2023 Project Report

World Aral Region Charity

MAY ECOLOGICAL TRIP

Program Name:
ECO-SERVICE SCHOOLS

Program Location:
TURTKUL, JANBASKALA

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INTRODUCTION

The World Aral Region Charity's mission is to provide ecological, economic, and cultural aid to the Aral Sea region specifically, and to Eurasia more broadly, through the support of local initiatives. Our organization also aims to foster international cooperation to ecological issues by engaging youth volunteers from Central Asia and all over the world.

In May 2023, WARC's annual ecological education project, "Eco-Service Schools," took place in Turtkul, Karakalpakstan. The project, which ran from May 16th to 30th, promoted sustainable ecological practices within schools, focusing on efficient water use and field irrigation methods. Our project combined both service and education: the WARC team installed two reverse-osmosis water filters at Schools 39 and 47 in the village of Janbaskala, and then engaged students in a dynamic educational program that covered a wide range of environmental topics.

Our core curriculum consisted of four components: engineering, group model building, environmental advocacy, and theater. Building on the knowledge they gained during our seminars, students engaged in real-world exercises: they built drip irrigation systems on the school grounds, performed a play inspired by local oral histories, and conducted a mock trial to resolve ecological issues such as those faced by their own community, among other activities.

The program culminated in the Janbaskala Eco-Fest, where students showcased their performances and engineering projects to fellow students, teachers, community members, government officials, and local news channels, synthesizing what they learned during the program.

ECO-SERVICE SCHOOLS

The Eco-Service Schools curriculum was designed as an expansion to our prior ecological education program, where humanities- and social science-based lessons in ecological advocacy would now supplement the technical and practical lessons in environmental engineering. We returned to Karakalpakstan with the aim of nurturing well-rounded ecological advocates amongst the students of Schools 39 and 47 in Janbaskala.

Throughout the two-week long program, our students were challenged to think about the array of tools available to ecological advocates. With our engineering team, the students dove right into hands-on sustainable projects, working on greenhouses and equipping them with drip-line irrigation systems in order to promote efficiency in water use. With our eco-theater team, the students learned how storytelling can be a potent tool in preserving the cultural and environmental memory of their community and in imagining a future in which we can live in greater harmony with nature. With our eco-law team, the students grappled with the legal and societal implications of both ecological issues and their solutions, as they were challenged to think about the long-term impact and upkeep of sustainable engineering projects. Finally, with our group model building team, the students learned critical methods that would help them analyze environmental issues and begin to arrive at community-based solutions.

We at WARC are proud of our expanded educational curriculum and we hope to continue promoting a holistic approach to ecological education and advocacy in Karakalpakstan.

AT A GLANCE

Get to know the scope of our project!

Participants

12 volunteers from WARC were involved:
5 from the USA, 6 from Tashkent, 1 from the Netherlands

Outreach

80 students across both schools

Schools

Our project conducted seminars in 2 schools:
Janbaskala 39, Janbaskala 47

Water Access

3,100 residents across one Karakalpak community
gained access to clean water

Reverse Osmosis Filtration

2 RO filters installed:
1) 95 L/h filter in Janbaskala 47, servicing 1,100 locals
2) 500 L/h filter in Janbaskala 39, servicing 2,000 locals

Farming

3 drip-line irrigation systems installed
2 greenhouse projects
Cabbage planting

ECO-ENGINEERING

Our ecological engineering curriculum demonstrated to students how technical solutions can be implemented to promote the practice of sustainable agriculture and water resource management. A hands-on approach to learning is critical to the mission of WARC: our students not only learn methods from engineers, but they are able to work alongside them to build prototypes that they can continue to use even after the end of our educational program.

Our engineering students worked together with their trainers to install greenhouses on their school grounds, which they equipped with drip-line irrigation systems. The students themselves contributed to the installation and development of these projects: they were very eager to get their hands dirty and dive into the practical side of things! We at WARC feel that we had just as much to learn from them, as they did from us.

The engineering team also participated in guest lectures from a specialist in aquaponics, a food production system that combines aquaculture (the raising of aquatic animals) with hydroponics (the cultivation of plants in water). The students were inspired to think of innovative and sustainable ways to approach agriculture, an industry that is so central to rural life in Karakalpakstan.

ECO-LAW

In the Eco-Law course, sixteen students were encouraged to see the legislative and judicial systems as tools and forums to address a community's ecological concerns.

After studying argumentative strategies and surveying key environmental laws in Uzbekistan and, as a comparison, in the United States, the students then participated in a mock trial.

In the mock trial, the students played the role of judges, lawyers, and witnesses to settle a fictional case that connected the concepts and laws learned in class, the realities of rural Karakalpak communities, and the engineering projects and the mission of WARC. A family of farmers on one side, and the district government on the other, met in the courthouse to decide how to resolve the ecological issues of their community. The district government wanted to expropriate the farmer's land to build a community water filtration plant, while the farmers wanted to keep their land to continue their sustainable farming practices.

After many days of memorizing lines, getting into character, and drafting statements, the lawyers and witnesses presented their arguments before the panel of judges, who made the final decision for the future of this fictional community.

ECO-THEATER

Award-winning author Kyra Ann Dawkins worked with a group of ten students to create a tale about the community's relationship to water in the past, present and future.

The students were first tasked with collecting oral histories: stories of life in Janbaskala especially at a time when the Aral Sea was abundant, from their community elders. These stories formed the basis of the play, "Finding Aral in Time," which followed the story of a young Karakalpak boy who one day saw a vision of a weeping woman, the spirit of the Aral Sea. As he tried to convince his neighbors to notice the woman, the boy was taken on a journey across time to understand the history of the sea and its relationship with the local community.

Using the devised theater method, we shared our first hand experiences of water community in a play performed before the same community elders whose memories informed the content of the piece. As the plot of the play moved into the present and the future, the audience was made to consider a world where we restore the Aral Sea and return to living in harmony with our ecology.

The play was directed by Robert Willard and included acting-based trainings by Afghan-Dutch storyteller Shah Tabibi.

GROUP MODEL BUILDING

Group Model Building is a qualitative research method used within the field of community-based systems dynamics to help understand the structures and behaviors underpinning systems. This tool is intended to help participants become more adept in analyzing complex societal problems, to validate their assumptions, and to ultimately develop consensus.

Our team, led by Professor Muzaffar Ismailov, used the analytical methods developed by GMB specialists to teach the students to identify the root causes of the complex ecological problems facing the Aral Sea region in general and Janbaskala specifically. Professor Muzaffar aimed to increase student participation and promote empathy so that students could find ways to mitigate these societal issues themselves.

The students dove into their work, creating causal loop diagrams, connection circles, and ideation mental models. Through these exercises, the students of Janbaskala strove to build a shared vision about actions needed to combat issues like water scarcity and soil degradation.

Our work doesn't stop in the classroom, however. Professor Muzaffar and his team are currently working on writing a research paper to present findings obtained through the students' diagrams and graphs to a wider academic community.

MONITORING KEGEYLI

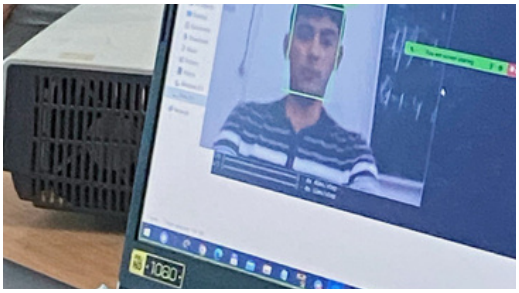
As part of our special Kegeyli monitoring project, a team of three WARC volunteers returned to School 12 in Kegeyli, the site of our 2022 Engineering Through Education program, to meet students from the previous year. We were thrilled to see so many familiar faces and to be reunited with our students! At WARC, we value strengthening our relationships with the communities that we serve and ensuring the long-term impact of our projects well after they have ended. Here's what we accomplished during this check-up:

Engineering Check-In

Our team inspected the infrastructure of our engineering projects from 2022 and checked to see that the RO filter and drip-line irrigation that we installed were still working and in good condition. The students shared the data that they have been collecting while monitoring the filter's use.

Eco-Law Workshop

In Kegeyli, we introduced a consolidated model of the Eco-Law curriculum. Students engaged in a mock trial simulation, and surprisingly, their judges issued a very different decision from the one taken by the Janbaskala students. In this way, students learned that there can be multiple solutions to similar societal issues.



Programming Workshop

Under the guidance of computer scientists, the students were introduced to computer programming. They learned basic coding in Python and the fundamentals of cybersecurity. They also worked on an app developed by WARC to calculate daily water usage, encouraging students to think about how they directly engage with this precious and limited resource.

University Workshop

For the students who were approaching their final year in high school, we designed a practical workshop to assist them with their university applications. We held short but helpful seminars covering topics such as requirements for university application and tips for writing successful personal statements.

TESTIMONIALS

Shah Tabibi

Storyteller

Being part of the journey to Karakalpakstan with the Aral Regional Fund became a memorable chapter in my life as a storyteller and traveller. It was a tale woven with the threads of environmental engineering, where the challenging landscapes inspired me to become part of a great team. Among the unique ecological environment, the students we encountered were not just participants but protagonists in their dedication and engagement, turning our lessons and experiments into a shared adventure. To fellow wanderers with a passion for engineering and a yearning for horizons unexplored, I recommend this expedition—it's a narrative waiting to unfold beyond the pages of textbooks.

Khushnudbek Shamsiddinov

Engineer

My time on the Aral trip was quite a ride. While we faced some challenges with the projects, what I firmly believed at that time was, "I have a team, so there's no problem we can't handle." The trip made me realize that I'm ready to tackle any spontaneous changes that come our way. Working on practical stuff like setting up greenhouses and drip-lines felt rewarding. The students I teamed up with were not only smart but also genuinely interested in finding sustainable solutions. It wasn't just me teaching them; we were all learning together. Plus, I really enjoyed the lessons from my other teammates – they are professionals in their work! The whole trip turned out to be a great social experience, too. Meeting other volunteers and professionals expanded my circle of friends and showed me how impactful a group effort can be in making positive changes. The Aral trip left me feeling fulfilled and motivated to keep getting involved in projects like these.

CONCLUSIONS

Engineering Projects on Display

Students displayed their projects at the WARC Eco-Fest, held on the campuses of both schools on the last day of our project. Parents, teachers, community members, and local media watched the students present the drip-line irrigation system, the greenhouse installed in School 47, and the aquaponics system set up in School 39.

Skill Development in Ecological Advocacy

At the Eco-Fest, students performed their original play, “Finding Aral in Time”. They also reenacted their mock trial in front of their community and the media. The students demonstrated how creative storytelling and logical reasoning are fundamental tools for furthering ecological advocacy.

Committed Monitoring and Evaluation

In addition to our curriculum in Janbaskala, a team of three WARC volunteers returned to Kegeyli, where we installed a 100 L/h RO filter in 2022. We ensured that the filter is still running smoothly and renewed our commitment to this community, where we will be returning for our May 2024 Project.

Access to Clean Water for 3,100 Locals

WARC worked with 80 students from both schools in Janbaskala and provided clean drinking water to over 3,100 community members in the village.

Visiting the shore of the Aral Sea

After completing the educational curriculum, our team took a trip to Muynaq, a former fishing port on the Aral Sea, and then traveled five hours north to see the shore of the sea as it exists today. Although it has significantly shrunk as compared to its former size, the Aral Sea remains a roaring body of water full of life, and our team was inspired to continue working for this region.

ACKNOWLEDGMENTS

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Contact

World Aral Region Charity, Inc.

www.araliregioncharity.org

aralregionfund@gmail.com

Instagram:

@worldaralregioncharity

We thank you for your continued support for our efforts to bring awareness and relief to the Aral Region.

FOR NOTES

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14 Grafton Road,
Glenmont, NY, 12077
www.aralregioncharity.org