OTTERS
Citizen Science for Water Stewardship

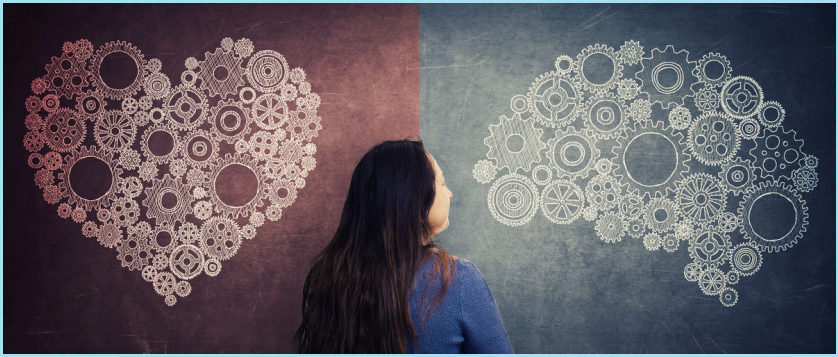
OTTERS CO-CREATION TOOLKIT

https://otters-eu.aua.am

Intro

OTTERS project aims to promote societal transformation for marine and freshwater stewardship through scaling up citizen science (CS). One of the focuses of the OTTERS project is to co-design CS campaigns that will foster a sense of agency in water stewardship.

The present OTTERS Co-Creation Toolkit is the first of two toolkits to be developed in the framework of the project. It will create an initial input to the Final OTTERS CS Toolkit, to be used as the basis of OTTERS Campaigns. Any interested stakeholders can use the co-creation toolkit to organise a co-creation session and afterward, a campaign that will change people's Hearts and Minds in terms of water stewardship.



The second and Final OTTERS CS Toolkit will be the result of all the co-creation sessions that were held and will comprise tailored messages and visuals per stakeholder group. It will aim to change hearts and minds by integrating citizen science components that engage citizens, empower younger and older generations to take action, promote the practice of social innovation, and achieve social transformation.

01 **OTTERS Co-creation Toolkit**

02 **Final OTTERS CS Toolkit**

* To be published in June 2025

Changing Hearts and Minds!

Steps to co-design a campaign

1. Read the OTTERS co-creation toolkit.
2. Run online and/or offline co-creation events with different stakeholders

   *More info on the next page.
3. Capture all the answers to the questions from all the co-creation sessions.
4. Send the answers to the OTTERS team.

   https://otters-eu.aua.am/contact-us/
5. OTTERS team will create the Final OTTERS CS Toolkit with messages and visuals tailored for each stakeholder group.
6. Use the marketing collateral prepared by the OTTERS team to run the Change Hearts and Minds campaign.

Tips for a successful co-creation event

1

Decide:

Decide to run a co-creation event and understand the audience. Know who the attendees are and what their interests are.

2

Objectives:

Define the objectives, identify the issues that should be solved, choose an OTTERS toolkit and clarify the outcomes of the event.

3

Prepare:

Set up the offline (i.e. room) or online environment (i.e. Zoom, etc.), and include the questions in Slido.

4

Promote:

Use online and offline marketing channels to attract attendees, create excitement, and raise awareness on the issues that will be discussed.

5

Execute:

Run the offline or online co-creation event. On the day of the event, ensure everything runs smoothly and all the tools are tested prior to the event.

6

Certificate:

Recognise participants' efforts through a certificate.

7

Feedback:

Send the answers that were captured during the co-creation session to the OTTERS team.

Co-creation Toolkit for Armenia

River & Lake Pollution

OTTERS
Citizen Science for Water Stewardship

Table of Contents

The Paradigm

AROUND WHAT CS CAMPAIGN COULD BE BUILT

River plastic pollution and household waste in Armenia, are a significant environmental concern. The pollution of rivers has major consequences on the natural environment as well as human health, emphasizing the need for improved technologies and increased public awareness to protect water resources [1].

Disposing of **wastewater** in the Sevan Lake and rivers can have detrimental effects on aquatic ecosystems and human health.

Amongst some of the impacts, we remind:

- eutrophication - a process that removes the oxygen from the water harming marine life [2].
- biodiversity loss and habitat disruption - sewage discharge can lead to loss of biodiversity, physiological changes in species, and changes in the food chains.
- human health risk - sewage contains pathogens that are dangerous if they contaminate drinking water.

[1] https://link.springer.com/chapter/10.1007/698_2023_981
[2] https://www.intechopen.com/chapters/79111

The Armenia Example

The largest freshwater lake in the Caucasus, Lake Sevan, is not only suffering from water contamination by heavy metals caused by mining industries but also decreased in size due to its great exploitation for energy generation and irrigation [1].

Agricultural waste, fishing, and fish farming contributed significantly to degrading the water quality from the rivers in Armenia.

Often enough untreated wastewater from households is often discharged into rivers that flow into the lake, further polluting it. The development of a better wastewater management system is of high importance [2][3].

[1] https://www.undp.org/armenia/projects/environmental-protection-lake-sevan-eu4sevan
[2] https://info.undp.org/docs/pdc/Documents/ARM/Prodoc_EU4SEVAN_UNDP_Final_Signed.pdf
[3] https://ebrd-stories.com/saving-the-waters-in-armenia/

RIVER & LAKE POLLUTION

Your help is invaluable!

The Policies

To address several environmental and health concerns, the European Commission (EC) and the Armenian Government implemented a range of policies and recommendations on plastics:

- The law on the protection of Lake Sevan in Armenian and English.
- Zero Pollution Package, proposes new monitoring requirements for microplastics in wastewater.
- UN Monitoring Plastics in Rivers and Lakes: Guidelines for the Harmonization of Methodologies.
- EU-Armenia Comprehensive and Enhanced Partnership Agreement which strengthens the political, economic, and sectorial fields cooperation.
- EU4SEVAN project, enhance the environmental protection of Lake Sevan.

Policies alone won't solve the problem...
We all need to contribute!

Can Citizen Science (CS) Help?

Citizen science (CS) is a collaborative effort where members of the general public voluntarily contribute to scientific research. CS can help address different problems and involve various tasks such as data collection, analysis, and reporting, often in collaboration with professional scientists.

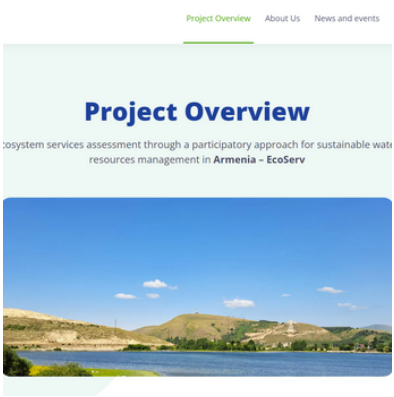
The goal of CS is to expand scientific knowledge and engage the public in hands-on learning about the scientific process.

One of the aims of the OTTERS project, is to scale up citizen science and foster a sense of agency in water stewardship.

Current CS Approaches

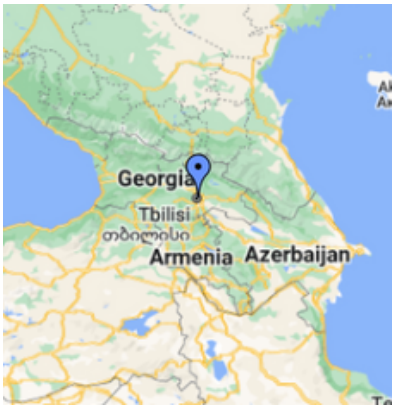
CS projects are addressing the problems, and contribute to the solution by involving and educating citizens. Below we present some CS platforms and apps used in Armenia.

FreshWater Watch, trains and empowers communities around the world to measure and monitor the health of their rivers, lakes, streams, ponds and wetlands, so that we can restore freshwater resources, together.

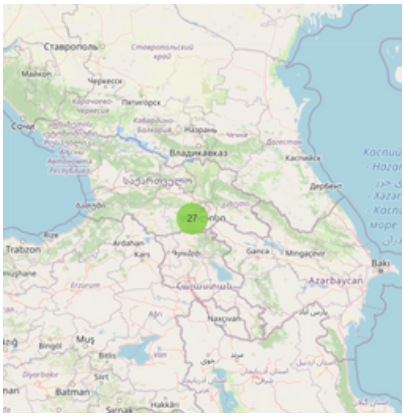


Ecoserv project in the Hrazdan river basin uses citizen science approach and aims to promote sustainable aquatic ecosystem management by capacity-building activities for target communities.

RIVER & LAKE POLLUTION



TIDES (Trash Information and Data for Education and Solutions Citizen Science) data is collected during the annual International Coastal Cleanup and by users of the Clean Swell app.



OpenLitterMap is a citizen science initiative where users can supply or process submitted data and get rewarded with Littercoins, a block-chain based crypto currency.

Next Steps

IDEAS FOR MAKING A DIFFERENCE

Recover energy, clean water, fertilisers, and nutrients from wastewater which can be reuse in different processes.

Shift to a circular economy and eliminate waste by design. The effectiveness of the circular economy model hinges on prioritizing the design phase to prevent waste, as opposed to addressing waste after a product's lifecycle has ended.

Have your say!

FOR INDIVIDUALS

- What do you think are the biggest problems in the rivers and the Sevan Lake in Armenia?
- How could future CS projects help solve water-related challenges?
- Did you find the current CS solutions efficient?
- What would you propose as next steps for reducing the plastic from the rivers and lakes? (i.e. more face-to-face activities, better apps, better local promotion etc.)

**If you need help setting up a Slido to capture the answers please contact us at https://otters-eu.aua.am/contact-us/*

RIVER & LAKE POLLUTION

Have your say!

FOR PROJECTS

- What are the biggest water-related challenges that you encountered in your project?
- Which is the best way to exchange CS data?
- Do you think there is a need to standardise CS?
- Would a Resource Hub for CS in marine and freshwater domains help your work?

**If you need help setting up a Slido to capture the answers please contact us at https://otters-eu.aua.am/contact-us/*

Inspirational Message

In the heart of our community lies a treasure – our lake. It mirrors the sky, holds the secrets of the deep, and sustains life. Yet, it whispers for help against the silent siege of pollution. This is our call to arms, to be the guardians of the blue. Your actions can cleanse its depths and preserve its purity for generations to come. Let's dive into action, for clear waters reflect the best of us.

RIVER & LAKE POLLUTION

These visuals can be used to promote participation in the co-creation sessions.

Initial Messages & Visuals

For the Citizens

This project has received funding from the European Commission's Horizon Europe Coordination and Support Actions programme under grant agreement No. 101094041.

RIVER & LAKE POLLUTION

Get involved!

Rivers of Life, Not Waste!

OTTERS
Citizen Science for Water Stewardship

JOIN US NOW!

This project has received funding from the European Commission's Horizon Europe Coordination and Support Actions programme under grant agreement No. 101094041.

RIVER & LAKE POLLUTION

Initial Messages & Visuals

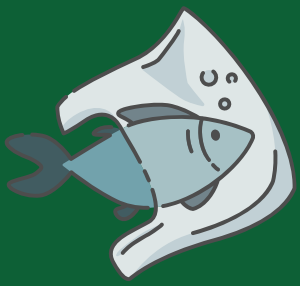
For the Public Authorities

This project has received funding from the European Commission's Horizon Europe Coordination and Support Actions programme under grant agreement No. 101094041.

RIVER & LAKE POLLUTION

Lakes Reflect Our Actions -

Let's Make Pollution Retraction!



OTTERS
Citizen Science for Water Stewardship

JOIN US NOW!

This project has received funding from the European Commission's Horizon Europe Coordination and Support Actions programme under grant agreement No. 101094041.

OTTERS Consortium

AUA American University of Armenia

ecsa

AGORA PARTNERS

21c consultancy

ELLINOGERMANIKI AGOGI

NUCLIO

ECOCEAN
Caring for the Marine Environment

ramani

אוניברסיטת חיפה
University of Haifa
جامعة حيفا

CSGI

OTTERS

Citizen Science for Water Stewardship

www.otters-eu.aua.am

@otters-project

@otters_project

@ottersprojecteu

This project has received funding from the European Commission's Horizon Europe Coordination and Support Actions programme under grant agreement No. 101094041.