



United Nations
Office for Outer Space Affairs



Prince Sultan Bin Abdulaziz
International Prize for Water



space4water

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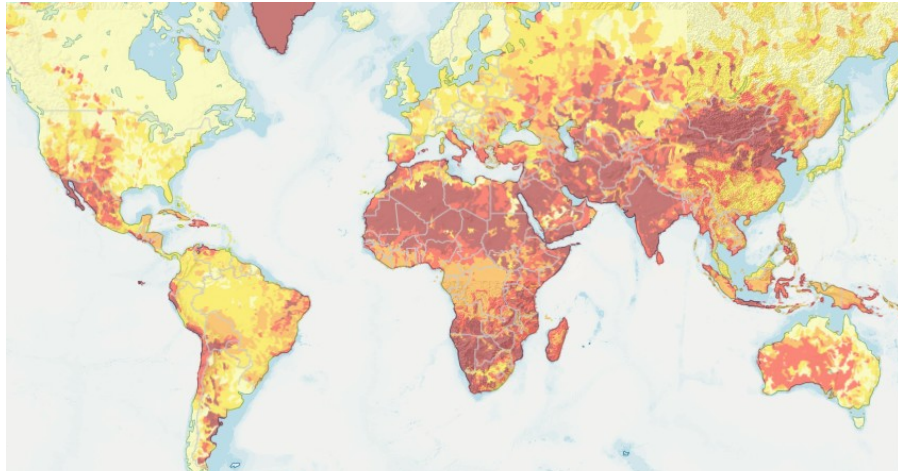
www.unoosa.org



An aerial photograph of a river delta, likely the Mississippi River delta, is shown in a teal color palette. Overlaid on the image are several concentric, semi-transparent white lines that resemble satellite orbital paths or signal waves, radiating from the left side of the frame. The text 'WHY SPACE4WATER' is prominently displayed in the upper left quadrant in a bold, white, sans-serif font.

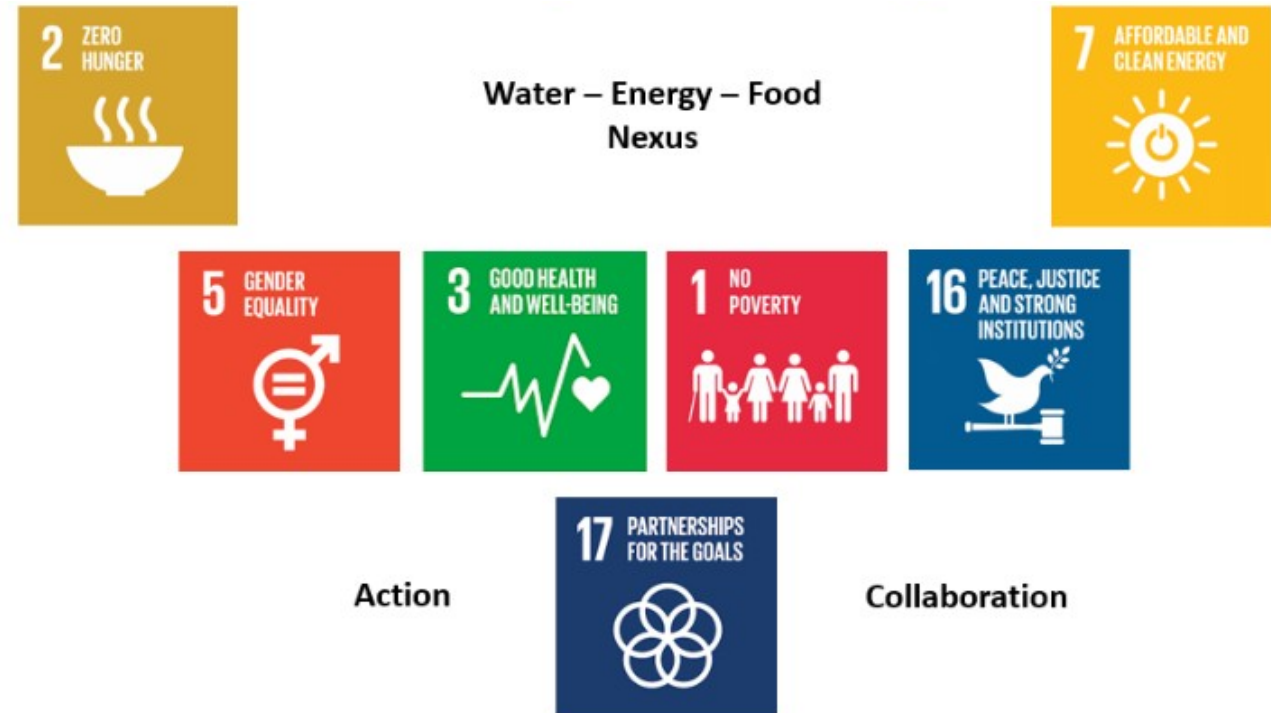
WHY SPACE4WATER

Space and sustainable development



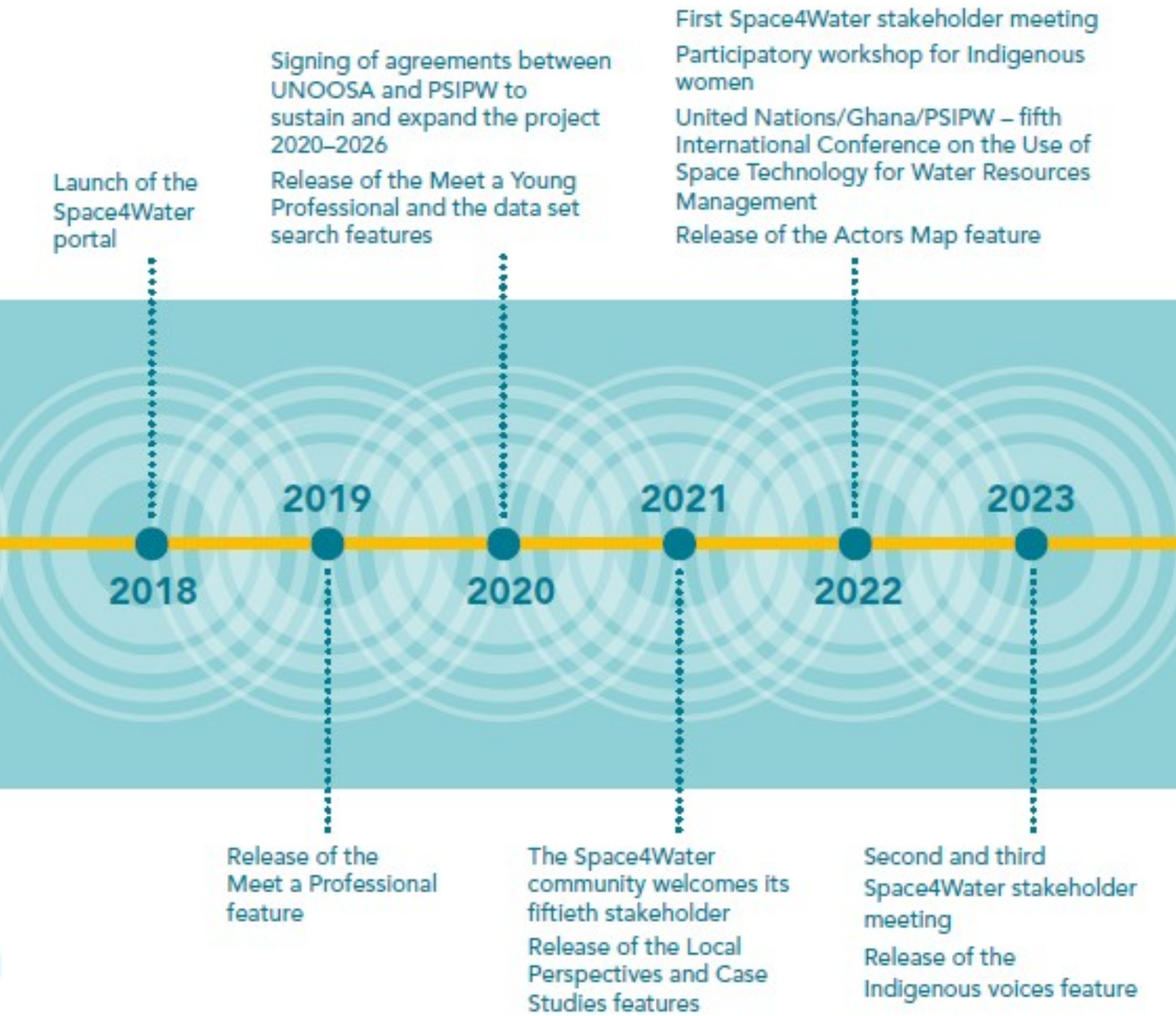
Water stress, global

Source: World Resources Institute



An aerial photograph of a desert canyon, showing a winding riverbed and rugged, eroded rock formations. The image is overlaid with a color gradient from red to orange and several semi-transparent, curved lines that sweep across the scene from the top left towards the bottom right. The text "AT A GLANCE" is centered in the upper portion of the image.

AT A GLANCE



Good News: Long term perspective!



THE SPACE4WATER
COMMUNITY



THE SPACE4WATER
PORTAL



A CONFERENCE
SERIES



THE SPACE4WATER COMMUNITY

102 Stakeholders

19 Professionals

26 Young Professionals

7 Indigenous Voices



THE SPACE4WATER
PORTAL



Shared Resources

Stakeholder

[E-learning Course to Support Sustainable Use of Water](#)

[Water scenarios For Copernicus Exploitation](#)

[Programming for Geospatial Hydrological Applications](#)

[QGIS et Applications en Hydrologie](#)

[Webinar: Groundwater for Water Security in Africa](#)

[FAO CB4WA: Use of FAO WaPOR Portal](#)

[Water Productivity and Water Accounting using WaPOR](#)



About IHE Delft Institute for Water Education

IHE Delft Institute for Water Education is the largest international graduate water education facility in the world and is based in Delft, the Netherlands. Since 1957 the Institute has provided water education and training to 23.000 professionals from over 190 countries, the vast majority from Africa, Asia and Latin America. Also, numerous research and institutional strengthening projects are carried out in partnership to strengthen capacity in the water sector worldwide. Through our overarching work on capacity development, IHE Delft aims to make a tangible contribution to achieving all Sustainable Development Goals in which water is key.

Vision

IHE Delft Institute for Water Education envisions a world free of poverty and injustice, in which people manage their water and environmental resources sustainably and equitably.

Mission

IHE Delft works in partnership to strengthen capacity in the water sector to achieve global sustainable development.

Ambition

Through our overarching work on capacity development, IHE Delft aims to make a tangible contribution to achieving all Sustainable Development Goals in which water is key.



Projects & Initiatives

(17)



Publications

(182)



Software & Tools

(23)



Articles & Success Stories

(56)



Training Material & Webinars

(94)



Water-related challenges

(17)



Activities & Opportunities



Space-based solutions

(17)



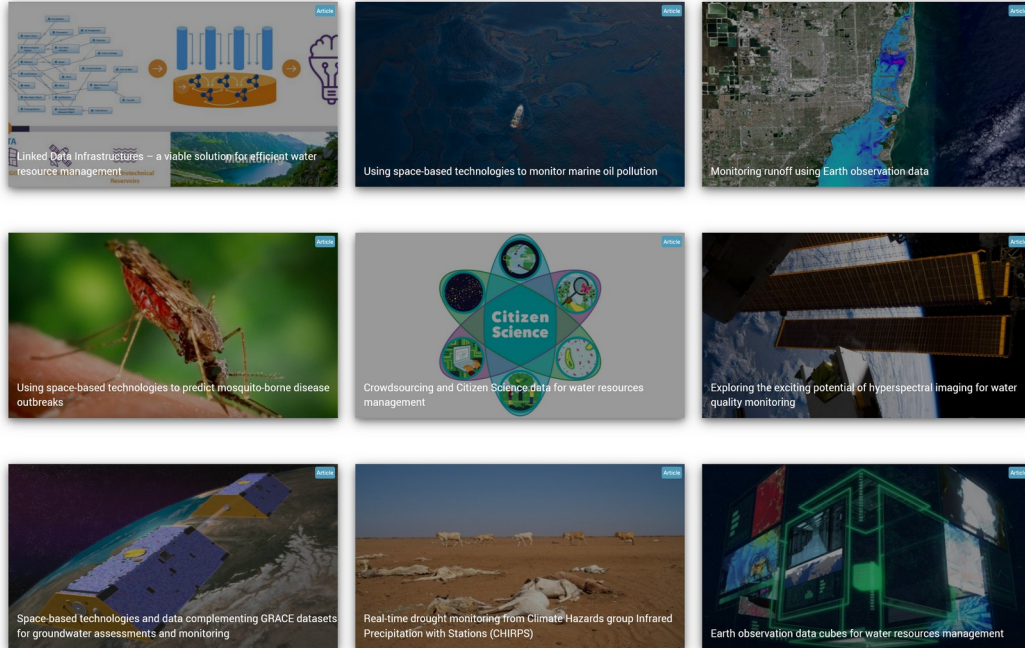
THE SPACE4WATER
PORTAL

Science communication

Monthly articles

Ad hoc translations to French and Spanish

Monthly interviews



Gregory Guilan
Senior Lecturer & Head of Unit at the University of Geneva and Head of the Digital Earth Unit at United Nations Environment Global Geneva



Khalid Mahmood
Assistant Professor in the Department of Space Science at University of the Punjab



Yvona Popescu
Associate Professor of Hydroinformatics at IHE Delft Institute for Water Education



Wolfgang Wagner
Univ.-Prof. for remote sensing, Dean of Faculty of Mathematics and Geoinformation, Co-Founder of EODC



Stuart Crane
Programme Management Officer at UN Environment



Ebone Tshepo
Head of the Environment and Water Institute at Southern African Research and Documentation Centre



Become a
featured
professional



THE SPACE4WATER
PORTAL

Sharing information



Training Material &
Webinars
(94)



Events
(312)



NEXT GEOSS
Dataset Search



Glossary &
Ontologies
(>1700)



Local Perspectives &
Case Studies
(3)



THE SPACE4WATER PORTAL


Portal updates

- Find collaborators on community landing pages
 - I work on a ...
local / national / regional / international level
 - I look for ...
collaboration / cooperation / knowledge exchange /
partnerships / other modes of interaction
 - In the thematic field of ...
 - In region / countries / climate zone
- Article translations to French and Spanish
- Water related challenges & space-based solutions
- Constantly growing global user and knowledge base
- 80K users last year
- > 1000 knowledge resources

Stakeholder meetings

- ❑ Interdisciplinary
- ❑ Multi-stakeholder
- ❑ Local – national - regional - global
- ❑ Co-design & development of space-based solutions
- ❑ 1-2 x a year online and in person





Participatory workshop for Indigenous women on their roles and responsibilities related to water

Mutual learning about

- Water
- Space
- Technology
- Water-related changes

Co-design and development of space-based solutions



Flood modeling for melting glacier - need for input



Identify upstream potential pollution sources - in development



Surface water extent river course - in development



Identify locations for the creation of sand dams - in development

pollution and lacking historic knowledge on river course and vegetation



□ Experts

- Nature-based solutions (Space4Water Professional)
- Vegetation mapping (University of Natural Resources and Life Sciences)
- Hydrology and water quality (Brazilian Water and Sanitation Agency)

□ Steps to the solution & status of implementation

1. Plot the Region of interest (completed)
2. Identify the region's main rivers and understand their hydrology (completed);
3. Identify the region's potential flood areas using H.A.N.D.;
4. Build a hydrography dataset (completed);
5. Identify multiple image sources for land cover analysis (completed);
6. Map the historical land use and land cover surrounding the river (in progress);

□ Implemented change on the ground

- Started water sampling
- Meetings with elders and experts on historic riverbed vegetation
- Planted hundreds of trees

Boundary of t
community, Ng



Samburu walk 20km to access water

□ Team

- Indigenous representative
- Hydro-geologists
- GIS experts (from Kenya Space Agency)

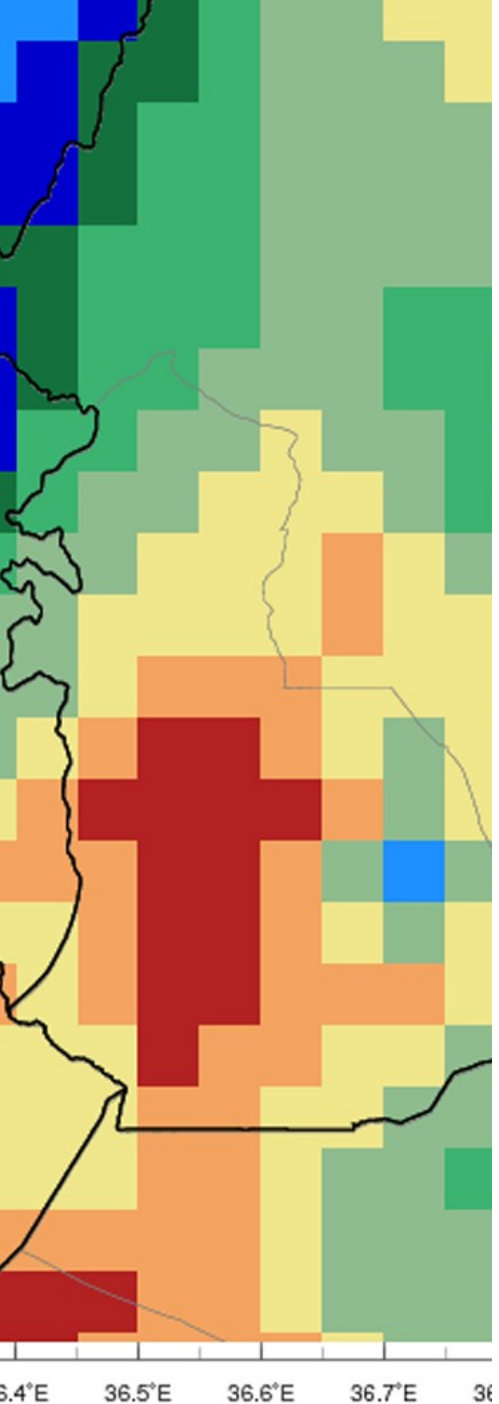
□ 3 outlined solutions

1. Borehole siting
2. Rainwater harvesting
3. Sand dams

□ To do:

- Implementing change on the ground based on academic findings & multi-stakeholder collabora





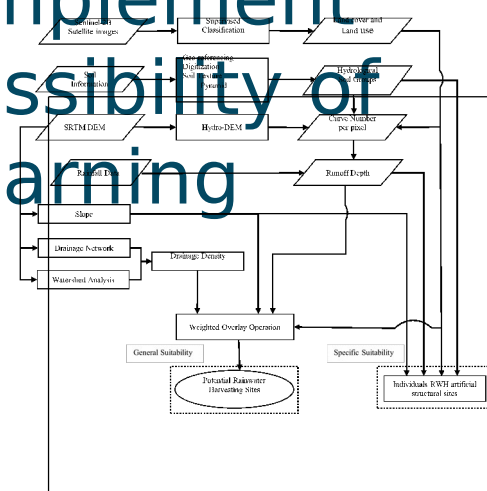
Solution: Determining optimum sites for rainwater harvesting

□ Applies to challenges

- Floods and drought over the same region
- Samburu

□ Space4Water Professional developed model for GIS based identification of optimum sites for rainwater harvesting

□ Space4Water Young professional will implement open-source software to increase accessibility of the solution and incentivise transfer-learning





6TH

UNITED NATIONS | COSTA RICA | PSIPW CONFERENCE ON THE USE OF SPACE TECHNOLOGY FOR WATER MANAGEMENT

HOSTED AND SUPPORTED BY THE
INTER-AMERICAN INSTITUTE FOR COOPERATION ON AGRICULTURE

7-10 MAY 2024, SAN JOSÉ, COSTA RICA



MINISTERIO DE
RELACIONES EXTERIORES
Y CULTO

GOBIERNO
DE COSTA RICA



Prince Sultan Bin Abdulaziz
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A CONFERENCE
SERIES





Outlook

- ❑ Focus on Space-based solutions
- ❑ Good practices transferring technology, and learning
- ❑ Webinar series
- ❑ Content translation
- ❑ Funding
 - ❑ Capacity building
 - ❑ Implementation of space-based solutions



United Nations
Office for Outer Space Affairs

3rdspace4water
Stakeholder Meeting
24-25 October 2023
Vienna International Centre



Thank you

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