

## “URGENT” RESEARCH FRAMEWORK FOR A PARTNER INSTITUTION

**The name of the partner organisation:** National University of Mongolia

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

Project title	Duration	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, ...)
Higher Engineering Education Development	2015-2026	JICA	Environmental engineering, degree program, visiting program	Research, education, mobility, capacity for the organization	Joint research
European orientation for sustainable environmental management in Mongolia – ONE	2022-2024	Erasmus+	Europa study, environmental management	Education	Joint summer school
Tackling the climate change through modernizing environmental engineering program	2021-2023	Erasmus+	Environmental engineering, course development	Education, mobility	Joint activity
Graduates for climate change adapted water management	2021-2023	Erasmus+	Water management, course development	Education	Joint seminar
Study of the groundwater Molybdenum contamination in Erdenet area, Mongolia	2021-2023	JSPS	Heavy metals, groundwater	Research	Joint research
Nature-based Solutions 2022	2023	The Asia-Europe Foundation	NbS database	education	Joint database
Integrated doctoral program for environmental policy, management and technology – INTENSE	2017- 2021	Erasmus+	GBI, NbS	Education, mobility	Joint seminar

**PhD programs available:**

- ~ Environmental science
- ~ Forestry

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

- ~ Forest management and modeling
- ~ Air quality and climate change

- ~ Energy and environmental issue
- ~ Special protected area management
- ~ Ecosystem services of pasture land
- ~ Urban soil study
- ~ Ecosystem services and disservices of urban parks

**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	<a href="#">Here</a>
O.Altansukh	Water pollution, environmental management, urban ecosystem service	<a href="#">Here</a>
D.Davaadorj	Urban soil	<a href="#">Here</a>
B.Batdelger	Particle matter analysis, environmental monitoring	-
D.Batsuren	Ecohydrology, environmental modelling	<a href="#">Here</a>
N.Oyunchimeg	Special protected area, social impact assessment	<a href="#">Here</a>
B.Enkhchimeg	Environmental health assessment, environmental monitoring	-
B.Ariunsanaa	Urban lakes and water	<a href="#">Here</a>

**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 in last 5 years**

Year	Scopus	Web of science
2019	164	127
2020	187	136
2021	233	189
2022	213	148
2023	193	143
Total	990	743
URGENT related publication	38	46

Source: [NUM statistics](#)

In last 5 years, NUM has published 990 papers in international scientific journals, indexed SCOPUS and WoS. Among them, 46 papers might related to the URGENT topics and it occupied 4.6% of the all publication.

**Number of project implementation in last 5 years**

Research type	Projects (funding source)			
	International	National	NUM	Other
Basic science	36	39	41	13
Applied science	22	14	41	36
R&D	13	8	3	4
Total	71	61	85	53
URGENT related project	5	2	2	1

Source: <https://www.num.edu.mn/research/engage-with-us/>

In last 5 years, NUM implemented 270 research projects. Among them, 10 research projects were related to the URGENT topics and it occupies 4% 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 URGENT 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://www.youtube.com/watch?v=GLZQIXVCCzc>
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. Long-term development national policy “Vision-2050” approved 2020 by Parliament of Mongolia. This document has 9 sections, including:
  - a. Section 2: Human development – Sub-section 2.4: Science, technology and innovation - Objective 2.4: Develop internationally competitive national science, technology and innovation system.
  - b. Section 6: Green development – Sub-section 6.4: Low carbon, efficient and inclusive green development - Objective 6.4: Contribute to international efforts to mitigate climate change by developing a low carbon, productive and inclusive green economy.
  - c. Section 9: Ulaanbaatar and satellite cities – Sub-section 9.2: Environment-focused solutions - Objective 9.2: Develop a comfortable city with balanced ecosystem, low greenhouse gas emissions and green technologies, and ensure a healthy and safe living environment for citizens

<https://vision2050.gov.mn/eng/index.html>

2. Law on higher education approved 2023 by Parliament of Mongolia. The purpose of this Law shall be to regulate higher education management, organization, training/study, research, financing, and relations in connection with them.

<https://legalinfo.mn/mn/detail?lawId=16759959041191>

3. Law on science and technology approved 2006 by Parliament of Mongolia. The purpose of this Law is to regulate relations in connection with establishing principles of scientific and technological activities, and legal basis of management, organization and financing of the respective activities.

<https://legalinfo.mn/mn/detail/94>

4. 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.

<https://legalinfo.mn/mn/detail?lawId=208678&showType=1>

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

1. Internal regulation on research center and institute of NUM approved in 2017 by the Rector – [Here](#)
2. Internal regulation on research laboratory of NUM approved in 2020 by the Rector – [Here](#)
3. Internal regulation on assessment of national scientific journal approved in 2018 by the Rector – [Here](#)
4. Internal regulation on overhead tax of NUM approved in 2016 by the Rector – [Here](#)
5. Internal regulation on research funding of NUM in 2022 by the Rector – [Here](#)

**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 frontier sciences