

**Научно-практическая конференция  
«Вода в Центральной Азии: будущее в сотрудничестве»**

**Development of Water-Environmental Education and  
Research in the era of global transformations:  
Achievements, Challenges and Ways to overcome**

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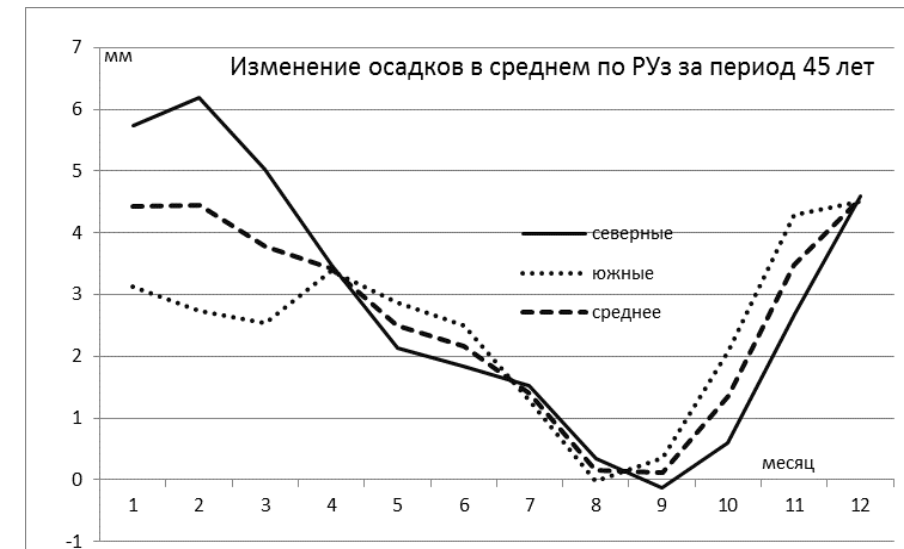
**Now. 8, 2024**

# Water resources are crucial for the sustainable development of Central Asia

- **Ensuring water, food, energy and environmental security in the region;**
- **Problems associated with increasing uncertainty:**
  - ❖ Shortage and progressive deterioration of water quality,
  - ❖ Salinization and desertification leading to severe land degradation that endangers human health,
  - ❖ Climate change leading to increased demand for water for energy, irrigation, and other purposes,
  - ❖ Competing interests between various sectors of the economy and water use,
  - ❖ - Increasing complexity of water resource management, including meeting the growing food needs of a growing population.
- **Solving these issues requires in-depth knowledge of sustainable management methods and rational water resource use (Water-Environmental Education and Research).**

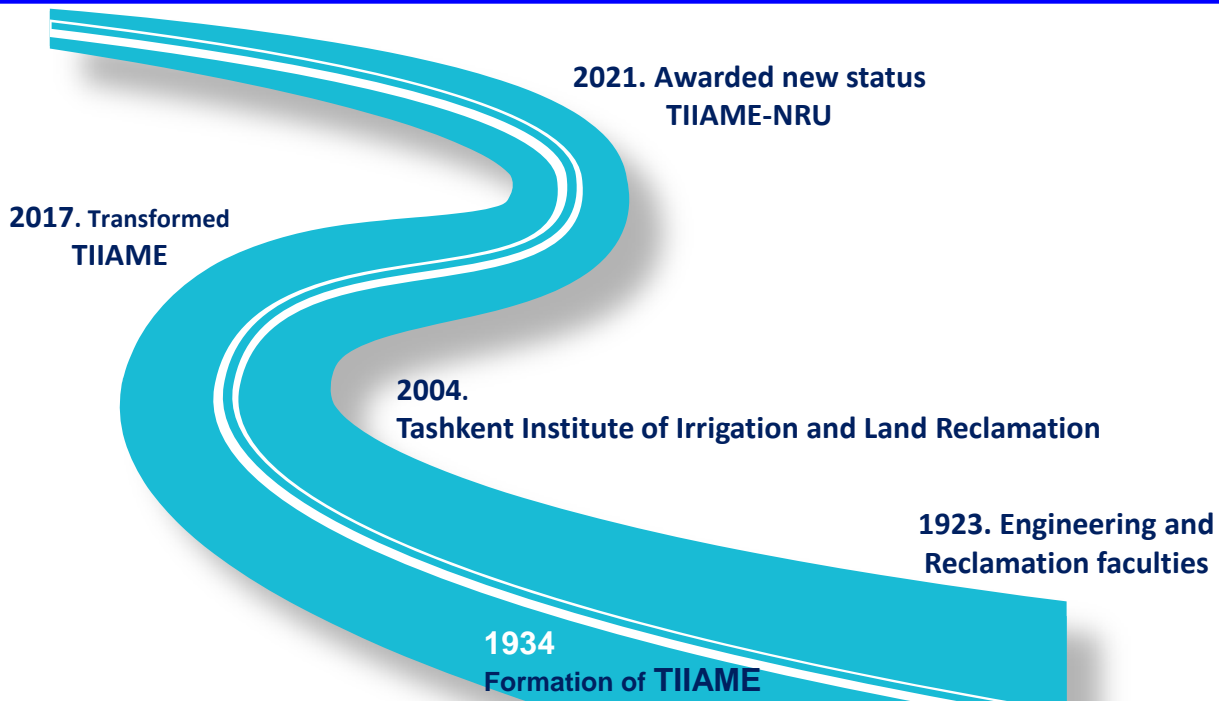


Decreased access to water



# The “TIAME” National Research University

- Formation and development
- Saved and maintained capacity during condition of transition (supported by stakeholder, government, industry and international partners)
- Wide Scale Reforms in higher education and economic sectors including Water Sector



## Structure

### ➤ **Main Campus in Tashkent city:**

- ❖ 7 faculties: 5600 national and 410 international students, 743 faculty members
- ❖ Education and Research Farm
- ❖ Fundamental and Applied Research Institute
- ❖ Academic lyceum
- ❖ Technical school

### ➤ **Bukhara Natural Resources Management Institute:**

- ❖ 3 faculties: 1587 national and 13 international students, 129 faculty members

### ➤ **Karshi Institute of Irrigation and Agrotechnology**

- ❖ 2 faculties: 1703 national and 21 international students, 138 faculty members

### ➤ **TIAME-NRU branch in Almaty**

**Academic and Financial Independent**

# EDUCATION PROGRAMS

## 40 Bachelor's degree programs

- ❖ Water Sector and Land Reclamation
- ❖ Water Supply Systems Engineering
- ❖ Hydrotechnical Constructions
- ❖ Agricultural Mechanization
- ❖ **Innovation Technology and Remote Sensing**
- ❖ **Mechatronics and Robotization**
- ❖ **Artificial Intelligence**
- ❖ **Information Systems and Technologies**
- ❖ **Mechanics and Mathematical Modeling**
- ❖ **Jurisprudence (transboundary water relations)**
- ❖ **MBA**
- ❖ **Energy and Renewable Energy Sources**
- ❖ Economics
- ❖ Land Management and Land Cadaster
- ❖ Ecology and Environmental Protection (water sector option), etc.

## 36 Master's degree programs

- ❖ Irrigated Agriculture and Land Reclamation
- ❖ Water Resources Planning and Management
- ❖ Artificial Intelligence
- ❖ Remote Sensing
- ❖ Water-saving Irrigation Technologies
- ❖ Hydrotechnical Structures
- ❖ Agricultural Mechanization
- ❖ Energy
- ❖ Environmental Protection (sectoral options)
- ❖ Jurisprudence (transboundary water relations), etc.

## 16 Doctoral programs (PhD и DSc)

## 12 Professional development programs for practitioners and decision makers



# INNOVATIVE APPROACH

## Organization of the educational process

### Focused on balance of theoretical knowledge and skills of students

- ❖ The balance of theoretical knowledge and skills considering integration in the "Science-Education-Production" system
- ❖ Modernization of the laboratory and technical capacity
- ❖ Internationalization of programs, staff, and students
- ❖ Advanced research, professional staff, and an innovative ecosystem
- ❖ The "5+1" system, branches of profiling departments at enterprises
- ❖ Joint classes and centers with advanced enterprises are mutually beneficial situations
- ❖ Focus groups (students, practitioners, scientists, administrative, basin organizations...)



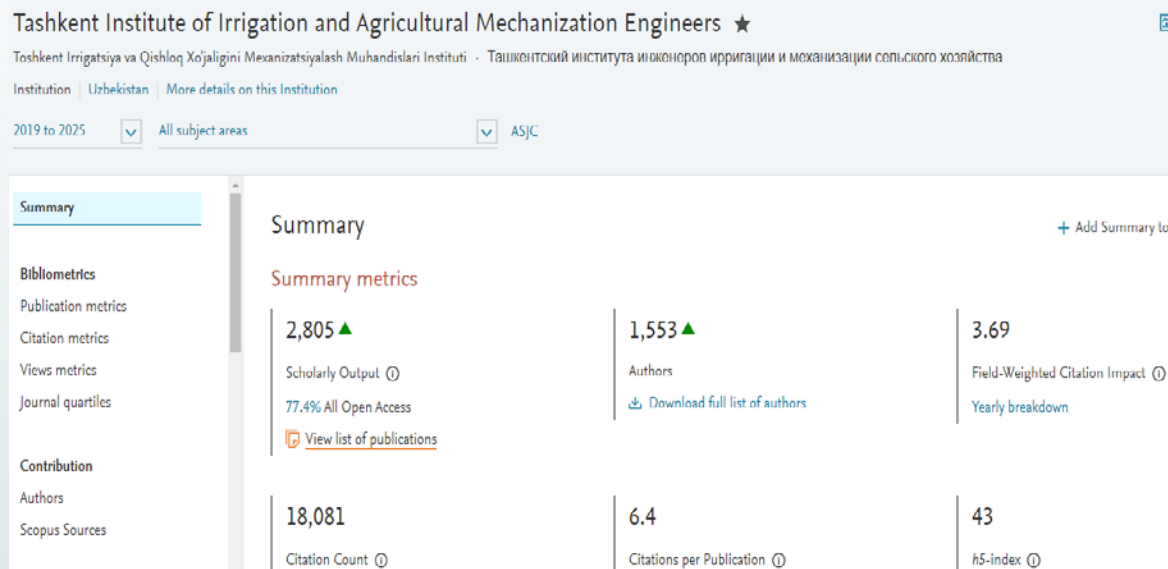


# INTERNATIONAL EDUCATION STANDARDS

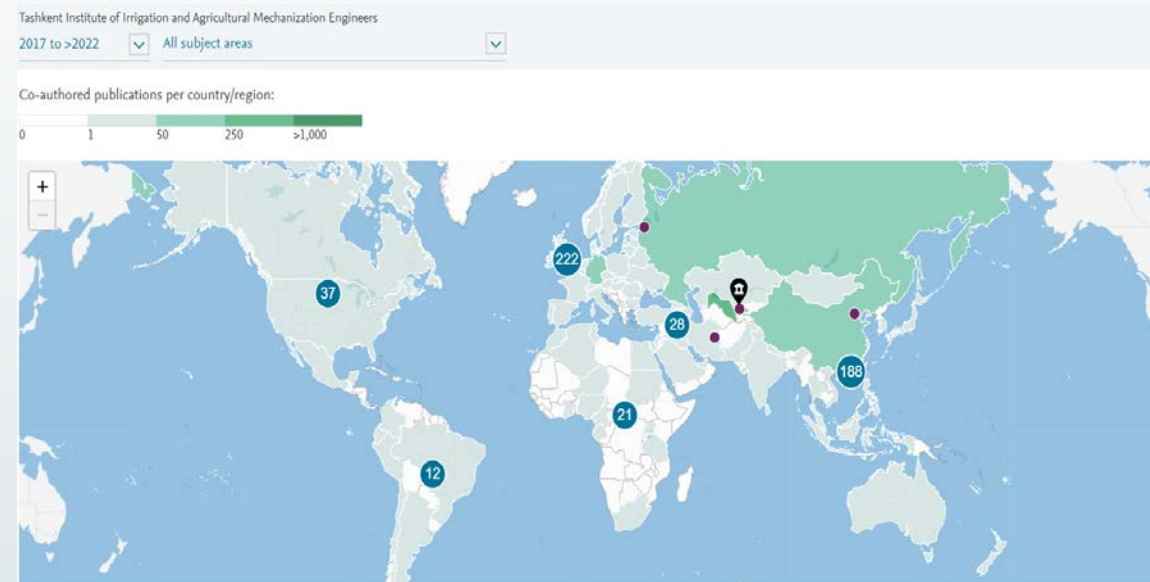
During the accreditation process of bachelor's and master's specialties at the faculties of **Hydromelioration, Land Resources and Cadastre, Ecology and law**, active participation was taken by 12 highly qualified experts from the international accreditation agency ASIIN, which is based in Germany.



## Publication activity of "TIAME" NRU teaching staff



## Collaboration of "TIAME" NRU and World Universities



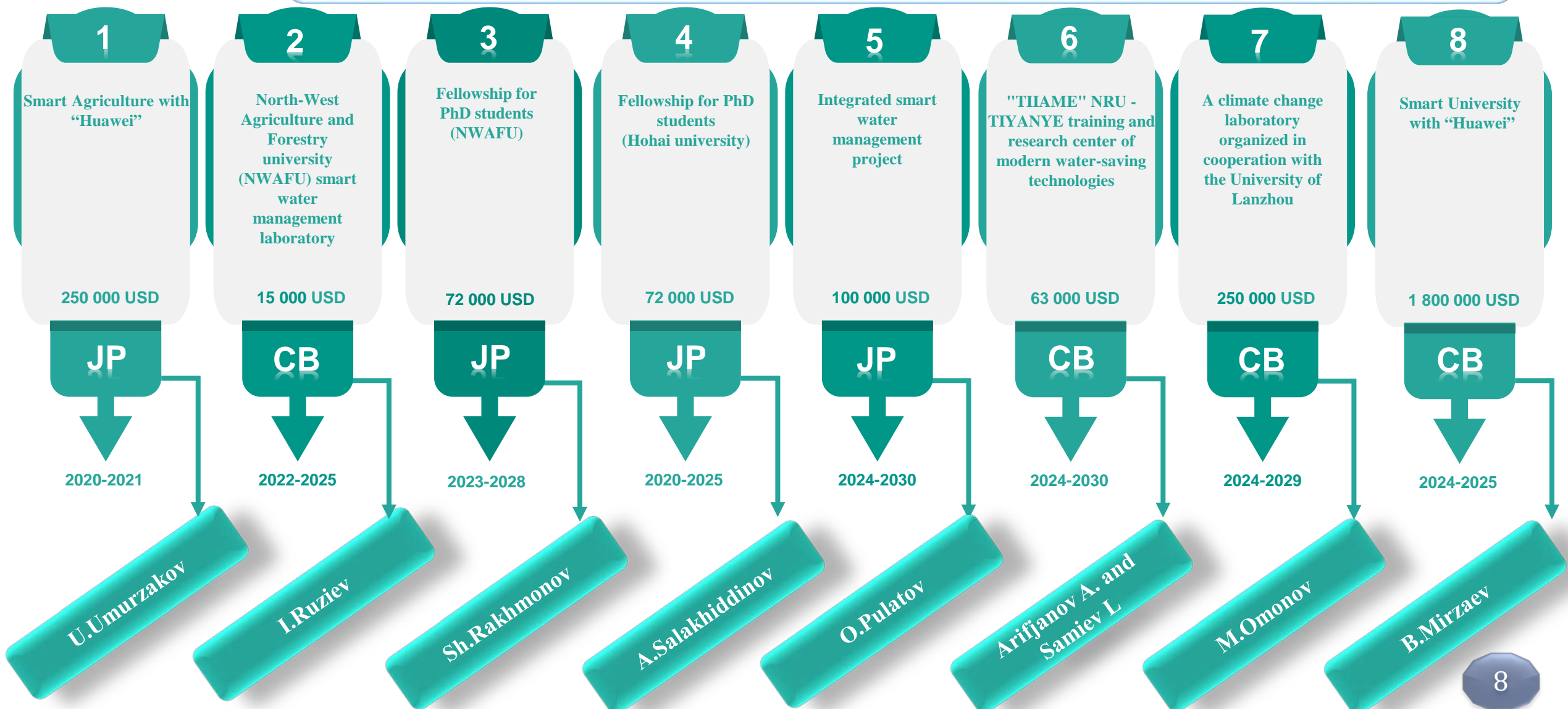
## International cooperation



## Double-Degree Diploma



# International projects between International partner universities and TIAME National Research University



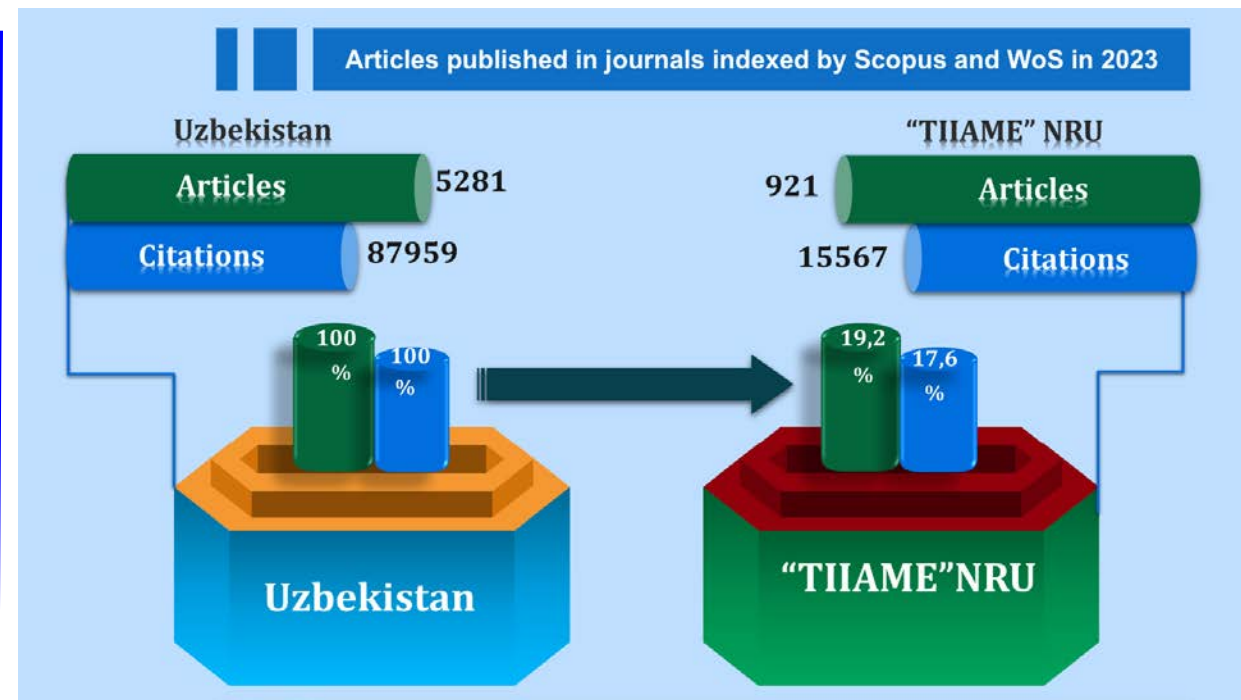
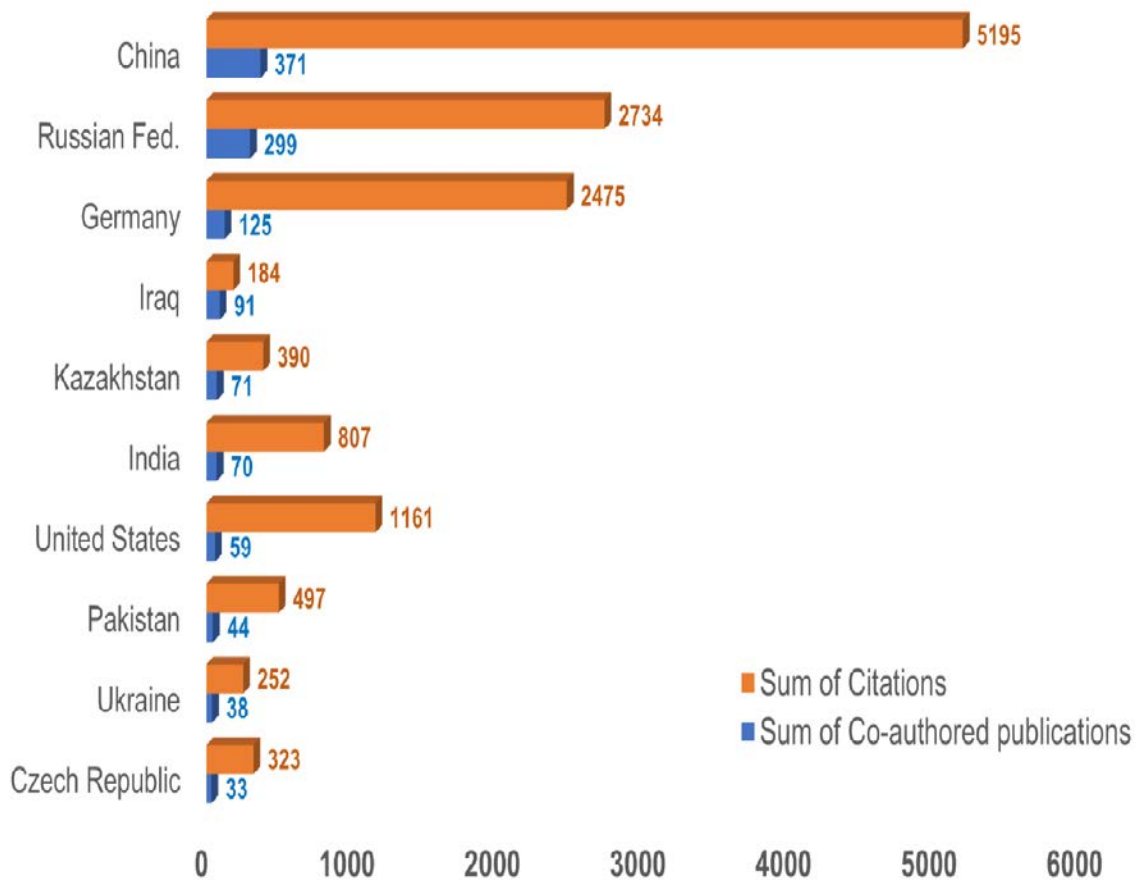
CB - Capacity Building projects

JP – Joint Programs



# INTERNATIONAL COLLABORATION

## International Research Network



## Collaborative Programs

1. Wageningen University, (Netherlands)
2. Michigan State University, Colorado State University, Washington State University, .... (USA)
3. University of Live Sciences (Slovenia)
4. Obuda University (Hungary)
5. Giessen University, GFZ, UFZ, IAMO, ZALF, Humboldt University, Berlin TU, Technical University of Munich München, Ingolstadt TU, Halle Wittenberg, Eberswalde University ... (Germany)
6. Belarus National Technical University (Belorussia)
7. Kazakh National Agrarian Research University (Kazakhstan)
8. ....

# Rankings of the "TIAME" National Research University



**THE World University Rankings 2025**

**#601+**

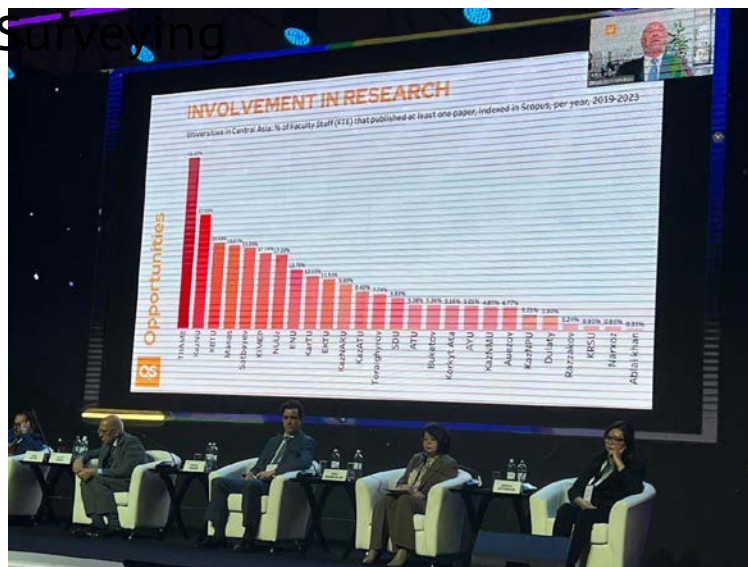
Dunyo universitetlari THE Xalqaro reytingida TOP-601 o'rin

**#1**  
O'zbekiston Oliy ta'lim muassasalari orasida TOP-1 o'rin

**#2**  
Markaziy Osiyo va Kavkazorti davlatlari universitetlari bo'yicha TOP-2 o'rin

"Toshkent irrigatsiya va qishloq xo'jaligini mexanizatsiyalash muhandislari instituti"  
Milliy tadqiqot universiteti - TIAME.UZ

[Ncees.org](http://Ncees.org) National Council of Examiners for Engineering and Surveying



## Rankings of the University

Ranking	Subject
#451-500	Engineering & Technology
#501-520	Natural Sciences
#351-400	Environmental Sciences

Tashkent Institute of Irrigation and Agricultural Mechanization Engineers - National Research University (TIAME-NRU)

**#451-500**  
in QS World University Rankings by Subject 2023  
Engineering & Technology

**#501-520**  
in QS World University Rankings by Subject 2023  
Natural Sciences

**#351-400**  
in QS World University Rankings by Subject 2023  
Environmental Sciences

### National Ranking of the Republic of Uzbekistan 1

Ranking	Subject
#701-710	Sustainability
547	Overall Performance

TASHKENT INSTITUTE OF IRRIGATION AND AGRICULTURAL MECHANIZATION ENGINEERS NATIONAL RESEARCH UNIVERSITY TIAMENRU

**#701-710**  
in overall performance

**547**  
Tashkent Institute of Irrigation and Agricultural Mechanization Engineers - National Research University  
New Entrant

# Inter-University Cooperation for Research and Education



## Joint Master's Degree Program in Water Diplomacy



# The main directions of TIAME-NRU's medium- and long-term strategic development plan

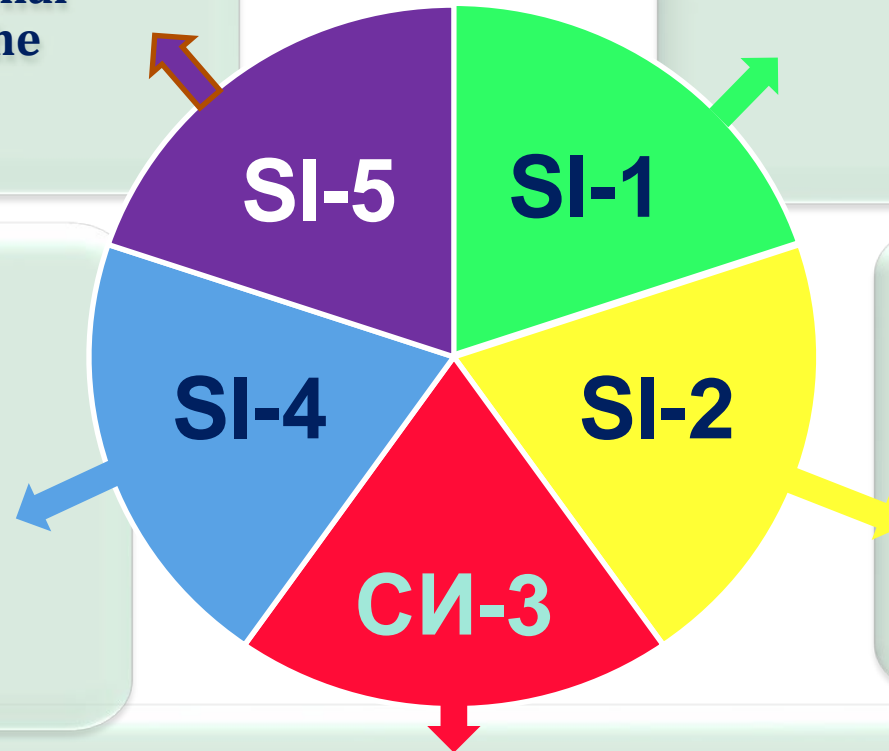
**"Global Recognition"**  
(**"Enhancing the International Academic Reputation of the University"**)

**Transformation of the TIAME-NRU's model** (to ensure the transformation of the university from a traditional to a world-class research university)

**"Education"** (new education in the context of the changing world economy)

**Human development**

**"Research and Innovation"** (development of the University as a center of modern science and innovation)



1. Education programs in different countries of the region are not unified and coordinated enough, and the number of joint education and research programs, as well as the flow of international students participating in these programs, is insignificant.
2. The opportunities, funding, and conditions for conducting joint research in the region are limited, and the potential for collaboration in water and environmental education and research is not fully utilized.
3. There is a lack of funds for joint education and research programs.
4. Water-related specialties are not widely popular among young people.
5. The problems of sustaining water resources and promoting sustainable development require continuous attention from society and government, and they are not a task for one generation alone.



Thinking



Problem  
solving

***Thank you for your  
attention!***