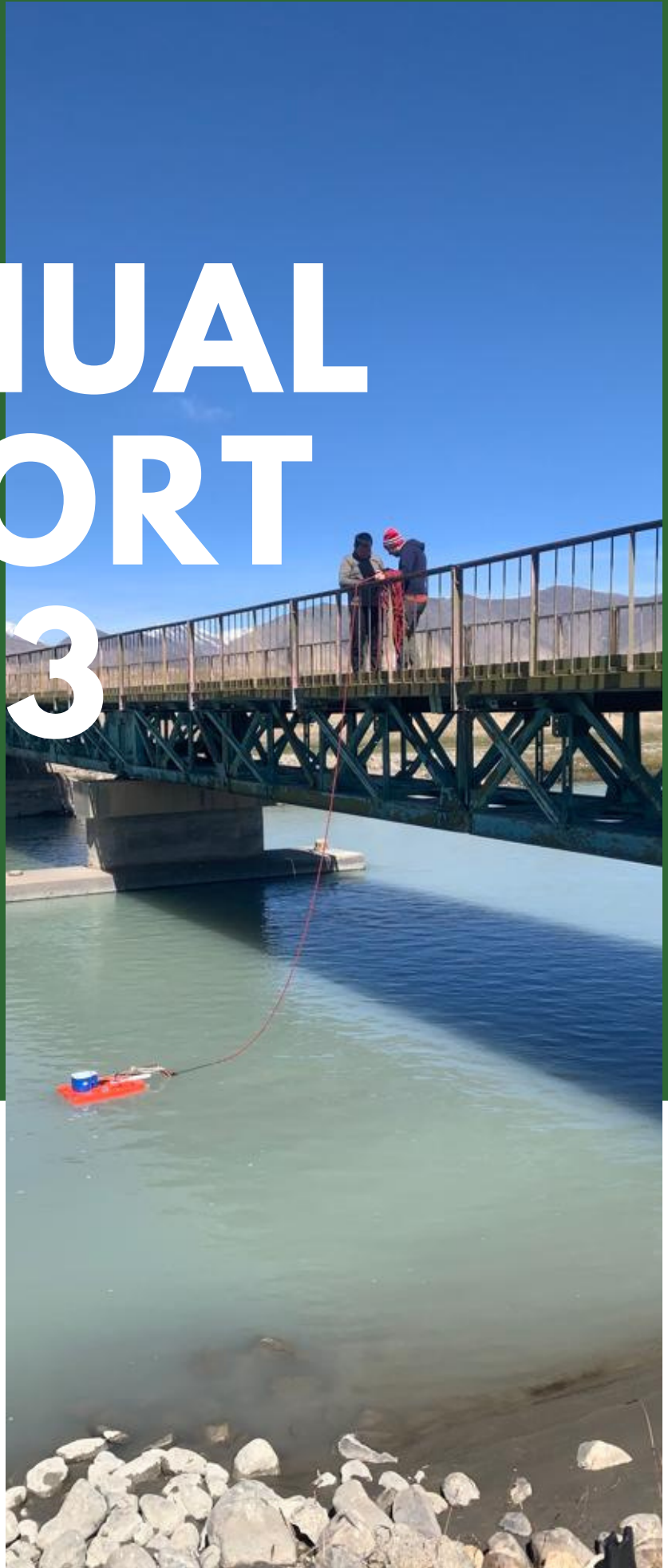


ANNUAL REPORT 2023





Project funded by



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
**State Secretariat for Education,
Research and Innovation SERI**

PRESIDENT'S NOTES

Dear supporters of better weather and water data,

This year, I've stepped into the role of President at Portolan, following our fantastic predecessor and founding President, Liesbeth Casier. A big thanks to Liesbeth from all Portolan members and directors for setting us on this journey.

From startup vibes to finding a steady pace, Portolan has come a long way. This year, we went from project preparation to reaping the first benefits of project implementation. WEACTION, our EU/Swiss-funded flagship project on water allocation is right on track.

2023 was a year in which Portolan entered more stable waters, enabling us to focus on our core mission: installing infrastructure to enhance the measurement of water resources and weather parameters. Portolan focuses on a specific element of the huge urgency to address key water challenges in the context of climate change.

In the face of the record heats, droughts, precipitation, and off the chart global warming in 2023, clear communication of hydrological and climate observations is only gaining relevance. Sharing the results of our work will therefore be one of our assignments for next year.

Collaborations with like-minded organizations, governments, and local communities will be pivotal in expanding our impact. Together with the (new) members to our board, whose diverse expertise and fresh perspectives have already proven beneficial to the association, we are exploring avenues for diversification to ensure our sustainability and resilience in the ever-evolving landscape of water resources management.



**Laura
Turley**

PRESIDENT OF THE
BOARD

01. MISSION STATEMENT, VISION AND KEY ACHIEVEMENTS

Portolan aims to **improve the information that helps dealing with flood risk and water resources management** under climate change. We aim for better information and better-informed decision making. **We focus on the upstream part of information flows:** the availability of high quality, sufficiently dense and long-term time series of hydrological observation and climate monitoring networks.



Our vision is a world where natural risks to people and the environment are known and dealt with in a rational manner. **We believe that better and more accurate information can lead to better decision-making, serving climate adaptation planning and disaster risk management** more accurately and sustainably.

Portolan is working to increase the availability of essential data, and to leverage it to inform collective, just and transparent adaptation strategies around water resources and water management.



The vision and goals of Portolan translated in 2023 in the scoping of monitoring **needs to improve transboundary water allocation in Central Asia**. This information will be used to select **the monitoring stations that will be modernised and installed** in the implementation of a European project, WEACTION, until 2027. In addition, Portolan carried out consultancy services for projects related to monitoring and **management of water resources in the Danube river basin**. Further activities included fundraising for Early Warning System for floods and mudflows, R&D on precipitation measurement technology. **We also built new partnerships with potential donors, end-users and manufacturers of sensors, and further professionalized the organisation** through the development of a website, regular Board meetings and participation in key events (such as the Meteorological World Expo in Geneva) to expand our network of potential beneficiaries and in the hydro-meteorological monitoring industry.



02. HIGHLIGHTS OF ACTIVITIES IN 2023

PROJECT IMPLEMENTATION

In January 2023, the EU/Swiss/UK funded project WEACT project kicked off. In WE-ACT, Portolan leads a work package on hydrometeorological monitoring in Kyrgyzstan and Uzbekistan for better water allocation. Portolan has the support of the International Water management Institute (Uzbekistan), the Central Asian Institute for Applied Geosciences (Kyrgyzstan) and the University of Fribourg (Switzerland).

3

field trips into
Kyrgyzstan
& Uzbekistan

2

scoping of all the
existing
hydrometeorological
monitoring capacity of
river basins.

60

existing stations in
need of repairs,
upgrades or
modernization visited

10

former stations and
numerous potential
sites for newly
installed sensors.

174

unique locations
where we gathered
informations

3

partners involved
from Uzbekistan,
Kyrgyzstan &
Switzerland

The data and information gathered, will enable us and WEACT partners to decide on priority sites in Kyrgyzstan and Uzbekistan, where Portolan will install sensors, upgrade stations and provide trainings.

CONSULTANCIES

Portolan provided services that contribute to its mission and objectives. This translated in a consultancy assignment with the European Commission, regarding sediment management in the Danube river. We started exploring consultancy projects on the outsourcing of an hydrology and flood assessment of a river basin in Uzbekistan. Discussions are ongoing, and a potential follow-up may occur in 2024.



RESEARCH AND DEVELOPMENT



Portolan has started the development of a energy-efficient solid precipitation monitoring device. A testing prototype was deployed in the ski resort les Arcs (at 2300 meters of altitude), next to an existing rain gauge with the purpose of comparing and validating preliminary monitoring results.

FUNDRAISING ACTIVITIES

Portolan engaged in a **TU Delft-led Horizon Europe proposal on resilience of irrigation systems.**

We submitted a **pre-proposal to the Aga Khan Development Network on early warning systems** for mudflows and flood in Naryn city, together with our partner Nelen & Schuurmans.

We engaged with the International Institute for Sustainable Development in **Canada** to apply for a **project that integrates monitoring of water quality and quantity** in and around Lake Winnipeg.

We joined a **project proposal on groundwater monitoring for long-term water availability in Ethiopia**, led by the Menschen für Menschen foundation in Germany.

PARTNERSHIPS

Core partners	Institutional partners, donors and awarding authorities	Target audience
<p>Scientific partners</p> <ul style="list-style-type: none"> • TU Munich: hydrological modelling • TU Delft: water management and water quality monitoring, low cost sensing • University of Fribourg: glacier monitoring and modelling • Central Asian Institute for Applied Geosciences: local partner in installing and operating monitoring stations • Tubitak: Turkish research institute for water resources management • University of Salamanca: hydro-economics and humanities. 	<p>Institutional donors</p> <ul style="list-style-type: none"> • EU • Swiss State Secretariat for Education, Research and Innovation • Aga Khan Development Network 	<p>International organisations</p> <ul style="list-style-type: none"> • WMO • UNECE Water Convention
<p>Private sector partners</p> <ul style="list-style-type: none"> • Nelen & Schuurmans: data storage, hydrodynamic modelling, and hydro-informatics • Geolux: manufacturer of monitoring equipment for water level and discharge • FutureWater: water resources planning and management 	<p>Research and development partners</p> <ul style="list-style-type: none"> • EDF (France Electricity): hydrometry development and testing 	<p>Hydrometeorological institutes</p>
<p>Civil society/NGO partners</p> <ul style="list-style-type: none"> • Menschen für Menschen • International Water Management Institute (IWMI): water resources management in Central Asia • International Institute for Sustainable Development 		<p>Water management authorities</p> <ul style="list-style-type: none"> • Basin Water Organisations • Basin Irrigation System Authorities

03. PORTOLAN WORK PROGRAMS

Portolan organises its activities around three main programs, namely:



Rivers, lakes, and climate monitoring



Snow, ice and glaciers



Training



P1. RIVERS, LAKES & CLIMATE MONITORING

The aim of this programme is to install Automated Weather Stations (AWS) and Automated Hydrological Observation Stations (AHOS) to improve availability of data concerning physical phenomena such as air temperature, solid and humid precipitation, atmospheric pressure, wind speed and orientation, rivers and lakes water level, rivers and lakes water temperature, and river discharge. These data can subsequently be used to improve the management of meteorological and hydrological risks such as floods and droughts.

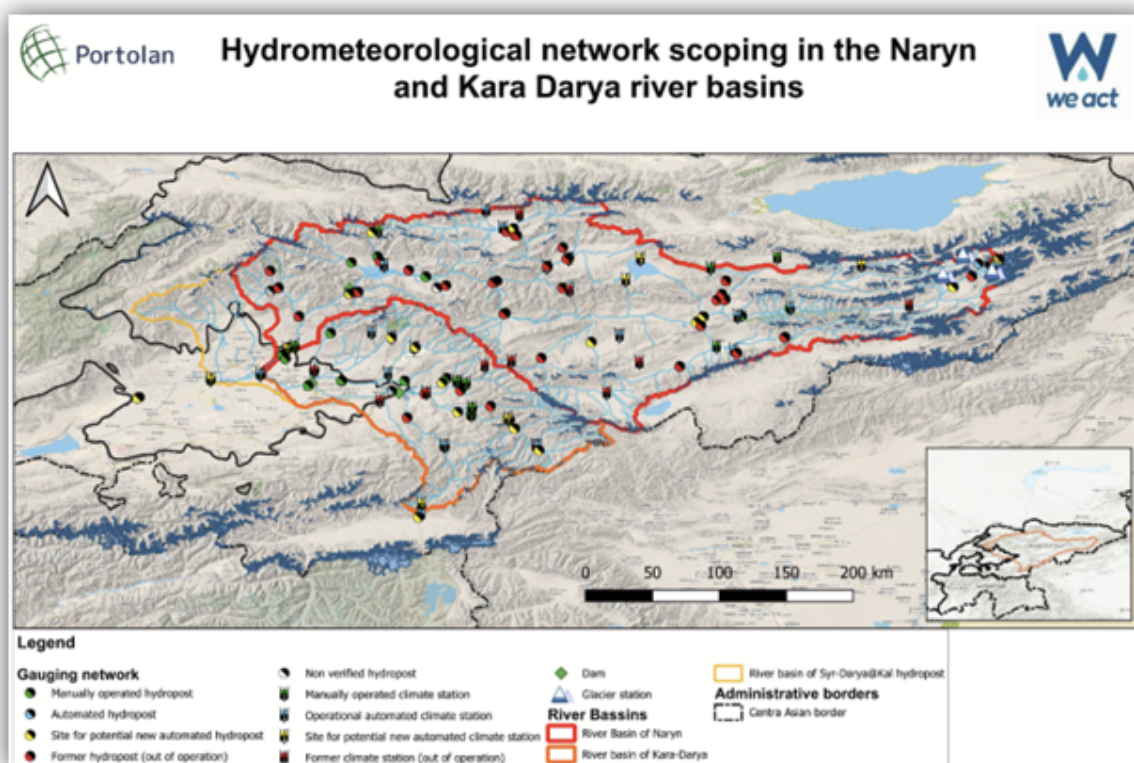
Achieved in 2023

75

Number of sites visited to gauge the need for modernization and installation of automatic sensors in Kyrgyzstan and Uzbekistan

4

Number of agreement reached on the upgrades/modernization of measurement stations in Uzbekistan





P2. SNOW, ICE AND GLACIERS



This programme **aims to study the evolution of snow cover and glaciers through specific indicators**. Both snow- and glacier mass can be regarded as seasonal water stocks, and as such have a significant impact on water cycle. Portolan's approach is to **install equipment to measure snow deck and water equivalent snow contents**, as well as **changes in glacier mass** (reduction and accumulation).

Achieved in 2023

Portolan has continued its **cooperation with the University of Fribourg's department of glaciology**, resulting in joint fieldwork.

Portolan is carrying out **R&D activities regarding energy-efficient solid precipitation measurements**.



P3. TRAINING

This programme contributes to **capacity building in hydrometeorological observations**, to **train local entities in the field of gauging technics, calibration of instruments, modern telecom data transmission, database management, uncertainties evaluation for improving quality, reliability and confidence in the data concerning these physical phenomena.**

Achieved in 2023



Lecture on operational hydrological modeling at the department of hydrology at the Technical University of Munich.



Planning of 4 training sessions on discharge gauging and data collection in Kyrgyzstan between 2023-2025



Planning of training sessions on use of discharge gauging devices in Uzbekistan, including donations of equipment.



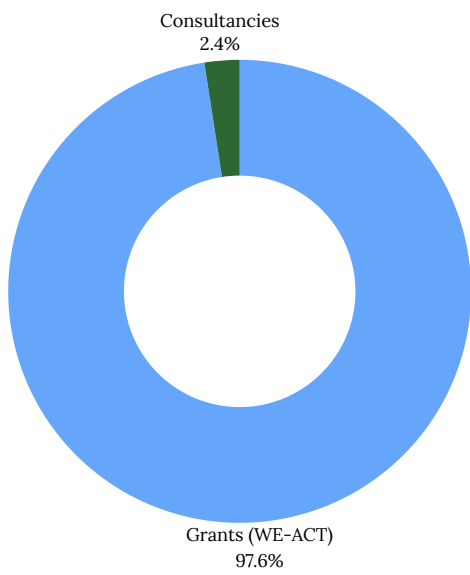
04. FINANCES

Portolan's primary source of income in 2023 was the WE-ACT project grant provided by the Swiss State Secretariat for Education, Research and Innovation.

A consultancy assignment for the European Commission complemented the total of revenues for 2023. In addition, Portolan received in-kind support by means of license-free software and services provided by Microsoft, among others.

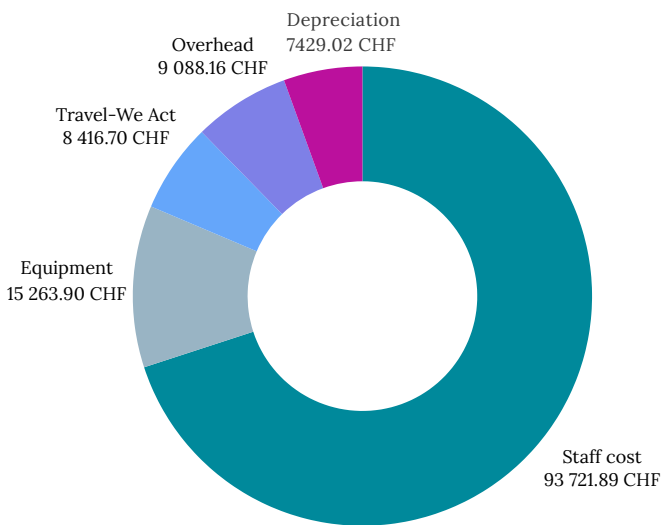
Expenses included staff cost, travel, equipment and services provided by third parties, such as accounting, translation and interpretation services. Portolan further acquired devices for flow measurement, tailored for implementation of the WE-ACT project, such as a mechanical flow meter and a sensor for tracing discharge through dilution.





2023 Revenues

CHF 133 919



2023 Expenses

05. GOVERNANCE & OPERATIONAL LEADERSHIP

Board Members



Laura Turley
Geneva Water Hub
President



Johannes Schreuder
Rewilding Europe
Treasurer



Anja Krabatsch
Civil servant
Strategy &
Partnerships



Alexandre Grassigny
NDC Partnerships
Vice-President

Directors

Bruno Capon and Max Linsen are the Directors of Portolan. They work closely together on all strategic, financial and operational matters, which are discussed during weekly and sometimes daily online meetings and monthly in-person meetings. Max focuses more on the fundraising and project acquisition, project management and partnerships, where Bruno focuses on project implementation and training materials, hydrometeorological operations and accounting issues.



Bruno Capon

Field hydrology lead
Technical project implementation
R&D
Finances
Training



Max Linsen

Fundraising
Partnerships
Project management
Water diplomacy
Field hydrology support

