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Ensuring safe water and sanitation for all: a solution through science, technology and innovation

Statement by

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Gender, water and sanitation
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Water remains a critical gender issue in development, and we support the statement that access to clean water is a rights issue. In 2023, the United Nations reports that at the current rates of progress, 1.6 billion people will lack safely managed drinking water, 2.8 billion people will lack safely managed sanitation, and 1.9 billion people will lack basic hand hygiene facilities in 2030[1].

Access to sanitation facilities is essential for women due to health concerns, the transmission of diseases – including malaria and diarrheal diseases – and cultural norms. The need for gender-specific technologies in sanitation extends to privacy so that sanitation facilities and choice of technology can also influence school attendance – inadequate sanitation decreases the likelihood of girls attending school, for private and security reasons, especially during menstruation.

Women's other water-related activities include drinking water collection, family hygiene/health, subsistence farming, and watering of livestock. They are involved in agricultural labour as well as off-farm economic activities, both of which require water access and sustainable water management[2]. When droughts and floods limit access to safe water, they spend more time and energy collecting water for sanitation and food security, exposing them to physical and sexual violence.

This is especially true as trends of drought, flooding and variable rainfall are increasing as a result of climate change. Variable climate conditions, resulting in periods of water scarcity and longer dry spells, or intense rainfall events, have serious implications for water and sanitation services. Climate change threatens to exacerbate these hazards, increasing risks to household water security, such as decreased access to safe water for drinking and sanitation, and contamination of water sources (Dickin et al, 2020). For example, in Rwanda, a water channel destroyed by flooding decreased community access to clean water, necessitating travel to buy clean water. Increased drought and variability of rainfall affect the availability of water for crop production and may force women and children to carry water for irrigation longer distances.

Women and girls' access and management of water is also a technology issue. Women undertake a range of diversified farming and household tasks which are not recognized, and therefore not supported, with technology. The invisibility of their work means it continues to be labor-intensive. For example, women often use manual technologies such as buckets and watering cans for irrigation, while men tend to use mechanical technologies such as mechanized pumps (van Koppen, Hope, & Colenbrander, 2012). The fact that rural areas tend to have less access to safe and accessible water is increasingly a gender issue, as male HH members tend to move to urban areas for employment.

STI can contribute to overcoming these challenges for women and girls by improving the distribution and delivery of safe water and sanitation, providing integrated water resource management, harnessing the potential of technologies, and addressing inequalities in the sector, notably in relation to gender. Involving women in technological solutions for water and sanitation management is key to success and sustainable development. Solutions that consider women's and girls' needs and include them in budgeting decisions can benefit entire communities (Women and Water, 2005 & UN Water 2022). We know that women's participation in resource management groups increases the efficiency of these groups as well as the

[1] See https://www.un.org/sustainabledevelopment/water-and-sanitation
[2] https://www.gwp.org/globalassets/global/gwp-med-files/news-and-activities/3rd-cairo-water-week/2nd-item/prachi-sharma_gender-issues-in-agricultural-water-management.pdf

preservation of natural resources. While they are a significant part of the stakeholders involved in everyday water use and management, they make up less than 18% of the paid workforce (in water utilities)[3]. A UNDP study of 44 water projects in Asia and Africa showed that involving both women and men in water management at the local level can "increase project effectiveness" and "improves the likelihood of sustainability" [4].

There are positive models to address these gaps. In Nepal, pumps powered by solar-irrigation were managed by the local women's group. The transition to drip irrigation from manual (bucket) irrigation significantly reduced their workloads, reduced water use and evaporation. At the same time the number of harvests increased from 1 to 3 per year. As a result of their role in managing the solar technology, their confidence and standing in the community increased (Khatri-Chhetri & Chanana, 2017). The Benin SELF initiative established 11 Solar Market Gardens that pumped water from nearby rivers and underground aquifers. It increased year-round production of produce, allowing girls and women to reallocate their time to education and economic activities, rather than having to haul water long distances. It has also enabled them to become entrepreneurs and leaders in their communities[5].

The CGIAR program Accelerating the Impact of CGIAR Climate Research in Africa (AICCRA) is developing agro-advisory hubs – platforms that integrate historical, GIS and other weather and agricultural data for meteorological agencies and other public, private and CSA partners so they can more accurately predict weather and climate trends. Data, forecasts and advisories that are targetted to women's agriculture and livestock activities will be made accessible via mobile, TV and radio.

To this end it should be highlighted that a great deal of progress is being made in the application of frontier and digital technologies for water management, irrigation and sanitation. However very few of these technologies or apps target women users, or adequately integrate user-centred design. This is a glaring gap that needs to be addressed, considering women's critical role in household water use, irrigation and sanitation. A report of the Statistical Commission of the United Nations Economic and Social Council (ECOSOC) on gender statistics by national governments around the world revealed a worrying situation: sex-disaggregated water statistics are scarce, with nearly half of countries reported by OECD as not producing any gender statistics related to water (OECD 2022).

Members of the CSTD's Gender Advisory Board can contribute to the debate and share these and other experiences to expand the women and water issue beyond sanitation to encompass key issues of water for agriculture and food security, water in urban areas, STI-based water solutions for development, and expanding women's contributions to technology and innovation for sustainable development.

[3] https://iwa-network.org/fostering-diversity-and-inclusive-participation-in-the-water-and-sanitation-workforce/
[4] https://www.undp.org/publications/resource-guide-mainstreaming-gender-water-management
[5] https://unfccc.int/climate-action/momentum-for-change/women-for-results/selfs-solar-market-gardens