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USAID Central Asia's Regional Water and Vulnerable Environment Activity



YOUNG RESEARCHERS COMPETITION

SUPPORTING THE NEXT GENERATION OF WATER SPECIALISTS IN CENTRAL ASIA

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YOUNG RESEARCHERS COMPETITION

INTRODUCTION

USAID Central Asia's Regional Water and Vulnerable Environment Activity is very pleased to present these profiles of the winners in our Young Researchers Competition (YRC).

Initiated in 2021, the YRC was launched to support graduate students and young professionals to advance their research in fields related to the water-energy-food-ecosystem (WEFE) Nexus and build a foundation in Central Asian for the next generation of water management specialists in the following thematic areas:

- Intersectoral cooperation
- Climate change and environmental issues
- Innovative approaches in natural resource management
- Transboundary, political, and socioeconomic issues

Since its inception, the competition has seen remarkable growth. The inaugural round in 2021 selected ten winners, two from each Central Asian country, demonstrating the breadth of talent and diversity across the region. In 2022, the competition expanded its reach, selecting 13 winners, solidifying its impact on the scientific community. And in November 2023, we announced the launch of the third round, inviting a new cohort of researchers to contribute to the evolving dialogue on water-energy resources.

After selection, each participant attends a two-week “summer school” where international experts provide guidance on the academic research process, from formulating a research question to devising their methodology, analyzing results, and drafting their papers to scientific journal standards. In this way, the YRC provides a pathway for young researchers to publish their work and contribute to a foundation of knowledge that will inspire important conversations about water and other natural resources. In the following pages, USAID would like to introduce you to the first cohort of this community of young scholars, who will not only lead the future dialogues about water resources, but be at the forefront of connecting research, policy and practice on WEFE Nexus issues in Central Asia.



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YOUNG RESEARCHERS COMPETITION

YEAR I

2022-2023



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YOUNG RESEARCHER COMPETITION WINNER



BEKAIYM ASHIMBEKOVA KYRGYZ REPUBLIC

POSITION

Lecturer and postgraduate student in the Renewable Energy Sources Department at I.Razzakov Kyrgyz State Technical University (KSTU)

PROJECT

Study of the hydropower potential of small watercourses for power supply to decentralized consumers based on gravity micro-hydroelectric power plants

PROJECT DESCRIPTION

Ashimbekova's research explores the potential of small river hydropower to create a competitive, affordable, and renewable energy source for the Kyrgyz Republic. Her work will contribute to global and regional conversations on finding a balance between production and sustainable energy generation.

Research: "Research and Development of a Gravitational Water Vortex Micro-HPP in the Conditions of Kyrgyzstan": <https://www.sciencedirect.com/science/article/pii/S2352484723010612>

"Water is a unique resource of nature, and we must improve our rational use."



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YOUNG RESEARCHER COMPETITION WINNER



SHOVKAT Kholdorov

UZBEKISTAN

POSITION

Head of Scientific-innovation and International Cooperation
Department In the Soil Composition, Repository, and Quality
Analysis Center

PROJECT

Estimation of salt-accumulated soils based on satellite image
analysis in Mingbulak district of Uzbekistan

PROJECT DESCRIPTION

Kholdorov's project aims to develop a rapid and resource-efficient method for assessing soil salinity in agriculture using high-resolution satellite image analysis. By accurately gauging soil salt conditions, the results of this study contribute to water conservation efforts by optimizing irrigation practices and minimizing unnecessary salt washing. This study enables decision-makers and farmers to promote efficient water use in the region.

Research: "Analysis of Irrigated Salt-Affected Soils in the Central Fergana Valley, Uzbekistan, Using Landsat 8 and Sentinel-2 Satellite Images, Laboratory Studies, and Spectral Index-Based Approaches":
<https://link.springer.com/article/10.1134/S1064229323600185>

"Thanks to USAID trainings, I gained considerable research experience for promoting my research through publishing."



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YOUNG RESEARCHER COMPETITION WINNER



MEIRZJAN ESSANBEKOV KAZAKHSTAN

POSITION

Director of Irrigation and Land Reclamation LLP

PROJECT

Development of water resource-saving environmentally safe agricultural practices of crop cultivation on saline lands with wastewater reuse

PROJECT DESCRIPTION

In collaboration with Arailym Yessenbekova (a fellow Young Researcher Competition Award winner), Essanbekov is studying the effectiveness of treating irrigated soils with a hydrocarbonate-sulfate solution to reduce mineral levels for increasing water availability for agriculture. This study and protocol will provide valuable insights for restoring overall soil health and increasing water availability during low-water years.

Research: "Assessment of the Current Soil-Reclamation State of the Soils of Myrzashol in the Kazakhstan Part (The Hungry Steppe)": <http://www.pjoes.com/pdf-155087-85380?filename=Assessment%20of%20the%20Current.pdf>

"Thanks to the technical and financial support from USAID, I have been able to build on important experimental research on water reuse that will help improve crop yields and build climate change resilience in Kazakhstan and all of Central Asia."



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YOUNG RESEARCHER COMPETITION WINNER



KHUSRAV KABUTOV TAJIKISTAN

POSITION

Head of the Department of Glacier Monitoring, Cryosphere, Glaciology and GIS Technology at the Glacier Research Center of the National Academy of Sciences of Tajikistan

PROJECT

The impact of glacier degradation on agriculture in mountainous areas near the village of Mok in the Lakhsh District of the Republic of Tajikistan

PROJECT DESCRIPTION

Kabutov's research seeks to anticipate climate change impacts on agriculture by analyzing a key glacier that provides meltwater for irrigation in the Lakhsh District of southern Tajikistan. Using geographic information system (GIS) and historical records, his study will contribute to area knowledge on water availability and forecasting for purposes of supporting agriculture and more efficient water use.

Research: "The Impact of Glacial Degradation on the State of the Agricultural Sector in the High-Mountain Territories of Tajikistan": <https://www.ijtsrd.com/other-scientific-research-area/enviornmental-science/56254/the-impact-of-glacia-degradation-on-the-state-of-the-agricultural-sector-in-the-highmountain-territories-of-tajikistan/khusrav-kabutov>

"Thanks to the support of USAID, I was able to understand that scientific research can and should be directed toward improving people's quality of life, security, and prosperity; using new technologies to achieve high goals in science; and providing necessary information for ordinary people to be able to properly respond to these or other unpredictable situations related to climate change."



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YOUNG RESEARCHER COMPETITION WINNER



GOVSHUT SHADURDYEV TURKMENISTAN

POSITION

Master in Integrated Water Resources Management at Kazakh-German University

PROJECT

Seasonal flow forecasting of the Amu Darya River to improve water resources planning and management in the basin

PROJECT DESCRIPTION

Shadurdyev's research investigates seasonal water flow rates on the Amu Darya River in Turkmenistan. His work will provide data and evidence for improving water forecasting and management for more efficient water use.

Research: "Analysis of Sets of Factors Affecting the Variable Flow of the Amu Darya River to Create a Seasonal Prognostic Model:

https://www.researchgate.net/publication/367570270_Analysis_of_sets_of_factors_affecting_the_variable_flow_of_the_Amu_Darya_River_to_create_a_seasonal_prognostic_model

"Let's bring the Water-Food-Energy-Ecosystem Nexus approach to all our natural resources and save the Amu Darya."



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YOUNG RESEARCHER COMPETITION WINNER



AZIZ KHAYDAROV
UZBEKISTAN

POSITION

PhD student at Tashkent Institute of Irrigation and Agricultural Mechanization Engineers

PROJECT

Improvement of resource-saving autonomous technology for cleaning irrigation systems from siltation, operating in the air and water system

PROJECT DESCRIPTION

Khaydarov's research attempts to improve irrigation by using a "air + water" system to remove siltation from irrigation channels and pumping stations. The results will contribute to enhancing water efficiency for farmers and yield improved water conservation for communities.

Research: "Cleaning of Irrigation Systems from Muddy Sediments by Hydromechanization Method":
<https://univerpubl.com/index.php/horizon/article/view/900>

"We don't start appreciating water until the well is dry."



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YOUNG RESEARCHER COMPETITION WINNER



ARAILYM YESSENBKOVA KAZAKHSTAN

POSITION

Hydrogeology engineer at the South Kazakhstan Hydrogeological and Reclamation Expedition in the Ministry of Agriculture of the Republic of Kazakhstan

PROJECT

Development of water resource-saving environmentally safe agricultural practices of crop cultivation on saline lands with wastewater reuse.

PROJECT DESCRIPTION

In collaboration with Meirzjan Essenbekov (a fellow Young Researcher Competition Award winner), Yessenbekova is studying the effectiveness of treating irrigated soils with a hydrocarbonate-sulfate solution to reduce mineral levels for increasing water availability for agriculture. This study and protocol will provide valuable insights for restoring overall soil health and increasing water availability during low-water years.

Research "Assessment of the Current Soil-Reclamation State of the Soils of Myrzashol in the Kazakhstan Part (The Hungry Steppe)": <http://www.pjoes.com/pdf-I55087-85380?filename=Assessment%20of%20the%20Current.pdf>

"USAID's support of this research will help us make progress in finding a balance between production and sustainable water use for agriculture."



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YOUNG RESEARCHER COMPETITION WINNER



ILKHOMJON ASSANBAYEV

KYRGYZ REPUBLIC

POSITION

Lecturer and postgraduate student at B. Sydykov Kyrgyz-Uzbek International University

PROJECT

Development and research of solar desalination plants for drinking water

PROJECT DESCRIPTION

Assanbayev's research investigates the potential for solar-powered desalinization plants (SDP) for use in Uzbekistan by examining opportunities and challenges based on the success of previous SDPs. From this study, he is developing a new type of three-layer SDP, which could pay large dividends for water availability in Central Asia and beyond.

Research: "Design Development of a Solar Desalination Plant for Drinking Water Supply":

<https://elibrary.ru/item.asp?id=50354254>

"Thanks to the support of USAID through the summer school program, we learned how to focus and express our scientific work."



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YOUNG RESEARCHER COMPETITION WINNER



ARAILYM PFEIFER
KAZAKHSTAN

POSITION

National Gender Consultant, UN Women

PROJECT

Analysis of gender roles in the fisheries in the North Aral Sea

PROJECT DESCRIPTION

Pfeifer's research evaluates opportunities and challenges for increasing women's participation in the fishing industry in the North Aral Sea and focuses on how better female representation in local fishery associations could lead to stronger growth of the entire industry.

Research: "Gender Roles in Fisheries of the Northern Aral Sea in Kazakhstan":

<https://caer.narxoz.kz/jour/article/view/820>

"Key stakeholders in the Aral Sea need to ensure the involvement of and equal benefits to women in the restoration of the fisheries industry and in the development of culture-based fisheries and capacity building (e.g., sales, marketing, fish farming, fish processing)."



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YOUNG RESEARCHER COMPETITION WINNER



TUGOLBAI MATISAKOV

KYRGYZ REPUBLIC

POSITION

Head of the Department of Energy at Osh State University

PROJECT

Pastures of Kyrgyzstan and fighting degradation with new irrigation systems

PROJECT DESCRIPTION

Matisakov's research focuses on finding optimal conditions for powering water pumps with renewable energy for increased irrigation efficiency. His research will add valuable data to larger concerns about sustainable water use in agriculture in the Kyrgyz Republic and Central Asia.

Research: "Organisation of a New Irrigation System to Improve Pasture Degradation":

<https://www.elibrary.ru/item.asp?id=54934505>

"Thanks to USAID, I gained tremendous research experience, especially for developing and promoting my research through publishing."



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USAID Central Asia's Regional Water and Vulnerable Environment Activity is focused on strengthening regional capacity to manage shared water resources and mitigating environmental risks in the Syr Darya and Amu Darya river basins. The Activity takes a multi-level approach to tackling complex regional water challenges by strengthening collaboration through stakeholder dialogues; developing a shared vision for integrated and sustainable river basin management using evidence and modeling; and fostering collaborative action across sectors and governance levels.

Facebook



USAID Central Asia's Regional Water and Environment Activity

050051, Almaty, Kazakhstan
St. Kerey-Zhanibek Khandar, Building 1B

ARD.WAVE.INFO@TETRATECH.COM

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