ADB

Concept Paper

Project Number: 52013-002
December 2018

Proposed Loan
Mongolia: Research University Sector Development Program

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 9 November 2018)

Currency unit	–	togrog (MNT)
MNT1.00	=	$0.000391
$1.00	=	MNT2,560

ABBREVIATIONS

ADB	–	Asian Development Bank
GDP	–	gross domestic product
MECSS	–	Ministry of Education, Culture, Science and Sports
R&D	–	research and development
STI	–	science, technology, and innovation
TA	–	technical assistance

NOTES

(i) The school year (SY) in Mongolia starts on 1 September and ends on 1 June of the following year. “SY2017/18” denotes the school year that ended on 1 June 2018.

(ii) In this report, “$” refers to United States dollars.

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PROJECT AT A GLANCE

1. Basic Data — **Project Number:** 52013-002

Project Name	Research University Sector Development Program	**Department /Division**	EARD/EASS
Country	Mongolia	**Executing Agency**	Ministry of Education, Culture, Science & Sports
Borrower	Mongolia		

2. Sector

	Sector	Subsector(s)	ADB Financing ($ million)
✓	**Education**	Tertiary	22.00
	Industry and trade	Industry and trade sector development	6.00
	Information and communication technology	ICT infrastructure	2.00
		Total	**30.00**

3. Strategic Agenda

Strategic Agenda	Subcomponents
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive
Environmentally sustainable growth (ESG)	Global and regional transboundary environmental concerns

Climate Change Information

Climate Change impact on the Project	Low

ADB Financing

Mitigation ($ million)	1.00

4. Drivers of Change

Drivers of Change	Components
Governance and capacity development (GCD)	Client relations, network, and partnership development to partnership driver of change Institutional development Institutional systems and political economy Organizational development
Knowledge solutions (KNS)	Application and use of new knowledge solutions in key operational areas
Partnerships (PAR)	Bilateral institutions (not client government) Implementation Official cofinancing Private Sector
Private sector development (PSD)	Public sector goods and services essential for private sector development

Gender Equity and Mainstreaming

Effective gender mainstreaming (EGM)	✓

5. Poverty and SDG Targeting

Geographic Targeting	No
Household Targeting	No
SDG Targeting	Yes
SDG Goals	SDG4, SDG8, SDG9

Location Impact

Urban	High

6. Risk Categorization: Complex

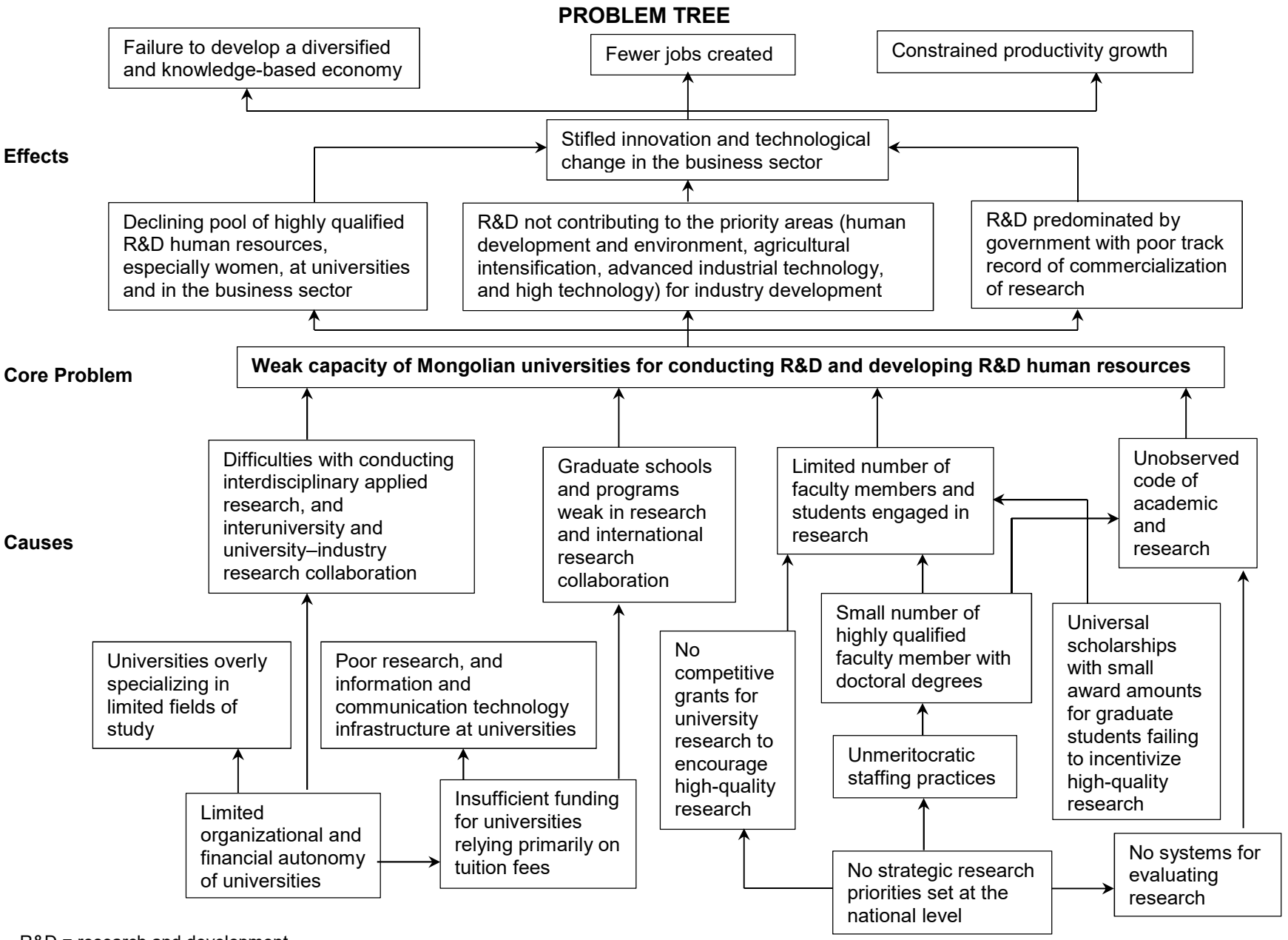
7. Safeguard Categorization **Environment:** B **Involuntary Resettlement:** A **Indigenous Peoples:** B

8. Financing

Modality and Sources	Amount ($ million)
ADB	**30.00**
Sovereign Programmatic Approach Policy-Based Lending (Regular Loan): Ordinary capital resources	8.00
Sovereign Project (Regular Loan): Ordinary capital resources	22.00
Cofinancing	**0.00**
None	0.00
Counterpart	**7.00**
Government	7.00
Total	**37.00**

Currency of ADB Financing: USD

Source: Asian Development Bank



R&D = research and development.

I. THE PROGRAM

A. Rationale

1. Mongolia's economy has been slow to diversify into other industries than mining. In fact, the share of the mining industry in the country's gross domestic product (GDP) has remained the largest since 2005. For the economy to further diversify and increase productivity and employment, the ability of non-mining businesses to adapt new technologies and develop new products and services needs to be enhanced. This would require increased industrial research and development (R&D), which Mongolia has seriously neglected since it transitioned from a centrally planned to a market-based economy. Between 1990 and 2016, gross domestic expenditure on R&D as a percentage of GDP shrank from 1.00% to 0.18%. The number of R&D personnel also declined from 3,102 in 1995 to 2,211 in 2016.[1] Against this background, the government plans to increase R&D human resources, financing, and infrastructure in the medium term.[2]

2. Historically, the government has dominated R&D in Mongolia in terms of performance (68.8% in 2016) and financing (86.3%).[3] Major government R&D institutions are the Academy of Sciences and its 10 specialized research institutions, which employ about 60% of R&D personnel in the country, mostly trained abroad. The publicly funded research, however, has a poor track record of commercialization because it focuses mainly on basic research. By contrast, the role of business in R&D has been insignificant (performance: 3.8%, financing: 4.9%). The R&D role of higher education is only marginally better (performance: 27.3%, financing: 3.7%), and just a handful of its institutions are engaging in significant R&D.[4] Consequently, university–industry collaboration in R&D has also been limited, as reflected in Mongolia's ranking in the Global Competitiveness Index (127th out of 137 countries in 2018).[5] More human resources capable of conducting interdisciplinary applied research linked to industrial R&D need to be developed at higher education institutions in collaboration with industry.

3. The weak ability of Mongolian universities to develop R&D human resources and conduct research stems from the higher education system inherited from the former Soviet Union—universities focused primarily on teaching, whereas the Academy of Sciences and its specialized research institutions, which were not part of the higher education system, conducted research. As a result, research functions and graduate programs and schools are underdeveloped at Mongolian universities. Even at key state universities, faculty members with doctoral degrees account for only about 40%, and the share of graduate students is considerably smaller than those at top universities in other middle-income countries.[6] Unmeritocratic staffing practices further exacerbate the lack of highly qualified faculty members. Moreover, heavy teaching responsibilities (the

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[1] Ministry of Education, Culture, Science and Sports (MECSS). 2015. *Statistical Year Book: Education and Science (2015–2016 Academic Year, 2015 Fiscal Year)*. Ulaanbaatar.

[2] Mongolia Sustainable Development Vision 2030, approved by the Parliament in 2016, sets the target of increasing gross domestic expenditure on R&D to 2.0% of GDP in 2016–2020, 2.5% in 2021–2025, and 3.0% in 2026–2030 (State Great Khural. 2016. *Mongolia Sustainable Development Vision 2030*. Ulaanbaatar).

[3] MECSS. 2017. *Questionnaire on Research and Experimental Development (R&D) Statistics (UNESCO Institute for Statistics)*. Ulaanbaatar.

[4] In the school year 2016/17, Mongolia had 95 higher education institutions (17 public and 74 private institutions, and four branches of foreign universities). Key universities engaging in significant R&D are the National University of Mongolia, Mongolian University of Science and Technology, and Mongolian University of Medical Sciences.

[5] K. Schwab, ed. 2017. *The Global Competitiveness Report 2017–2018*. World Economic Forum: Geneva.

[6] The share of graduate students is about 19% at the National University of Mongolia, and 14% at the Mongolian University of Science and Technology. This contrasts, for instance, with about 58% at the Indian Institute of Technology-Bombay, 33% at the University of Malaya, and 42% at the Shanghai Jiao Tong University (P. Altbach and J. Salmi, eds. 2011. *The Road to Academic Excellence: The Making of World-Class Research Universities*. The World Bank: Washington, DC).

teacher–student ratio is about 1:29) make it difficult for many faculty members to carry out research, especially interdisciplinary applied research linked to industrial R&D. Under the circumstances, teaching at universities rarely incorporates latest developments in the field, and students are provided little opportunities to take part in research. Relatedly, the code of academic and research ethics is not well established, and the quality of graduate degrees awarded by different universities is uneven because systems for evaluating research are lacking.

4. Although many new technologies, systems, and problems have become increasingly complex, requiring multidisciplinary knowledge, Mongolian universities remain highly specialized rather than being comprehensive. This organizational characteristic of Mongolian universities, inherited from the former Soviet Union, stifles interdisciplinary applied research, and university–industry and inter-university research collaboration, which would be needed to deal with the government-defined priority areas for science, technology, and innovation (STI).[7] It also results in considerable overlap between specialized R&D facilities and equipment installed at key state universities, as well as underutilization despite the high costs of investment. The failure to foster collaborative research environments constrains the ability of Mongolian universities to attract highly qualified researchers and teaching staff domestically and internationally. International research collaboration is limited, which is a missed opportunity for enriching the quality and outputs of research and teaching.

5. The current funding mechanisms for universities, university research, and graduate students are inadequate to foster high-quality research in the priority areas. Tuition fees have been the primary source of funding for universities since the early 1990s, which leaves them severely underfunded. State universities are particularly constrained because they lack the autonomy to raise funds, generate and reinvest revenues, and set tuition fees. Given the lack of investment, research as well as information and communication technology infrastructure at universities has become obsolete and inadequate for cutting-edge research. Moreover, apart from funding available from national programs for STI or projects funded by development partners, no competitive grants exist that would systematically support interdisciplinary applied research, as well as university–industry and inter-university research collaboration, and would be linked to a system for assessing the quality of the research funded. Currently, scholarships with small award amounts (Student Development Loan Fund) are provided to all graduate students without considering intellectual merit, poverty and other disadvantaged conditions, or clear objectives.

6. To strengthen the links between teaching, research, and industry partnerships, and the contribution to a diversified and knowledge-based economy, the Ministry of Education, Culture, Science and Sports (MECSS) launched a national program on research universities (2018–2022).[8] It is also drafting amendments to the package of education laws, the Innovation Law, and related laws to support the program.[9] MECS is further developing an STI human resource development

[7] The priority areas are (i) human development and environment; (ii) agricultural intensification; (iii) advanced industrial technology; and (iv) high technology (Government of Mongolia. 2015. *Priority Areas for Science and Technology Development and List of Core Technologies, 2015–2021*. Government Resolution No. 368. Ulaanbaatar).

[8] The program, approved by the Cabinet on 5 September 2018, aims to develop research universities by (i) establishing requirements and criteria for research universities and a mechanism for evaluating research; (ii) enhancing systems for governing research universities and university research through the establishment of the National Committee on Higher Education; (iii) creating diversified funding mechanisms for universities, university research, and graduate students, and introducing a competitive grant program to promote quality research; (iv) developing a pool of competent researchers through the establishment of graduate schools; and (v) promoting research collaboration and partnerships.

[9] The amendments will introduce a clearer classification of universities, including “research universities” as a new category; greater financial and organizational autonomy of universities; and the establishment of a National Committee on Higher Education, an endowment fund, and venture capital funds.

plan and STI investment plan to accompany the revamped State Policy on Science and Technology approved in 2017.

7. The Asian Development Bank (ADB) has provided support to all the subsectors of education in Mongolia since the country's transition from a centrally planned to a market-based economy in the early 1990s. In the higher education subsector, ADB's assistance contributed to better research infrastructure of key state universities and competitive research grants, and the preparation of the national program on research universities and the STI investment plan.[10] Other development partners also support the subsector, such as the Japan International Cooperation Agency[11] and other bilateral donors.[12] ADB's engagement in the subsector is fully in line with its country partnership strategy for Mongolia, 2017–2020,[13] and Strategy 2030.[14]

B. Proposed Solutions

8. To overcome regulatory, governance, and financing constraints on university research, especially interdisciplinary applied research, and inter-university and university–industry collaborative research, the proposed program will support the government's agenda of reforms to develop research universities and strengthen university research through a set of policy actions, capacity development, and physical investments. The program will have three outputs.

9. **Output 1: Governance and regulatory mechanisms for developing research universities and strengthening university research established.** As initial steps to develop research universities with strong graduate schools and programs aiming to develop human resources capable of conducting interdisciplinary applied research, the program will support the establishment of a National Committee on Higher Education, governing the development of clusters of research universities and the funding for university research, with appropriate management systems and operational procedures, adequate staffing, and properly equipped office space. Requirements and criteria for research universities, including industry partnerships, will be developed as part of competitive grant proposal preparation and evaluation guidelines. Operational guidelines for a research excellence framework will also be prepared to evaluate the quality of research in line with strategic research priorities, including roles and responsibilities of expert panels and user guides, with equity, gender, and diversity criteria. These governance and regulatory mechanisms will guide subsequent capacity development and investment activities, including (i) training of university management and administrative staff at the key universities on standards and requirements for graduate programs, guidelines for ensuring the quality of graduate degrees, and an academic and research code of ethics to be also developed under the program; (ii) development of databases for university research outputs (including a citation database) and for research facilities, equipment, and other assets; and (iii) publication of at least two reports on results of the research excellence framework, including equity, gender, and diversity aspects.

10. **Output 2: Diversified funding mechanisms for research universities, university research, and graduate students established.** To ensure the provision of necessary financial resources to develop research universities and promote collaborative and interdisciplinary applied

[10] ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Government of Mongolia for the Higher Education Reform Project.* Manila; ADB. 2017. *Technical Assistance Report. Mongolia: Strengthening Systems for Promoting Science, Technology, and Innovation*. Manila.

[11] Higher Engineering Education Development Project (Japanese yen loan of $72.96 million equivalent for the period of 2014–2023), which supports faculty twinning and exchange programs for teaching staff, investment in teaching and research equipment, and collaborative research between Japanese and Mongolian universities.

[12] Overseas scholarship grants for Mongolian students and researchers.

[13] ADB. 2017. *Country Partnership Strategy: Mongolia, 2017–2020—Sustaining Inclusive Growth in a Period of Economic Difficulty.* Manila. The program is included in the Country Operations Business Plan: Mongolia, 2019–2021.

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

research, the program will support managerial and operational procedures for competitive grant programs to be adopted at the National Committee on Higher Education. The competitive grant programs aim to support (i) the development of clusters of research universities through capital investments, human resource development, industry partnerships, and the establishment of governance, strategic management, and operational mechanisms; and (ii) interdisciplinary applied research conducted in collaboration with industries and in consideration of equity, gender, and diversity. Based on the procedures adopted, management and administrative systems and tools for the competitive grant programs will further be developed and staff of the National Committee on Higher Education will be trained on using these systems and tools. In accordance with the newly established competitive grant programs, the management and operational systems and procedures for graduate student scholarships will be updated, with equity, gender, and diversity considerations, and staff at the Student Development Loan Fund will be trained. In addition to the competitive grant programs, governance, management, and operational mechanisms will be developed for the endowment fund to promote university research, and for venture capital funds (established possibly in collaboration with industries) to support business startups commercializing university research.

11. **Output 3: Clusters of research universities with shared R&D facilities developed.** To boost efficiency and economy in the procurement and use of R&D facilities and equipment, collaborative procurement framework as well as governance, management, and operational mechanisms for sharing R&D facilities and equipment between universities, research institutes, companies, and industries will be adopted as part of competitive grant utilization guidelines for clusters of research universities. Based on the framework and mechanisms, one or two clusters of research universities with shared R&D facilities will be developed through competitive grants in line with the STI plans, strategic research priorities, and a new strategy for developing science and technology parks. These R&D facilities will conform to green building standards and adopt measures to save energy and water. Operational tools for sharing R&D facilities and equipment will also be developed, and staff of the National Committee on Higher Education, university, institute, and company staff, researchers, and research support staff will be trained on R&D facility and equipment sharing mechanisms. In addition to shared R&D facilities to be developed in clusters of research universities, the program will support (i) the establishment of technology transfer, licensing, and intellectual property offices and their management systems as well as capacity development of staff at these offices in clusters of research universities; and (ii) the strengthening of innovation and entrepreneurship education programs and incubators for business startups to commercialize research outputs in clusters of research universities.

12. ADB's assistance will add value by facilitating access to expertise and international good practices related to (i) graduate education and university research, (ii) funding mechanisms for universities, and (iii) cost-effective measures such as collaborative procurement and the sharing of R&D facilities and equipment. It will also add value by promoting collaboration and coordination within government, with development partners, and between government agencies, universities, research institutes, companies, and industries through its ongoing support for the formulation of an education sector master plan[15] and an STI investment plan (para. 7), and cofinancing with development partners (para. 15).

13. These outputs will result in the following outcome: R&D capacity of clusters of research universities enhanced. The program will be aligned with the following impact: innovation and technological change to boost productivity and employment in the business sector promoted.[16]

[15] ADB. 2017. *Technical Assistance Report. Mongoli*a: *Supporting the Development of an Education Sector Master Plan.* Manila.

[16] State Great Khural. 2016. *Mongolia Sustainable Development Vision 2030*. Ulaanbaatar. The design and monitoring framework is in Appendix 1.

C. Proposed Financing Plans and Modality

14. The government has requested regular loans of $30 million from ADB's ordinary capital resources to help finance the program, including (i) an indicative policy-based loan of $8 million and (ii) a project loan of $22 million. The indicative amount of the policy-based loan considers development financing needs and impacts of the reforms. The government will provide counterpart funding of about $7 million to cover part of the recurrent costs of the National Committee on Higher Education, competitive grant programs, endowment fund, and taxes and duties. The cost of climate change mitigation for ADB financing will be determined during program preparation.

Table 1: Indicative Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank		
Ordinary capital resources (regular policy-based loan)	8.0	21.6
Ordinary capital resources (regular project loan)	22.0	59.5
Government	7.0	18.9
Total	**37.0**	**100.0**

Sources: Asian Development Bank.

15. The sector development program modality is proposed because without the reform of regulations, governance, and financing for universities and university research, investment in research universities is unlikely to result in more capacity for conducting R&D and developing R&D human resources. Stand-alone policy-based lending possibly to be disbursed in two tranches is considered. Policy actions and tranching will be further developed during program preparation. Cofinancing with the Japan International Cooperation Agency for the program will be explored to closely coordinate with its ongoing project (footnote 11). Implementation experience with sector development programs in the education sector has been satisfactory.

D. Implementation Arrangements

Table 2: Indicative Implementation Arrangements

Aspects	**Arrangements**
Indicative implementation period	
(i) Policy-based loan	September 2021−December 2023
(ii) Project loan	September 2021−September 2027
Indicative completion date	
(i) Policy-based loan	31 December 2023
(ii) Project loan	30 September 2027
Management	
(i) Executing agency	Ministry of Education, Culture, Science and Sports
(ii) Key implementing agency	Higher Education Department (Ministry of Education, Culture, Science and Sports)

Note: Detailed implementation arrangements for the policy-based lending component, including disbursement and procurement arrangements, will be defined during program preparation. The loan proceeds will be withdrawn in accordance with ADB's *Loan Disbursement Handbook* (2017, as amended from time to time).

II. PROGRAM PREPARATION AND READINESS

16. Transaction technical assistance (TA) will be required for program preparation. It is estimated to cost $850,000, of which $800,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF 6). Details of the TA are in Appendix 3. Advance contracting and retroactive financing are not envisaged for the program.

III. DELIBERATIVE AND DECISION-MAKING ITEMS

A. Risk Categorization

17. The program is *complex* because the involuntary resettlement safeguard categorization is expected to be A,[17] and the sector development program modality is proposed.

B. Program Procurement Classification

18. The program procurement is classified B because the executing and implementing agency has experience with procurement under ADB-financed projects, and multiple contract packages and/or complex and high-value contracts are not expected under the program.

C. Scope of Due Diligence

Due Diligence Outputs	To be undertaken by
Development coordination, sector assessment	Staff, TA consultant
Economic and financial analysis	Staff, TA consultant
Financial management and procurement capacity assessments, and risk assessment and management plan	Staff, TA consultant
Gender analysis, collection of baseline data, gender action plan, and summary poverty reduction and social strategy	Staff, TA consultant
Environmental and social (involuntary resettlement and indigenous peoples) assessment of policy interventions and policy action matrix; and safeguard screening and documentation on environment, involuntary resettlement, and indigenous peoples	Staff, TA consultant, government
Project administration manual	Staff, TA consultant

TA = technical assistance.
Source: Asian Development Bank.

D. Processing Schedule and Sector Group's Participation

Milestones	Expected Completion Date
1. Approval of the concept paper and transaction TA	December 2018
2. Mobilization of TA consultants	February/March 2019
3. Fact-finding mission and memorandum of understanding signing	December 2020
4. Staff review meeting	January 2021
5. Loan negotiations	March 2021
6. Loan approval	May 2021
7. Loan agreement signing	July 2021

TA = technical assistance.
Source: Asian Development Bank.

E. Key Processing Issues and Mitigation Measures

19. No issues are outstanding.

[17] The program's safeguard category is expected to be B for environment, A for involuntary resettlement, and B for indigenous peoples. R&D and other facilities to be supported under output 3 may be in (i) densely populated urban areas in Ulaanbaatar or in *ger* (tent) areas; or (ii) second-tier cities like Darkhan and Erdenet, especially their sparsely populated surrounding areas. Significant land acquisition and relocation are expected. Some universities to be supported under outputs 1 and 2 may have higher proportions of students and staff from ethnic minority groups.

PRELIMINARY DESIGN AND MONITORING FRAMEWORK

Impact the Program is Aligned with Innovation and technological change to boost productivity and employment in the business sector promoted (Mongolia Sustainable Development Vision 2030)[a]			
Results Chain	**Performance Indicators with Targets and Baselines**	**Data Sources and Reporting Mechanisms**	**Risks**
Outcome and/or Effect of the Reform R&D capacity of clusters of research universities enhanced	By the end of 2027 a. Share of graduate students increased to 17% of all students, 18% of all female students, XX% of all students in STEM, and XX% of all female students in STEM, in clusters of research universities (school year 2016/17 baseline: 15% of all students, 16% of all female students, XX% of all students in STEM, and XX% of all female students in STEM nationwide) b. XXX (number) teaching and research staff (XX female teaching and research staff) conducted research with support from the endowment fund (2018 baseline: 0) c. At least XX collaborative and interdisciplinary applied research projects linked to industrial R&D funded through competitive grant program in line with strategic research priorities and meeting equity, gender, and diversity criteria (2018 baseline: 0)	a. MECSS statistics; data provided by clusters of research universities b. Annual reports of the endowment fund c. Annual reports of the National Committee on Higher Education; research excellence framework reports	Unexpected change in economic conditions reduces the number of students enrolling in graduate programs.
Outputs and/or Reform Areas 1. Governance and regulatory mechanisms for developing research universities and strengthening university research established	**Program:** By the end of 2021 1a. Management systems and operational procedures for the National Committee on Higher Education approved by cabinet (2018 baseline: not approved) 1b. Requirements and criteria for research universities, including industry partnerships, approved by cabinet and included in competitive grant proposal preparation and evaluation guidelines (2018 baseline: not approved) By the end of 2023 1c. Research excellence framework operational guidelines, roles and responsibilities of expert panels, and user guides (with due regard to equity, gender, and diversity aspects), approved by cabinet (2018 baseline: not approved) **Project:** 1d. By 2023, the National Committee on Higher Education established with properly equipped office space and staff having knowledge of the management systems and operational procedures (2018 baseline: not established) 1e. By 2024, XX (number) university management and teaching staff (XX female university management and teaching staff) having knowledge of standards and requirements for graduate programs, guidelines for	1a. Government resolutions 1b. Government resolution on requirements and criteria, proposal preparation and evaluation guidelines issued by MECSS 1c. Government resolutions 1d. Office space and staff of the National Committee on Higher Education; results of knowledge survey conducted among staff 1e. Program quarterly progress reports; results of	Elections and change of government, causing divergence of interests and priorities of stakeholders, and slowing coordination and decision-making processes.

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	ensuring the quality of graduate degrees, and academic and research code of ethics (2018 baseline: 0)	knowledge survey conducted among staff	
	1f. By 2024, databases for university research outputs, research facilities, equipment and other assets developed at all the key state universities (2018 baseline: not developed)	1f. Data available from databases	
	1g. By 2027, at least two reports on results of the research excellence framework (including equity, gender, and diversity aspects) published (2018 baseline: not published)	1g. Research excellence framework reports	
	Program: By the end of 2021		
2. Diversified funding mechanisms for research universities, university research, and graduate students established	2a. Managerial and operational procedures for a competitive grant program for clusters of research universities approved by cabinet (2018 baseline: not approved) 2b. Managerial and operational procedures for a competitive grant program for collaborative and interdisciplinary applied research linked to industrial R&D, with equity, gender, and diversity considerations, approved by cabinet (2018 baseline: not approved)	2a–b. Government resolutions	
	Project: 2c. By 2024, management and administration systems and tools for competitive grant programs for clusters of research universities, and collaborative and interdisciplinary applied research linked to industrial R&D developed and used by staff at the National Committee on Higher Education (2018 baseline: not developed)	2c. Consultants' reports; annual reports of the National Committee on Higher Education; program quarterly reports	
	2d. By 2025, managerial and operational procedures for graduate student scholarships updated with equity, gender, and diversity considerations, and used by staff (2018 baseline: not updated)	2d. Consultants' reports; annual reports of Student Development Loan Fund; program quarterly reports	
	2e. By 2027, governance, management, and operational mechanisms for endowment fund developed and used by staff (2018 baseline: not developed)	2e. Consultants' reports; annual reports of the endowment fund; program quarterly progress reports	
	2f. By 2027, governance, management, and operational mechanisms for at least one venture capital fund developed in collaboration with industry and used by staff (2018 baseline: not developed)	2f. Consultants' reports; annual reports of the venture capital fund; program quarterly progress reports	
	Program: By the end of 2023		
3. Clusters of research universities with shared R&D facilities developed	3a. Collaborative procurement framework for competitive grant program for clusters of research universities approved by cabinet (2018 baseline: not approved) 3b. Governance, management, and operational mechanisms for sharing R&D facilities and research	3a−b. Government resolutions	

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
	equipment approved by cabinet (2018 baseline: not approved) **Project:** By 2027 3c. At least six R&D facilities in clusters of research universities upgraded within the collaborative procurement framework and opened to the public (2018 baseline: not upgraded) 3d. XX (number) university, institute, and company staff, researchers, and research support staff (XX female university, institute, and company staff, researchers, and research support staff) having knowledge of R&D facility and equipment sharing mechanisms (2018 baseline: 0) 3e. XX (number) technology transfer, licensing, and intellectual property offices established with properly equipped office spaces, management systems, and trained staff in clusters of research universities (2018 baseline: not established)	3c. Program quarterly progress reports 3d. Consultants' reports; results of knowledge survey conducted among staff; program quarterly progress reports 3e. Office spaces, management systems, and staff; consultants' reports; program quarterly progress reports	

Project Key Activities with Milestones

1. Output 1: Governance and regulatory mechanisms for developing research universities and strengthening university research established

1.1 Assist the National Committee on Higher Education in establishing management systems and operational procedures including the administration of competitive grants for developing research universities, promoting interdisciplinary and collaborative research in line with strategic research priorities, and developing and implementing research excellence framework operational guidelines (Q1 2020–Q4 2024)

1.2 Develop standards and requirements for graduate programs, guidelines for ensuring the quality of graduate degrees, and an academic and research code of ethics, and train management and teaching staff of universities (Q1 2022–Q4 2024)

1.3 Assist all the key state universities in developing databases for university research outputs, research facilities, equipment and other assets (Q1 2022–Q4 2024)

2. Output 2: Diversified funding mechanisms for universities, university research, and graduate students established

2.1 Assist the National Committee on Higher Education in managing and administering competitive grants (Q1 2020–Q4 2024)

2.2 Assist the Student Loan Fund in updating managerial and operational procedures and managing and administering competitive and merit-based scholarships for graduate students (Q1 2022–Q4 2025)

2.3 Support a professional fund management institution with appropriate governance mechanisms to establish managerial and operational procedures and managing and administering the endowment fund (Q1 2022–Q3 2027)

3. Output 3: Clusters of research universities with shared R&D facilities developed

3.1 Finalize the STI human resource development plan, STI investment plan, and the strategy for developing science and technology parks (Q1 2019–Q1 2022)

3.2 Review existing innovation and entrepreneurship education programs and incubators for business startups in clusters of research universities and strengthen them (Q1 2022–Q3 2027)

Inputs

Asian Development Bank: $30 million (ordinary capital resources)
Government: $7 million

Assumptions for Partner Financing

Not applicable

MECSS = Ministry of Education, Culture, Science and Sports, Q = quarter, R&D = research and development, STEM = science, technology, engineering, and math, STI = science, technology, and innovation.

[a] State Great Khural. 2016. *Mongolia Sustainable Development Vision 2030*. Ulaanbaatar.

Source: Asian Development Bank.

PROGRAM PROCUREMENT CLASSIFICATION

Characteristic	Assessor's Rating:
Is the procurement environment risk for this project assessed to be *high* based on the country and sector and/or agency risk assessments?	☒Yes ☐No The country and sector and/or agency risk assessments in the past indicate that the procurement environment risk is *high.*
Are multiple (typically more than three) and/or diverse executing agencies and/or implementing agencies envisaged during project implementation? Do they lack prior experience in implementation under an ADB-financed project?	☐Yes ☒No ☐Unknown
Are multiple contract packages and/or complex and high-value contracts (compared with recent externally financed projects in the developing member country [DMC]) expected?	☐Yes ☒No ☐Unknown
Does the project plan to use innovative contracts (public–private partnership, performance-based, design and build, operation and maintenance, etc.)?	☐Yes ☒No ☐Unknown
Are contracts distributed in more than three geographical locations?	☐Yes ☒No ☐Unknown
Are there significant ongoing contractual and/or procurement issues under ADB (or other externally) financed projects? Has misprocurement been declared in the DMC?	☒Yes ☐No ☐Unknown There was a case of misprocurement in 2016 under a health sector project in Mongolia.
Does the DMC have prolonged procurement lead times, experience implementation delays, or otherwise consistently fail to meet procurement time frames?	☒Yes ☐No ☐Unknown The preparation of technical specifications and terms of reference, as well as bid evaluation and consultant selection tends to be slow, partly because of staff shortages and frequent turnovers of directors and staff at the executing and implementing agency.
Do executing and/or implementing agencies lack capacity to manage new and ongoing procurement? Have executing and/or implementing agencies requested ADB for procurement support under previous projects?	☐Yes ☒No ☐Unknown
Regional department's overall recommendation (Asako Maruyama)	
Overall project categorization recommended	☐ Category A ☒ Category B
The Ministry of Education, Culture, Science and Sports, the executing and implementing agency of the program, has experience with procurement under ADB-financed projects without any case of misprocurement. Multiple contract packages and/or complex and high-value contracts are not expected under the program.	
Procurement, Portfolio, and Financial Management Department's recommendation (Hiet Thi Hong Tran)	
The department confirms category B for the program.	

ADB = Asian Development Bank, DMC = developing member country.
Source: ADB.

TECHNICAL ASSISTANCE FOR PROGRAM PREPARATION

A. Justification

1. The Government of Mongolia has requested a loan of $30 million from the ordinary capital resources of the Asian Development Bank (ADB) to enhance the research and development (R&D) capacity of Mongolian universities. The proposed transaction technical assistance (TA) will support the preparation of the program through an in-depth sector assessment; technical assessments; economic and financial analyses; financial management and procurement capacity assessments; poverty, social, and gender analysis; and environment and social impact assessments.[1] The TA is included in ADB's country operations business plan, 2019–2021 for Mongolia.[2]

B. Major Outputs and Activities

2. **Output 1: Science and technology park development strategy, environmental and social impact assessments, and planning documents prepared.** The TA will support the (i) review of land availability, transportation and access infrastructure, and current locations of industries, universities, research institutes, and R&D facilities in Ulaanbaatar and second-tier cities and their surrounding areas; and (ii) preparation of a strategy for developing science and technology parks that will guide decisions on the location of R&D facilities, technology transfer, licensing, and/or intellectual property offices, and other facilities for the clusters of prospective research universities to be supported under output 3. Environmental and involuntary resettlement impacts are expected. The TA will support the review of such impacts and the preparation of an initial environmental examination report and environmental management plan and/or framework, a land acquisition and resettlement due diligence report, and resettlement plan and/or framework for the program.

3. **Output 2: In-depth assessments of graduate programs and schools, university research, and funding and governance mechanisms for university research completed.** The TA will support in-depth assessments of graduate programs and schools; and university-, research institution-, and company-based R&D funding and governance mechanisms for university research. Based on the assessments, strategies and methods for conducting activities to be supported under the program will be prepared. The following will be assessed in depth, using a sample of universities offering graduate programs and, where applicable, research institutes and companies with in-house R&D functions:

(i) graduate programs with data on students, university staff (teaching and research staff, research support staff, management and administrative staff), degrees (students, teaching and research staff, and management staff), fields of study and research areas, industry partnerships, funding (scholarships and grants), program governance, management, and quality assurance;
(ii) doctoral defense committees, and degree-awarding procedures and practices;
(iii) human resource management systems and practices, including career paths for teaching and research staff, and criteria and procedures for recruitment and promotion;
(iv) structure and organization of graduate schools, including charters and statutes, governing and management boards, involvement of business and industries, board by-laws and procedures, and reporting;

[1] The TA first appeared in the business opportunities section of ADB's website on 23 September 2018.
[2] ADB. 2018. *Country Operations Business Plan: Mongolia, 2019–2021.* Manila.

(v) internationalization status, policy, and strategy;
(vi) university, research institution, and company-based R&D (types of activities, projects, inputs, outputs; human, financial, and facility management; procurement), as well as key constraints on research collaboration;
(vii) research facilities and equipment use;
(viii) commercialization of R&D outputs (activities, institutions, financial, and human resources), and gaps in support services, financing, institutions, and policy for commercialization of R&D outputs;
(ix) university and non-university-based business incubation, acceleration, technology and business support for entrepreneurs, startups, scale-ups, and small- and medium-sized enterprises; and experiences of entrepreneurs, startups, scale-ups, and companies that have received support;
(x) budgets and expenditures, and financial management systems and capacity of universities and research institutes; and
(xi) budgets and expenditures, financial management systems and capacity, governance and management structures, and operational procedures of the Science and Technology Foundation, the Student Loan Fund, other funds, and competitive grant programs.

4. Based on the assessments and reviews of national and international experiences and in consultation with stakeholders, strategies and approaches will be developed for the following activities to be supported under the program:

(i) designing and developing databases for university research outputs (including a citation database), R&D facilities, research equipment, and other assets;
(ii) developing standards, requirements, guidelines, and a code of ethics for graduate programs;
(iii) developing processes to set strategic research priorities;
(iv) designing and implementing a research excellence framework to evaluate the quality of research;
(v) developing managerial and operational guidelines for competitive grant programs;
(vi) exploring funding mechanisms for R&D, commercialization, and business startups; and
(vii) developing collaborative procurement frameworks for R&D facilities and research equipment.

5. These strategies and approaches will be used to develop a detailed implementation plan for the national program on research universities, and detailed cost estimates. Moreover, a stakeholder analysis of policy actions proposed under the national program will be conducted, which will be considered when determining the financing modality of the program. Additionally, a plan to develop the second phase of the national program on research universities will also be prepared. For the policy-based loan, an environmental and social assessment (involuntary resettlement, indigenous peoples) of policy interventions will be conducted, and an environmental and social assessment policy action matrix will be developed.

6. **Output 3: Due diligence and project documents completed.** The TA will support technical, economic, and financial analyses; financial management and procurement capacity assessments; poverty, social, and gender analysis; and preparation of project documents. Facilities to be constructed or upgraded under output 3 will conform to green building standards, and adopt measures to save energy and water. The TA will support assessments of climate change risks and impacts, and possible climate mitigation and/or adaptation interventions. A climate risk and vulnerability assessment and management report will be prepared. The existing

systems and capacity of the Ministry of Education, Culture, Science and Sports (MECSS) will be assessed, and potential risks and mitigating measures will be identified. Data on poverty, gender and other social aspects of graduate programs, university research, funding and governance mechanisms for university research will be collected and analyzed to assess the current situation of students, teaching staff, researchers, research support staff, university management and administrative staff, and other direct and indirect program beneficiaries and stakeholders; as well as potential positive and negative impacts of the program on various stakeholders. A social development and gender action plan for the project will be prepared. Moreover, cost-benefit analysis and analysis of fiscal impacts and financial sustainability of the project will be conducted. Based on these assessments and analyses, the report and recommendation of the President, the project administration manual, and other linked documents will be prepared.

7. The major outputs and delivery dates are summarized in Table 1.

Table 1: Summary of Major Outputs and Activities

Output	Delivery Date
Land acquisition and resettlement due diligence report	April 2020
Financial management and procurement capacity assessments	April 2020
Assessment reports of graduate programs, university research, funding, and governance mechanisms for university research	April 2020
Strategies and approaches to conduct activities	May 2020
Climate risk and vulnerability assessment and management report	May 2020
Resettlement plan and/or framework	May 2020
Initial environmental examination and environmental management plan and/or framework	May 2020
Stakeholder analysis, detailed implementation plan, and cost estimates of the national program on research-based universities	June 2020
Environmental and social assessment (involuntary resettlement, indigenous peoples) of policy interventions and policy action matrix	June 2020
Poverty, social, and gender analysis, and social development and gender action plan	June 2020
Economic and financial analyses	June 2020
RRP, PAM, and other linked documents	July 2020

PAM = project administration manual, RRP = report and recommendation of the President.
Source: Asian Development Bank.

C. Cost Estimate and Financing Plan

8. The TA is estimated to cost $850,000, of which $800,000 will be financed on a grant basis by ADB's Technical Assistance Special Fund (TASF 6). The key expenditure items are listed in Table 2. The government will provide counterpart support in the form of counterpart staff, data, information, and other in-kind contributions. The government was informed that approval of the TA does not commit ADB to finance any ensuing project.

Table 2: Cost Estimates and Financing Plan
($'000)

Item	Amount
A. Asian Development Bank[a]	
1. Consultants	
a. Remuneration and per diem	
i. International consultants	453.6
ii. National consultants	89.6
b. Out-of-pocket expenditures	
i. International and local travel	60.0
ii. Rental of office space and related facilities	6.0
iii. Surveys	20.0
iv. Training, seminars, and conferences	80.0

Item	Amount
v. Reports and communications	20.0
vi. Miscellaneous administration and support costs	20.0
2. Contingencies	50.8
Total	**800.0**

Note: The technical assistance (TA) is estimated to cost $850,000, of which contributions from the Asian Development Bank (ADB) are presented in the table above. The government will provide counterpart support in the form of counterpart staff, data, information, and other in-kind contributions. The value of government contribution is estimated to account for 5.9% of the total TA cost.

[a] Financed by ADB's Technical Assistance Special Fund (TASF 6).

Source: ADB estimates.

D. Consulting Services

9. ADB will engage the consultants following the ADB Procurement Policy (2017, as amended from time to time) and its associated project administration instructions and/or staff instructions.[3] ADB will recruit one international consulting firm for sector assessments, project design, and due diligence to provide 39.0 person-months of consulting services (international, 16.0 person-months; national, 23.0 person-months) in the areas of graduate school governance and management, graduate education, university research, R&D management, fund governance and management, financial management, procurement, economics, climate change, and social and gender, using the quality- and cost-based selection method with a quality–cost ratio of 90:10 and simplified technical proposal. ADB will also recruit seven individual consultants (international, 7 person-months; national, 9 person-months) to prepare a strategy for the development of science and technology parks, conduct environmental and social impact assessments, and prepare safeguards planning documents. Lump sum payments and/or output-based contracts will be considered for consulting services under the TA. The required consulting services are summarized in Table 3.

Table 3: Summary of Required Consulting Services

International	Person-months	National	Person-months
Engaged as individual			
Science and technology park planning specialist	2.0	Science and technology park planning specialist	3.0
Environment specialist	2.0	Environment specialist	3.0
Resettlement specialist	2.0	Resettlement specialist	3.0
Climate change specialist	1.0		
Subtotal	**7.0**	**Subtotal**	**9.0**
Engaged through consulting firm			
Graduate school governance and management specialist/team leader	3.0	Graduate school governance and management specialist/deputy team leader	4.0
Graduate education specialist	2.0	Graduate education specialist	3.0
Research and development management specialist	2.0	Research and development management specialist	3.0
Fund governance and management specialist	2.0	Fund governance and management specialist	3.0
Financial management specialist	2.0	Financial management specialist	3.0
Procurement specialist	1.5	Procurement specialist	2.0
Economist	1.5	Economist	2.0
Social development and gender specialist	2.0	Social development and gender specialist	3.0
Subtotal	**16.0**	**Subtotal**	**23.0**
Total	**23.0**	**Total**	**32.0**

[3] Terms of Reference for Consultants (Supplementary Appendix) are available upon request.

E. Implementation Arrangements

10. ADB will administer the TA. It will select the consultants, and supervise and evaluate them during the implementation of the TA. MECSS will be the executing and implementing agency, and will be responsible for providing guidance and support to consultants, and involving stakeholders during TA implementation, including but not limited to other government agencies, the working group on the national program for research universities, other universities, the Science and Technology Foundation, the Academy of Sciences, the Student Development Loan Fund, research institutes, and companies engaged in R&D. A project steering committee chaired by the state secretary of MECSS, and comprising the directors of MECSS and representatives from the Ministry of Finance and other government agencies and institutions, will be set up to review implementation progress and provide overall guidance. The implementation arrangements are summarized in Table 4.

Table 4: Implementation Arrangements

Aspects	**Arrangements**		
Indicative implementation period	January 2019–January 2022		
Executing agency	Ministry of Education, Culture, Science and Sports		
Implementing agency	Higher Education Department (Ministry of Education, Culture, Science and Sports)		
Consultants	To be selected and engaged by the Asian Development Bank		
	Quality- and cost-based selection (90:10)	Consulting firm for sector assessments, project design, and due diligence (39.0 person-months)	$543,500
	Individual consultant selection	International urban and industrial development planning, environment, resettlement, and climate change specialists (7.0 person-months)	$153,600
	Individual consultant selection	National urban and industrial development planning, environment, and resettlement specialists (9.0 person-months)	$32,100
Disbursement	The technical assistance resources will be disbursed following ADB's *Technical Assistance Disbursement Handbook* (2010, as amended from time to time).		

Source: Asian Development Bank.

INITIAL POVERTY AND SOCIAL ANALYSIS

Country:	Mongolia	Project Title:	Research University Sector Development Program
Lending/Financing Modality:	Sector development program	Department/ Division:	East Asia Department/Urban and Social Sectors Division

I. POVERTY IMPACT AND SOCIAL DIMENSIONS

A. Links to the National Poverty Reduction Strategy and Country Partnership Strategy

The program aims to enhance the R&D capacity of clusters of research universities in Mongolia by establishing governance and regulatory mechanisms for developing research universities and strengthening university research; setting up diversified funding mechanisms for research universities, university research, and graduate students; and developing clusters of research universities with shared R&D facilities. The program supports the goal of enhancing the role of universities in R&D and their contribution to a diversified and knowledge-based economy, set forth in Mongolia's Sustainable Development Vision 2030. The program is aligned with the Asian Development Bank's country partnership strategy, 2017–2020 for Mongolia,[a] and its Strategy 2030.[b]

B. Poverty Targeting

☐General intervention ☐Individual or household (TI-H) ☐Geographic (TI-G) ☒Non-income SDGs (SDG 4, SDG 8, SDG 9)

C. Poverty and Social Analysis

1. **Key issues and potential beneficiaries.** The growth of Mongolia's economy decelerated in 2015–2016, resulting in a steep rise in unemployment (7.5% in 2015 and 10.0% in 2016). The poverty headcount ratio (the percentage of households living below the national poverty line) also rose from 21.6% in 2014 to 29.6% in 2016. To create jobs and enhance productivity in the business sector, it is necessary to step up investments in industrial R&D (human resources, financing, and infrastructure), which declined in Mongolia after its transition from a centrally planned to a market-based economy. The program will strengthen the R&D capacity of Mongolian universities, especially in the government-defined priority STI areas. The program's direct beneficiaries will be students, faculty members, and research and management staff at universities offering graduate programs, most of which are in the capital, Ulaanbaatar. The program's indirect beneficiaries will be startups, scale-ups, and SMEs supported by R&D, technology transfers, licensing, intellectual property, consultancy, and business support enhanced in clusters of research universities in collaboration with industries.

2. **Impact channels and expected systemic changes.** Direct impact channels will be (i) increased competitive grants for research in strategic priority areas where significant contribution to productivity growth and job creation is expected; (ii) increased scholarship amounts for selected graduate students, with equity considerations; (iii) improved quality of graduate programs, helping students complete programs on time and providing quality research training; (iv) better access to knowledge, technology, and business support for startups, scale-ups, and SMEs through R&D, technology transfer, licenses, intellectual property, consultancy, and business support; and (v) open access to R&D facilities and research equipment for universities, research institutes, companies, and researchers. Expected systemic changes include (i) systems, frameworks, and mechanisms in place to enhance effectiveness, efficiency, and economy in publicly funded research; (ii) stronger governance and management of graduate schools and programs, ensuring the quality of graduate degrees, and adherence to the academic and research code of ethics; (iii) diversified and sustainable funding mechanisms for universities, university research, and graduate students, encouraging high-quality research in strategic priority areas; (iv) increased interdisciplinary applied research, and inter-university and university–industry collaborative research; and (v) expanded pool of research human resources.

3. **Focus of (and resources allocated in) the transaction technical assistance or due diligence.** The transaction TA will support the (i) review of current conditions surrounding the poor, disadvantaged, ethnic minorities, people with disabilities, and other disadvantaged groups in terms of access to higher education (especially graduate education), funding (scholarships and grants), knowledge, technology and business support, and learning and labor market outcomes; (ii) assessment of benefits and negative impacts on various stakeholders, and measures to mitigate negative impacts and enhance benefits; and (iii) preparation of a social development and gender action plan.

4. **Specific analysis for policy-based lending.** The program will support the government's reform agenda of developing research universities through a set of policy actions, capacity development, and physical investment. Transmission channels of policy interventions include (i) sharper focus on strategic research priorities for physical investments in R&D facilities and research equipment, and competitive research grants in line with STI plans and strategy; (ii) better access to sustainable funding for universities, university research, and graduate students, aiming to enhance the capacity of universities to develop human resources, conduct research, and transfer knowledge and technology; and (iii) open access to R&D facilities and research equipment for universities, research institutes, companies, and researchers. Short-term direct impacts will be more graduate students from poor families and disadvantaged backgrounds enrolling and completing graduate programs and being awarded

graduate degrees. Medium-term indirect impacts will be more quality jobs and economic opportunities available in STI-related industries. Other positive and negative impacts of developing research universities on the poor and disadvantaged groups will be examined, and measures to mitigate negative impacts on and enhance benefits for them will be identified during program design.

II. GENDER AND DEVELOPMENT

1. What are the key gender issues in the sector and/or subsector that are likely to be relevant to this project or program?

More female students enroll in higher education (58.2% in school year 2016/17) than male students across all types of programs, with the largest share of female students in master's programs (62.6%), doctorate programs (57.7%), and bachelor's programs (57.6%). However, the share of female graduate students is smaller in information and communication technology (38.7%); and engineering, manufacturing, and construction (43.1%). Similarly, more female students tend to complete higher education programs (60.9%), obtaining doctorate degrees (64.0%), and master's degrees (63.9%), except in engineering, manufacturing, and construction (41.0%). There are more female staff than male staff in higher education (62.4%), including among full-time faculty staff (59.7%). As part of the poverty and social analysis, the reasons for lower male enrollment and completion in higher education; lower female enrollment and completion in engineering, manufacturing, and construction; and a smaller proportion of male staff in higher education will be examined, along with other dimensions such as opportunity gaps in training, research, funding, promotion, and managerial responsibilities between female and male staff. The poverty and social analysis will include an examination of gender issues in access to knowledge, technical and business support, and funding for entrepreneurs, startups, scale-ups, and SMEs.

2. Does the proposed project or program have the potential to contribute to the promotion of gender equity and/or empowerment of women by providing women's access to and use of opportunities, services, resources, assets, and participation in decision making? ☒ Yes ☐ No

The program will promote gender considerations in scholarship and competitive grant programs, and evaluation of research quality, while ensuring sex-disaggregated monitoring of research and training participants, graduate degree, scholarship, and grant awardees. A social development and gender action plan will be prepared under the transaction TA.

3. Could the proposed project have an adverse impact on women and/or girls or widen gender inequality?

☐ Yes ☒ No

4. Indicate the intended gender mainstreaming category:

☐ GEN (gender equity) ☒ EGM (effective gender mainstreaming)
☐ SGE (some gender elements) ☐ NGE (no gender elements)

III. PARTICIPATION AND EMPOWERMENT

1. Who are the main stakeholders of the project, including beneficiaries and negatively affected people? Identify how they will participate in the project design.

The main stakeholders of the program are universities, especially those offering graduate programs; research institutes; companies; students and their families; university teaching, research, and management staff; and entrepreneurs, startups, scale-ups, and SMEs benefiting from R&D, technology transfer, licenses, intellectual property, consultancy, and business support enhanced in clusters of research universities in collaboration with industries. They will be consulted through questionnaires, interviews, focus group discussions, and workshops.

2. How can the project contribute (in a systemic way) to engaging and empowering stakeholders and beneficiaries, particularly the poor, vulnerable, and excluded groups? What issues in the project design require participation of the poor and excluded?

The process of setting strategic research priorities and evaluating research quality (through the implementation of the research excellence framework) will involve stakeholders, including research users. Updating managerial and operational procedures for scholarships for graduate students with equity considerations will require participation of students from poor families and disadvantaged backgrounds.

3. What are the key, active, and relevant civil society organizations in the project area? What is the level of civil society organization participation in the project design?

☒ Information generation and sharing (M) ☒ Consultation (H) ☒ Collaboration (L) ☒ Partnership (L)

4. Are there issues during project design for which participation of the poor and excluded is important? What are they and how should they be addressed? ☒ Yes ☐ No

Students and their families will be consulted to identify measures to make research universities and graduate education more accessible. Similarly, entrepreneurs, startups, scale-ups, and SMEs will be consulted to identify their needs for and gaps in knowledge, technology, and business support as well as funding.

IV. SOCIAL SAFEGUARDS

A. Involuntary Resettlement Category ☒ A ☐ B ☐ C ☐ FI

1. Does the project have the potential to involve involuntary land acquisition resulting in physical and economic displacement? ☒ Yes ☐ No

The program may involve significant land acquisition and resettlement impacts because of R&D facilities; technology transfer, licensing, and intellectual property offices; and other facilities that will be located in densely populated urban areas in Ulaanbaatar or in *ger* (tent) areas; or in second-tier cities like Darkhan and Erdenet,

especially their sparsely populated surrounding areas. As part of due diligence, a socioeconomic survey and valuation of affected assets will be conducted on potential sites to identify potential impacts on affected people, and compensation and other measures for them. Specific to the policy-based lending component, a comprehensive social assessment of proposed policy interventions will be carried out, and an environmental and social assessment policy action matrix will be prepared.

2. What action plan is required to address involuntary resettlement as part of the transaction TA or due diligence process?

☒ Resettlement plan ☒ Resettlement framework ☒ Policy actions matrix
☐ Environmental and social management system arrangement ☐ None

If the land requirements and impacts are not known during program preparation, a resettlement framework will be prepared to guide the screening, planning, implementation, and monitoring of resettlement activities.

B. Indigenous Peoples Category ☐ A ☒ B ☐ C ☐ FI

1. Does the proposed project have the potential to directly or indirectly affect the dignity, human rights, livelihood systems, or culture of indigenous peoples? ☐ Yes ☒ No

Policy actions and capacity development under the program are designed for universities across the country, some of which may have higher proportions of students and staff from ethnic minority groups. A comprehensive social assessment of proposed policy interventions on ethnic minorities will be conducted, and an environmental and social assessment policy action matrix will be prepared to ensure that the identified ethnic minorities will benefit from policy interventions as much as other students and staff do.

2. Does it affect the territories or natural and cultural resources indigenous peoples own, use, occupy, or claim, as their ancestral domain? ☐ Yes ☒ No

3. Will the project require broad community support of affected indigenous communities? ☐ Yes ☒ No

4. What action plan is required to address risks to indigenous peoples as part of the transaction TA or due diligence process?

☒ Indigenous peoples plan ☐ Indigenous peoples planning framework ☒ Policy actions matrix
☐ Environmental and social management system arrangement ☐ None

Ethnic minority actions and measures will be incorporated into a social development, ethnic minority, and gender action plan for the project.

V. OTHER SOCIAL ISSUES AND RISKS

1. What other social issues and risks should be considered in the project design?

☒ Creating decent jobs and employment (M) ☒ Adhering to core labor standards (L) ☐ Labor retrenchment
☒ Spread of communicable diseases, including HIV/AIDS (L) ☐ Increase in human trafficking ☒ Affordability (M) ☒ Increase in unplanned migration (L) ☐ Increase in vulnerability to natural disasters ☐ Creating political instability ☐ Creating internal social conflicts ☐ Others, please specify

2. How are these additional social issues and risks going to be addressed in the project design?

The program will contribute to the creation of quality jobs and economic opportunities by promoting R&D, technology transfer, licensing, intellectual property, consultancy, and business support for industries, entrepreneurs, startups, scale-ups, and SMEs. Compliance with core labor standards and dissemination of information on the risk of communicable diseases, including HIV/AIDS, will be integrated in the loan agreements. The program will increase scholarships for graduate students, with equity considerations, to enhance the affordability of graduate programs. The location of R&D facilities, technology transfer, licensing, intellectual property offices, and venture capital funds will be determined with consideration for rural–urban migration.

VI. TRANSACTION TA OR DUE DILIGENCE RESOURCE REQUIREMENT

1. Do the terms of reference for the transaction TA (or other due diligence) contain key information needed to be gathered during transaction TA or due diligence process to better analyze (i) poverty and social impact, (ii) gender impact, (iii) participation dimensions, (iv) social safeguards, and (v) other social risks. Are the relevant specialists identified?

☒ Yes ☐ No

2. What resources (e.g., consultants, survey budget, and workshop) are allocated for conducting poverty, social, and/or gender analysis, and participation plan during the transaction TA or due diligence?

2.0 person-months of international and 3.0 person-months of national social development and gender specialists will be engaged under the transaction TA to conduct poverty, social, and gender analysis, and prepare a social development and gender action plan.

R&D = research and development; SDG = Sustainable Development Goal; SMEs = small and medium-sized enterprises; STI = science, technology, and innovation; SY = school year; TA = technical assistance.

[a] ADB. 2017. *Country Partnership Strategy: Mongolia, 2017–2020—Sustaining Inclusive Growth in a Period of Economic Difficulty*. Manila.

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

Source: Asian Development Bank.