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English only

**Committee on the Peaceful
Uses of Outer Space
Scientific and Technical Subcommittee
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Vienna, 7–18 February 2022
Item 6 of the provisional agenda*
Space technology for sustainable
socioeconomic development**

The Space4Water Project: Community building

I. Introduction

1. The Space4Water Project started in 2018 and its main pillar, the Space4Water Portal, was launched on 30 October 2018 at the Eighth Award Ceremony of the Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW) hosted at the United Nations Headquarters in New York, United States of America. The Project has been developed and implemented by the Office for Outer Space Affairs and funded by the Prince Sultan Bin Abdulaziz International Prize for Water (PSIPW).

2. The Space4Water Project is an umbrella for initiatives relating to space technologies and their application for water resources management, hydrology and ecosystem preservation. The Project is structured with three pillars of actions aiming to increase their impact from a local to a global level:

(a) Foster scientific exchange via conferences, to inform decision making and provide substantive evidence to support the development of policy;

(b) Reach and inform users worldwide, via the Space4Water Portal, to showcase good practices and allow users to find partners with the expertise or the regional focus they need. The vision and objectives are detailed in A/AC.105/C.1/2019/CRP.11 and on the Portal¹ itself; and

(c) Community building via interactive Space4Water Portal stakeholder meetings with the aim to create an Experts Committee for Quality Assurance and Scientific Guidance.

3. Since 2018, the Office and PSIPW have been promoting the use of space-based technology for increased access to water. They have been cooperating for over ten years in the organisation of an international conference series on the use of space technologies in water management. Within the first funding period of the Space4Water Project (2018-2020), the Office organised a conference in Islamabad, Pakistan. The next edition will take place in Accra, Ghana, from 10 to 13 May 2022. This conference series allows experts to meet and exchange in person or online. Activities carried out at the conferences can actively

* <https://www.space4water.org>.



contribute to community building between experts and researchers by creating a space for knowledge exchange and interaction. The Office will actively contribute to that end by hosting a participatory workshop using rapid prototyping and design thinking methods at the conference in Ghana. The objective of the participatory workshop is to identify user needs of indigenous women concerning water resources management and space technologies.

4. The rapid increase in users (150 per cent growth in 2021) and resources shared on the Space4Water Portal demonstrate that a strong demand exists for learning more about the use of space-based technologies for water related topics.

II. The Space4Water Project and its community

5. As a platform for interdisciplinary knowledge exchange, the Space4Water Portal (see figure 1) brings together experts from the fields of both space technologies and water-related sectors, to form a community of practice. On the Portal, organisations and actors share information on projects/initiatives/satellite missions/community portals¹, software/webapps/tools², capacity building and training material, events such as conferences and workshops³, as well as news⁴ and publications⁵ in the sector. This allows users to learn about successful applications of space technologies to address water management issues and provides contact details of professionals on specific topics.

6. The Space4Water Portal is intended to serve as a bridge between communities of both the water and the space sectors, but also between different types of stakeholders⁶: academia, governmental institutions, inter-governmental organisations, private sector, private research institutes, non-for-profit organisations, and non-governmental organisations. Individuals representing civil society are interviewed and their views featured in the “Meet a Professional”⁷ and “Meet a Young Professional”⁸ section, or they provide articles and success stories.

7. Apart from the space technologies for water management conference series or capacity building initiatives by UN-SPIDER (e.g., on flood mapping), most of UNOOSA’s activities related to space technologies and water resource management have taken place online.

8. With new funding assured until 2026, the Office aims at engaging actors to identify user needs and to match them with existing solutions or communicate those needs to relevant actors who are building space-based solutions. Community building efforts will focus on the identification of problems, building human capacity, and facilitating an exchange with experts who are aware of state-of-the-art space-based technology solutions suitable to address water-related problems within their actual context. The Office for Outer Space Affairs will host and moderate community building activities.



Figure 1: Landing page of www.space4water.org

¹ Space4Water Projects landing page accessible at <https://www.space4water.org/projects-initiatives-missions-community-portals>.
² Space4Water Software landing page accessible at <https://www.space4water.org/software-webapps-tools>.
³ Space4Water Events landing page accessible at <https://www.space4water.org/events>.
⁴ Space4Water News landing page accessible at <https://www.space4water.org/news>.
⁵ Space4Water Publications landing page accessible at <https://www.space4water.org/publications>.
⁶ Space4Water Stakeholder landing page accessible at <https://www.space4water.org/stakeholders>.
⁷ Space4Water Meet a Professional landing page accessible at <https://www.space4water.org/meet-professionals>.
⁸ Space4Water Meet a Professional landing page accessible at <https://www.space4water.org/meet-young-professionals>.

9. The Space4Water community today is a community of interest which is maturing towards a community of practice. To truly become a community of practice there needs to be focus on:

- (a) Participation, interaction, negotiation of shared objectives, and developing knowledge;
- (b) Regular communication with and interaction between members;
- (c) Improved processes and practices;
- (d) Group learning to accomplish objectives; and
- (e) Commitment from members.

10. The Office sees value in the creation of a real community of practice to exchange on latest research findings, to inform decision-making and governance with scientific knowledge and to provide for a platform between all stakeholder groups (international intergovernmental organisations, government, academia, private sector and industry, civil society).

11. To build communities of practice, the most relevant elements are the communication of shared objectives, as well as group learning to reach these shared objectives. The identification of shared objectives within the stakeholder community is therefore the main objective for the *1st Space4Water stakeholder meeting* planned to take place 27-28 October 2022 at the Vienna International Centre. Stakeholders⁹ of the Space4Water Portal would meet in person, provided travel restrictions due to the COVID-19 pandemic have been relaxed. A few participants from developing countries will receive fellowships to participate to allow for a more balanced attendance from various world regions.

12. The Office is committed to release features on the Space4Water Portal that aim to improve joint learning experiences as well as the identification of existing solutions that can be applied to water-related problems elsewhere.

A. The Community in Figures

13. As 1 January 2022, 62 stakeholders have registered to be featured on the Space4Water Portal, with many more currently considering participating.

14. Distribution among types of stakeholders is as follows: Academia (14), Government (7), Intergovernmental organisation (16), Non-for-profit organisation (4), Non-governmental organisation (3), Private research institute (2), Private sector and industry (10), Other (6).

15. Stakeholders shared information on 21 software tools and eleven projects. The Office further linked 77 publications and published information on 79 capacity building and training material sources. In addition, 35 articles and eleven profile pages were published for professionals, including interviews with distinguished personalities. Additionally, 13 Young Professionals have published profiles and gave interviews. Finally, 155 relevant events such as conferences, workshops have been promoted to keep the community posted on possibilities to expand their horizon into the realm of space technologies for water management. The Office also published 24 activities and opportunities for the community of users. In total the portal counts over 500 digital resources. Additionally, The Office keeps developing the glossary of space and environmental terms with a special focus on water, with an improved structure/hierarchy.

⁹ To be considered as a Space4Water stakeholder, interested potential stakeholders can apply online by clicking at the button at the bottom of the Stakeholder page <https://www.space4water.org/stakeholders>.

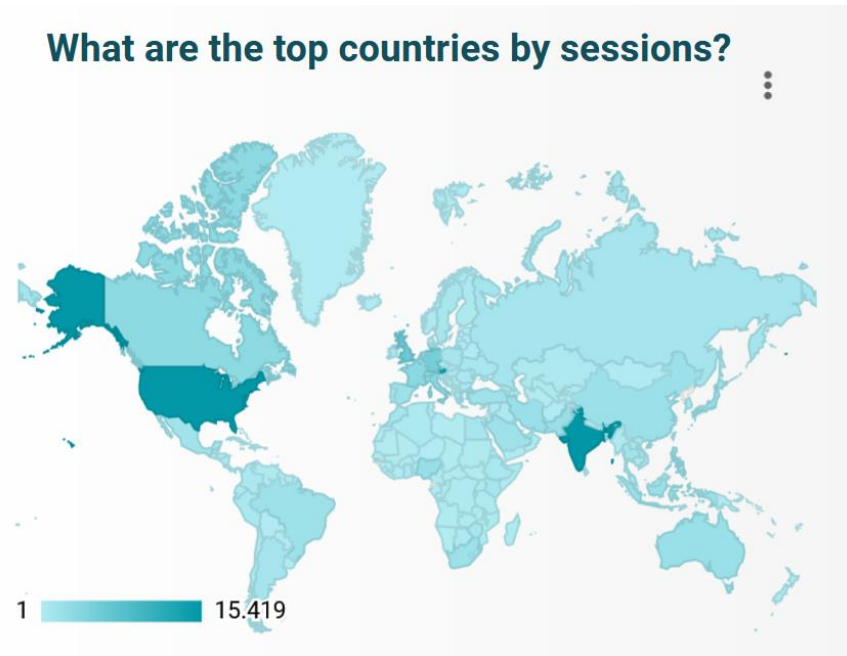


Figure 2: Countries by number of user sessions (31 Oct 2018 - 31 Dec 2021)

16. User access statistics of the Space4Water Portal during 2021 show that the Portal attracted over 37,600 users (14,000 users in 2020), who looked at over 76,000 pages. Users came from 196 countries/territories¹⁰ (see figure 2) which means a full global coverage, an increase from 90,7 percent of all UN Member States in 2020.

B. Inclusivity and Diversity

17. The Portal strives to include all voices and a variety of contributions. That means being deliberately inclusive for people from all regions of the world, respecting and mainstreaming gender equality as well as being inclusive of a broad range of users' age. The Portal provides knowledge resources suitable for different levels of technological advancement and financial resources and encourages sharing of such resources that can be leveraged by actors from developing countries.

18. Geographical diversity is regularly monitored, to ensure a balanced representation of individuals. Sharing location information is not mandatory on the Portal, so statistics on geographic diversity do not cover all the actors and initiatives featured. The Portal has an unproportionally high representation of stakeholders from Europe at the moment and the Office seeks to balance the geographic diversity of stakeholders, inviting all Member States, and especially developing countries, to register on the Portal and share information on relevant stakeholders¹¹ in their country.

¹⁰ According to Google. Note these do not represent the official Member States and borders of the United Nations.

¹¹ To be considered as a Space4Water stakeholder, interested potential stakeholders can apply online by clicking at the button at the bottom of the linked Stakeholder page <https://www.space4water.org/stakeholders>.

19. The Portal aims to foster women's empowerment and gender equality in the space and water sector, and sections of the Space4Water Portal that feature individuals show a balanced representation. As of 1 January 2022, 13 women are featured out of 24 individuals in total. The Office has also established knowledge exchange and mutually supporting activities with the Space4Women Project, as well as with the Space4Youth project. There is gender balance among all users who have accessed the Space4Water Portal since its launch, with approximately 46 per cent female and 54 per cent male users as of 1 January 2022 (see figure 3).

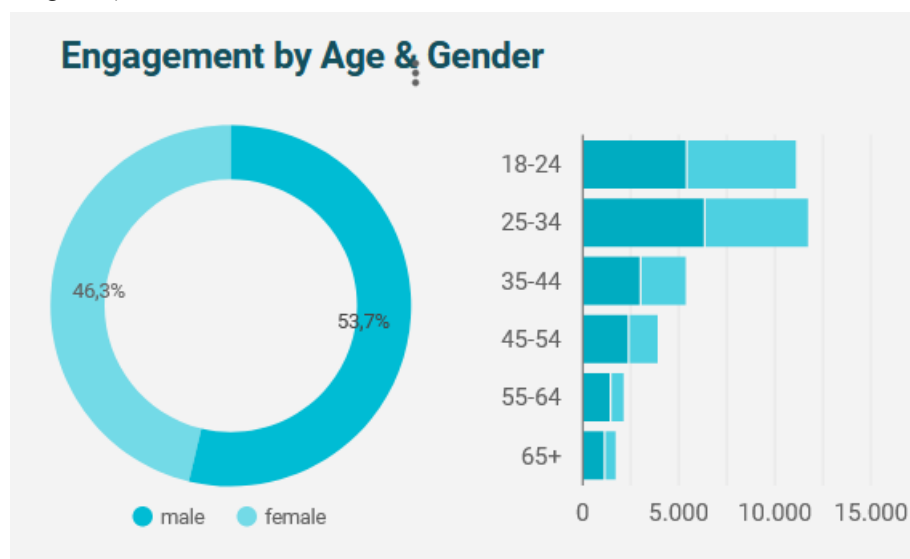


Figure 3: User engagement by age and gender (31 Oct 2018 - 1 Jan 2022)

20. To be inclusive of all age groups and give generations of the future a voice, the Portal now includes the “Meet a Young Professional” feature, in which young individuals publish information about their professional activities. They are interviewed by the Office about their view of the space and water sector, the community, as well as key topics therein. The Office aims at knowledge exchange and joint activities with the Space4Youth Project.

C. Stakeholder Feedback

21. A majority of the Space4Water Portal stakeholders are interested in finding collaborators on the Portal.

22. Stakeholders who joined the community in 2021 would like to see the following features and content added on the Portal:

- (a) Best practices;
- (b) Promote new competitions/challenges and find participants for those;
- (c) Collaborative environment, forum, workspace where ideas can be exchanged;
- (d) Advertisement on relevant scientific papers;
- (e) Projects, case studies, evidence of real-world impact, blogs, events;
- (f) Knowledge sharing on water resources;
- (g) Alerts for when a new content is posted;
- (h) Daily water news;
- (i) Possibility to give proper feedback;
- (j) Communicate the purpose of the Portal clearly;
- (k) Guidance on how best to use it; and

- (l) Tool to directly interact with stakeholders.

23. To implement suggestions from the feedback received and foster the capacity-building initiative within the Space4Water Project, the Office started to develop good practices. The development of a collaborative environment is challenging because the required moderation efforts are time-intensive but necessary. To maintain neutrality and impartiality, the Office will carefully consider how to increase the interactivity allowed on the Portal, knowing that it generates value especially when it comes to knowledge exchange, but must also be carefully monitored. While Points c to e from the feedback provided are already satisfactorily implemented on the Portal, g is infeasible with current staff resources. Other requests could be considered even though there is no need to replicate what is provided by other social media platforms.

III. Conclusion

24. During the past three years, the Space4Water Portal has created and shared valuable resources (>500 as of 1 January 2022) while a community of practice has started to develop around the theme of Space4Water.

25. Researchers and professionals see value in the Space4Water Project and have provided feedback on what potential solutions space technologies can provide, as well as on how they see Space4Water contributing to addressing current issues.

26. Over 60 stakeholders have registered to be part of the community and shared information on their resources. As providing detailed inputs can be a time-consuming task, while stakeholders often have very limited human resources, their willingness to contribute demonstrates the value they see in the initiative.

27. User access statistics show that the initiative is growing rapidly (150 per cent in 2021).

28. In the future, the project will allow face-to-face interaction and knowledge exchange during stakeholder meetings, to better match needs from users and space-based solutions. The Portal will provide new ways to increase online interaction among the community and continue to develop innovative features with more guidance to contributors. As part of these additional elements, the Office started to distribute the Space4Water user newsletter¹² and the Space4Water stakeholder newsletter.

29. As a hub of information and knowledge, the Portal lives from contributions of relevant stakeholders and individual professionals. The Office encourages all Member States and affiliated parties of the Committee on the Peaceful Uses of Outer Space to promote the portal towards relevant actors.

30. The Office also welcomes individual professionals to engage¹³ with the portal and project and to provide their valuable views and ideas.

31. Within the Office for Outer Space Affairs, the experience gained by running the Space4Water Portal and interacting with its users is valuable to further develop a range of activities. It is serving to develop other services in areas directly or indirectly connected, such as Space4Youth and Space4Women, and could be a reference in building future initiatives that similarly require an online platform.

32. To conclude, the Office would like to express its gratitude to the Prince Sultan Bin Abdulaziz International Prize for Water, the donor of the project, who has always been, open minded, patient and supportive with regards to our ideas and implementation making Space4Water a success.

¹² Register for the user newsletter here: <https://www.space4water.org/newsletter-registration>.

¹³ Reach out to office@space4water.org to learn more.