



Water Forum 2021 – Dakar, Senegal

Action Group 4E - Increasing water efficiency and sustainable management through science, technology, innovation and education

Proposal for actions – Synthesis Note

- **Past Forums and gaps to be addressed**

The interdependence of Science, technology, innovation and education, although touched upon in previous fora, should benefit from stronger focus in future recommendations for developing actions. In the 7th Forum, practical cases and roles of S&T have been stressed by making ‘Science and Technology Process’ (STP), one of the four main pillars of the forum that included more than 50 thematic sessions and a White Paper publication, as well as special programs such as the World Water Challenge and CEO Innovation Panel. A multitude of outputs from the 8th World Water Forum¹, representing a diversity of stakeholder groups and views on water, can be considered for these issues, expanding in many cases tendencies of previous World Water Forums’ processes.

Among related key tendencies in the 8th Forum’s outputs would be:

- the interconnectedness of water with social and natural systems, and climate change, resulting in the need for comprehensive, holistic approaches adapted to specific situations;
- the water-energy-food nexus (WEF) beyond the industrial scale and including local systems of wastewater recycling and reuse (circular approach) to optimize water resources uses;
- the pivotal roles and impacts of S&T, and its linkage to policy as well as socio-economic interconnectivity in the field of water;
- the necessity to embed scientific knowledge and innovative solutions, including monitoring and data use into inclusive, participatory governance mechanisms, requiring increased institutional and human capacities, and access to information;
- the recognition of the role of non techno-scientific factors of water management for sustainable development, including the importance of behavioural change, cultural values of water, collaborative learning and education at the individual and collective level, for driving change;
- the social aspects of water challenges and solutions, including the importance of gender equality (supported, e.g., by sex-disaggregated data), youth involvement and intergenerational dialogue.

Noticeable gaps could be the low profile of:

- joint efforts for financing development of new knowledge and innovative solutions for tackling the current and foreseen water challenges;
- support for open science and data as driver of innovative solutions;
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¹ The Regional Process of the 8th World Water Forum in Brasilia provides a rich summary of the findings and developments worldwide and builds on the experience of past Forums. Similarly, the Sustainability Declaration of the 8th Forum, the Brasilia Declaration of Judges on Water Justice, the Parliamentarians Manifesto, the Youth Declaration and the Declaration on Water and Spirituality, the output of the Citizens Process, as well as the outputs of the Thematic process provide the latest views in their respective perspectives.

- recognition of the need for the approaches considering interlinkage between innovation and policy and providing a research-innovation-policy interface to water-related multi-stakeholders that should lead to an effective Implementation of Solutions;
- conditions for positive dynamics of increased technical and economic efficiency, to avoid unsustainable practices due to purpose and scaling, with social and environmental impacts;
- concrete scientific inter- and trans-disciplinary approaches to combine science, technology, innovation and education, including between the natural and engineering, and the social and human sciences.

Gathering a plurality of stakeholders' expressions could be more impactful when integrated in a joint statement, to be heard, amplified and understood more easily, to then inform and translate into support for innovative and sustainable action.

- **What are the expectations on substance and outcomes for the forum based on the discussions**

In order to bridge the above identified gaps, three actions are proposed for discussion within the Action Group 4.E. These three proposed actions include contributions from many of the institutions involved in the Action Group.

- 1. Financing innovation: novel means and tools, technical and non-technical solutions to leverage knowledge, education, science and innovation required for solving water challenges** and achieving UN SDGs: there is a need to engage with research and innovation funders for defining and implementing new joint actions in a structured and coordinated way. This should allow creating critical financing mass for investing in innovative approaches and solutions and overcoming some of the key known barriers (e.g. fragmentation of actions and landscape, discontinuity between science and innovation programmes, low level of results uptake by policies and markets) which limits impacts delivery.

Action 1 "SUB-PROJECTS" from AG 4E members

Title	Objectives	New or existing action	Expected results	Stakeholders involved	Geographic scale/category	Proponent/s
Continued Funding for Research and Innovation	Identify modalities of such RDI funding cooperation and interested parties which could join forces.	Existing	Engage with research and innovation funders for defining and implementing new joint actions in relation with identified scientific priorities. Accelerate research, development and disseminate innovation	Research and Innovation Ministries, RDI funders, RDI End-users	Worldwide	ANR
Funding Innovations transfer into Water sector	investment initiatives and scaling mechanisms for innovative technologies in Africa's water sector	New	Scaling up mechanisms for innovative technologies and approaches and developing mechanisms for raising the level of	Agriculture sector, innovators	Africa	UNESCO Eastern Africa

			investments in water through the development business and investment plans			
Funding for reforming Water governance	Enhance management and governance of Transboundary Aquifers in Africa	New	reforming/updating legal, policy and institutional arrangements, strengthening capacity and implementing collective measures at national and regional level	Policy-makers, water resources managers at different scales	Africa	UNESCO

2. Establishing a permanent and efficient Science – Innovation – Policy – Education Dialogue for implementing solutions at local level: Main aims are to identify key gaps for achieving policies and their implementation at all relevant scales and to prioritise interdisciplinary water research, development and innovation (RDI) in the Political Agenda, as key for developing innovative and affordable solutions to achieve SDG 6 and water-related SDGs. For implementation, education and behavioural changes are pivotal. The action will have a strong focus on innovations and solutions developed in Africa and the Global South.

Action 2 “SUB-PROJECTS” from AG 4E members

Title	Objectives	New or existing action	Expected results	Stakeholders involved	Geographic scale/category	Proponent/s
Multi-stakeholder dialogue on bottom-up approaches to climate change adaptation		Existing	Case studies on sustainable approach to climate change adaptation from Africa, Latin America and Asia	All interested stakeholders	Africa, Latin America and Asia	UNESCO Harare
Science-Education-Policy Dialogue	Evolving Education and Training for Human Capacity Development to Update and Reform Africa’s Water Sector to Face Risks and Challenges of Today and Tomorrow”	Existing	Increase research, data-sharing, technology transfer and human capacity development challenges	Junior & senior professionals and technicians in Africa’s Water	Africa	UNESCO Brussels, Joint Research Centre (EC)
Mayor WINS – Water Innovation Networking for the SDGs among small and medium-sized cities		Existing	Network to share evidence-based knowledge and experience with each other, linking with centres of excellence on water policy at various universities and scientific institutes.	Cities	Asia-Pacific/global, small and medium sized cities	UNESCO Jakarta

Science-evidence information	Develop or reinforce platforms to share data and knowledge, link and combine them in multidisciplinary collaborative approaches		Efficient accounting and monitoring systems to guide decision-makings		Global	Senegal
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3. Coordinating Water Innovation Platforms.

Launched at WWForum 7, the *World Water Challenge* is showcasing actions that identify and address the most challenging global water issues. It provides the basis for designing a cooperative platform providing opportunities for demand-driven science and knowledge-based solutions and innovation providers. By promoting action-oriented cases of pragmatic solutions, the platform shall provide WWForum 9 participants with the opportunity to share their innovative solutions (both technical and non-technical), technologies and good practice cases to implement policies.

Action 3 “SUB-PROJECTS” from AG 4E members

Title	Objectives	New or existing action	Expected results	Stakeholders involved	Geographic scale/category	Proponent/s
Progressing on the World Water Challenge	share the action-based technological and political solutions and the process to witness the sustainability of the follow-up action of the previous World Water Fora	Existing	sustainable co-operative platform to drive implementation of innovative technologies and well-developed policies together on-site	Demanders and technologies providers	World	Korean Ministry of Environment
Building water sustainability partnerships with the CEO Water Mandate’s Water Action Hub	The discussion will explore the Water Action Hub, a collaboration and knowledge-sharing platform for companies, NGOs, agencies, and technology providers working on water sustainability, with the goal of helping interested members experience the	Existing	Provide ongoing support from the CEO Water Mandate for Action Group members and others to develop robust Water Action Hub profiles and leverage the Hub’s partnership-building tools to further water sustainability around the world.	Agencies, technology providers, companies, and NGOs	World	CEO Water Mandate



	benefits of the Hub.					
Endogenous knowledge of existing projects for strengthening education and public policies for responsible use of water.	Development of the Knowledge / Innovation - Public Policy interface	Existing	Complementarity in the contributions of ALL stakeholders in a project (beneficiary populations (young people and women in priority), administrative authorities and elected politicians, local officials, etc.). Holistic vision of development for a construction in this sense Strengthening equity, gender, governance environmental compliance Anchoring populations by creating employment in rural areas and combating migration consideration of food security together with health and hygiene issues			Intercultural Network for Development and Peace (INDP)
Water Education and Culture as key tools for water security in Latin America and the Caribbean	Assess and analyze existing efforts to raise human capacities at the local, national and regional level in, to develop	Existing	New education tools at all levels while highlighting the important role of indigenous knowledge and practices in water management, while considering gender aspects and the involvement of youth.		Latin America and the Caribbean	UNESCO Montevideo, Centres and Chairs
Lessons learnt from Local Demonstration	Propose local experiences which could be replicated in other areas	Existing	Good Practices using innovations with high engagement of local stakeholders		Senegal	Institut de Recherche pour le Développement
Young innovators and entrepreneurs	Encourage students and young professionals' engagement in the water sector	New	strengthened integration of youth in the water innovation, governance and management			International Youth Council Philippines, Inc. / Philippine



How to work and get organised with the working groups – the roadmap (open to development)

A. Approval of types of actions by AG 4E – done by 8 July 2020

B. Ranking of actions, if needed, and identification of AG 4E members as Actions leaders

1. Action “**Financing new innovation required for solving water challenges**”:
 - a. Identification of key Financial Institutions to invite (e.g. European Institutions, Key countries funders, foundations investing in RDI, ...) – One month after approval
 - b. Presentation of identified challenges for RDI but also opportunities created by the current Covid19 crisis (two months after approval)
 - c. Contacts of key actors for offering opportunities to join and exchanges for co-designing a future platform for moving forward
 - d. Discussing possible modalities of cooperation for presentation at WWF9 and if possible, formal future commitments
2. Action “**Establishing a permanent and efficient Science – Innovation – Policy – Education Dialogue for implementing sustainable solutions for water and sanitation at local level**”:

foreseen as official Sessions, with balanced panel compositions (1 political, 1 operational, 1 technical participant) with consideration of gender balance, age and regional representation.

 - a. Topics of the sessions considering the number of sessions allocated to this AG (One month after approval of Action by Pilot Group)
 - b. Concept of each session by AG 4E members, identification of key issues to discuss and identification of responsible session moderator in charge of setting and development of the session (three months after approval)
 - c. Institutions to invite (Five Months after approval of Action by Pilot Group, via all AG 4E members)
 - d. Run test session with invitees
3. Action “**Coordinating Water Innovation Platforms**”:
 - a. Discussion with WWF9 organization for having a place at the village of Innovations
 - b. Identification of prioritized global water challenges with the international experts including action, pilot, and consultative group members of 4.E (One month after approval of Action by Pilot Group)
 - c. International Call for the cases of well- developed innovations related to the identified global water challenges and related policies (Three Months after approval of Action by Pilot Group, via all AG 4E members)
 - d. Selecting cases on sustainable and efficient solutions already applied or planned to be applied to the identified challenges (Four months after approval of Action by AG 4E members).
 - e. Collecting the best cases of application of technologies and policies to address the on-site water challenges for inviting them to the WWF9