



Report and Recommendation of the President to the Board of Directors

Project Number: 53022–001
June 2021

Proposed Loan and Grant Kyrgyz Republic: Landslide Risk Management Sector Project

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Asian Development Bank

CURRENCY EQUIVALENTS

(as of 21 May 2021)

Currency unit	–	som (Som)
Som1.00	=	\$0.01191
\$1.00	=	Som83.97

ABBREVIATIONS

ADB	–	Asian Development Bank
COVID-19	–	coronavirus disease
EMP	–	environmental management plan
GDP	–	gross domestic product
IEE	–	initial environmental examination
InSAR	–	interferometric synthetic aperture radar
KCHE	–	Kyrgyz Integrated Hydrogeological Expedition
LARF	–	land acquisition and resettlement framework
LARP	–	land acquisition and resettlement plan
MES	–	Ministry of Emergency Situations
MTACC	–	Ministry of Transport, Architecture, Construction and Communications
O&M	–	operation and maintenance
PAM	–	project administration manual
PIC	–	project implementation consultant
PIU	–	project implementation unit

NOTE

In this report, "\$" refers to United States dollars.

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PROJECT AT A GLANCE

1. Basic Data		Project Number: 53022-001	
Project Name	Landslide Risk Management Sector Project	Department/Division	CWRD/CWER
Country	Kyrgyz Republic	Executing Agency	Ministry of Emergency Situations
Borrower	Kyrgyz Republic		
Country Economic Indicators	https://www.adb.org/Documents/LinkedDocs/?id=53022-001-CEI		
Portfolio at a Glance	https://www.adb.org/Documents/LinkedDocs/?id=53022-001-PortAtaGlance		
2. Sector		Subsector(s)	
✓ Agriculture, natural resources and rural development	Land-based natural resources management		ADB Financing (\$ million)
			35.00
		Total	35.00
3. Operational Priorities		Climate Change Information	
✓ Addressing remaining poverty and reducing inequalities		GHG reductions (tons per annum)	0.000
✓ Accelerating progress in gender equality		Climate Change impact on the Project	Medium
✓ Tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability			
✓ Promoting rural development and food security		ADB Financing	
		Adaptation (\$ million)	17.50
		Mitigation (\$ million)	0.00
		Cofinancing	
		Adaptation (\$ million)	0.00
		Mitigation (\$ million)	0.00
Sustainable Development Goals		Gender Equity and Mainstreaming	
SDG 1.5		Effective gender mainstreaming (EGM)	✓
SDG 5.5			
SDG 11.5, 11.b		Poverty Targeting	
SDG 13.a		General Intervention on Poverty	✓
4. Risk Categorization:	Low		
5. Safeguard Categorization	Environment: B Involuntary Resettlement: B Indigenous Peoples: C		
6. Financing			
Modality and Sources		Amount (\$ million)	
ADB		35.00	
Sovereign Project grant: Asian Development Fund		23.50	
Sovereign Project (Concessional Loan): Ordinary capital resources		11.50	
Cofinancing		0.00	
None		0.00	
Counterpart		4.00	
Government		4.00	
Total		39.00	
Currency of ADB Financing: US Dollar			

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan and (ii) a proposed grant, both to the Kyrgyz Republic for the Landslide Risk Management Sector Project.

2. This project is the first integrated preemptive landslide risk reduction investment of the Asian Development Bank (ADB) to safeguard rural communities in the Kyrgyz Republic.¹ This innovative project will embed international best practices and advanced technologies for improved risk reduction and monitoring. It will combine engineering and nature-based solutions with community-based planning and capacity building for sustainable long-term landslide safety. The project will reduce the risk to communities and infrastructure from landslide events by (i) implementing landslide mitigation engineering measures, (ii) improving landslide monitoring systems, and (iii) strengthening capacity for landslide risk management.²

II. THE PROJECT

A. Rationale

3. **Landslide risks.** The Kyrgyz Republic, particularly the southern *oblasts* (provinces) of Jalal-Abad and Osh, is highly prone to landslides because of its rainfall patterns, geology, land cover, and high seismic activity.³ There are more than 4,500 landslide sites in the country, of which about 1,200 are active. About 550 settlements housing 30,000 people, representing about 30% of settlements and 0.5% of the total population, face immediate landslide risks. During 1991–2018, about 600 landslide events occurred in the country, resulting in 275 fatalities. This equates to about 10 deaths per year.⁴ In Osh *oblast*, a landslide in Kara-Taryk village in 2003 caused 38 deaths, and in 2017 a landslide in Ayusai, Ayu village caused 24 deaths.⁵ Climate change is expected to increase landslide frequency because of earlier snowmelt, melting permafrost, and more intense precipitation events.⁶

4. **Socioeconomic impacts.** The Kyrgyz Republic has a small economy with a gross domestic product (GDP) of \$8.4 billion in 2018.⁷ Its population of 6.46 million depends heavily on international migrant remittances (30% of GDP) and on gold ore production (6%–10% of GDP). The national poverty rate was 23% in 2018 based on the national poverty line. Poverty is unevenly distributed across the country, with about 75% of the poor living in rural areas and 60% residing in the south of the country.⁸ On average, about 5% of GDP and about 5% of the population is

¹ Earlier projects have addressed broader geohazards in an urban setting (e.g., ADB. [Guangxi Wuzhou Urban Development Project](#)) and responded to landslide events (e.g., ADB. [Emergency Baipaza Landslide Stabilization Project](#); and ADB. [Second Sri Lanka Flood and Landslide Disaster Response Project](#)).

² The project was prepared under ADB. 2019. *Technical Assistance to the Kyrgyz Republic for Preparing the Landslide Risk Management Sector Project*. Manila.

³ A landslide is the movement of a mass of rock, debris, or earth down a slope. Landslides can be initiated by rainfall, snowmelt, changes in groundwater, earthquakes, disturbance by human activities (including mining), or any combination of these factors. Source: United States Geological Survey. [What is a landslide and what causes one?](#)

⁴ Detailed Sector Assessment (accessible from the list of linked documents in Appendix 2).

⁵ Havenith et al. 2017. Past and Potential Future Socioeconomic Impacts of Environmental Hazards in Kyrgyzstan. In O. A. Perry. *Kyrgyzstan: Political, Economic and Social Issues, Edition: Central Asia: Economic and Political Issues*. New York.

⁶ Climate Change Assessment (accessible from the list of linked documents in Appendix 2).

⁷ Government of the Kyrgyz Republic. 2020. *Main Directions of Fiscal Policy for 2020–2023*. Bishkek.

⁸ ADB. 2021. *Landslide Risk Management Sector Project: Poverty, Gender, and Social Assessment*. Consultant's report. Manila (TA 9726-KGZ).

exposed to disasters triggered by natural hazards annually.⁹ Landslide events cause injury and loss of life, and destroy infrastructure and productive land. They disrupt basic services, transport, and logistics, and threaten the safety of mining sites. The long-run annual average loss from landslides is estimated at about 0.08% of GDP (about \$6.5 million), or about 25% of the country's estimated long-run annual average disaster losses.¹⁰ About 70% of landslide fatalities are women and children. Landslide-prone areas are typically also the poorest; in 2018, the poverty rate of Jalal-Abad *oblast* (32%) was the country's second highest (footnote 8).

5. **Strategy and policy framework.** The Kyrgyz Republic's nationally determined contribution to the Paris Agreement includes prevention of climate-change-related disasters.¹¹ The long-term national development strategy for 2018–2040 emphasizes landslide risk management.¹² The current national development program for 2018–2022 includes proactive management of geophysical risks.¹³ The government has prepared a national disaster risk management strategy for 2018–2030. Phase 1 of the program for 2018–2022 is currently under implementation and includes, among others, improved monitoring and forecasting, and construction of protective structures, with a cost estimate of Som9.8 billion.¹⁴

6. **Fragmented institutional arrangements.** Effective landslide risk management has been hindered by distributed responsibilities and limited cross-agency coordination. The Ministry of Emergency Situations (MES) is the primary disaster risk management agency responsible for disaster risk monitoring, reduction, warning, and response. The Kyrgyz Integrated Hydrogeological Expedition (KCHE) under the State Committee of Industry, Power and Subsoils assesses and monitors landslide risks. The Road Infrastructure Department of the Ministry of Transport, Architecture, Construction and Communications (MTACC) is also responsible for monitoring for landslide risks in the road network, and for preventative and rehabilitation works. Research agencies develop the underlying knowledge base on landslide risks in the country.

7. **Sector challenges.** Currently, the MES lacks a comprehensive approach to landslide risk management that combines structural and nonstructural measures. It has undertaken physical preventative works on a limited number of landslide sites and its capacity to undertake such works needs strengthening. Key landslide risk mitigation has been resettlement of at-risk households. The decision to resettle people is made with a basic risk ranking system and visual observation. The government's relocation programs have proven to be costly, with limited effectiveness because of a high proportion of returning households. The government mandatory housing insurance program for private property has been taken up by only 10% of households because of low public awareness and a lack of adequate enforcement mechanisms. Coverage per household is fixed at Som500,000 to Som1 million per disaster event and the program is at risk of insolvency from a major event. Private insurance options are limited in remote rural areas (footnote 4).

⁹ Global Facility for Disaster Reduction and Recovery. 2015. [Country Profile: Kyrgyz Republic](#).

¹⁰ World Bank and United Nations International Strategy for Disaster Risk Reduction. 2009. *Central Asia and Caucasus Disaster Risk Management Initiative Risk Assessment for Central Asia and Caucasus: Desk Study Review*. Washington, DC.

¹¹ Kyrgyz Republic. 2015. *Intended Nationally Determined Contribution. United National Framework Convention on Climate Change Paris Agreement*. Bishkek.

¹² Government of the Kyrgyz Republic. 2018. *National Development Strategy of the Kyrgyz Republic for 2018–2040*. Bishkek.

¹³ Government of the Kyrgyz Republic. 2018. *The Development Program of the Kyrgyz Republic for the Period 2018–2022: Unity. Trust. Creation*. Bishkek.

¹⁴ Government of the Kyrgyz Republic. 2018. *Concept of Comprehensive Protection of the Population and the Territory of the Kyrgyz Republic from Emergency Situations for 2018–2030*. Bishkek.

8. **Limited data collection and quantitative analysis.** Capacity for the MES and other stakeholders to collect, manage, and apply landslide data in relevant analysis is limited. Landslide databases and hazard risk mapping are not well consolidated and often outdated. The limited coordination and dissemination of hazard maps have hindered their use in settlement master planning and disaster risk mitigation initiatives. Landslide risk monitoring is not sufficiently or geographically comprehensive or integrated because of a lack of capacity, equipment, and resources across agencies. Landslide risk assessment is primarily based on visual monitoring and does not follow a systematic or standardized approach. Modern equipment-based monitoring and analysis of satellite imagery integrated with an established national automated early warning system would improve hazard warning accuracy and effectiveness.

9. **COVID-19 pandemic.** The outbreak of the coronavirus disease (COVID-19) had significant negative impacts on the Kyrgyz Republic's economy. Real GDP growth was –8.6% in 2020 compared 4.6% in 2019.¹⁵ The project will strengthen disaster resilience in areas most impacted by COVID-19. The country's first state of emergency declarations because of the pandemic were in Osh in April 2020. The landslide-prone *oblasts* of Jalal-Abad and Osh faced particularly acute declines in income from remittances, tourism, and travel services. These were associated with increases in returning migrants, food price hikes, and food insecurity among rural populations.¹⁶ Project implementation offices will be established in Osh and Bishkek cities to limit travel requirements. Contractors will be required to prepare and implement effective COVID-19 health and safety plans.

10. **Opportunities and lessons.** ADB and other development partners support climate change and disaster risk management in the country through several investment projects and technical assistance. Earlier projects have provided only limited or fragmented support on landslides. Stakeholder consultations identified key priorities in (i) improving community resilience to extreme events such as landslides; (ii) strengthening institutional capacity for disaster risk management and response, including through monitoring and warning systems; and (iii) incorporating climate change and disaster risk considerations into infrastructure design.¹⁷ The World Bank financed Disaster Hazard Mitigation Project, completed in 2012, supported the MES on limited landslide risk mitigation works and landslide monitoring.¹⁸ Key lessons of that project have been incorporated in this project including: (i) engagement of local communities to support the sustainability of monitoring and (ii) engagement of international consultants' expertise for technically complex activities.

11. **Assistance of ADB and other development partners.** ADB has worked closely with development partners to coordinate project activities. The World Bank financed Enhancing Resilience in Kyrgyzstan Project is strengthening the mandatory household insurance program.¹⁹ It also supports MES with landslide risk mapping, mobile landslide monitoring, and public disaster risk awareness. The Global Facility for Disaster Reduction and Recovery supported the establishment and operation of an open-source national disaster risk data-sharing platform.²⁰ The Japan International Cooperation Agency supported the MTACC with landslide risk reduction in the road subsector. The project will complement ADB's ongoing Climate Change and Disaster-

¹⁵ ADB. 2021. *Asian Development Outlook 2021. Financing a Green and Inclusive Recovery*. Manila.

¹⁶ ADB. 2020. *COVID-19 in the Kyrgyz Republic: Socioeconomic and Vulnerability Impact Assessment and Policy Response*. Manila.

¹⁷ ADB. 2016. *Economics of Climate Change in Central and West Asia*. Consultant's report. Manila (TA 8119-REG).

¹⁸ World Bank. 2014. *Implementation Completion Review Report: Disaster Hazard Mitigation Project in Kyrgyz Republic*. Washington, DC.

¹⁹ World Bank. World Bank. [Enhancing Resilience in Kyrgyzstan Project](#).

²⁰ <http://geonode.caiag.kg> (accessed 15 March 2021).

Resilient Water Resources Sector Project, which incorporates mudflow protection measures into irrigation subprojects and strengthens the MES's emergency response centers.²¹

12. **Sector lending modality.** The project meets the sector lending criteria: (i) the government has a disaster risk management program to 2030; (ii) institutional capacity is sufficient to implement the program, and the project will provide further support to introduce international best practices and advanced technologies; and (iii) supporting policies are in place and will be further strengthened through the project.²² The sector lending modality is appropriate to (i) allow dynamic and flexible selection of subprojects for engineering measures (output 1) or on-site monitoring (output 2) following site investigations and (ii) integrate lessons learned through sequential implementation of the distributed subprojects. The MES has prepared a long list of 46 prospective landslide risk-reduction subprojects. Preliminary quantitative analysis has been undertaken for each of these subprojects to categorize hazard level, at-risk elements, and expected mitigation requirements.²³ A technical feasibility study, including geotechnical and geological survey, has been prepared for a major representative subproject in Ayusai.²⁴ This subproject covers two landslide sites and is among the largest by volume of the longlisted subprojects, comprising about 12% of anticipated project works. It was selected because of its highly representative nature and will be a model for the subsequent selected subprojects, which are expected to have similar risk mitigation measures and safeguards requirements. Additional subprojects will be selected and prepared in line with agreed eligibility criteria and procedures.²⁵

13. **Alignment with ADB and country priorities.** The project is aligned with the development, disaster risk management, and climate change adaptation priorities of the Kyrgyz Republic (footnotes 11, 13, and 14). The project directly supports pillar 2 of ADB's country partnership strategy for the Kyrgyz Republic, 2018–2022, to strengthen climate resilience and disaster risk reduction.²⁶ It is aligned with ADB's Strategy 2030, particularly the operational priorities of (i) addressing remaining poverty and reducing inequalities; (ii) accelerating progress in gender equality; (iii) tackling climate change, building climate and disaster resilience, and enhancing environmental sustainability; and (iv) promoting rural development and food security.²⁷ It supports the United Nations Sustainable Development Goals 1, 5, 11, and 13.²⁸

B. Project Description

14. The project is aligned with the following impacts: (i) human and material loss from climate- and geophysical-related disasters reduced (footnote 13) and (ii) level of protection of the population and territories from emergency situations increased for sustainable development (footnote 14). The project will have the following outcome: vulnerability and exposure of communities and infrastructure to landslide events reduced.²⁹

²¹ ADB. [Climate Change and Disaster-Resilient Water Resources Sector Project](#).

²² ADB. 2003. Sector Lending. *Operations Manual*. OM D3/BP. Manila.

²³ Landslide Risk Assessment (accessible from the list of linked documents in Appendix 2).

²⁴ Technical Feasibility Study: Ayusai Subproject (accessible from the list of linked documents in Appendix 2).

²⁵ Project Administration Manual (accessible from the list of linked documents in Appendix 2). Eligibility criteria include (i) minimum 6% and ideally 9% expected economic internal rate of return, (ii) category B or C social and environmental safeguards and avoidance or minimization of permanent land acquisition and resettlement, and (iii) no association with uranium mining sites.

²⁶ ADB. 2018. *Country Partnership Strategy: Kyrgyz Republic, 2018–2022—Supporting Sustainable Growth, Inclusion, and Regional Cooperation*. Manila.

²⁷ ADB. 2018. *Strategy 2030: Achieving a Prosperous, Inclusive, Resilient, and Sustainable Asia and the Pacific*. Manila.

²⁸ United Nations. 2015. *The 2030 Agenda for Sustainable Development*. New York.

²⁹ The design and monitoring framework is in [Appendix 1](#).

15. **Output 1: Landslide mitigation engineering measures implemented.** The exposure of at-risk communities to landslides will be reduced through mitigation engineering measures in about 15–20 subprojects. These include unloading soil overburden, reshaping bulging or cracked areas on hillsides, and draining underground and surface water. Subprojects will incorporate considerations for future climate change. Nature-based solutions, including greening and timber retaining and drainage structures, will be implemented where appropriate. The measures are estimated to directly protect about 2,550 people, 300 hectares of land, and 30 kilometers of linear infrastructure such as roads and irrigation canals. Beneficiary communities, particularly women and households headed by women, will be engaged in the planning, implementation, and operation and maintenance (O&M) of subprojects. Sustainable asset management and O&M plans and budgets will be prepared and implemented for each subproject. These will identify roles and responsibilities for community representatives.

16. **Output 2: Systems for on-site and national landslide monitoring improved.** The landslide risk monitoring capacity of the MES, at-risk communities, and other stakeholders including the KCHE, MTACC, and local authorities will be modernized. The project will establish an integrated risk-based multilevel landslide monitoring system. It will combine on-site monitoring and a pilot national landslide monitoring approach using satellite-based interferometric synthetic aperture radar (InSAR). On-site monitoring systems will be installed in about 20 subprojects not included under output 1.³⁰ These will directly benefit about 2,150 people, 350 hectares of land, and 35 kilometers of linear infrastructure. The pilot InSAR system will provide broad-based monitoring of surface displacements and analysis of historical slope movement, and support the updating of the national landslide inventory under output 3. The integrated system will be linked to the existing national early warning system and the network of crisis management centers. Beneficiary communities, particularly women and households headed by women, will be engaged for planning and O&M of monitoring sites. Associated gender-sensitive training will be provided to key government and community stakeholders. Sustainable asset management and O&M plans and budgets will also be prepared and implemented for each monitoring subproject.

17. **Output 3: Capacity for landslide risk management strengthened.** The capacity of the MES, at-risk communities, government agencies including local authorities, and other stakeholders for landslide risk assessment, mitigation, and resettlement will be strengthened. The project will develop a gender-sensitive national landslide risk management road map. It will develop a geographic-information-system-based platform and database to assess landslide hazard, exposure, and vulnerability with sex-disaggregated data. This will build on the existing data-sharing platform and risk maps. Updated maps will be disseminated to key government and community stakeholders to support coordination and planning. The project will develop procedures and case studies to strengthen institutional capacity for planning, implementation, and O&M of landslide mitigation and resettlement. Emphasis will be given to community engagement and consideration for future climate change impacts to ensure long-term sustainability and effectiveness.³¹ The project will conduct a participatory gender-sensitive landslide risk awareness, planning, and information-sharing program for at-risk communities. The MES staff will be trained in O&M and financial management of O&M to strengthen their internal asset management systems, records, and safeguards.

³⁰ The systems are expected to comprise sensors to measure and assess slope stability, groundwater levels, and key trigger variables.

³¹ Anderson and Holcolme. 2013. *Community-Based Landslide Risk Reduction*. Washington, DC: World Bank.

C. Value Added by ADB

18. This project was initiated by stakeholder consultations on resilience investment needs in the Kyrgyz Republic under earlier ADB regional technical assistance (footnote 17). The project leverages the Asian Development Fund 13 (ADF-13) Thematic Pool for Disaster Risk Reduction and Climate Adaptation to support stand-alone disaster risk reduction with supplementary grant financing. The project will support the transfer and use of modern practices for risk identification, monitoring, and early warning of landslides. It will pilot the use of advanced InSAR technology for ongoing monitoring. The technology has previously only been used for discrete landslide research in the Kyrgyz Republic. The project will support community participation (particularly of women) in the design and O&M of subprojects to improve effectiveness and sustainability.

D. Summary Cost Estimates and Financing Plan

19. The project is estimated to cost \$39.0 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).³²

Table 1: Summary Cost Estimates
(\$ million)

Item	Amount ^a
A. Base Cost^b	
1. Landslide mitigation engineering measures implemented	30.0
2. Systems for on-site and national landslide monitoring improved	4.1
3. Capacity for landslide risk management strengthened	0.8
Subtotal (A)	34.9
B. Contingencies^c	3.7
C. Financial Charges During Implementation^d	0.4
Total (A+B+C)	39.0

^a Includes taxes and duties of \$4.1 million. Such an amount does not represent an excessive share of the project cost. The government will finance taxes and duties of \$3.8 million through exemptions and cash contributions. The Asian Development Bank will finance taxes of \$0.3 million.

^b In mid-2021 prices as of February 2021.

^c Physical and price contingencies and a provision for exchange rate fluctuation are included.

^d Includes interest.

Source: Asian Development Bank estimates.

20. The government has requested (i) a concessional loan of \$11.5 million from ADB's ordinary capital resources and (ii) a grant not exceeding \$23.5 million from ADB's Special Funds resources (Asian Development Fund) to help finance the project.³³ The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan agreement.

21. The summary financing plan is in Table 2. ADB will finance the expenditures in relation to civil works, goods, consulting services, project implementation unit (PIU) expenditures, and land acquisition and resettlement.³⁴ The government contribution is estimated at \$4.0 million equivalent for taxes and duties and in-kind contributions for temporary resettlement.

³² Project Administration Manual (accessible from the list of linked documents in Appendix 2).

³³ The grant is provided under the ADF-13 Thematic Pool for Disaster Risk Reduction and Climate Adaptation. ADB financing will be disbursed on a pro rata basis.

³⁴ Eligible land acquisition and resettlement expenditures are detailed in the Project Administration Manual (accessible from the list of linked documents in Appendix 2) and, as applicable, includes the taxes related to resettlement

Table 2: Summary Financing Plan

Source	Amount (\$ million)	Share of Total (%)
Asian Development Bank		
Ordinary capital resources (concessional loan)	11.5	30.0
Special Funds resources (Asian Development Fund grant)	23.5	60.0
Government of the Kyrgyz Republic	4.0	10.0
Total	39.0	100.0

Source: Asian Development Bank estimates.

22. Climate change adaptation is estimated to cost \$19.5 million. ADB will finance 90% (\$17.5 million) of adaptation costs. The project is predicated on reducing risks of landslides, which are triggered by extreme weather events and are likely to be exacerbated by future climate change. Climate risk considerations will be included in the design and implementation of works, monitoring, and capacity-building programs (footnote 6).

E. Implementation Arrangements

23. The MES will be the executing agency. A PIU will be established within the MES to implement the project, supported by a project implementation consultant (PIC) firm led by international specialists. The PIU will be responsible for the day-to-day management of the project. A project coordination group will be established among stakeholders including the MTACC, KCHE, and other government agencies and community, civil society, and research organizations to facilitate project communication, consultation, coordination, and planning.

24. Implementation arrangements are summarized in Table 3 and described in detail in the PAM (footnote 32). Procurement of works, goods, and services will follow the ADB Procurement Policy (2017, as amended from time to time). A request for proposals for the PIC will be issued by the second quarter of 2021. Completion of advanced design and issuance of the invitation for bids for the Ayusai civil works package are targeted by the third quarter of 2021. Issuance of the invitation for bids for the first major goods package for on-site monitoring equipment is targeted by the fourth quarter of 2021.

Table 3: Implementation Arrangements

Aspects	Arrangements		
Implementation period	August 2021–August 2028 (7 years)		
Estimated completion date	29 February 2028		
Estimated loan and grant closing date	31 August 2028		
Management			
(i) Executing agency	Ministry of Emergency Situations		
(ii) Implementation unit	Project implementation unit in Bishkek (9 staff) and Osh (6 staff)		
Coordination	Project coordination group		
Procurement ^a	Internationally advertised open competitive bidding	2 contracts	\$2.20 million ^b
	Nationally advertised open competitive bidding	5–7 contracts	\$23.40 million
	Request for quotations	Multiple	\$0.11 million
Consulting services	QCBS 90:10	243 person-months	\$4.00 million ^c

payments to affected people. When land acquisition costs are to be financed, specific due diligence will be conducted as per ADB. 2013. Cost Sharing and Eligibility of Expenditures for ADB Financing. *Operations Manual*. OM H3. Manila (para. 6).

Aspects	Arrangements		
	CQS	Audit services	\$0.14 million
Retroactive financing and advance contracting	Advance action may be undertaken on staffing the project implementation unit, recruiting the project implementation consultant, and procuring goods. ^d An advanced feasibility study of the representative subproject will be prepared prior to effectiveness. No retroactive financing will be used under the project.		
Disbursement	Disbursement of the loan and grant proceeds will follow ADB's <i>Loan Disbursement Handbook</i> (2017, as amended from time to time) and detailed arrangements agreed between the government and ADB.		

ADB = Asian Development Bank, CQS = consultant qualification selection, QCBS = quality- and cost-based selection.

^a Cost estimates exclude taxes and duties.

^b Equipment for on-site and national landslide monitoring and associated systems.

^c Consultant firm for capacity building, due diligence, studies, surveys, design, and construction supervision.

^d All advance contracting will be undertaken in conformity with the ADB Procurement Policy (2017, as amended from time to time). The executing agency has been advised that approval of advance contracting does not commit ADB to finance the project. The issuance of invitations to bid under advance contracting will be subject to ADB approval.

Source: ADB.

III. DUE DILIGENCE

A. Technical

25. The project is assessed technically feasible and designed to ensure the long-term and sustainable safety of vulnerable communities. A feasibility study, including geotechnical and geophysical survey and site landslide risk mapping, was prepared for a representative subproject in Ayusai, Ayu village, Osh *oblast* (footnote 24). The study identified high risks to the community from two large landslides. It proposes soil overburden removal and reshaping the hillside with accompanying installation of underground drainage. It will incorporate considerations for future climate change impacts. Further subprojects will be selected in line with agreed criteria and procedures and designed on a similar basis during project implementation (footnote 25).

B. Economic and Financial Viability

26. The project is expected to be economically and financially viable.³⁵ The representative subproject is estimated to have an economic internal rate of return of 13.2% and remains viable under sensitivity cases.³⁶ Subsequent subprojects under outputs 1 and 2 will be required to meet the economic viability threshold under the eligibility criteria (footnote 25). Quantified benefits include (i) avoided destruction of residential and agricultural land; (ii) avoided destruction of physical assets including buildings, roads, water, and power infrastructure; (iii) avoided loss of income because of post-landslide economic inactivity and injury; and (iv) costs of subsequent resettlement of surviving affected households. The project has significant additional nonmonetized benefits of avoided deaths and improved investment confidence.

27. Long-term O&M costs are expected to be modest with limited complexity because of the nature of planned works and equipment installation. Landslide soil overburden removal, reshaping, and drainage works are largely permanent and do not require significant maintenance. Long-term O&M costs have been estimated at about Som20.7 million per year. This is about 3% of the current annual budget of the MES for disaster monitoring, prevention, and management.

³⁵ Summary Economic and Financial Analysis (accessible from the list of linked documents in Appendix 2)

³⁶ For disaster risk management projects, the minimum required economic internal rate of return may be 6%. ADB. 2017. *Staff Instruction on Business Processes for Economic Analysis of Projects*. Manila.

C. Sustainability

28. Project financial sustainability risk is *substantial* because of low O&M annual budget allocations, heavy dependency on central government support, and limited capacity to manage and plan O&M. To mitigate risks, the project will develop and update asset management and O&M plans for each subproject, including budget and assignment of roles and responsibilities. ADB has secured government assurance that adequate finance and resources will be provided to implement these plans. Local communities will be engaged and trained in the planning, design, and capacity-building phases to support project effectiveness and long-term operation of the installed systems. The MES staff will be trained in O&M and financial management of O&M to strengthen their internal asset management systems, records, and safeguards.

D. Governance

29. The premitigation financial management risk is rated *substantial* because the MES (i) has limited experience in ADB policies and requirements for project financial management and (ii) does not generally apply international standards for accounting and internal and external audit. The risks will be mitigated through (i) the establishment of a PIU with qualified full-time financial management specialists; (ii) the establishment of a PIU financial management system, including the use of commercial accounting software by the PIU; and (iii) the provision of on-the-job support and training to the PIU by a PIC. The premitigation procurement risk is *medium* because the MES has (i) limited experience in ADB procurement policies and requirements and (ii) insufficient internal systems in place for governance on procurement. The risks will be mitigated through the (i) establishment of a PIU with qualified procurement specialists, (ii) establishment of a procurement management system in the PIU, (iii) provision of on-the-job support and training to the PIU by a PIC, and (iv) the use of prior review procedures.

30. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government. The specific policy requirements and supplementary measures are described in the PAM (footnote 32).

E. Poverty, Social, and Gender

31. Poverty and unemployment rates are generally higher in landslide-prone rural areas, where most residents have limited resources to take their own actions against landslide risks.³⁷ In the southern *oblasts* (especially in Osh and Jalal-Abad), women and the elderly are frequently left behind in rural areas as heads of households because of high migration rates among men.³⁸ Data on landslide events during 2009–2019 show that women and children comprise 70% of casualties from landslides compared to men (29%). The southern regions are more conservative, impinging on women's ability to participate in activities outside of the household. This impacts their access to information and resources for disaster preparedness and resilience. The project will address key gender issues, including (i) weak participation of women in disaster risk management; (ii) unavailability of sex-disaggregated data on disaster risk management; and (iii) low capacity of the MES staff and stakeholders to implement gender-sensitive standard procedures, landslide risk assessment, planning, mitigation, and resettlement.³⁹

³⁷ National Statistical Committee of the Kyrgyz Republic. [Employment statistics](#).

³⁸ National Statistical Committee of the Kyrgyz Republic and United Nations Children's Fund (UNICEF). 2018. *Kyrgyzstan Multiple Indicator Cluster Survey, Snapshots of Key Findings*. Bishkek; Kyrgyzstan National Statistical Committee of the Kyrgyz Republic and UNICEF. 2019. [Kyrgyzstan](#).

³⁹ Gender Action Plan (accessible from the list of linked documents in Appendix 2).

32. The project is categorized as effective gender mainstreaming. It aims to protect from landslides about 4,700 people or 950 households, about 11% of which are households headed by women. The MES will develop and adopt a landslide risk management roadmap that will include (i) activities and targets to improve women's representation in landslide risk management decision-making structures and mechanisms, as well as promote the role of women as technical specialists; and (ii) capacity building on gender-sensitive landslide risks and vulnerability assessment and planning. Sustainable asset management and O&M plans will be developed and implemented identifying roles and responsibilities of community representatives, at least a third of whom will be women. The project will conduct gender-informed vulnerability mapping, collect sex-disaggregated data, and develop a web-based landslide risk database and maps. The project will also increase the capacity of communities on gender-sensitive standard procedures and landslide risk mitigation. Women in the communities will participate in training on landslide risk mitigation, community risk assessment and planning, and on-site landslide monitoring.

F. Safeguards

33. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.⁴⁰

34. **Environment (category B).** An environmental assessment and review framework has been prepared in accordance with the Kyrgyz Republic's applicable laws and regulations and ADB's Safeguard Policy Statement. This will (i) guide selection, screening and categorization, environmental assessment, and preparation and implementation of a safeguard plan of subprojects; and (ii) facilitate compliance with the requirements specified in ADB's Safeguard Policy Statement. Subproject selection criteria will exclude subprojects with significant environmental impacts (category A). An initial environmental examination (IEE) will be performed for each subproject and any civil works (footnote 25). A sample IEE, including an environmental management plan (EMP), has been prepared for the representative subproject in Ayusai. It is expected that the IEEs of subsequent subprojects will follow the sample IEE.

35. Project impacts during construction are expected to be site specific and temporary, and relate to the construction of the engineering subprojects. Expected impacts include noise, dust, and exhaust emissions from equipment and construction vehicles; impacts on the river and/or surface water; waste management; occupational health and safety; site accessibility; community health and safety; and construction traffic. The EMP provides appropriate mitigation and monitoring measures, and a capacity-building plan. Contractors will be responsible for implementing the mitigation measures. The PIU will recruit a full-time safeguard staff member, with on-the-job training and assistance from the PIC, to monitor the EMP's implementation during construction.

36. The PIU will submit to ADB the final IEEs prior to issuance of bid documents for review and disclosure on ADB's website. These will be included in the bid and contract documents. The PIU safeguards staff will coordinate with PIU design engineers and procurement officers in preparing bid documents, prebid meetings, and bid evaluation to ensure that environmental safeguard requirements are adequately incorporated. The PIU will also ensure that all required statutory permits and clearances are obtained prior to award of contracts, and contractors submit site-specific EMPs prior to starting civil works. Consultations and stakeholder engagement will continue throughout project implementation.

⁴⁰ ADB. [Safeguard Categories](#).

37. **Involuntary resettlement (category B).** A land acquisition and resettlement framework (LARF) has been prepared in accordance with the Kyrgyz Republic's applicable laws and regulations and ADB's Safeguard Policy Statement. It will guide the selection, screening and categorization, impact assessment, and preparation and implementation of social safeguard plans of subprojects. Subproject eligibility criteria exclude subprojects with significant resettlement impacts (involuntary resettlement category A). The project will seek to avoid or minimize permanent land acquisition and resettlement in subprojects as assessed at the time of subproject selection.⁴¹ As per LARF requirements, any civil works sites selected by the MES will be assessed, and proper safeguard documents prepared.⁴²

38. A draft land acquisition and resettlement plan (LARP) has been prepared for the representative subproject in Ayusai. An impact assessment was carried out during project preparation for the representative subproject, and 25 affected households were identified. Of these, 11 households require temporary resettlement and compensation for restriction in use of agricultural land that will be affected during construction.⁴³ The compensation for relocation and affected assets was calculated and budgeted as part of the draft LARP. Through the PIU's safeguards staff and PIC, the MES will ensure that the draft LARP for the representative subproject is updated. This will be based on the detailed design and will be implemented before the commencement of civil works.

39. The PIU safeguards staff will coordinate with PIU design engineers and procurement officers to ensure that social safeguards assessment and planning are completed for each subproject prior to the contract award. Any subproject LARP will be fully implemented prior to the commencement of civil works. Project information was disclosed, and meaningful consultations with project stakeholders and affected people were undertaken during LARF and draft LARP preparation. This will be continued throughout project implementation. The costs related to land acquisition and resettlement will be covered by ADB project funds, and costs of temporary housing units will be covered by the in-kind contribution by the government. A grievance redress mechanism will be established by the PIU in accordance with the LARP, LARF, environmental assessment and review framework, and IEE to assist affected people to resolve grievances and complaints. During project implementation, the PIU will submit (i) a semiannual environmental monitoring report and (ii) a semiannual social monitoring report to ADB for review and disclosure, commencing 6 months after the first year of effectivity of the grant and/or loan.

40. **Indigenous peoples (category C).** There are no indigenous peoples in the Kyrgyz Republic as defined by ADB's Safeguard Policy Statement.

G. Summary of Risk Assessment and Risk Management Plan

41. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.⁴⁴

⁴¹ Except for cases of loss of land (changes in land size) because of deep trenches and reshaping of land, to be assessed during the subproject design and implementation stage.

⁴² LARP for category B subprojects, and social due diligence report for category C subprojects.

⁴³ Where no land is acquired but use will be restricted for the construction period.

⁴⁴ Risk Assessment and Management Plan (accessible from the list of linked documents in Appendix 2).

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigation Measures
Landslides triggered by major seismic or extreme weather event may harm target communities	Project activities will be prioritized, designed, and implemented based on detailed site investigation with support and supervision of a PIC with international specialists. During the construction of each subproject, at-risk households will be temporarily resettled and early warning systems will be operated.
Subproject selection and implementation may be delayed and reduce project efficiency and benefits	Advanced contracting will support timely mobilization of the PIC and award of the first goods and works packages. A long list of prospective subprojects has been compiled and preliminarily assessed for expected mitigation requirements to support ensuing design.
Insufficient long-term O&M reduces effectiveness and sustainability of project investments	Subprojects will be designed to minimize long-term O&M expense. Asset management and O&M plans will be developed for each subproject, emphasizing the role of beneficiary communities. Loan and grant covenants will ensure sufficient government funding for the plans. MES systems for internal asset management will be strengthened.
The MES has limited capacity and experience in financial management and safeguards in line with ADB requirements.	A PIU will be established with qualified full-time financial management and social and environmental safeguards specialists and supported by a PIC. An ADB consultant will support the MES to establish the project financial management system and internal audit procedures. Subprojects will be screened to avoid category A subprojects.

ADB = Asian Development Bank, MES = Ministry of Emergency Situations, O&M = operation and maintenance, PIC = project implementation consultant, PIU = project implementation unit.

Source: Asian Development Bank.

IV. ASSURANCES

42. The government and the MES have assured ADB that implementation of the project shall conform to all applicable ADB requirements, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services, financial management, and disbursement as described in detail in the PAM and loan and grant documents. The government has agreed with ADB on certain covenants for the project, which are set forth in the draft loan and grant agreements.

V. RECOMMENDATION

43. I am satisfied that the proposed loan and grant would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve

- (i) the loan of \$11,500,000 to the Kyrgyz Republic for the Landslide Risk Management Sector Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board; and
- (ii) the grant not exceeding \$23,500,000 to the Kyrgyz Republic, from ADB's Special Funds resources (Asian Development Fund), for the Landslide Risk Management Sector Project, on terms and conditions that are substantially in accordance with those set forth in the draft grant agreement presented to the Board.

Masatsugu Asakawa
President

21 June 2021

DESIGN AND MONITORING FRAMEWORK

Impacts the Project is Aligned with Human and material loss from climate- and geophysical-related disasters reduced (Development Program of the Kyrgyz Republic 2018–2022) ^a Level of protection of the population and territories from emergency situations increased for sustainable development (Disaster Risk Management Strategy of the Kyrgyz Republic 2018–2030) ^b			
Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
Outcome Vulnerability and exposure of communities and infrastructure to landslide events reduced	By 2029: a. Risk of landslide decreased for about 4,700 people, of which at least 50% are women ^c (2020 baseline: 0) (OP 2.5; OP 3.2) b. Risk of landslides decreased for about 650 ha of land, 65 km of linear infrastructure, and 14 community buildings ^d (2020 baseline: 0) (OP 3.2.5)	a.–b Annual national and local statistics ^e	R: Major seismic or extreme weather event impacts target beneficiaries
Outputs 1. Landslide mitigation engineering measures implemented	By 2028: 1a. About 3.0 million m ³ of slope unloaded and reshaped for landslide risk reduction, including 100 ha of revegetated slopes (2020 baseline: 0) 1b. About 40 km of drainage conduits installed on slopes for landslide risk reduction (2020 baseline: 0) (OP 1.3.1; OP 5.1.1)	1a.–1b. Quarterly project progress reports	R: Major seismic or extreme weather event disrupts civil works and damage equipment installations A: Government priority towards strengthening landslide risk management systems remains high
2. Systems for on-site and national landslide monitoring improved	By 2026: 2a. On-site landslide monitoring systems installed in about 20 at-risk sites (2020 baseline: 0) 2b. One integrated IT system for real-time on-site and InSAR landslide monitoring operational (2020 baseline: 0) 2c. 230 government staff and community members (including at least 30% women) report increased capacity for national and on-site landslide monitoring	2a.–2b. Quarterly project progress reports 2c. Surveys of workshop participants	

Results Chain	Performance Indicators	Data Sources and Reporting Mechanisms	Risks and Critical Assumptions
	(2020 baseline: 0) (OP 3.2.2)		
3. Capacity for landslide risk management strengthened	<p>3a. By the end of 2025, a gender-sensitive landslide risk management road map adopted by the MES^f (2020 baseline: Not applicable) (OP 3.2.2)</p> <p>3b. By the end of 2025, consolidated landslide risk database (including gender-disaggregated data and a web-based risk assessment platform) operational (2020 baseline: database and platform incomplete and not integrated) (OP 3.2.2)</p> <p>3c. By the end of 2026, 500 government staff and community members (including at least 30% women) report improved knowledge on landslide risk assessment, mitigation, and resettlement (2020 baseline: 0) (OP 2.5.1; OP 3.2.2)</p> <p>3d. By the end of 2026, 1,000 community members (including at least 45% women) report improved knowledge and action on gender-sensitive community landslide risk assessment and planning (2020 baseline: 0) (OP 2.5.1; OP 3.2.2)</p>	<p>3a.–3b. Quarterly project progress reports</p> <p>3c.–3d. Surveys of workshop participants</p>	

Key Activities with Milestones

1. Landslide mitigation engineering measures implemented

- 1.1 Complete advanced design for first subproject by Q3 2021.
- 1.2 Complete construction for all subprojects by Q1 2027.
- 1.3 Update estimated long-term O&M costs and plan for all works by Q1 2027.

2. Systems for on-site and national landslide monitoring improved

- 2.1 Complete surveys and studies for on-site monitoring equipment by Q3 2021.
- 2.2 Design the landslide monitoring system with InSAR during Q1–Q2 2023.
- 2.3 Prepare procedures and associated training materials on landslide monitoring from Q3 2023 to Q4 2024.
- 2.4 Conduct stakeholder training for integrated landslide monitoring and early warning systems from Q2 2024 to Q4 2026.

Key Activities with Milestones	
2.5 Conduct regional study tour on integrated landslide monitoring and early warning systems by Q4 2026.	
2.6 Update estimated long-term O&M costs and plan for all sites by Q4 2026.	
3. Capacity for landslide risk management strengthened	
3.1 Commence O&M training program for the MES staff by Q1 2023.	
3.2 Design the landslide database and geographic information system platform by Q2 2023.	
3.3 Develop and disseminate risk maps, including community risk maps, by Q3 2025.	
3.4 Prepare road map and associated procedures and training materials on landslide risk assessment, mitigation, and resettlement by Q1 2026.	
3.5 Conduct stakeholder training for landslide risk database and platform by Q4 2026.	
3.6 Conduct community awareness, planning, exchange visits, and stakeholder training by Q4 2026.	
Project Management Activities	
Procure PIU office and IT equipment and vehicles by Q4 2021.	
Mobilize PIU and PIC by Q1 2022.	
Procure first works package by Q2 2022.	
Procure first goods contract by Q2 2022.	
Procure second works package by Q1 2023.	
Procure third works package by Q3 2023.	
Procure fourth works package by Q1 2024.	
Inputs	
Asian Development Bank:	\$23.50 million (grant)
	\$11.50 million (concessional loan)
Government of the Kyrgyz Republic:	\$4.00 million (indicative estimate)

A = assumption, ha = hectare, IFB = invitation for bids, InSAR = interferometric synthetic aperture radar, IT = information technology, km = kilometer, m³ = cubic meter, MES = Ministry of Emergency Situations, O&M = operation and maintenance, OP = operational priority, PIC = project implementation consultant, PIU = project implementation unit, Q = quarter, R = risk.

^a Government of the Kyrgyz Republic. 2018. *The Development Program of the Kyrgyz Republic for the Period 2018–2022: Unity. Trust. Creation*. Bishkek.

^b Government of the Kyrgyz Republic. 2018. *Concept of Comprehensive Protection of Population and Territory of the Kyrgyz Republic from Emergency Situations for 2018–2030*. Bishkek.

^c This is a combined estimate of people directly benefiting from landslide engineering works under output 1 (about 2,550) and improved landslide monitoring under output 2 (about 2,150). These and the related output indicators will be reviewed and updated during project implementation upon subproject selection and implementation.

^d This is a combined estimate of land and infrastructure benefiting from landslide engineering works under output 1 (about 300 ha of land, 30 km of linear infrastructure, and seven community buildings) and improved landslide monitoring under output 2 (about 350 ha of land, 35 km of linear infrastructure, and seven community buildings). These and the related output indicators will be reviewed and updated during project implementation upon subproject selection and implementation.

^e Indicative sources: National Statistical Committee of the Kyrgyz Republic and the MES.

^f The road map will be accompanied by procedures on risk assessment, risk mitigation measures, and resettlement and include targets and actions to (i) strengthen women's representation in senior and technical positions and in landslide risk management decision-making positions and structures and (ii) enhance capacity on gender assessment of landslide risks and vulnerabilities.

Contribution to Strategy 2030 Operational Priorities

Expected values and methodological details for all OP indicators to which this operation will contribute results are detailed in Contribution to Strategy 2030 Operational Priorities (accessible from the list of linked documents in Appendix 2).

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

<http://www.adb.org/Documents/RRPs/?id=53022-001-3>

1. Loan Agreement
2. Grant Agreement
3. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
4. Project Administration Manual
5. Summary Economic and Financial Analysis
6. Summary Poverty Reduction and Social Strategy
7. Risk Assessment and Risk Management Plan
8. Contribution to Strategy 2030 Operational Priorities
9. Climate Change Assessment
10. Gender Action Plan
11. Initial Environmental Examination: Ayusai Representative Subproject
12. Environmental Assessment and Review Framework
13. Land Acquisition and Resettlement Plan: Ayusai Representative Subproject
14. Land Acquisition and Resettlement Framework

Supplementary Documents

15. Detailed Sector Assessment
16. Detailed Economic and Financial Analysis
17. Financial Management Assessment
18. Procurement Risk Assessment
19. Landslide Risk Assessment
20. Technical Feasibility Study: Ayusai Subproject
21. Asset Management and Operation and Maintenance Plan