

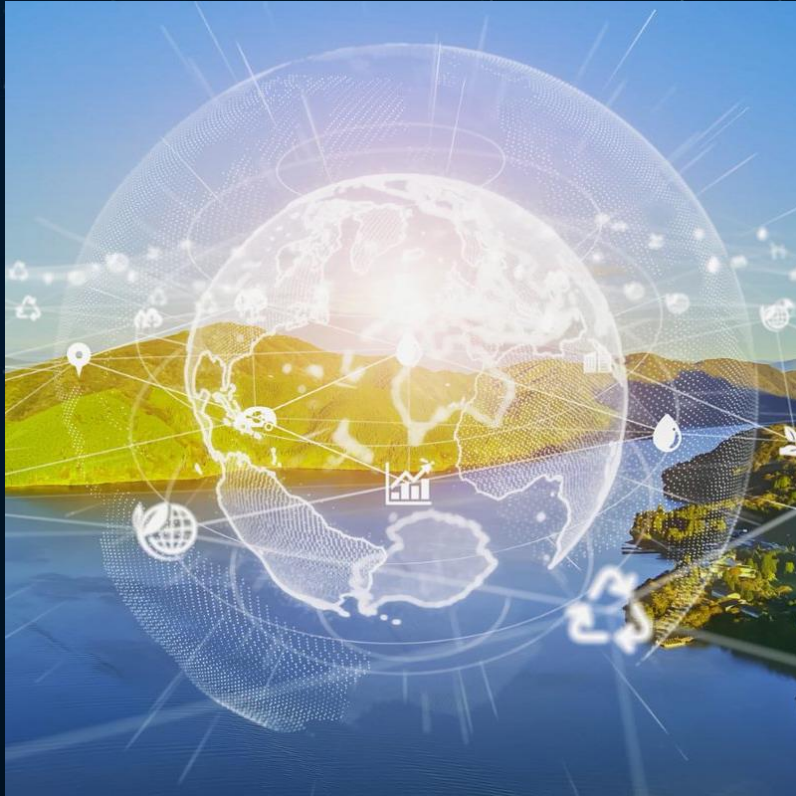


CEO
WATER
MANDATE

WATER
RESILIENCE
COALITION



esa
space solutions



Digitising Water Resilience

Acting on Water Stress in Basins

03 November 2022 | 15:00 CET

ESA UNCLASSIFIED



European Space Agency

Webinar hosts



CEO
WATER
MANDATE

WATER
RESILIENCE
COALITION



esa
space solutions



Liz Barrow

European Space Agency
Liz.Barrow@esa.int



André Villaça Ramalho

Water Resilience Coalition
AVRamalho@pacinst.org



Cheryl Hicks

CEO Water Mandate
cheryl-hicks@pacinst.org



ESA UNCLASSIFIED



European Space Agency

Welcome to our webinar

Before we start...

- Please **keep your microphones muted** during the webinar and make sure your webcam is switched off.
- You can use the **chat box** at any time to submit your questions. They will be addressed during the **Q&A** at the end of the webinar.



Funding Opportunity: Digitising Water Resilience - Acting on Water Stress in Basins

Agenda

1. Introduction
2. ESA Space Solutions
3. About this Call: Digitising Water Resilience - Acting on Water Stress in Basins
4. Guest Speakers: Cheryl Hicks (CEO Water Mandate) and André Villaça Ramalho (Water Resilience Coalition)
5. How to Apply for this funding opportunity
6. Q&A



**CEO
WATER
MANDATE**

**WATER
RESILIENCE
COALITION**



→ Supporting European start-ups and SMEs to develop services using space technology and data

→ Offering funding, business and technical support to solve social, environmental and economic challenges across every sector



Space Technology...



... applied across every market



What we offer



Zero-equity funding (from €50k to €2M+ per activity)



A personalised ESA consultant



Technical support and commercial guidance



Tailored project management support



Access to our international network of ESA and partners



Access to our network of investors



Credibility of the ESA brand



Digitising Water Resilience - Acting on Water Stress in Basins

Call for Proposals
Open 1-30 November 2022

Apply here:

<https://business.esa.int/funding/invitation-to-tender/digitising-water-resilience-acting-water-stress-basins>



Digitising Water Resilience - Acting on Water Stress in Basins

The Problem

- Water is an **essential** resource to everyone on Earth
- Over the next decade the world will experience a serious **shortfall in freshwater** supply.
- Intensified **floods** and prolonged **droughts** are expected to worsen in the coming years



Digitising Water Resilience - Acting on Water Stress in Basins

This Opportunity

ESA has partnered with the [CEO Water Mandate](#) and 30+ members of the [Water Resilience Coalition](#) to address the global water crisis in its three dimensions:

1. Availability
2. Quality
3. Accessibility



Digitising Water Basins: Key Needs and Challenges

There is a need for:

- **digitisation** and innovative **monitoring** technologies of water **basin health**
- continuous monitoring of the **impacts** of **interventions**.

To digitise water basins, several challenges must be overcome. Current data on basins can be:

- Incomplete
- Inconsistent
- Dispersed
- Outdated



Value of Space



High Altitude
Platform Systems



Satellite
Communications



Satellite
Navigation



Earth
Observation



Nanosatellite
Networks

Satellite technologies and data have an important role to play within prospective services:

- **Satellite Communications (satcom)** can connect data captured at basins to decision-makers more efficiently. It can be used for primary or back-up communications in BVLOS autonomous vehicle operations.
- **Satellite Earth Observation data (SatEO)**, including next generation nano satellite and cubesat networks, could support basin diagnostics and monitor progress on water security and resilience in basins
- **Satellite Navigation** can be used to enable geo-referencing of in-situ data, as well as navigation and tracking of autonomous vehicles
- **High-altitude platform systems (HAPS)** could complement data collected on the ground or from SatEO to give a complete, accurate and unified picture of water basin conditions. HAPS could also provide connectivity for sensors in remote locations and autonomous vehicles (including command and control links, broadband payload data communications and inter-vehicle links).



**CEO
WATER
MANDATE**

**WATER
RESILIENCE
COALITION**



Digitizing Water Resilience Monitoring in Basins

Call for Proposals Open 1-30 November 2022

Andre Ramalho

The Water Resilience Coalition: Vision and Mission

Global Companies and their CEOs joining forces to achieve one common goal

Mission
Accelerate progress against the global water crisis

Aligned **quantifiable and timebound** enterprise-level water commitments

Identify and accelerate investments in innovative **solutions to the water-climate crisis**

Collective action to build water security and resilience at scale in stressed regions

The WRC's 2030 Ambition



By 2030, we will have positive water impact in over 100 water stressed basins that support **over 3 billion people**

By 2030, we will enable equitable and resilient access and sanitation for at least **300 million people**

150 COMPANIES have the potential to **INFLUENCE 1/3 OF GLOBAL WATER USE**

The WRC is the Strategic Spearhead of the UN Global Compact on Climate Adaptation

UN Global Compact

World's largest corporate sustainability initiative



United Nations
Global Compact

CEO Water Mandate

Water stewardship initiative of the UN Global Compact



CEO
WATER
MANDATE

Water Resilience Coalition

Leadership platform of the CEO Water Mandate



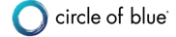
WATER
RESILIENCE
COALITION



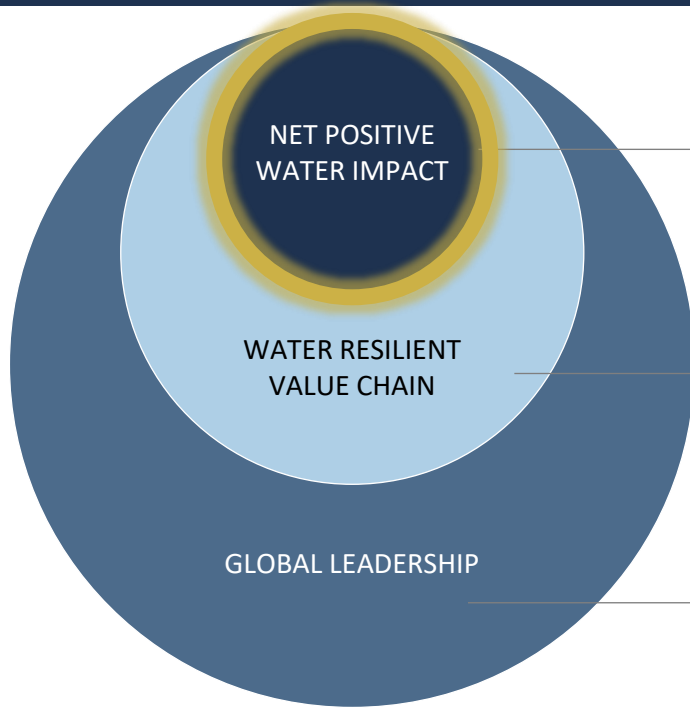
THE WRC TODAY - 30 MEMBER COMPANIES + 17 PARTNERS

MEMBERS

PARTNERS



The WRC 2050 Pledge*



By 2050 (reaching the halfway mark in 2030), individually and collectively achieve and maintain a measurable and net positive impact in water-stressed basins on availability, quality, and accessibility through industry-leading water operations and basin initiatives

Develop, implement, and enable strategies to support leading impact-based water resilience practices across the global value chain

Raise the ambition of water resilience through public and corporate outreach
Inspire other industry leaders to join the Coalition

***Taken by all members upon joining the WRC**
Halfway mark to be reached by 2030

NET POSITIVE WATER IMPACT PLEDGE KEY TO 2030 AMBITION

Net positive water impact (NPWI) is an aspiration for how a water user interacts with a basin, its ecosystem, and its communities.

Delivering NPWI contributes toward reducing water stress in its three dimensions – availability, quality, and accessibility – and ensures the water user's contributions exceed impacts on water stress in the same region.

WRC is advancing the industry standard by creating the collective framework for action on water that will coalesce previously fragmented efforts in water stressed basins

UNITED NATIONS GLOBAL COMPACT

NPWI Principles

- NPWI is an enterprise **ambition** that **manifests in water-stressed basins** to create impact where it matters most.
- NPWI is **quantifiable** against the three dimensions of water stress (availability, quality, and accessibility), **aligns with established methodologies** (e.g., **context and science-based water targets**), and **can be measured via both short-term outputs and long-term outcomes**.
- An enterprise achieves NPWI **through a combination of investments** in its own operations and through **collective action partnerships/initiatives** within basins.

16



WRC PRIORITY BASINS IN 2022

15 BASINS PRIORITIZED & 21 COLLECTIVE ACTION INITIATIVES TO DATE



New Country + Basins



CEO
WATER
MANDATE

WATER
RESILIENCE
COALITION



Collective Action to Digitize Metrics & Monitoring in Basins

Through the use of space and digital technologies, we will be able to visualize:

- the current baseline of water stress in priority basins,
- understand the systemic interlinkages of the challenge,
- model future risks, and
- identify areas for innovation

in order to prioritize actions, monitor and report on progress towards water resilience in 100 water stressed basins.

WRC Partnership with the European Space Agency will enable WRC to:



- Leverage **earth observation technologies** to support basin diagnostics and monitor progress on water security and resilience in basins
- Leverage **digital tools such as AI and IOT** to collect better data on water quantity, water quality, and water access /sanitation/hygiene systems –
- To identify solutions that can be deployed or innovation that is needed
- Leverage **satellite connectivity** to connect data being captured in basins to decision-makers

Current Challenges to be Overcome



- **Standardizing approach for basin classification and naming** – hydro shed system upgrade
- **Merging existing baseline data about priority basins** (including biodiversity; climate benefits; social impact)
- **Limited data sets** or existing data sets but dispersed in multiple platforms
- **Limited use of next-generation data sources** i.e. sensors for monitoring water bodies linked to space, high-altitude platform stations, drones monitoring
- **Defining next-generation methods** for basin diagnostics and water resilience monitoring

The Project: Phases

PHASE 1 (2022-23)

Develop Tech Capabilities & Pilot

Supporting the development of **new technologies** to monitor **water resilience**

Piloting water resilience monitoring technologies **in priority basins**

PHASE 2 (2024-25)

Scale Up Digitized Monitoring Across Basins

Merging existing baseline data with global partners

Developing **water resilience specific data sets**

Scaling up water resilience monitoring technologies **across priority basins**

The Project: Roles

Water Resilience Coalition

Apply NPWI and next-generation water resilience data sets and framework

Leverage WRC companies' expertise to support the pilots and scale up

Network of digital technology service providers

European Space Agency

Financial and space tech support & network

Network of digital technology service providers

Contacts:

Andre Ramalho
avramalho@pacinst.org

Cheryl Hicks
cheryl-hicks@pacinst.org



LEARN MORE

ceowatermandate.org/resilience



**WATER
RESILIENCE
COALITION**



Digitising Water Basins to Monitor and Act on Water Resilience

Teams successful in applying for this opportunity will run a feasibility study that:



visualises the current baseline of water stress at priority basins.



identifies large-scale monitoring solutions for the future.



Establishes a roadmap for the solution roll-out



Develops a 'proof of concept'



Tries to resolve water sustainability issues in businesses



Investigates the technical and commercial feasibility of the service



The Long-Term Vision

Step 1: Feasibility Study
2022 – 2023

Feasibility Studies should start in **2022 or 2023 and run for one year**. During this period, bidding teams can work alongside the CEO Water Mandate and members of the Water Resilience Coalition.

Step 2: Scale Up
2024 – 2025

Once feasibility studies have been completed, teams will have the opportunity to progress to the **scale up phase**: implementing water resilience monitoring services and **trialling** them across **multiple water stressed basins (Demonstration Project)**.

Step 3: Roll out
2025 – 2030

The goal is to have **an innovative service** that effectively **monitors, evaluates, and enables action** on water resilience information across **100+ basins by 2030**.

Note: Steps 2 and 3 are outside the scope of this call



How can we support you?

1. Funding

- Teams successful in applying for this opportunity will run a Feasibility Study. The total cost of each study is expected to be around €300k
- ESA will typically bear 50% of the eligible total study costs, but the funding level can be increased up to 80% for micro, small and medium-sized enterprises or research institutions.
- The precise funding amount should be discussed with your National Delegate. Contact details for National Delegations are here: <https://business.esa.int/national-delegations>
- There may be additional opportunities for financial support via the corporate open innovation platforms of WRC members.
- There is the opportunity for further funding and support from ESA after the study.



A note on funding eligibility

Companies or organisations registered in the following Member States are eligible to apply for funding from ESA:

Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, and the United Kingdom.

ESA can only fund companies based in participating member states, so if a team consists of a member state company and a non-member state company, **the non-member state company would have to fund their own contribution to the study.**

Please contact your National Delegation to inform them of your intention to apply for this opportunity. Contact details can be found here: <https://business.esa.int/national-delegations>

Companies or organisations registered in **Greece** may apply for this opportunity if the proposed idea uses hybrid SatCom – terrestrial (wired or wireless) and 5G networks.



How can we support you?

2. Accessing Networks and Expertise

- Access additional expertise from [WRC water resilience experts and member companies](#).
- Connect with the [Water Action Hub](#) to access a broader global network of potential partners and collaborators on water sustainability and climate resilience: <https://wateractionhub.org>
- An [ESA consultant](#) will guide each team through the Feasibility Study



How to Apply



Visit the 'How to Apply' section on this webpage:

<https://business.esa.int/funding/invitation-to-tender/digitising-water-resilience-acting-water-stress-basins>

You will start by preparing a Video Pitch and Pitch Form.

Video Pitch

- 1-5 minutes long

- Should include the following information:

- Who you are – Which company/companies will be involved in the feasibility study?
- What your idea is – What is your proposed service and how does it work?
- Which test users will be involved in the feasibility study – have you already determined who the users of your service will be? Have you engaged with them already?
- Which satellite data and innovative technologies your idea will use – can you be specific about the data and technologies you will use?
- Your starting point - Are you starting from scratch? Have you worked on similar projects in the past?
- Your vision for the future – how will you aim to tackle water resilience - related challenges by 2030? Think big!

- Once you have recorded your video, post it on a website or streaming service; you can use any service to upload it.



Pitch Form

- Download the form template from here:

<https://business.esa.int/sites/business/files/Pitch%20Form.docx>



- Answer the 7 questions on the form template
- Once you have completed your Video Pitch and Pitch Form submit them here:

<https://business.esa.int/form/digitising-water-resilience>

A panel will review your pitch and will get back to you on the result within two weeks of submission.

Following a positive result, you will be invited to prepare an outline proposal, followed by a full proposal. We will connect you with somebody in ESA to help guide you through this process.

Q&A

