

URGENT research framework for a partner institution

The name of the partner organisation: National University of Mongolia

Contact person and e-mail address:

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Departments or other academic units at your organisation concerned with URGENT-related topics:

1. Department of Environment and Forest Engineering
2. Graduate school
3. Department of Biology
4. Department of Geography
5. Institute for Sustainable Development

Current and past projects implemented at your institution and concerned with URGENT topics:

Add as many lines as necessary

Project title	Funding agency	Project topics concerned (2-3 keywords)	Type of the project (research, education, mobility, capacity for the organization or external stakeholders building, promotion etc)	Possible links to URGENT (joint activities, agreements, ...)
Tackling the climate change through modernizing environmental engineering program (2021-2023)	Erasmus+	Environmental engineering, course development	Education	Joint activity
European orientation for sustainable environmental management in	Erasmus+	Europa study, environmental management	Education	Joint summer school

Mongolia – ONE 2022-2024				
Integrated doctoral program for environmental policy, management and technology – INTENSE 2017- 2021	Erasmus+	GBI, NbS	Education	Joint seminar
Graduates for climate change adapted water management (2021-2023)	Erasmus+	Water management, course development	Education	Joint seminar
Higher Engineering Education Development (2015-2026)	Japanese International Cooperation Agency	Environmental engineering, degree program, visiting program	Research, education, mobility, capacity for the organization	Joint research
“Study of the groundwater molybdenum contamination in Erdenet area, Mongolia” international project, 2021-2023	Japan Society for the Promotion of Science– JSPS	Heavy metals, groundwater	Research	Joint research

PHD Programs available

Add as many lines as necessary

- ~ *Environmental science*
- ~ *Forestry*

Topics of PhD thesis (or other graduate works if you do not have a PhD program)

Add as many lines as necessary

- Forest management and modeling*
- Air quality and climate*
- Energy and environmental issue*
- Special protected area management*
- Ecosystem services of pasture land*
- Urban soil study*

Key personalities at your organisation publishing on URGENT -related topics:

Name	Key words (2-3) describing research interests	Personal webpage, if applicable
Ch.Sonomdagva	Ambient air pollution, environmental monitoring	http://seas.num.edu.mn/dep/defe/aboutus/teachers/136/detail/
O.Altansukh	Water pollution, environmental management	http://seas.num.edu.mn/dep/defe/aboutus/teachers/128/detail/
D.Davaadorj	Soil and sediment analysis	
N.Baatarbileg	Tree ring, climate change	http://seas.num.edu.mn/dep/defe/aboutus/teachers/249/detail/
N.Batkhuu	Forest genetics, ecophysiology	http://seas.num.edu.mn/dep/defe/aboutus/teachers/134/detail/
B.Batdelger	Particle matter analysis, environmental monitoring	http://seas.num.edu.mn/dep/defe/aboutus/teachers/151/detail/
D.Batsuren	Ecohydrology, environmental modelling	http://seas.num.edu.mn/dep/defe/aboutus/teachers/150/detail/
B.Oyunsanaa	Forestry, wildfire management	http://seas.num.edu.mn/dep/defe/aboutus/teachers/145/detail/
T.Enhdol	Waste management, environmental chemistry	http://seas.num.edu.mn/dep/defe/aboutus/teachers/179/detail/
N.Oyunchimeg	Special protected area, social impact assessment	http://seas.num.edu.mn/dep/defe/aboutus/teachers/147/detail/
B.Enkhchimeg	Environmental health assessment, environmental monitoring	http://seas.num.edu.mn/dep/defe/aboutus/teachers/168/detail/

Current research profile of the organization in relation to URGENT topics:

Strategic plan of NUM between 2016 and 2024, first chapter is focusing on research development, and it includes to increase number of professors who publishes international papers, to increase number of publication and citation, and to increase university income from out-sourcing scientific fund.

Number of publication and citation in last 5 years

Year	Scopus		Web of science		URGENT related publication
	Publication	Citation	Publication	Citation	
2015	88	766	71	672	-
2016	87	1017	74	885	-
2017	102	1083	71	953	-
2018	158	1317	106	1282	-
2019	156	1671	118	1702	-
2020	61	877	41	677	-
Total	652	6731	481	6171	41 (8.5%)

Source: <https://www.num.edu.mn/content.htm?mid=3477>



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In last 5 years, NUM has published 102 papers in international scientific journals, indexed SCOPUS and WoS. Among them, 41 papers were related to the URGENT topics and it occupied 8.5% of the all publication.

Number of project implementation in 2020

Research type	Project	URGENT related project (funding source)		
		International	National	NUM
Basic science	102	12	5	3
Applied science	59			
R&D	4			
Total	165	20 (12%)		

Source: <https://www.num.edu.mn/content.htm?mid=3487>

In 2020, NUM implemented 165 research projects. Among them, 20 research projects were related to the URGENT topics and it occupies 12% of all projects.

Ambitions of the organization (in terms of research topics) or aspired activities in relation to URGENT topics (i.e. research collaboration agreements, phd supervision, internships for phd students to Eu partners)

Strategic plan of NUM between 2016 and 2024, first chapter is focusing on research. In the strategic plan, several policies that can related to the INTENSE topics, are included:

1. Increase number of staffs who supervise and co-supervise international and national projects
2. Increase number of international publications, and encourage persons who published paper.
3. Increase amount of international and national research fund. The internal fund shall occupy at least 15% of annual budget.
4. Apply internationally acceptable methodology to evaluate annual performance of staffs.
5. Develop joint doctoral and master programs with international universities.

For actual implementation of these policies, NUM is doing the following activities:

1. Annual joint event “Web of Science” with Clarivate Analytics for authors who published papers in internationally acceptable journals. <https://news.num.edu.mn/?p=54012>
2. An internal regulation on NUM research funding has been approved in 2018, and spent around 250,000 euro, annually.
3. An internal regulation on evaluation of NUM professor and staff has been updated in 2019. Research outputs occupies 70%, and 30% occupies teaching and social activities. Highest scores give to international publication and project.
4. International joint graduate program is strongly encouraged, and NUM provides national accreditation fee, which national accreditation is acceptable to international level.

Not only research collaboration agreements, but also joint PhD supervision, internships for PhD students to EU partners are required.

Obstacles and barriers hampering the aspired developments

The following barriers are facing to reach our development:

1. At higher documents are developed. Practically, qualified staffs are lacking.

2. Financial difficulty. Specially, there is very little possibility to apply high amount co-financing projects.
3. English language. There is no system to enroll and study foreign students via online. Everything is in native language.

Enabling conditions and positive factor behind your current successes in relation to URGENT -related research developments, and/or making you hopeful about your ambitions:

Under URGENT research framework, we create international and national science network that consists of researchers with same interest and who are working in same scientific field. This is a key factor to further collaboration on education and scientific projects. Also, monthly research seminar at national level gives us good opportunity to expand network and gives us new collaborative research ideas. Moreover, shareable equipment and environmental monitoring stations provides us to expand research area within the country.

Specific capacities you want to develop to reach you aspired URGENT-related research goals, such as equipment, training for academic or technical staff, access to international databases, external experts support or PhD supervision etc etc

There are two capacities that NUM wants to develop. Herein:

1. International joint PhD supervision – we are lack of supervisors who can actually supervise topics related to interdisciplinary and frontier sciences such urban planning with nature-based solution.
2. International joint research-oriented graduate program on interdisciplinary science such us environmental management.

Are there any national research or development policy objectives that support your current or aspired URGENT-related research developments? Please expand on this, if so

There are several policies at national level to support URGENT-related research development. Herein:

1. National program to develop research-oriented university, approved in 2018 by the Government of Mongolia. Objective of the program is to support transition period of recent teaching-oriented universities to research-oriented universities.
2. National policy on science and technology, approved in 2017 by the Government of Mongolia. Objective of the policy is set national guideline on science and technology that shall reflect in further documents.
3. The list of core technology and high priority science field between 2015-2021, approved in 2015 by the Government of Mongolia. The URGENT related research, human development-environment is listed at the first place in high priority science field.

Based on aforesaid national policy and programs, the university develops several internal regulations on science and technology. Herein:

1. Internal regulation on research center and institute of NUM
2. Internal regulation on research laboratory of NUM
3. Internal regulation on assessment of national scientific journal
4. Internal regulation on overhead tax of NUM
5. Internal regulation on research self-funding of NUM

What are specific enabling conditions or obstacles for the development of research training at your organization – in general, and in URGENT-related fields

Enabling condition:

- ~ Policy is very clear that the university will support
- ~ Class room and space will be provided
- ~ No special permission is required

Obstacle:

- ~ Lack of finance
- ~ Lack of equipment
- ~ Depends on research training, lack of human capacity in some modern science