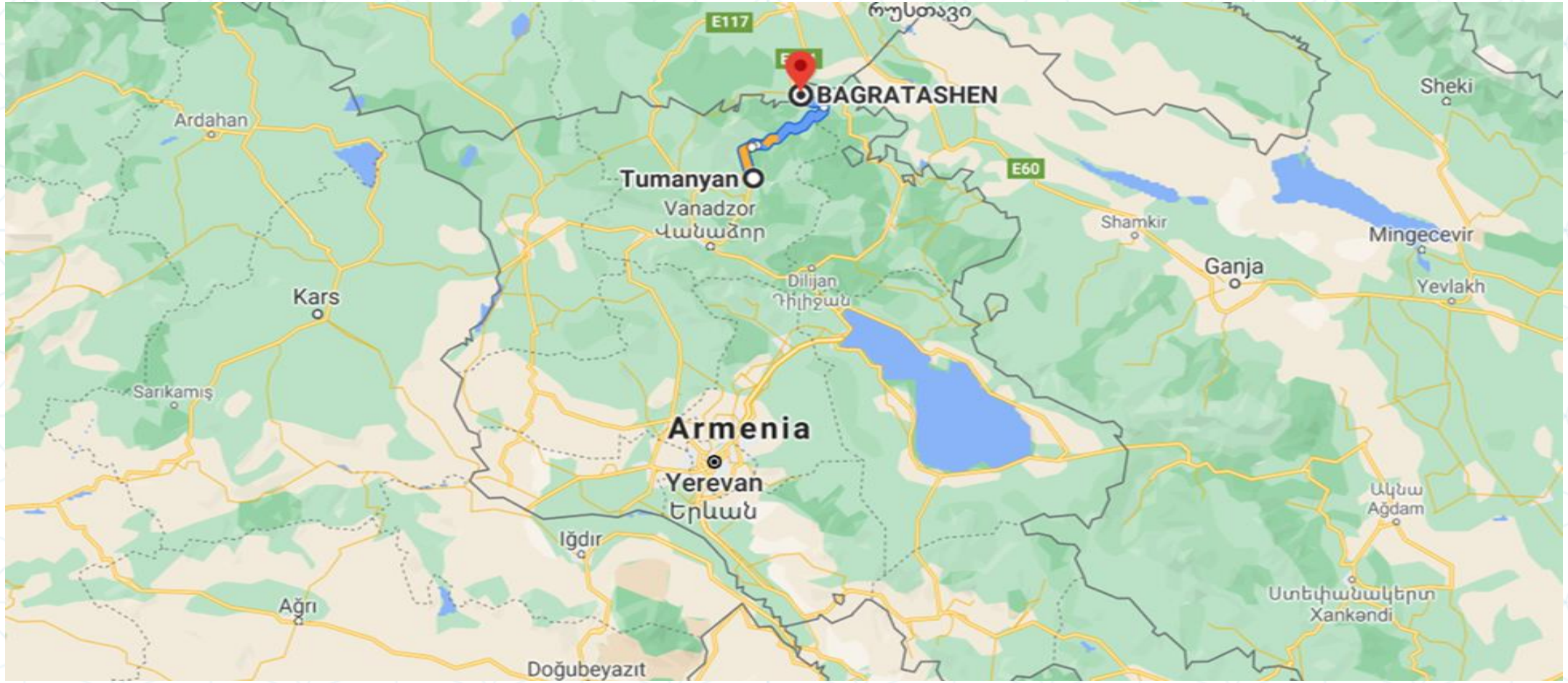
Project: ARM: Armenia-Georgia Border Regional Road
(M6 Vanadzor-Bagratashen) Improvement Project

Presenter: Inesa Zargaryan, PIU Environmental Specialist

EA/IA: Ministry of Territorial Administration and Infrastructure/Road Department Fund

Project Description

51.7KM M6 ROAD IMPROVEMENT PROJECT



Project Area

Section 2

Lot 1 (km 38+450 – km 48+140), l=9,690 km

Lot 2 (km 48+140 – km 62+300), l=14,160 km

Lot 3 (km 62+300 – km 90+191), l=27,891 km

Safeguards Challenges

For the M6 road — in the post-disaster context

Safety measures

Damage assessment

Financial evaluation

Actions for rehabilitation and recovery

For Armenia — in future road construction programs

DISASTER PREPAREDNESS IN FUTURE ROAD PROJECTS

Photos (before flooding and after flooding)

Cross-Cutting Issues and Solutions Introduced under TA 10110

Key Issues:

- Natural hazard impacts on M6 road
- Hydrology mapping & risk initiatives
- Risk matrix methodology development

Solutions and Innovations (TA 10110):

- AEST for PIU specialists
- Trainings & workshops
- Risk-informed safeguards planning
- M6 road rehabilitation & post-disaster discussions

Successes and Adaptive / Innovative Measures

- Hydrological Study and Modelling of the Debed River with GIS Mapping
- Hydrological Study of Armenia's River Network for Use in Road Construction Design
- Natural Hazard Risk Matrix for Interstate Road Segments in Armenia
- Pilot testing of the risk matrix on M6 and other high-risk roads in Armenia
- Involvement of Climate Adaptation Measures in Road Construction Projects

Institutional Capacity Gains

Following the Debed River flooding and M6 road collapse, the PIU has enhanced capacities by:

- Strengthening coordination with local authorities and emergency agencies for better disaster response
- Launching the first natural disaster risk assessments for interstate roads with national scientific involvement
- Modelling of government–science–stakeholder cooperation for disaster risk prevention and response

Evidence & Replicability Takeaways

- Pilot will be tested on M6 road; methodology will be implemented to other roads.
- Institutional capacity raised through AEST training.
- Possibility of replication on other sectors (utilities, urban infrastructure).
- Risk matrix methodology can be applied across critical roads — simple, visual, decision-ready.

Lessons Learned

- In the context of Climate Change, it is *mandatory* to conduct a detailed assessment of natural disasters for the design of all roads and to develop adaptation measures.

Forward-Looking Actions / Next Steps for Sustainability

- Integrate hydrological and disaster risk findings into the M6 road and future project designs
- Make disaster risk assessments a standard part of future road project planning.
- Maintain partnerships with national scientific bodies, universities and other stakeholders

Case Study:
Best Practices in Road Infrastructure Projects

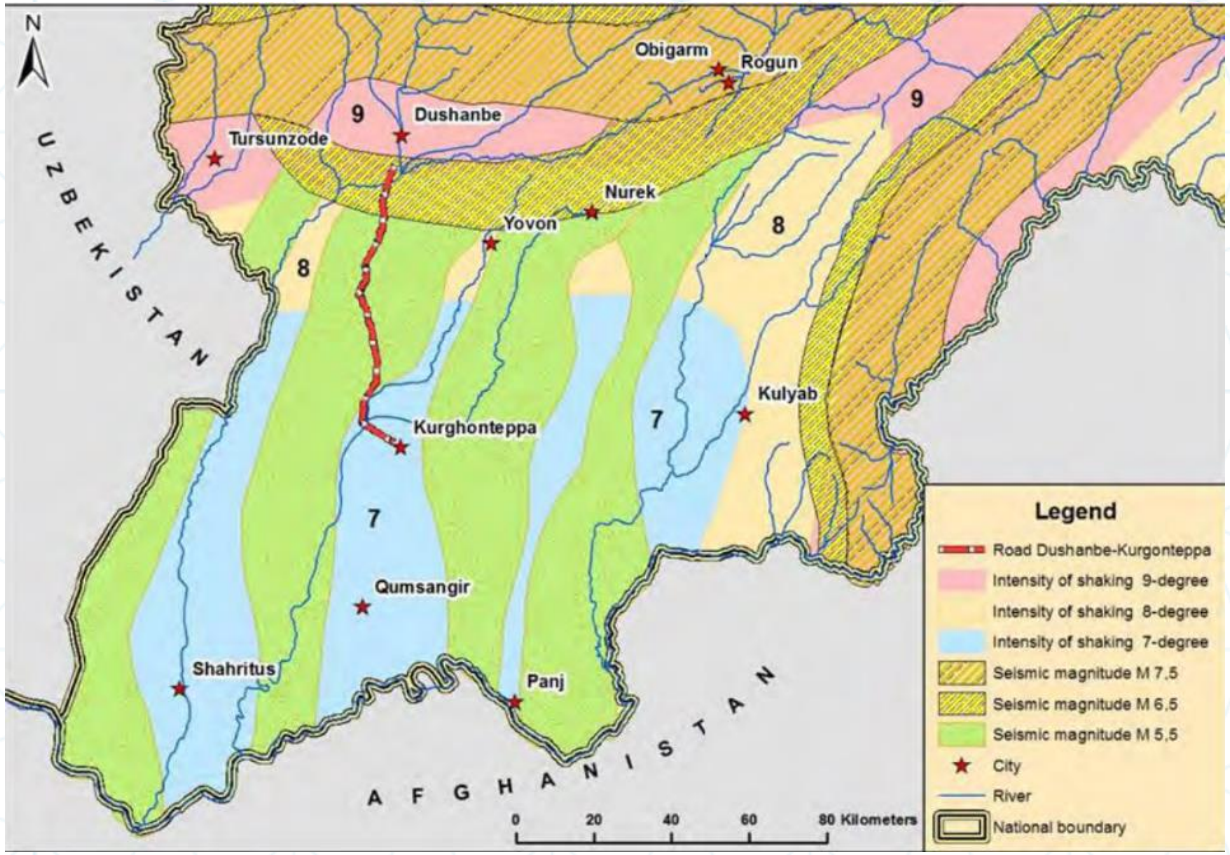
Project: TAJ Biodiversity Conservation in Road Design (CAREC Corridors 2, 5, 6) Dushanbe – Bokhtar Rehabilitation and Reconstruction Road Project

Presenter: **Eraj Abduvohidzoda**

EA/IA: **Projects Implementation Unit for Roads Rehabilitation**

Project scope

- *The project is part of CAREC corridors 2, 5 & 6*
- *Road section length: 73 км*
- *Category B under ADB SPS 2009*
- *Road widening from 2 to 4 lanes, construction of bridges and overhead pedestrian crossings*



Context & Challenge

Dushanbe – Bokhtar, Phase 1 and Phase 2

Initial Challenge: Tree Removal for Road Widening

- CAREC road widening required removing approximately 5,000 trees
- Biodiversity loss + CO_2 implications

PIURR and TA-10110 Introduced Solutions

Dushanbe – Bokhtar, Phase 1 and Phase 2

Prioritized tree conservation, without compromising project efficiency or road quality.

- Design alteration in two sections for saving up to 500 trees
- Involvement of community and environmental authority's input
- Design integrated biodiversity into road median
- Up to 1000 trees for removal were transplanted to other location

Implemented Best Practices

Dushanbe – Bokhtar, Phase 1

Saved trees at km
20+000 – 25+000

Implemented Best Practices

Dushanbe – Bokhtar, Phase 1

Transplanted trees on *Naberezhnaya* Street in Dushanbe

Implemented Best Practices

Dushanbe – Bokhtar, Phase 2

Saved over 200 mature pine trees at km 66+000

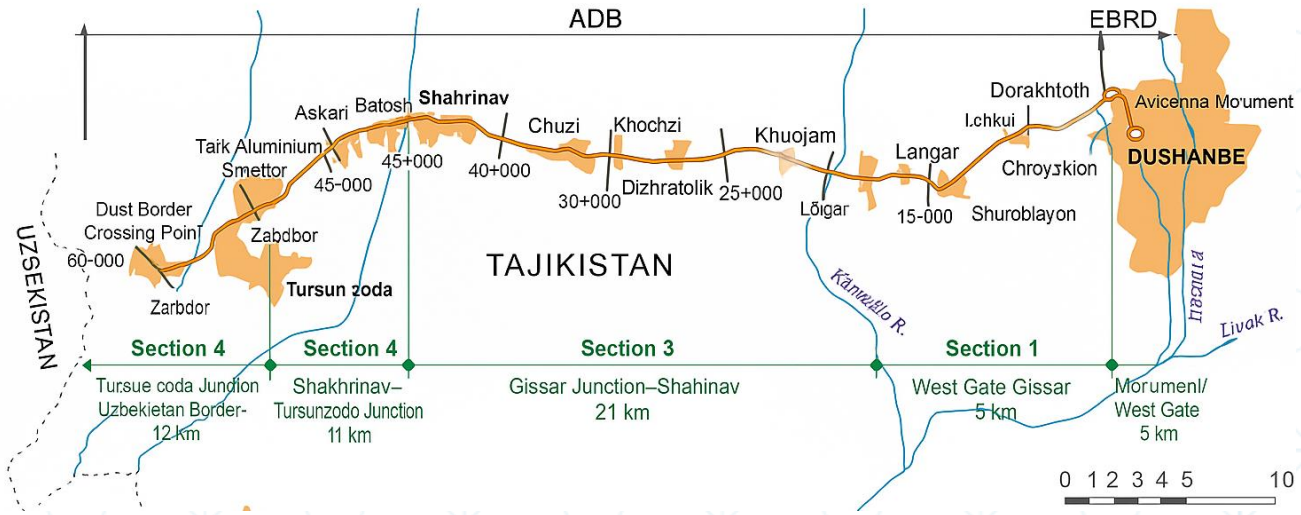
Good Practices & Replicability Takeaway

Dushanbe – Bokhtar road project

- After the stabilization of stored materials, a gas station, shops, and a construction materials market were built on this site.
- Created more than 40 full time jobs for local population.

Replicable Model: early design revision + safeguard authority input = “nature-positive” project.

Safeguards challenges



Trees planted by PIURR employees

Dushanbe – Tursunzade – Uzbekistan border

Institutional Capacity Gains

Positive Environmental Impact:

- **Over 2000 mature trees** preserved in two projects.
- Estimated up to **50 tons of CO_2 captured annually** by preserved trees.
- Habitat for local fauna maintained, supporting regional biodiversity.
- Reduction in **climate impact** from avoided tree loss.

Cost – effective conservation

- Revisions showed that biodiversity protection need not be expensive or complicated

Community Participation

- Local voices helped shape final decisions
- The value of inclusive planning and transparency was demonstrated

Lessons Learned

- **Conduct early, detailed reviews** of project design, with a focus on conserving biodiversity and natural assets.
- **Collaborate with local experts, stakeholders, and communities** to ensure socially and ecologically responsible solutions.
- **Regular consultations** with the public and local government agencies should be held.
- **All possible options** should be considered, and only the best ones should be adopted.

Good Practices & Replicability Takeaways

- **Community involvement in tree replantation and care**
- Local residents and stakeholders participated in tree replantation and care.
- Environmental campaigns were held in schools.
- Up to 20,000 were replanted along the Dushanbe - Bokhtar road section.

Other best practices

Audience Q&A

- Can safeguards staff influence design early enough — or are we too late?
- How can adaptive design be budgeted when contexts change?
- Who signs off design revisions linked to safeguards?

Wrap-Up & ESF Bridge

Key Takeaways

- Hazard risk and biodiversity must be designed into projects upfront.
- Mitigation hierarchy only works if tied to BOQs, contracts, and budgets.
- Safeguards staff can shift projects from “less harm” → “net positive.”

ESF Bridge

- SPS (2009): Pollution prevention, biodiversity, consultation.
- ESF (ESS1 + ESS6): **Risk-based design, resilience, and net-positive biodiversity outcomes.** ESS6: biodiversity and habitats.
- *“Procurement embeds safeguards (Session 2), EMPs resource them (Session 3), GRMs validate them (Session 4). Now, design itself must anticipate hazards and embed resilience (Session 5).”*

Session 6:

Driving Shared Responsibility: Managing Cross-Cutting E&S Risks and Building a Culture of Compliance

Objective: Show how multi-stakeholder oversight makes safeguards credible.

Duration: 90 minutes

Why it Matters

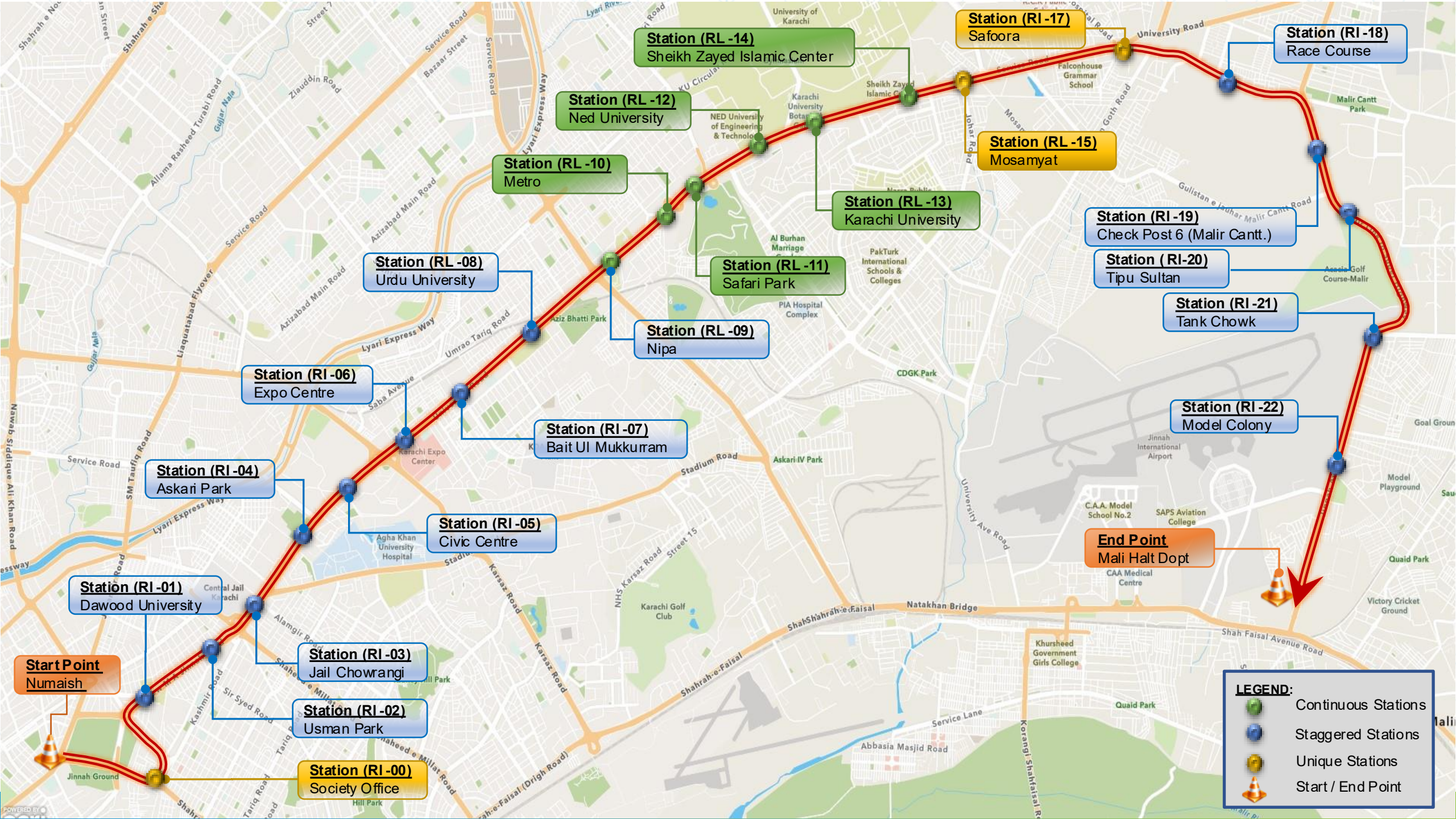
- Cross-cutting risks like waste, OHS, asbestos, biodiversity, and GRMs cannot be solved by one actor alone.
- Shared responsibility = shared accountability.
- Shared accountability = roles, records, repercussions.

Case Study:
Stakeholder Engagement and E-GRM

Project: PAK Karachi Bus Rapid Transit (KBRT) Red Line

Presenter: **Abdul Jabbar (Assistant Manager Environment)**

EA/IA: **Trans Karachi**


Start Point
Numaish
Station (RI -00)
Society Office
Station (RI -01)
Dawood University
Station (RI -02)
Usman Park
Station (RI -03)
Jail Chowrangi
Station (RI -04)
Askari Park
Station (RI -05)
Civic Centre
Station (RI -06)
Expo Centre
Station (RI -07)
Bait Ul Mukkurram
Station (RL -08)
Urdu University
Station (RL -09)
Nipa
Station (RL -10)
Metro
Station (RL -11)
Safari Park
Station (RL -12)
Ned University
Station (RL -13)
Karachi University
Station (RL -14)
Sheikh Zayed Islamic Center
Station (RI -17)
Safoora
Station (RL -15)
Mosamyat
Station (RI -18)
Race Course
Station (RI -19)
Check Post 6 (Malir Cantt.)
Station (RI-20)
Tipu Sultan
Station (RI -21)
Tank Chowk
Station (RI -22)
Model Colony
End Point
Mali Halt Dopt
LEGEND:
Continuous Stations
Staggered Stations
Unique Stations
Start / End Point

Project Context

- Urban mass transit project, multiple contractors, high labor intensity.
- Works suspended due to E&S gaps and safety compliance gaps.
- OHS and safeguards not budgeted in BOQ → systemic non-compliance.

Safeguards Challenges

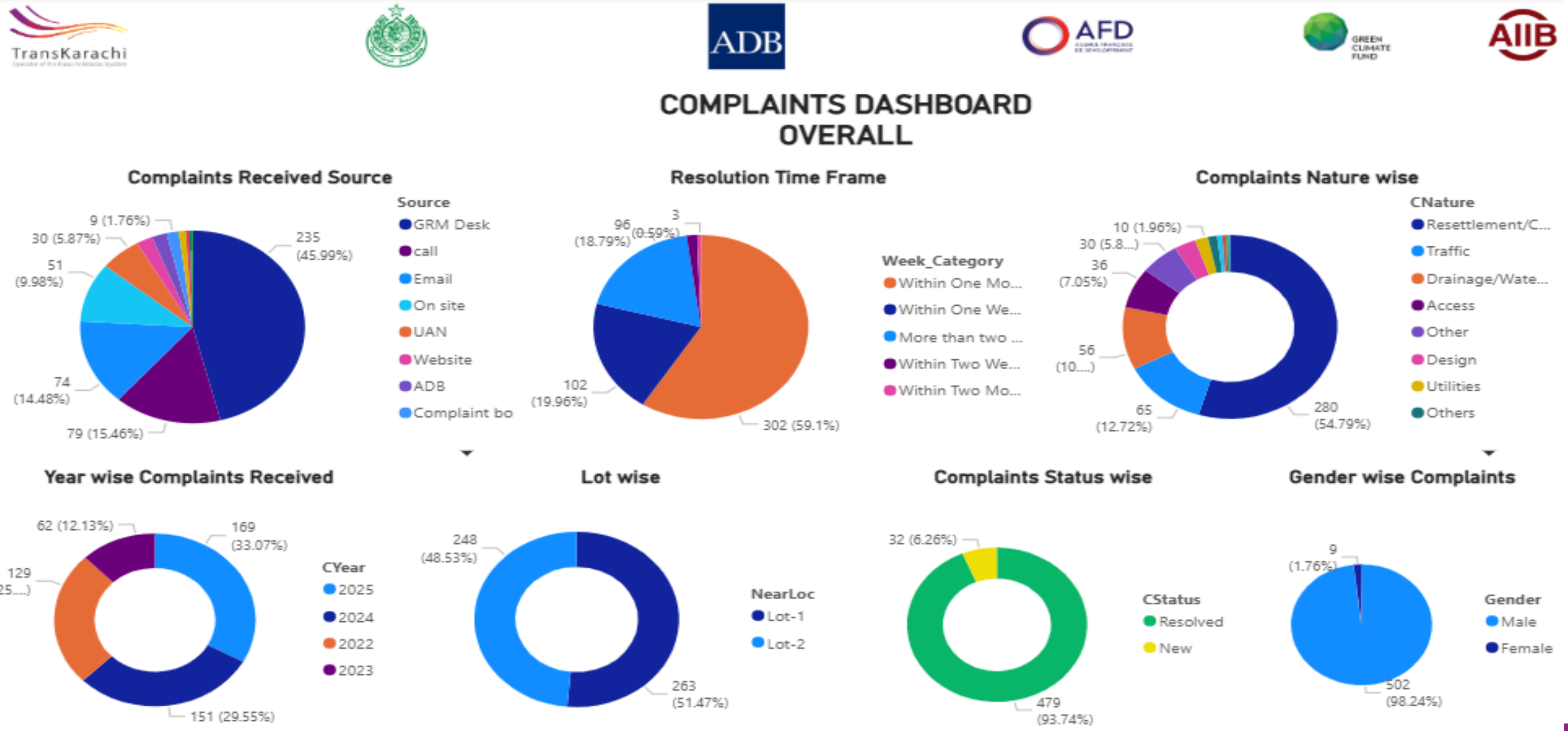
- Contract implementation revealed capacity gaps in OHS planning and budgeting
- OHS non-compliances shut down works
- Gaps on safeguards cost items in BOQ / cost provisions in contracts
- Serious safety incidents due to weak OHS systems implemented at sites
- Community raised concerns
- Project implementation stalled

Brief history of OH&S and ENV issues. Actions. April 2025.

Phased Corrective Action Plan

- Phase 1 – Address and mitigate the most critical OH&S risks posing immediate danger to workers and the public (May 16-May 31).
- Phase 2 – Tackle remaining safety issues and ensure full compliance with OH&S standards across the site (June 1--June 15).
- No construction works until CAP for Phase 1 implemented
- Actual implementation of CAP for Phase 1 – July 4, 2025.
- CAP for Phase 2 – under implementation- Due to recent heavy rains in Karachi, Urban flooding badly impacted the compliance progress.

community complaints - 511



TA 10110 Contributions

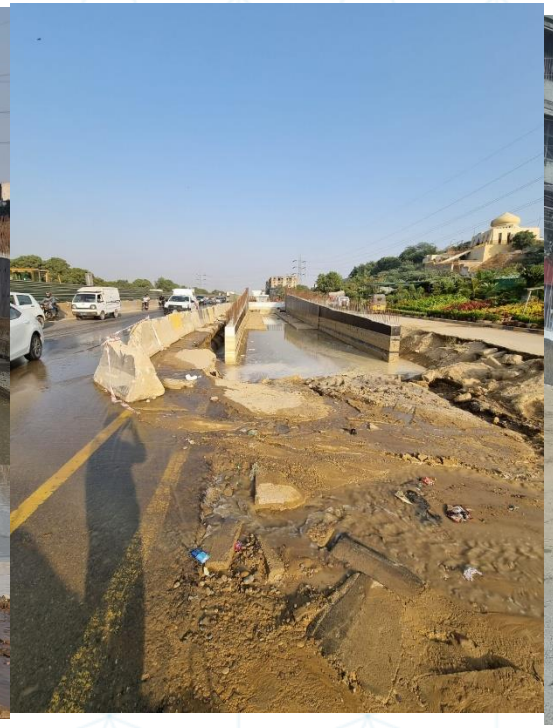
- Developed CAP, inserted safeguards line items via contract addenda, sectionalized works, and rolled out multilingual site safety communications.
- Measures Implemented: Daily toolbox meetings, behavior-based safety checks, visual/video-based safety training, CAP tracker linked to interim payments.
- CAP tracker linked to interim payments → ensured accountability.
- E&S site conditions improved through CAP implementation and safety enhancements / compliance improved.
- Work resumed under safer conditions.

Capacity Building Sessions with TK, PMCSC, Contractors by ADB

Implementation Experience — Successes, Challenges, and Adaptive / Innovative Measures

- KBRT Case Study:
- A strategic phasing of the CAP illustrates that by clearly defining action items, specifying who will be responsible for implementation, determining monitoring roles, and establishing cost allocations and timelines, the implementation of tasks was accomplished that once seemed impossible.
- Ultimately, all interconnected factors - social, environmental, and technical were tackled, project teams progressed toward fulfilling the CAP action items.

Non-compliances


Non-compliances

Non-compliances









Traffic Signages- For Community Safety

Signboards have been installed along Lot 2, from Mosamiyat to Numaish.








Improvement Works- For Community and Labor safety

Lane Marking Work- Lot 1- To facilitate the community

Zebra Crossing for Pedestrian Movement at CP 6

Zebra Crossing for Pedestrian Movement at Tank Chowk

Zebra Crossing for Pedestrian Movement at Ayesha Chowk

Lane Marking from Tank Chowk to CP 6

Barrier cleaning from Tank Chowk to CP 6

Lane Marking near CP 6

Traffic Signages – Lot 1- To facilitate the community

- 106 signboards have been installed along Lot 1, from Tank Chowk to Mosamiyat.












Improvement Works - Lot 2

Before	After
	

Road patch Work at Mosamiyat Service Road

Before	After
	

Road patch Work at Samama for smooth traffic flow

Before	After
	

Road patch Work at Samama for smooth traffic flow

Before	After
	

Road patch Work at Safari Park for smooth traffic flow

Lane Marking Work- Lot 2

Lane Marking at Urdu University

Lane Marking at Sheikh Zayed

Zebra Crossing at Mosamiyat

Zebra Crossing at Café Qabail

Zebra Crossing at Numaish Underpass

Zebra Crossing at Numaish Underpass

Traffic Signages- Lot 2

184 signboards have been installed along Lot 2, from Mosamiyat to Numaish.









Diversion Improvement

Before	After Treatment
	

Location: From CP-06 toward Safoora

In between K14+220 to K14+480

Work Zone Improvement – Toilet Facility for Workers

Karachi BRT Red Line (Lot-II) Improvement Works

Before

After Treatment

Location: Samama Bridge R/S

Karachi BRT Red Line (Lot-II) Improvement Works

Before	After Treatment
	

Location: Cafe Qabail

Karachi BRT Red Line (Lot-II)
Improvement Works

Before	After Treatment
	

Location: KU U turn

Karachi BRT Red Line (Lot-II) Improvement Works

Before

After Treatment

Excavation Safety

Implementation Experience — Successes, Challenges, and Adaptive / Innovative Measures

- Monitoring and Reporting

Strategic phasing of the CAP improved monitoring and reporting by quantifying environmental and social issues- better trend analysis will be presented in monitoring reports.

- E-GRM

Barcode scanning, calling on UAN number, sending concern directly to designated number through SMS, or emailing directly project contractors. Any complaints or suggestions submitted by users are promptly forwarded to the appropriate teams. If a suggestion or complaint is deemed valid, a CAP is created, detailing the action items, responsibilities, and timelines for implementation.

- Public Consultation

Developing a compliance culture, aligning projects more closely with community needs. Bi-monthly public consultation are being conducted before, during and after project activity completion through out the corridor.

UC 11 Complaint Case – CAP Compliance

- All minor 15 items are complete except two due to technical design issue are pending. Minor concerns were raised to enhance community benefits, like street lights, manhole covers, and land leveling.

Total Observations	**17**
Closed Observations	15
Pending	02

Pending

S. No	Activity	Observation	Original Duration (Days)	Start Date	End Date	Responsibility	Progress Update	Remarks
11	Asphalt	Road preparation with asphalt & Footpath	20	21-May-2025	30-June-2025	Lot-2 Contractor/ PMCSC	To finalize the job, mix design of asphalt trials have been started, once the results finalized then asphalt activity will be planned accordingly and footpath will be completed after that.	Ongoing
12	Storm Water Drain Chambers	SWD Chambers	5	27-May-2025	30-Jun-2025	Lot-2 Contractor/ PMCSC	Shop drawing has been approved, contractor planned activity to complete by 10 October, 2025.	Ongoing

E-GRM on site


COMPLAINT REGISTER
FOR BRT-RED LINE
KARACHI
LOT- 1
شکایت رجسٹر
برائے بی-آر-ٹی ریڈ لائن کراچی


TransKarachi
شکایات باکس
Complaint Box


ADB
TransKarachi
شکایات اور تجاویز
Cell #: 0336-3502-009/0333-2087-422
Email: complaint.grm@transkarachi.pk
Address: Gulistan-e-Johar, Shahrah-e-Aisha Near Gulistan-e-Roomni KBRT Redline Lot-1 ZKB Camp Office.
TransKarachi - Complaints
UAN 111 544 278
KHI BRT
Minconsult
Project Management Construction Supervision Cunsultant
TransKarachi
HELPLINE
UAN
111-544-278
111-KHI-BRT
"We value your concerns and use them to improve our services."


EMAIL


WWW

Lessons Learned

- Timely and appropriate GRM operations
- Effective communication, monitoring and reporting
- Investment in capacity building and tailored training
- A proactive approach is essential. GRM efficiency is key.
- Work should be suspended until safety measures are implemented community issues addressed, or design risks resolved. Create a CAP and prioritize for implementation.
- Engage third party auditors
- Prompt and proactive communication with complainants

Good Practices & Replicability Takeaway

- Practical CAP + payment linkage model
  - Results: CAP closures improved compliance; unsafe worksites transformed; replicable model for multi-contractor, high-labor transport projects.
- Sectionalized approach effective for large, labor-intensive projects.
- Shows how TA support converts non-compliance into a culture of safety.

Forward-Looking Actions / Next Steps for Sustainability

- Stakeholder Management Plan implementation.
- Design changes where possible as per the public opinion.
- Strengthen the comprehensive monitoring and reporting while adapting to changes in project activities to enhance the accountability.
- Effective teamwork between technical and safeguard teams is important.
- Update the Traffic Management Plan.
- GRM visibility on sites should be sustained at visible locations and record should be maintained.

Case Study:
EMP Monitoring Practices

Project: Uzbekistan Central Asia Regional Economic Cooperation Corridor 2 (Bukhara-Miskin-Urgench-Khiva) Railway Electrification Project

Presenter: **Guzal Khojamyarova, PIU Environmental Specialist**

EA/IA: **O'zbekiston Temir Yo'llari JSC – Railways Company**


Afrosiyob

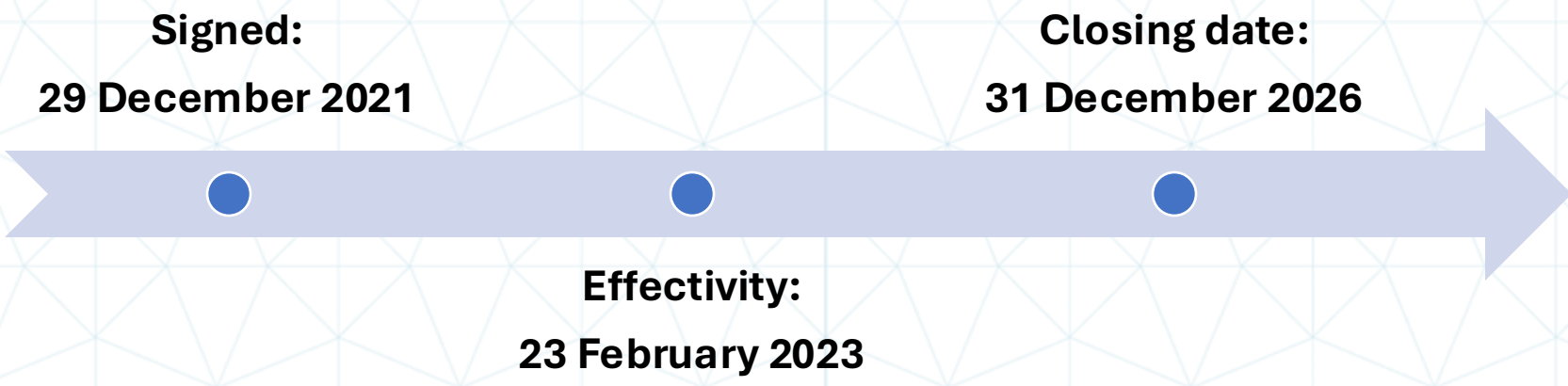
Brief project context

Loan 4170-UZB:

- Classified as **Category B** in accordance with the ADB Safeguard Policy Statement (2009).
- Project IEE approved in 2021.
- Construction works began in April 2024.

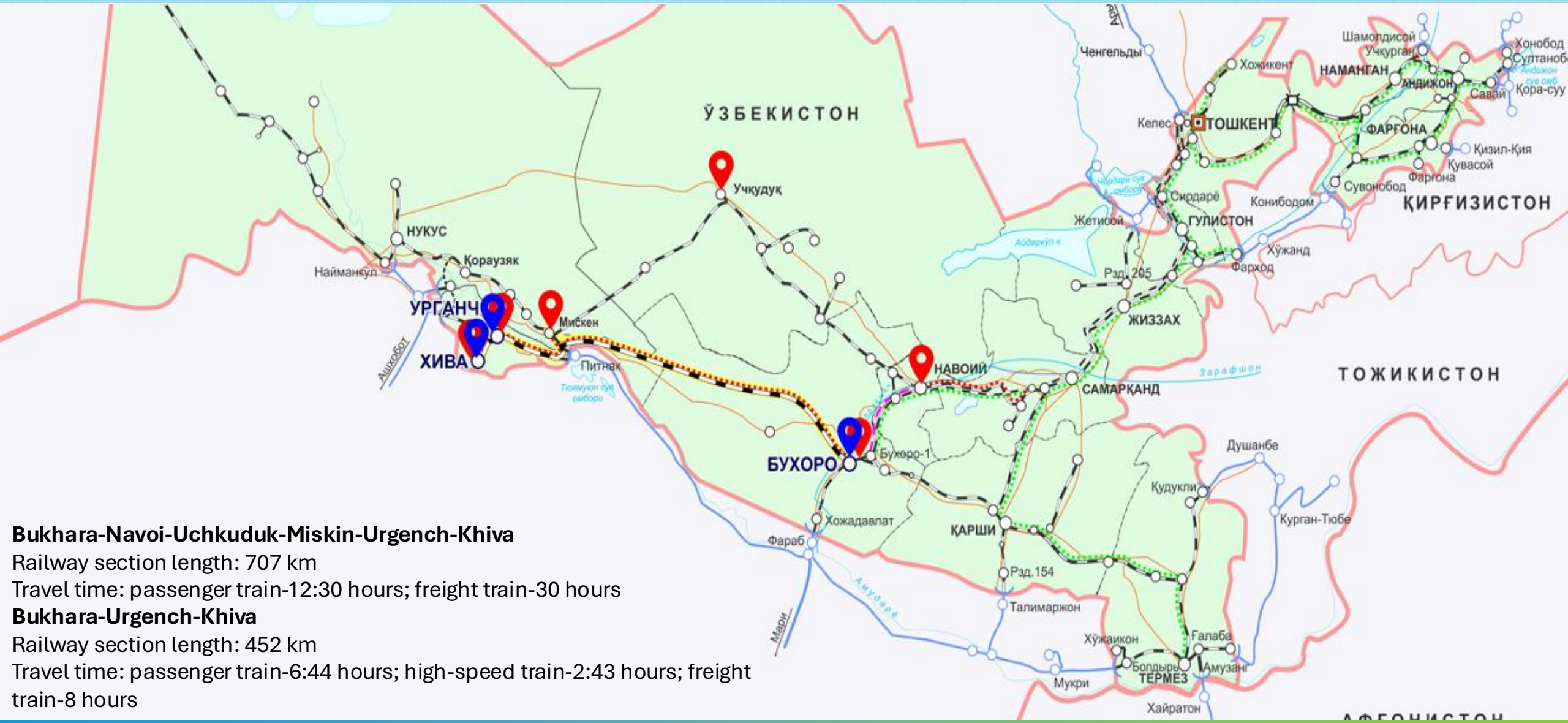
Project objectives:

- Electrification of 465 km of existing railway lines
- Reduce travel times of high-speed trains
- Tourist destinations could be accessed by high-speed railway to promote UZB's culture and history



Brief project context

Map of the Main Railway Network of Uzbekistan



Bukhara-Navoi-Uchkuduk-Miskin-Urgench-Khiva
Railway section length: 707 km
Travel time: passenger train-12:30 hours; freight train-30 hours

Bukhara-Urgench-Khiva
Railway section length: 452 km
Travel time: passenger train-6:44 hours; high-speed train-2:43 hours; freight train-8 hours

Three-stages Impacts

Pre-construction Stage

- Obtain permits/approvals
- Development of IEE

Construction Stage

- generation of construction, solid and liquid waste
- air pollution
- increased noise levels
- vibration
- land allocation for construction camps
- soil disturbance
- risks to public health and safety
- occupational health and safety

Operation Stage

- Noise and vibration levels generated by the railway and their effects on buildings and community health and safety

Design Changes and Impact Prevention

Relocation of traction substations Bukhara and Urgench

Adjustment of traction substation Khazarasp site

Environmental due diligence

Repeat EIA and positive State Environmental Review

Implementation Experience — Challenges

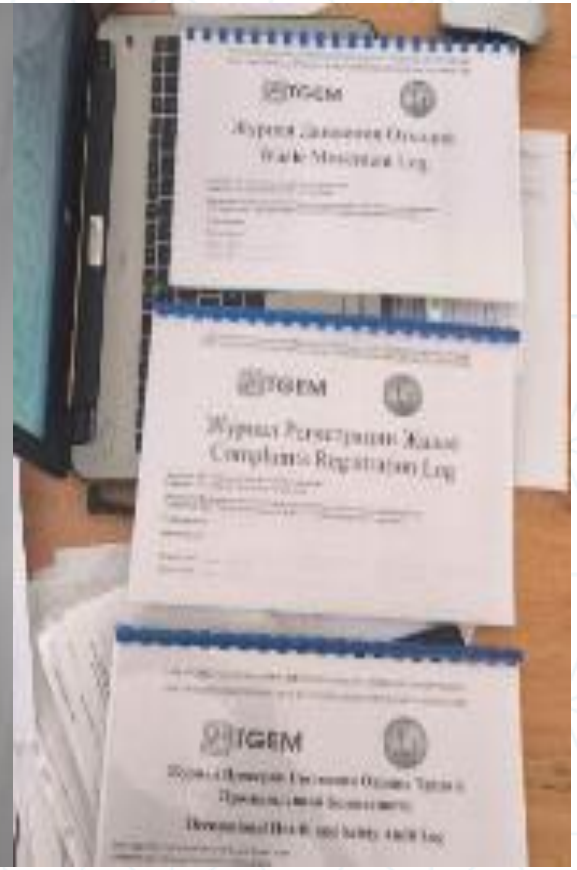
CONTRACTOR EHS SYSTEMS: INCOMPLETE SSEMP/TSEMP ROLLOUT; CAMP CONDITIONS BELOW ACCEPTABLE STANDARDS; HAZARDOUS-WASTE MISMANAGEMENT, NONCOMPLIANT WATER/SANITATION CONDITIONS.

DOCUMENTATION GAPS: GAPS IN TRAINING RECORDS, NON-COMPLIANCE NOTICES, GRM TRACKING.

DUST AND MACHINERY EMISSIONS IN DESERT SECTIONS; STRONG WINDS INCREASED DUST SPREAD, THOUGH FAR LOCATION OF FACILITIES FROM SENSITIVE RECEPTORS.

Challenges and Solutions

Field-level findings **corrective actions**



Improved waste storage, sanitary facilities and record keeping

Challenges and Solutions

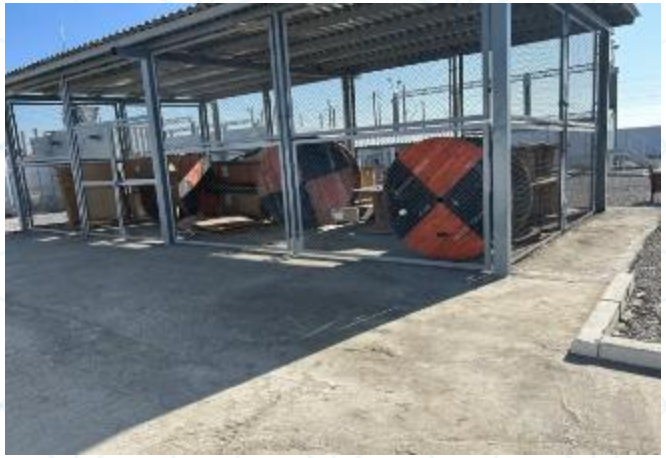
Improper storage of fuel and lubricants (old used barrels of fuel and lubricants)

Site has been cleared, old used barrels with fuel and lubricants have been removed

Proper storage of fuel and lubricants has been organized

Lack of designated storage for construction waste: debris and used construction materials were piled near the technical trailer and partly outside the construction site

Construction site cleared of waste: debris removed to an authorized landfill; territory cleared



Proper storage of fuel and lubricants organized: containers moved to a specially equipped area with a solid base and fire-resistant foundation, preventing soil contact

Implementation Experience — Success

Mobilization & staging. Selected the precast foundations method to reduce noise/dust/time on site

IEE confirmed no need for large-scale vegetation clearance; no protected areas or cultural heritage sites nearby.

At Amudarya River crossing: flat terrain, minimal vegetation clearance, reduced risk of erosion and sedimentation to watercourses.

Impact avoidance by design. Substation relocations reduced interaction with irrigated household plots and avoided demolitions

Contact line works carried out with limited disturbance; manual excavation reduced dust and machinery emissions.

Adaptive / Innovative Measures

- Wider use of precast elements in civil works to reduce construction footprint.
- Sequenced IEE/EMP updates with revised designs.
- Use of reed barriers to prevent dune (sand) migration toward railway tracks.
- Steel transmission towers fitted with lightning protection and wind stabilizers to ensure reliability in strong winds/seismic zones.
- Buffer zone maintained around contact line poles to avoid EMF impacts on residential premises.

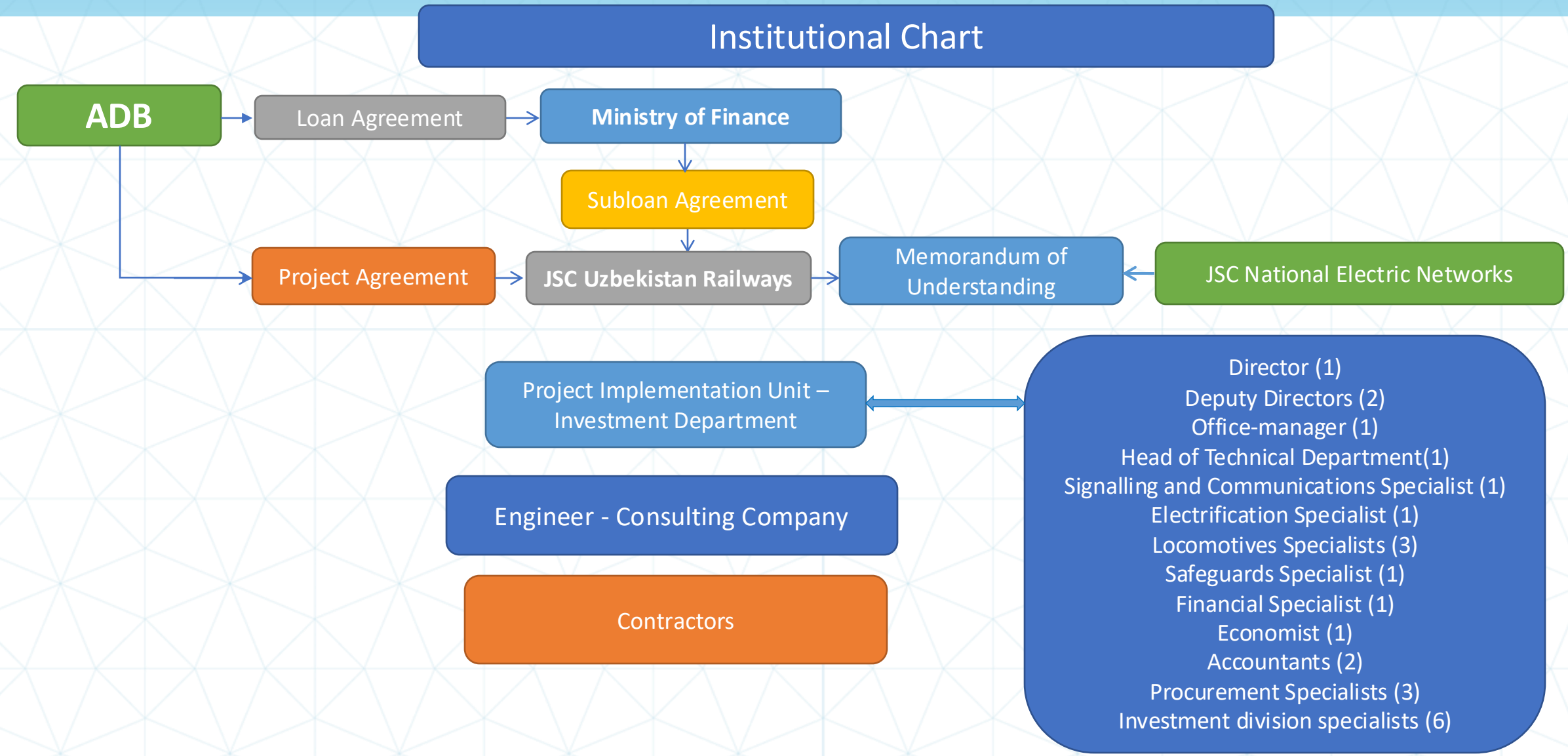
TA 10110 Contributions

- Triggered timely EIAs/EMP updates when siting shifted. Biodiversity risks addressed via ornithologist engagement
- Conducted joint audits with PIU + contractors. Precast structures reduced site footprint (dust, noise, waste).
- Joint audits with CAPs; Corrective CAPs closed with evidence.
- Improved camp standards → safer and healthier worker conditions.
- Introduced “Camp Compliance Pack”: lined hazardous-waste bays, potable water SOPs, GRM logs at camps.

Institutional Capacity Gains

- **Strengthened PIU**: 22 staff including Environmental Specialist, supported by international and national consultants.
- **Supervision**: Regular joint supervision missions, field audits, semi-annual EMRs, EHS sections integrated into monthly / quarterly reporting.
- **Trainings**: Contractor's SSEMP review training, EHS coaching and EMP implementation.
- **Documentation**: Improved reporting (GRM, waste contracts, non-compliance logs).
- **Adaptive Management**: Institutionalized updating IEE/EMP after design changes.
- **Cross-Integration**: Safeguards linked with engineering/procurement teams.

Institutional Capacity Gains



Evidence & Results

Mobility Gains

- Travel time on Bukhara–Khiva line cut from ~8 hrs to ~3 hrs.
- Tashkent–Khiva journey now ~7 hrs, improving high-speed rail connectivity.
- Passenger volume projected to grow from 0.15M (2021) to 1.41M (2026).
- Boosts tourism and regional business access across cultural centers.

Green Measures

- Electrification reduces diesel use and emissions.
- 342,000 saxaul seedlings planted.
- 87 km of irrigation supports vegetation and combats desertification.
- Reed barriers protect railway from sand drift and dust.

Institutionalization

- PIU staffed with 22 specialists and consultants.
- Regular environmental monitoring and field audits in place.
- Corrective-action plans ensure compliance and long-term sustainability.

Evidence & Results

Installation of reed barriers along the railway to stabilize shifting sands and prevent wind erosion.

Good Practices & Replicability Takeaway

- Compliance Pack model scalable to other rail/energy projects.
- Precast approach minimizes environmental impacts.
- Demonstrates risk-based safeguards response under ADB SPS and ESF transition.

Forward-Looking Actions / Next Steps for Sustainability

- **Operationalize GRM at camp/site level**
- **Implement avifauna controls**
- **Quantify the project's green co-benefits**
- **Operations readiness**

Case Study:
Practical Management of Legacy Asbestos in a HPP Rehabilitation Project

Project: Toktogul Hydropower Plant Rehabilitation Projects
Phase 2 and Phase 3

Presenter: **Burul Alymkulova, PIU Environmental Officer**

EA/IA: **PIU OJSC Electrical Power Plants**

Introduction

- Asbestos was widely used in construction and the energy sector in former USSR (insulation, panels, coatings).
- Today, this legacy is a challenge faced in the rehabilitation of facilities across the entire region.

Implementation Experience — Challenges

- Gap in the national framework for hazardous waste management

Implementation Experience — Challenges

- Lack of disposal facilities

Municipal Landfill in Kara-Kul

Implementation Experience — Challenges

- Lengthy and complex permit approvals for disposing asbestos-containing wastes (ACW)

Implementation Experience — Challenges

- Limited/gap local expertise in hazardous waste handling.

Implementation Experience — Challenges

- Health and safety risks for workers of subcontractor and hydropower plant (HPP) staff

Before

After

Cross-Cutting Issues and Solutions Introduced under TA 10110

- **Health & Safety -** Trained workers of contractor, subcontractor, HPP staff, PPE distribution.

Training to work in full PPE for asbestos clearance works

Asbestos awareness training PIC with Asbestos Subcontractor Anthesis

Cross-Cutting Issues and Solutions Introduced under TA 10110

- **Governance -** Engagement with regulators and local authorities

Regular meetings and consultations with Territorial Department of Ministry of Natural Resources, Ecology and Technical Supervision on ACW disposal methods and permits.

Cross-Cutting Issues and Solutions Introduced under TA 10110

- **Infrastructure -** Temporary storage solutions

2017

2023

Implementation Experience — Successes

- Safe ACM and ACW removal by specialized subcontractor and containment of asbestos, proper labeling and keeping waste inventory of the ACW. No works conducted commenced in contaminated areas.

Before: wet removal method

After: Safe to dismantle and transport

Implementation Experience — Successes

Successes:

- ✓ Regular monitoring and reporting.
- ✓ A mobile laboratory was deployed by the subcontractor on site.
- ✓ The lab team conducted air sampling using pumps and filters to check for airborne asbestos fibers before, during and after dismantling works.
- ✓ Subcontractor collected wet (wipe) samples and bulk material samples from surfaces and equipment to verify contamination levels.
- ✓ The mobile lab allowed for immediate on-site analysis, giving rapid results and supporting clearance decisions before work continued.
- ✓ Results were documented and provided to Contractor and PIU

Adaptive / Innovative Measures

- Coordination with Ministry of Natural Resources, Ecology and Technical Supervision;
- Regular consultations of ADB and PIU
- Development Asbestos Waste Disposal Management Plan by PIU with PIC support

Institutional Capacity Gains

- Training of PIU staff & contractors, and HPP staff
- Strengthened monitoring & reporting systems
- Improved understanding of international ACM requirements

Lessons Learned

- Early identification of hazardous materials under the project engagement with regulators is essential
- International expertise helps address gaps
- Flexibility is key for adaptive management
- Conducting a comprehensive, in-depth Environmental Assessment prior to any civil works

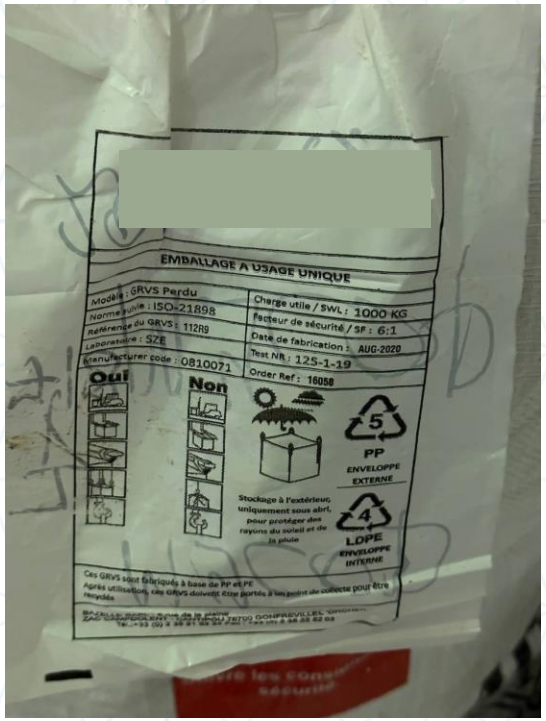
Good Practices & Replicability Takeaways

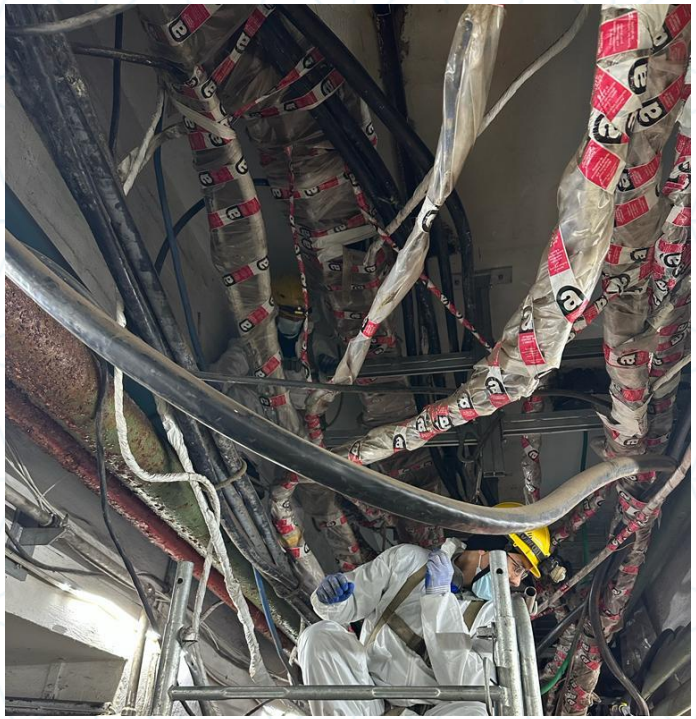
- Hazardous waste identification and mapping
- Engagement of qualified subcontractor

VERMEULEN CONTRACTORS

Good Practices & Replicability Takeaways

- Asbestos mapping, segregation & labeling



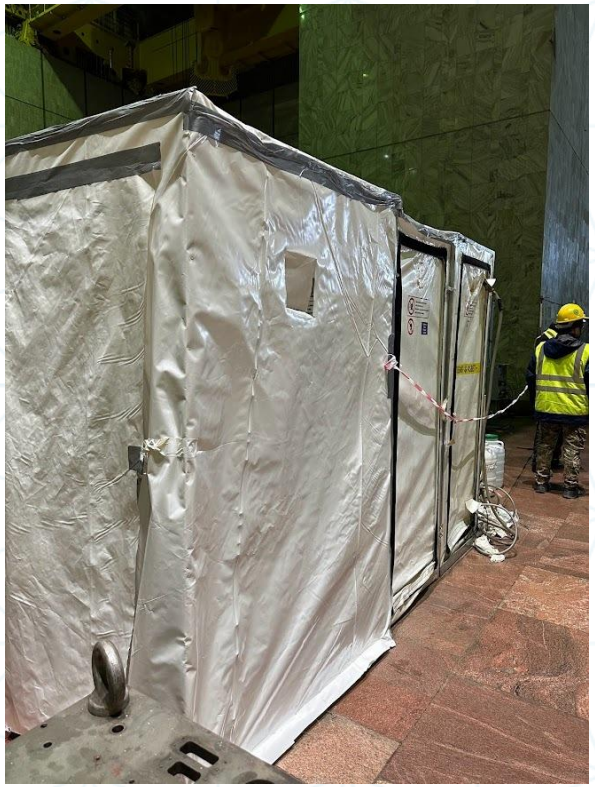


Good Practices & Replicability Takeaways

- Safe temporary containment methods
- Training programs for workers and HPP staff awareness programs
- Practices replicable in other hydropower & infrastructure projects

Wet removal method

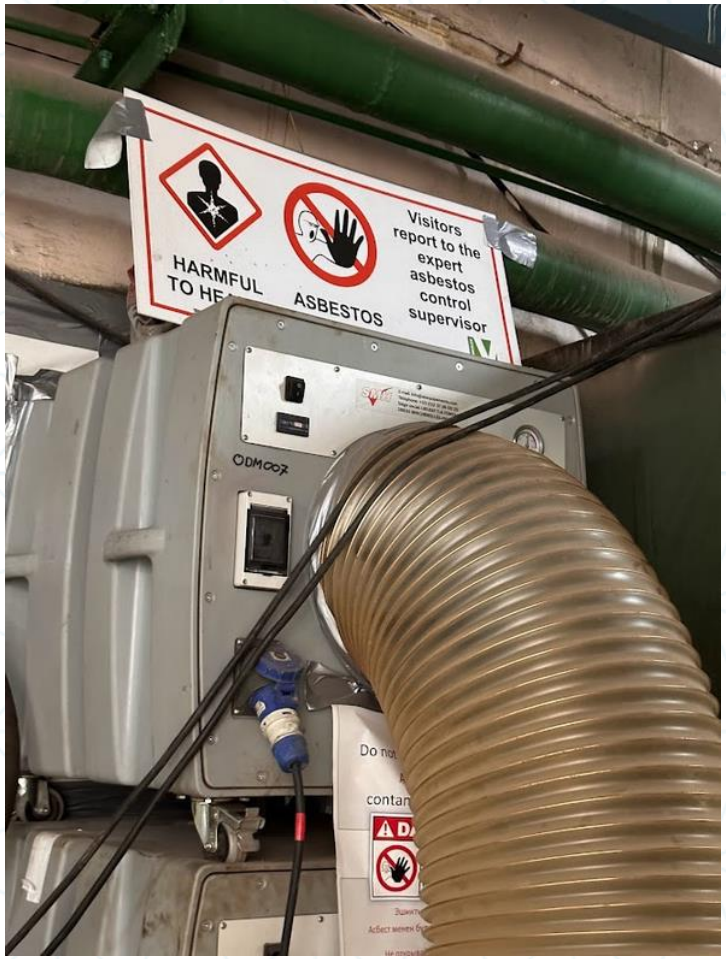
Safe for work in generator pit




HARMFUL TO HEALTH
ASBESTOS


HARMFUL TO HEALTH


HARMFUL TO HEALTH
ASBESTOS


HARMFUL
ASBESTOS
Visitors report to the expert asbestos control supervisor

Forward-Looking Actions / Next Steps for Sustainability

- Construction of monofil at Kara-Kul city landfill;
- Regional cooperation for hazardous waste disposal
- National hazardous waste strategy development
- Long-term vision: Sustainable safeguards framework

Synthesis Across Cases

- Common Challenge: gaps in OHS, hazardous waste, legacy risks.
  i. Shared Responsibility in Action
  ii. Contract addenda + payment linkages (PAK).
  iii. Joint audits + corrective CAPs (UZB).
  iv. Cross-agency asbestos protocol (KGZ).

Key Message: Compliance culture requires Borrower, Contractor, Consultant, and Regulator alignment.

Audience Q&A Questions

- Which oversight tool most changed contractor behavior in your project?
- How do you prove CAPs closed on time to auditors?
- What's the most realistic sanction in your context — payment delay, public disclosure, or contract suspension?

Key Takeaways

- Monitor to correct and maintain, not just report.
- Clear roles / responsibilities + timelines.
- Link compliance to payment / disbursement.

ESF Bridge

- SPS required compliance at project level.
- ESF raises bar: Borrowers must demonstrate **systems** for OHS, hazardous waste, labor, and stakeholder engagement.
- These cases show **shared responsibility models** → ESF readiness.

Session 7:

Strengthening Institutional Arrangements for Effective Safeguards Implementation

Objective: Explore how PIUs and ministries can build durable systems for safeguards delivery.

Duration: 60 minutes

The Challenges

- Safeguards units often under-resourced, siloed, or ad hoc.
- Staff turnover erases capacity unless systems are institutionalized.
- Safeguards delivery depends not just onsite compliance, but on institutions that outlast individual staff.
- Many PIUs/ministries struggle with under-resourced, ad hoc units — once staff rotate, safeguards capacity vanishes.
- TA 10110 piloted how embedding safeguards into permanent PIU structures builds continuity, improves compliance, and sustains systems beyond one loan.

Case Study: Institutional Arrangements Across Five Water Supply and Sanitation Projects

Projects:
L3457-UZB: Tashkent Province Water Supply Development Project
L3782-UZB: Second Tashkent Province Water Supply Development Project
L3659-UZB: Western Uzbekistan Water Supply Development Project
L4146-UZB: Tashkent Province Sewerage Improvement Project
L4582-UZB: Climate-Smart Water Management Improvement Project

Presenter: **Abboskhon Tillakhujaev**

EA/IA: **Uzsuvta'minot JSC – Uzbekistan Water supply and Sanitation Company**

Brief Project Context

- PIU manages five ADB-financed WSS projects simultaneously
- Consolidated model → efficiency, consistency, but heavy workload.

Brief Projects' Context

5 projects

Total USD 751.6 mln

25 construction contracts

Scope of Projects

Construction

- *5 Water Treatment Plants*
- *62 Water Distribution Units*
- *2504 km water networks*
- *~ 900 000 population coverage*
- *Installation of household water meters*
- *5 Waste Water Treatment Plants*
- *15 sewerage pumping stations*
- *350 km sewerage networks*
- *~ 355 000 population coverage*

Implementation Experience — Challenges

- Limited core staff vs. high project load (i.e., managing five ADB-financed projects simultaneously)
- Variable quality of safeguards reports from contractors; uneven contractor safeguards capacity
- Coordinating multiple grievances across sites

Implementation Experience — Successes

- Improved coordination and resource sharing across projects
- Monitoring visits become more effective with the proper approach of project consultants
- Improved contractor compliance following targeted on-site training sessions and guidance.

Implementation Experience — Adaptive / Innovative Measures:

- Introduction of a centralized safeguards database for tracking
- Scheduling joint monitoring visits with engineers and supervision consultants' relevant specialists
- Development of a standard corrective action plan

TA 10110 Support

- Adaptive monitoring — updating IEEs when designs changed.
- Continuous coaching during site visits and reviews (e.g., monitoring reports, SSEMPs, EMP updates).
- Assistance on corrective actions and report quality.
- Standard templates e.g., SSEMPs and CAP, centralized safeguards database.

Monitoring schedule (monthly and yearly)

Loan 3782

January — **Site Visits** — **2025**

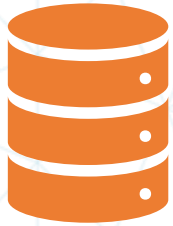
Parties	Wed 1	Thr 2	Fri 3	Sat 4	Sun 5	Mon 6	Tue 7	Wed 8	Thr 9	Fri 10	Sat 11	Sun 12	Mon 13	Tue 14	Wed 15	Thr 16	Fri 17	Sat 18	Sun 19	Mon 20	Tue 21	Wed 22	Thr 23	Fri 24	Sat 25	Sun 26	Mon 27	Tue 28	Wed 29	Thr 30	Fri 31	!
ADB																																0
EA/PCU							ENV																					ENV				2
PCU regional coordinator			RC	RC			RC	RC	RC	RC	RC			RC	RC	RC	RC	RC			RC	RC	RC	RC	RC			RC	RC	RC	RC	21
SC's International Environmental Specialist																																0
SC's Environmental Specialist																																9
Contractor 1																																0
Contractor 2																																0
Contractor 3																																0
Contractor 4			EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	25
Contractor 5							EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS	EHS	EHS	22
Contractor 6			EHS	EHS	EHS		EHS	EHS	EHS	EHS	EHS	EHS		EHS	EHS																	
Contractor 7																																
Contractor 8																																

Loan 3782

Site Visits — **2025**

Parties	Jan 1	Feb 2	Mar 3	Apr 4	May 5	Jun 6	Jul 7	Aug 8	Sep 9	Oct 10	Nov 11	Dec 12	!
ADB								Project team Mission					1
EA/PCU	2	1	1	2	2	2	0	2	2	3	3	3	23
PCU regional coordinator	RC	RC	RC	RC	RC	RC	RC	RC	RC	RC	RC	RC	Always
SC's International Environmental Specialist		3					3	3			3		12
SC's National Environmental Specialist	9	6	7	9	8	5	7	6	8	12	12	12	101
Contractor 1													0
Contractor 2													0
Contractor 3													0
Contractor 4	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	Always
Contractor 5	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	Always
Contractor 6	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	EHS	Always
Contractor 7													0
Contractor 8													0

Evidence & Results



Improved reporting compliance i.e., centralized safeguards database, joint monitoring with engineers.

Faster resolution of community grievances.

Standard operating procedures applied across projects.

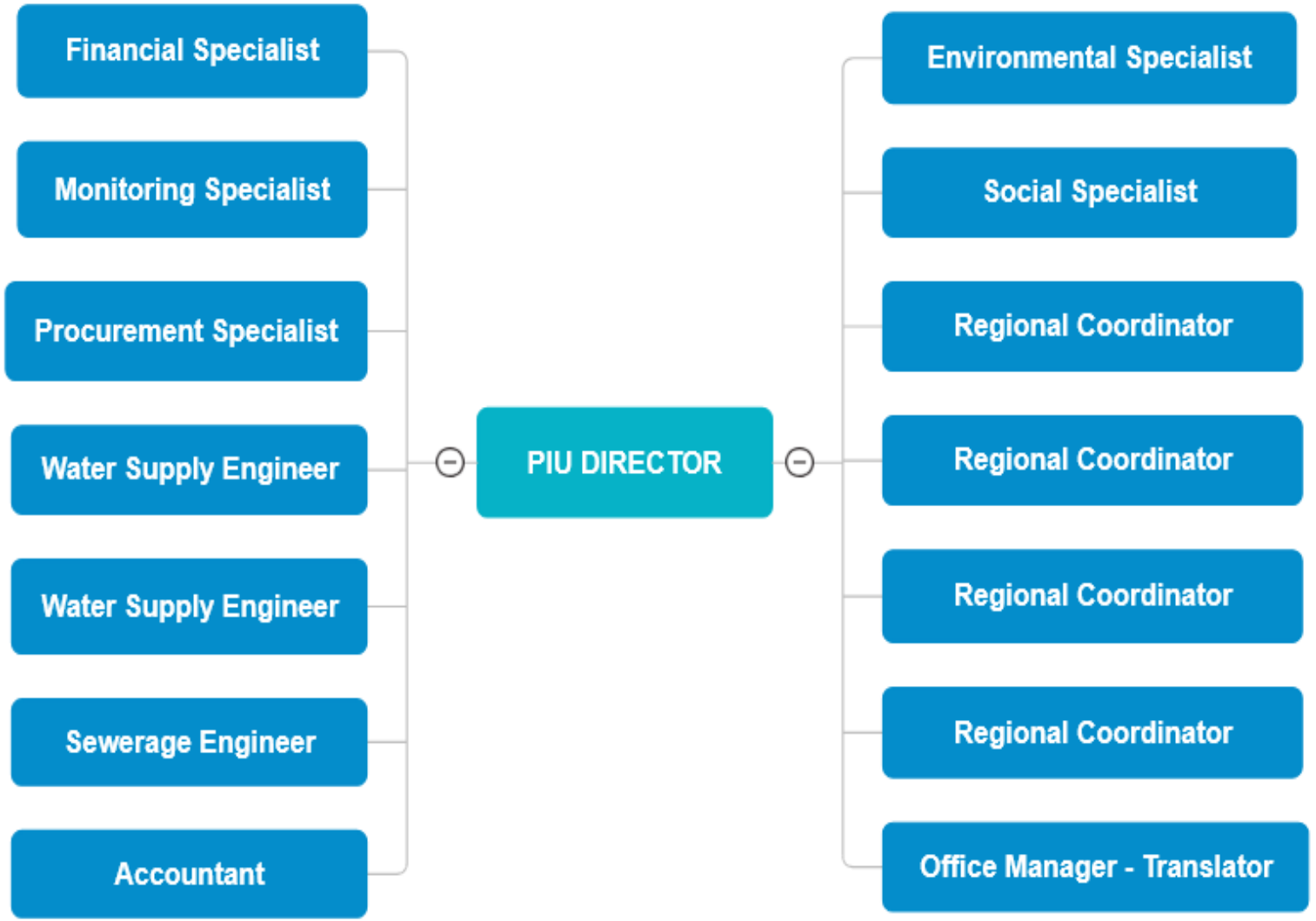
Good Practices & Replicability Takeaway

- Centralized PIUs can optimize resources in multi-loan sectors.
- Centralized PIU model for multi-loan management + interim manual safeguards tracking.
- Lessons for smaller DMCs: scaling model to size and capacity.
- Standardized safeguards reporting formats

Institutional Capacity Gains

The consolidated PIU model enables effective and consistent safeguards implementation across a multi-loan portfolio.

- PIU staff now independently prepare/review safeguards documents.
- Improved integration with engineering/procurement units.



Forward-Looking Actions / Next Steps for Sustainability

1. Introduce digital monitoring tools for real-time reporting from the field;
2. Strengthen pre-qualification requirements for contractors to ensure safeguards readiness at the bidding stage;
3. Establish a proper sanction system for contractors at the contracting stage;
4. Hiring additional 3 Environmental, Social and Gender specialists to support the PIU

Audience Q&A

- Which institutional gap causes the most delays — staff, budget, or authority?
- How can safeguards survive staff turnover?

ESF Bridge

SPS vs ESF Linkage

- **SPS:** Project-based EMP compliance.
- **ESF:** System-based — ESS1 & ESS10 require **durable borrower systems, stakeholder engagement, and risk management capacity.**

Closing

"Embedding safeguards into PIU structures and ministries is how we move from project-by-project compliance under SPS to institutionalized, system-level safeguards delivery under ESF."

"Sustainability is not just resilient infrastructure — it's resilient institutions. Embedding safeguards into PIU structures is how ESF readiness moves from paper to practice."

Day 2 Recap

Session 5: Resilient and Nature-Positive Design — Enhancing Safeguards Implementation in Challenging Project Environments

- Design is the first safeguard — resilience and nature-positive features prevent risks before they need mitigation.
- Armenia’s hazard risk matrix and Tajikistan’s biodiversity-sensitive design prove adaptive design is both feasible and replicable.
- We now shift from project-level resilience to system-wide accountability — how multiple agencies share responsibility for cross-cutting risks.

Session 6: Driving Shared Responsibility — Managing Cross-Cutting E&S Risks Across Sectors and Stakeholders Safeguards.

- Shared responsibility means clear roles, records, and repercussions — otherwise monitoring is just paperwork.
- From Karachi's empowered GRM, to Uzbekistan's CAP-driven ESMP, to Toktogul's hazardous-waste chain of custody, the lesson is the same: evidence closes the loop.
- Our final session brings it home: grievance redress — not just as a complaint box, but as the ultimate test of accountability and trust.

Session 7: Strengthening Institutional Arrangements for Effective Safeguards Implementation

- Nature-positive design + early design = resilience + saves costs + ecosystems.
- PIUs alone cannot carry the weight — durable safeguards systems require embedded authority in ministries and sector agencies.
- Consolidated models like Uzbekistan's PIU show how capacity can be pooled and scaled i.e., capacity, reporting, and SOPs create lasting safeguards systems.
- The next frontier is resilience: how design itself can reduce risk and generate nature-positive outcomes
- From mitigation → net positive. Strong systems are not enough — they must also anticipate climate and ecological risks in design

Thank you!