



2024 ANNUAL REPORT ON GHANA COMMITTEE FOR UNESCO-IHP ACTIVITIES

GHANA COMMITTEE FOR UNESCO-IHP ACTIVITIES

March 2025

ACRONYMS AND ABBREVIATIONS

BPA	Bui Power Authority
CREMA	Community Resource Management Area
CONIWAS	Coalition of NGOs in Water and Sanitation
CSIR-WRI	Council for Scientific and Industrial Research - Water Research Institute
CWSA	Community Water and Sanitation Agency
EPA	Environmental Protection Agency
Ghana Hydro	Ghana Hydrological Authority
GIDA	Ghana Irrigation Development Authority
GMet	Ghana Meteorological Agency
GWCL	Ghana Water Company Limited
IFRC	International Federation of Red Cross and Red Crescent Societies
IHP	International Hydrological Programme
ITU	International Telecommunication Union
MOGCSP	Ministry of Gender, Children and Social Protection
MSWR	Ministry of Sanitation and Water Resources
SWAT	Soil and Water Assessment Tool
UESD	University of Environmental and Sustainable Development
UNDRR	United Nations Office for Disaster Risk Reduction
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNECE	United Nations Economic Commission for Europe
VRA	Volta River Authority
WASH	Water Sanitation and Hygiene
WMO	World Meteorological Organization
WRC	Water Resources Commission
WWD	World Water Day

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1. Introduction

The Ghana Committee for UNESCO - International Hydrological Programme was set up by an administrative approval of the Government of Ghana in 1976 to promote the country's participation in activities of the United Nations Educational and Scientific and Cultural Organization (UNESCO) International Hydrological Programme (IHP). This Committee serves as a pivotal entity, facilitating liaison with UNESCO IHP to develop and implement tailored programs and projects essential for the advancement of Ghana's hydrological sector.

In accordance with Article 4.5 of its statutes, the committee annually compiles reports to document its activities and achievements. This comprehensive report provides a detailed account of the contributions made by the committee members, shedding light on the collaborative efforts that have propelled Ghana towards enhancing its hydrological sector. The report specifically addresses the activities performed in 2024 as outlined in the 2024 work plan, which comprises three priority areas, each containing several sub-priority areas.

2. Priority Area 1: Scientific research and innovation

2.1 Sub-priority Area 1.1: National and International scientific cooperation strengthened and fostered to address unsolved problems in hydrology, improving scientific understanding of hydrological cycles across river basins and aquifers.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
2	Ghana Hydrological Authority Partners with UK Center for Ecology and Hydrology	A collaborative effort between the United Kingdom Centre for Ecology and Hydrology (UKCEH) and the Ghana Hydrological Authority.	To establish a strategic partnership with the United Kingdom Centre for Ecology and Hydrology (UKCEH). To strengthen predictive capabilities, allowing both institutions to develop more accurate and effective models to mitigate flood and drought impacts.	The Ghana Hydrological Authority (HYDRO) has made a significant advancement in tackling the country's urgent hydrological challenges by forging a strategic partnership with the United Kingdom Centre for Ecology and Hydrology (UKCEH). This collaboration was formalized with the signing of a Memorandum of Understanding (MoU) in Accra. The MoU highlights a shared commitment to advancing flood management, water resource optimization, and climate resilience.  <i>Pictures taken during the signing of the MoU`</i>

2.2 Sub-priority Area 1.2: Ecohydrology research and innovation at UNESCO-designated sites conducted and shared by the scientific community and UNESCO Water Family, communicated to assess the impact of ecohydrological and nature-based solutions on water cycles and include such solutions in Integrated Water Resource Management (IWRM) and services at all scales and in Sites' management.

Activity No	Title of Activity	Institution (Support)	Objective(s)	Activities / Outcome
2	Strengthening the Community Resource Management Area (CREMA) System of the Lake Bosomtwe Biosphere Reserve in Ghana' project December 2024	WRC (UNESCO)	To introduce and initiate ecohydrology principles to all stakeholders and communities around the LBBR.	Activities: - Community entry was carried out to solicit the traditional authorities' approval and to give them an overview of the project. Five (5) communities were visited. - Training on Reviewed LBBR Management Plan and Riparian Buffer Zone Policy Two workshops were held in both Bosomtwe and Bosome Freho Districts to train participants Bosomtwe District had 4 females and 12 males in attendance Bosome Freho District had 5 females and 10 males in attendance - Community Sensitization on CREMA and District Assembly Bye-Laws Two training sessions, one in each district, were organized within the Lake Bosomtwe Biosphere Reserve to sensitize community members on CREMA and District Assembly bye-laws. 14 communities within the Bosomtwe District had 57 females and 77 males in attendance. 8 communities within the Bosome Freho

Activity No	Title of Activity	Institution (Support)	Objective(s)	Activities / Outcome
				District had 35 females and 45 males in attendance.  Training sessions held at Duase in the Bosome Freho District   Training sessions held Abono in the Bosomtwe District
5	Built Environment National Conference on Housing and Hydrology (BENCHH) from July 4th to July 6th at the Labadi Beach Hotel	Ghana Hydro	To enhance the understanding on management of flood risks in Ghana, particularly those arising from climate change, urbanization, and inadequate land use practices. To showcase and evaluate the strategies implemented by the Ghana Hydrological Authority for	The following activities took place during the 3-day conference: • Key Presentations on flood risks; roles of hydrological management; the impact of flooding; and financial aspects of flood risk management. • Official launch of the National Hydrological Fund. • Exhibitions booths displaying innovations and research findings in housing and

Activity No	Title of Activity	Institution (Support)	Objective(s)	Activities / Outcome
			effective flood risk mitigation, sustainable water	hydrology, providing a platform for information exchange and collaboration. - Panel discussions among participants regarding policy implications and successful case studies from other countries. Outcome - Launch of the National Hydrological Fund: Introduced with 1.5 million Ghana cedis dedicated to hydrological projects, ensuring sustained resources for flood management initiatives. - Enhanced Collaboration among stakeholders, creating opportunities for future partnerships and collaboration in tackling housing and hydrology challenges.  <i>Picture taken at the opening of the conference</i>
6	Reversing Ecosystem and Water Degradation in the Volta Basin (REWarD) Project	WRC, UNEP, IUCN, VBA, GWP-WA and other national actors	To reverse the trend of degradation of ecosystems and water resources and support integrated ecosystem-based development in the Volta Basin through strengthening cross-	Activities: Regional workshop to validate the inception report of the DHI Technical Assistance to the REWarD-Volta Basin

Activity No	Title of Activity	Institution (Support)	Objective(s)	Activities / Outcome
			border governance, restoration and conservation of ecosystems for sustainable livelihoods.	Three (3) regional workshops were undertaken in Accra, Ghana in June 2024 to discuss some activities executed and the ones yet to take place. The workshops were as follows. • The first workshop considered the detailed implementation plan to be provided by UNEP-DHI to deliver some selected outputs of the REWarD project. These outputs are related to tools for water resources management and decision-making in the Volta Basin. • The second was the regional workshop to validate VBA's updated Communication Strategy and Plan • The final workshop was the 2nd meeting of the project's Regional Steering Committee where the project's progress was discussed and the technical and financial reports for implementation were reviewed.

2.3 Sub-priority Area 1.3: Research on uncertainty in climatic scenarios, hydrological projections and water use scenarios conducted and recommendations communicated to decision makers and the general public to elaborate adaptive water management strategies.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	Publications on uncertainty in climatic scenarios, hydrological projections and water use scenarios and intersectoral consultations among research teams	University of Environment and Sustainable Development (UESD) CSIR - WRI	To enhance understanding and address uncertainties related to climatic scenarios, hydrological projections, and water use scenarios	Four (4) publications on uncertainty in climatic scenarios, and hydrological projections Publications: 1. Dotse, S.-Q., Larbi, I., Limantol, A. M., Asare-Nuamah, P., Frimpong, L. K., Alhassan, A.-R. M., Sarpong, S., Angmor, E., & Ayisi-Addo, A. K. (2023). Rainfall Projections from Coupled Model Intercomparison Project Phase 6 in the Volta River Basin: Implications on Achieving Sustainable Development. <i>Sustainability</i>, 15(2), 1472. https://doi.org/10.3390/su15021472 2. Limantol, A. M., Larbi, I., Dotse, S.-Q., Okafor, G. C., Asare-Nuamah, P., Frimpong, L. K., Alhassan, A.-R. M., Angmor, E., Joel Premkumar, J. P., Lutterodt, G., Asiamah, T. A., Atta-Darkwa, T., Kumi, N., & Prempeh, N. A. (2023). An increase in temperature under the shared socioeconomic scenarios in the Volta River Basin, West Africa: implications for economic development. <i>Journal of Water</i>

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				and Climate Change, 14(8), 2808–2824. https://doi.org/10.2166/wcc.2023.141 3. Obuobie, E., Osei-Owusu, M., Anornu, G.K., Asante-Sasu, C. and Ruby Asmah. (2024). Estimation of Suspended Sediment Load to the Volta Lake under Changing Climate using Empirical Discharge-Sediment Equations. <i>International Journal of River Basin Management</i>, 1-12, doi.org/10.1080/15715124.2024.2382175. 4. Okafor, G. C., Ogbu, K. N., Agyekum, J., Limantol, A. M., & Larbi, I. (2024). Rainfall projections under different climate scenarios over the Kaduna River Basin, Nigeria. <i>Discover Environment</i>, 2(1), 89.
2	Analysis of Ghana's disaster risk landscape, especially concerning WASH services and infrastructure.	MSWR	To create key recommendations to Decision Makers and the general public to guide water management strategies in the WASH services and infrastructure.	Outcome: Development of a report which focuses on recommendations made by the researchers for consideration by the Water sector. The recommendations are categorised into thematic gaps which include: Immediate Plan (1-2 years), Short-term plan (2-4years) and Long-term (>4years). The thematic gaps identified includes: • Funding Gap • Institutional Gap • Legal Gap • Planning Gap

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				• Monitoring and Data Management Gap • Infrastructure Development Gap
2	Engagement of Parliamentary Select Committee for WASH	CONIWAS	To present demands to the legislature to push for increased public funding and disbursement to reflect government's commitment to achieving the national and SDG targets.	CONIWAS has engaged with the Parliamentary Select Committee on Works and Housing, which oversees the Water, Sanitation, and Hygiene (WASH) sector, to present the following key demands: • Development and Operationalization of the Sanitation and Pollution Levy (SPL). • Implementation of measures to ensure the Ministry of Finance provides an account of inflows and disbursements made under the SPL to date; • Acceleration of WASH Sector Reforms, particularly in rural water utilization, the establishment of a National Sanitation Authority, and the creation of a dedicated sanitation fund. • Engagement of Diverse Stakeholders to combat the detrimental effects of illegal mining activities in rivers and water bodies • Focus on Water Resources Management to protect freshwater bodies and rivers from pollution
3	Training for Flood Forecasting Using Google	GMet	To build the capacity of participants on satellite-based information.	Activities: The training program enhanced participants knowledge with sessions on understanding satellite-based information and practical exercises in generating maps depicting flood frequencies,

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
	Earth Engine (TMT) 7th - 12th March, 2024			wet season onset, and theoretical crop growing periods.  A section of participants at the training programme
3	GMet and Danish Meteorological Institute's Engagement Launch of the Strategic Sector Cooperation 30th January 2024	GMet	Specific objective for 2024 included the following: • Making the KAPy code stable (KAPy code is the underlying python code for the climate atlas) and this is to be made stable before summer • Production of basic indicators based on temperature, precipitation and sea level • Developing the front-end for basic climate atlas	The key aims of this collaboration encompass the development of a Climate Atlas and the implementation of Regional Climate Modelling.  Participants at the Launch

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
			Plan for stakeholder engagement to launch of Climate Atlas Basic in Ghana	
3	Volta Flood and Drought Management April – June 2024	NADMO, WRC, GMet and Hydro (VBA)	To assess the flood and drought vulnerabilities and to build the capacity of stakeholders in flood and drought management through the simulation exercises.	Activities: - Conducted flood and drought risk assessments in the Upper East and Volta (Lower Volta) regions. - Carried out flood and drought simulation exercises to evaluate potential impacts. - Organized feedback workshops to discuss findings and gather stakeholder input. - Shared simulation results with local and national stakeholders for review and recommendations to enhance the preparedness for future actions. Outcome: - Strengthened capacity in impact-based drought monitoring and bulletins integrated into the myDewetra VoltAlarm platform through three (3) regional training workshops. - Enhanced regional collaboration by sharing experiences from pilot testing of the early warning system in each of the member states. - Facilitated knowledge exchange through the final technical advisory committee meeting and VFDM project closing ceremony.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				4. Improved Ghana's hydrological monitoring capabilities with the installation of hydrological equipment at three stations in the White and Black Volta Basin (Lawra-Dikpe, Chache, and Yarigu).
5	Capacity building on Climate Resilient Water Safety Plans for selected water treatment plants and their distribution areas across the country.	GWL	To improve water quality, reliability, and resilience in the selected communities	Outcome: - Regional WSP Teams have been formed. 10 WSP documents have been developed and submitted to the Head Office of GWL
5	Groundwater monitoring in Adentan and Ga West Municipalities	WRC, WRI and the Adentan and Ga West Municipal Assemblies (Blue Deal)	To evaluate the physical, chemical, and microbiological quality of groundwater in selected communities within Ga West Municipality. To identify potential sources of contamination that may affect water quality, with a focus on waste management practices and sanitation facilities.	This activity involved the collaboration of WRC, WRI and the Municipal Assemblies where; - Geo-referenced data on groundwater wells and boreholes in the Adentan and Ga West Municipalities were collected. - A total of 107 water samples from Adentan and 169 water samples from Ga West Municipalities were collected for testing. Outcome: - A comprehensive technical report for both municipal assemblies was prepared. In summary, most of the samples did not

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				pass the microbiology test for drinking water according to GS 175-201 Both communities were sensitised on the need to clean storage tanks at least twice a year and basic hygiene around the well and boreholes.   State of a well in a household An official sampling a well
5	Sustainable Wetland and Flood Management for Strengthening Food Security and Ecosystem Resilience in West Africa (GDZHIAO)	CSIR-WRI (African Union Commission/European Commission)	Specific objectives for the CSIR-WRI team include: - Identifying and mapping past and on-going initiatives and programmes related to floods in Ghana; - Appraisal of existing policies on flood management to identify areas of weaknesses that require strengthening; - Developing and simulating flood contingency plans selected local areas, jointly with the National Disaster Management Organization (NADMO) and in	GDZHIAO is a consortium of 15 organizations from 10 West African countries with the aim of assisting decision-makers and stakeholders to manage wetlands and floods in West Africa by providing tools, innovative approaches and earth observational data for effectively monitoring and managing wetlands and floods at several scales. Outcome: Trained 20 stakeholder institutions from government agencies including NADMO - regional and district offices, district assembly, security services, private sector, NGOs and local communities on the development of flood contingency plan for

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
			collaboration with relevant stakeholders; IV. Strengthening capacity of NADMO and other disaster management organizations to enhance community participation in the planning and management of floods; V. Consolidating and operationalizing the flood services for the Black Volta Basin in Ghana based on flood forecast systems from other project partners (INE, Benin/CSSTE, Nigeria)	flood disaster management in the Nandom District in the Black Volta River Basin. - Guided and supported stakeholders of the Nandom District to develop a draft flood contingency plan. The plan was simulated first in a tabletop simulation exercise during its development and later in the 2024 flood season of the Black Volta River Basin. - Engaged 20 community stakeholders from 19 communities in the Nandom and Lawra Districts within the Black Volta River Basin, to identify climate and flood threats to individuals and households in those communities. The engagement was also used to identify measures that are already being used by the communities. Successful interventions used elsewhere in Ghana and beyond under similar conditions were introduced to the participants and a short survey was conducted to assess the applicability, cost-effectiveness, trade-offs and other aspects of those interventions. - Trained a female student at the master's degree level at Kwame Nkrumah University of Science and Technology.

2.4 Sub-priority Area 1.6: Scientific knowledge, methodologies and tools in addressing water-related disasters, such as flood and drought elaborated and/or enhanced towards timely forecasting.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	Organized a stakeholder workshop for enhancing the BSc Water Resources Development Curriculum at the University of Environment and Sustainable Development (UESD), Somanya. (22-08-24)	UESD	To enhance the BSc Water Resources Development Curriculum at the University of Environment and Sustainable Development (UESD)	Output: Representatives from Eight (8) leading institutions in the Water Sector in Ghana made inputs to the BSc Water Resources Development Program being run by UESD. Outcome: s Improved curriculum with more practical, climate and sustainability, and gender and diversity inclusion.
2	Meteorological Virtual Seminar Series	GMet	To enhance knowledge sharing and foster collaboration among stakeholders within Ghana and internationally on atmospheric sciences.	Outcome: The GMet organized virtual seminar series to enhance knowledge sharing on atmospheric sciences and foster collaboration among stakeholders.   <i>Samples of the flyers used in advertising the seminar series</i>

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
6	Building Climate Resilience into River Basin Management (CREAM)	CSIR-WRI (Danish Ministry of Foreign Affairs /DANIDA)	To create knowledge base and capacity for integrating climate change, shared socioeconomic pathways, land-use/-cover change and other future development scenarios into river basin management to enhance climate resilience, livelihood, water-food-energy security, and environmental conservation. To enhance the capacity of researchers, PhD students and stakeholders on how to incorporate climate resilience into water management.	Outcome: (i) Collected, processed and archived data on climate, river discharge and groundwater levels in the Pra and Densu River Basins; (ii) Maintained and monitored 58 meteorological stations, 40 groundwater wells and 18 river flow stations in the Pra and Densu River Basins; (iii) Completed work on adapting hydrological and groundwater models (SWAT/MIKE-SHE/GSM) to Pra and Densu River Basins; (iv) Developed an algorithm, underpinned by machine learning technique, for simulating future land-use/-cover in the Densu River Basin; (v) Completed analysis on combined impacts of climate change and land-use/-cover in the Pra and Densu River Basins; (vi) Completed multi-objective trade-off analysis, underpinned by a WEAP model coupled to an optimization algorithm in the Pra Basin; (vii) Developed a Dashboard for aiding stakeholder engagement around water resource decision making and implementation of water projects; (viii) Two of 8 PhD students on project completed their studies at Kwame Nkrumah University of Science and Technology and University of Ghana. (ix) Educated 5 Science Teachers and 15 Students of Nyameyehene Primary and Junior High School, Nyameyehen, near Nyinahin in the Ashanti Region

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				on climate science including the measurement of weather parameters using one of the CREAM project's weather stations installed on the school's premises. The education also covered climate change, its causes and impacts on water and other resource. Figure 1 depicts an engagement with the JHS science teachers (left) and students (right).  CREAM Project team engaging with teachers and students of Nyameyehene Primary and Junior High School, Nyameyehene, Ashanti Region
6	Training on Advanced Climate Data Analysis Tool 6th – 15th August 2024	GMet	To enhance accurate climate data analysis and forecasting.	The training programme equipped staff with the technical skills needed to ensure accurate climate data analysis and forecasting, helping with water cycle monitoring.  Participants at the training programme

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
6	Hydrologic and hydraulic modelling Training under GARID Project From September to December, 2024	Ghana Hydro	to equip staff from the Ghana Hydrological Authority with the necessary skills and knowledge to effectively utilize the HEC modeling suite (HEC-HMS and HEC-RAS) for hydrological and hydraulic modeling.	The Ghana Hydrological Authority received training on the HEC modeling suite. This training is part of the implementation of the Flood Early Warning System for the Greater Accra Region (FEWS-Accra), a key initiative under the Greater Accra Resilient and Integrated Development (GARID) Project. The training covered the following topics: • Theoretical background on hydrological and hydraulic modeling • GIS processing procedures required for basin delineation and other hydrological procedures. • Introduction to rainfall-runoff modeling in HEC-HMS • Creating a rainfall-runoff HEC-HMS model like the models created within this project • Introduction to hydraulic modelling in HEC-RAS Certificates were presented to participants at the end of the training  FEWS Consultants (Deltares) taking participants through hydraulic and hydrological modelling training process

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
6	Emergency Support to Rural Livelihoods and Food Systems exposed to COVID-19 (ESRF)	GIDA	To ensure food security, enhanced livelihood and economic empowerment of the rural community and promote resilience against climate change	Activities The following projects were completed in 2024; - Design Review and Construction of Two (2) Water Harvesting Structures in the Volta Region (Tordzinu and Klenormadi) 200ha - Design and Construction of Sixteen (16) Rice Drying Platform - Formation of the Water Users Association (WUA)   <i>Embankment to control flood in the project area Formation of the WUAs</i>
6	Afram Plains Economic Enclave Irrigation Project	GIDA	To ensure food security, enhanced livelihood and economic empowerment of the rural community and promote resilience against climate change	The following are on-going projects; - Development of Dam and irrigable area of 350ha - Atonsu - Development of Center Pivot Irrigation System 900ha - Konadu - Development of Center Pivot irrigation System 250ha - Ekyeamanfro - Development of Sprinkler Irrigation System 200ha – Ahinase - Development of Sprinkler Irrigation System 200ha - Nkwantanan

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				Development of Multi – Irrigation System for 423ha (Drip 140ha, Gravity 80ha, Sprinkler 113ha, Center Pivot 90ha) - Kumawu

3. Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability

3.1 Sub-priority Area 2.1: Public's awareness at all levels raised towards better understanding their contribution to the important multi-functions of water in domestic life, ecosystems and productive development.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	2024 Global Handwashing Day (GHD)	MSWR, CWSA	To leverage the efforts and learnings from recent years and shift the increased awareness towards sustainable behavioural change.	The celebration was used as an opportunity to have interpersonal contact with a cross section of the public to deepen stakeholders' understanding on importance of handwashing with soap. Activities • The 2024 Global Handwashing Day celebrations was commemorated successfully at Kotokraba, Cape Coast in the Central region of Ghana with series of events at the national, regional and community levels. • The Minister took the opportunity to call on all sector stakeholders to support the drive by government to push the agenda for the Hand Hygiene for All Initiative. • Stakeholders must unite to support affordable and desirable handwashing solutions for everyone, everywhere.
1	Organized 1 awareness and sensitization in Ghanata Senior High School in Dodowa on World Water Day. (22-03-24)	UESD	To increase awareness towards sustainable behavioural change.	The 2024 celebration was used as an opportunity to have interpersonal contact with a cross section of the students to deepen their understanding on the World Water Day Celebrations and the theme, "Water for Peace". Outcome: About 200 senior high school students knowledge enhanced

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	2024 World Water Day Celebrations theme: “Accelerating Change to solve the water and climate crisis	MSWR, WRC, GWL, WRI, CWSA, CONIWAS, EPA, PURC, VRA Arocha Ghana, UNICEF, UNESCO, Rural Water of the Church of Christ,	To increase awareness and provide workable solutions for ensuring water availability in its right quantity and quality for the impartial use of all	Activities The following activities were carried out: 1. National Media Launch (March 18, 2024) – Officially launched World Water Day celebrations, creating public awareness. 2. Webinar on "Leveraging Water for Peace" (March 19, 2024) – Engaged about 100 participants from academia, media, water sector stakeholders, and government ministries. 3. Media Engagements – Conducted phone-in discussions and morning interviews on radio stations in Accra, Takoradi, Tarkwa, Wa, and Bunsu to discuss measures to prevent water conflicts. 4. Sensitization Training on Competing Uses of Water (March 19, 2024, Black Volta Basin) – Educated participants, including hotel managers and water producers, on water use regulations and permitting. 5. Social Media Awareness Campaign – Shared e-flyers across institutional platforms to increase public engagement. 6. T-shirt Distribution – Provided 150 branded T-shirts to partners, sponsors, and participants for visibility. 7. Inter-Departmental Quiz Competition – Organized at the University of Mines and Technology (UMaT) to engage students on water-related topics. 8. Students Fair on Water Resources Conflict Management (March 20, 2024) – Hosted at Wa Senior High School and T.I Ahmadiyya Senior High School, involving key stakeholders such as CWSA, WRC, and the EPA. 9. Community Training at Ankobra Basin – Over 350 individuals from community-based organizations

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				received training at UMaT on water resource management. 10. National Climax Event (Akyem Potroase MA School Park) – Featured cultural performances, poetry recitals, speeches, and stakeholder engagements, with approximately 600 participants. 11. The 2023 UN Water Report was launched in Walewale on the climax day 2024. Outcomes: i. Increased public awareness and knowledge on water resource management and conflict prevention. ii. Strengthened collaboration among stakeholders, including government agencies, educational institutions, and private sector players. iii. Improved understanding of water uses regulations and Permitting Process among water users. iv. Broadened youth engagement through quiz competitions and student fairs, enhancing their knowledge of water conservation. v. Promoted policy discussions on sustainable water resource management and conflict resolution. vi. Encouraged community participation in protecting water sources, particularly in the Densu River and Ankobra Basin. vii. Expanded the reach of World Water Day messages through media engagements and social media campaigns.
2	Ghana Wash Week 2024 (July 8 -12, 2004)	CONIWAS (MSWR, the World Bank, GAMA SWP	To create awareness and generate deliberations for action on water, sanitation, and hygiene issues in Ghana.	Activities The Ghana WASH Week initiative is an annual event on the WASH calendar and 2024 celebration was the third edition,

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		Project, UNICEF, IRC, WaterAid Ghana, Global Communities, Plan International Ghana, SNV, CRS, APDO and PATH Ghana)		The theme for the 2024 edition was “WASH prioritization and its impact on social and economic development”. The activities for the celebration were in two categories; national and regional level; with CONIWAS members leading most of the regional level activities. • July 10th - National dialogue advocates for comprehensive WASH programs that incorporate infrastructure development, health education, and consistent maintenance to ensure lasting health benefits for all. The dialogue brought together various stakeholders including government representatives, WASH sector players, the Media Coalition Against Open Defecation (M-CODE) and the Media. • A dialogue on WASH and Neglected Tropical Diseases (NTD) which educated participants on the linkages between WASH and NTDs and highlighted relevant interventions. • Radio discussions on WASH • July 12 - WASH sermons at mosques in Tamale • Northern Zone: Discussions on WASH’s impact on public health in the Nanton District. • Middle Zone: Educational activities including school visits in the Kwahu Afram Plains.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				 Group photo after the opening session of the 2024 Ghana WASH Week
2	Marine Weather Dissemination Workshop for Coastal Community Centre Operators 19th January, 2024	GMet	To enhance the capacity of information center operators in effectively communicating marine weather forecasts and ocean state information to coastal communities.	Activity: The workshop aimed to enhance the capacity of information center operators in effectively communicating marine weather forecasts and ocean state information to coastal communities.  Participants at the workshop
4	Seasonal Climate Outlook Forum (PRESAG) 26th February, 2024 - 1st March, 2024	GMet	To strengthen the capacity of participants and characterization of Agro-hydro-climatic risks related to the main rainy seasons for the Gulf of Guinea countries.	This forum mainly focused on the analysis of weather data to co-produce and strengthen the capacity of participants and characterization of Agro-hydro-climatic risks related to the main rainy seasons for the Gulf of Guinea countries.  Participants at the Forum

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	Side Event at the 35 th MOLE WASH Conference	IHP Committee Members (with support from WRC and UNESCO)	To publicize and to project the committee's activities	Activities; Organised side event and exhibition during the conference which attracted about thirty participants. Output: • Development, printing, and distribution of a flyer outlining the committee's objectives and activities. • Exhibition of educational materials and brochures at the conference Outcome: • Improving visibility of the committee



Committee members and the secretariat present at the side event and the exhibition

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1	35th MOLE WASH Conference October 7 – 10, 2024	CONIWAS	To provide the platform for stakeholders to share ideas on how to build resilient WASH systems to ensure access for the unserved.	The conference was themed “Looking Back on the Implementation of SDG 6: Progress, Challenges, and Way Forward” and was held at the Volta Serene Hotel in Ho. It brought together about 200 participants, including representatives from academia, civil society organizations (CSOs), government agencies, the private sector, and bilateral and multilateral entities. The event commenced with an address from the Minister for Sanitation and Water Resources, Hon. Lydia Eyrarn Alhassan, who highlighted the critical role of strategic planning in enabling Ghana to achieve its water and sanitation goals. The conference featured several sessions during which CONIWAS members and other sector stakeholders presented various insights and contributions related to the progress of SDG 6.  <i>Participants at the opening of the conference</i>
5	Water Safety Campaign	GWL	To avert the looming water security situation and to manage the water resources, public health, water scarcity and potable supply challenges.	Activities: Stakeholder workshop on the impact of illegal mining on the supply of Drinking Water to Cape-coast, Sekondi-Takoradi and the surrounding communities. Organized at the university of Cape-coast Institute of Education Conference Room on

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				20th March 204 as part of activities of the World Water Day. Policy dialogue on the World Water Day Theme: Leveraging Water for Peace. Organized at the Centre of Excellence in Public Utility Regulation at the Ghana Institute of Management and Public Administration (GIMPA).

3.2 Sub-priority Area 2.2: Development and implementation of transdisciplinary research collaborations and educational approaches by UNESCO Water Family promoted to enhance participatory holistic practices

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
4	Workshop on Droughts Over Sub-Saharan Africa, October 22, 2024	A collaborative effort between the UK and Ghana UNESCO Intergovernmental Hydrological Programme (IHP).	To provide an invaluable platform for UK and Ghanaian researchers to exchange insights and experiences regarding the latest scientific developments in seasonal hydrological forecasting, drought indicators, impacts, and flash droughts.	The conference was organized by the UK Centre for Ecology & Hydrology, the Ghana Meteorological Agency, the Ghana Hydrological Authority, and the Water Resources Commission of Ghana,  Group photo of participants at the workshop

3.3 Sub-priority Area 2.3: Teaching and learning materials on water-related matters for formal, non-formal and informal education at all levels elaborated towards a better understanding of the importance of water in lives and communities.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
5	Public Lecture on Institutional Framework for Efficient Water, Sanitation and Hygiene services delivery in Ghana, May 7, 2024	CONIWAS and the Department of Geography and Regional Planning; University of Cape Coast	To facilitate policy proposals and strategies to help improve the WASH situation in Ghana	The public lecture was delivered by Simon Mariwah (PhD) on the subject “Institutional Framework for Efficient Water, Sanitation and Hygiene services delivery in Ghana”. The lecture was attended by various stakeholders including government officials, private sector players, CSOs, traditional leaders, political parties and media. He highlighted the urgent challenges of WASH services, particularly in developing countries, where inadequate access affects health, wealth, and dignity, with notable disparities across regions and socio-economic groups. He identified several key constraints within Ghana's WASH sector, including weak coordination, inequitable resource allocation, inadequate monitoring information systems, poor facility management, and insufficient financing, which collectively hinder effective service delivery. To address these issues, he proposed a single Ministry for WASH, Environment and related sectors, thereby promoting coordinated efforts, continued progress, and capacity building. He also advocated for the establishment of a National Sanitation Authority to enhance policy implementation, emphasizing that while the water sector has a more robust institutional framework, sanitation receives

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
				inadequate attention, despite its critical interplay with water pollution.  Participants at the event

4 Priority Area 4: Integrated water resources management under conditions of global change

4.1 Sub-priority Area 4.2: Research on upstream-downstream river uses for hydropower, navigation, irrigation, fishery, leisure activities, water supply, drought risk management and flood risk management conducted and shared by the scientific community and UNESCO Water Family to minimize socioeconomic and ecological consequences.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
1	Publications and capacity building on good practices in upstream-downstream river uses for hydropower, navigation, irrigation, fishery, leisure activities, water supply and risk management.	CSIR-WRI	To enhance knowledge and skills related to the sustainable and equitable management of water resources	Publications: (i) Bazaanah, P., Buthelezi, S. J., & Oppong, D. A. K. (2024). Qualitative study of drinking water, sanitation, and hygiene access: Perspectives from the Central Gonja District, Ghana, and Mtubatuba Municipality, South Africa. <i>Journal of Water, Sanitation and Hygiene for Development</i>. https://doi.org/10.2166/washdev.2024.021 (ii) Martin, E., Bekoe, O., Quarcoo, G., Dankwa, P., Naangmenyele, Z., Adu-Boakye, M., Mensah, E. T.-D., & Kumi, M. (2024). Health risk assessment of surface water resources in the Nandom Municipality of Ghana. <i>Discover Public Health</i>, 21(35), 35. https://doi.org/10.1186/s12982-024-00150-9 (iii) Bruce-Vanderpuije, P. and R. Asmah (2024) Distribution of microplastics in sediment, surface water, and fish of the lower Volta basin, Ghana: Implications for human exposure; American Chemical Society Fall 2024 Conference, August 18-22, 2024 in Denver, Colorado, USA. (iv) Odametey, S., Obuobie, E., Mensah, A. Nukpeza, D. and Pabi, O. Towards Water-related Ecosystem Services (WRES) assessments in the Densu River Basin (DRB) of Ghana: evaluating water supply and sediment retention dynamics over time. Mediterranean Geoscience Union 4th Annual Meeting, 25-28 November 2024, Barcelona, Spain. (v) Osei-Owusu, M., Obuobie, E., Adjei, K.A. and Stisen, S. Evaluating the performance of single and multi-site calibration to simulate streamflow and estimation of water balance in the Pra River Basin using the SWAT model. Mediterranean Geoscience Union 4th Annual Meeting, 25-28 November 2024, Barcelona, Spain. (vi) Akurugu, B.A., Stisen, S., Yidana, S.M., Seidenfaden, I.K., Obuobie, E. and Chegbeleh, L.P. Assessing the potential impacts of abstraction and recharge using numerical groundwater flow modelling for the Densu River Basin, Ghana. Mediterranean Geoscience Union 4th Annual Meeting, 25-28 November 2024, Barcelona, Spain.
3	Inventory of Commercial Water Suppliers	CSIR-WRI (World Bank)	To develop an inventory of commercial water suppliers and users, to inform the design and	Key Activities: • Collected secondary data on water quantities, quality, levels in dams and reservoirs; volumes used by industry, agriculture, domestic, hydropower, etc, from relevant

	& Users in Pra & Volta Basins		implementation of a Payment for Ecosystem Services scheme, with farming communities and water users in Ghana's Pra and Volta Basins.	government ministries and agencies, private sector institutions, NGOs and online sources. • Conducted field missions in the Pra and Volta Basins, to collect primary data to fill in gaps in secondary data. The missions were also used to conduct interviews with key stakeholders on willingness to pay for ecosystem services; • Undertook data cleaning and processing; • Developed a geo-spatial inventory of all the data collected; and • Prepared a draft technical report for the World Bank. `
5	Launch of Early Warning for All (EW4All) Initiative in Accra, Ghana: 29th — 30th October 2024	GMET and Ghana Hydro (WMO, UNDRR, IFRC, ITU)	To ensure that all individuals are protected from hazardous weather events by 2027	The EW4All is a global commitment designed to safeguard populations from hazardous weather, water, and climate events. The initiative is founded on four key pillars: Disaster Risk Knowledge, Observations and Forecasting, Dissemination and Communication, and Preparedness to Respond. This initiative was officially launched in Accra, Ghana, on October 29, 2024, The Ghana Meteorological Agency has developed a comprehensive roadmap for early warning systems, which will guide future investment and implementation efforts. This roadmap aspires to fortify Ghana's resilience against climate-related hazards and disasters.  <i>Stakeholder institutions deliberating on the road map for the EW4All for Ghana</i>

4.2 Sub-priority Area 4.9: Implementing integrated water resources management at all levels, through transboundary cooperation as appropriate by Member States, supported, in coordination with UN-Water and UNECE, to achieve SDG target

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
2	Global Workshop Conjunctive Management of Surface Water and Groundwater & 18th Working Group on Monitoring and Assessment	UNECE (WRC participated)	The global workshop aimed to increase understanding of the importance, needs, and benefits of conjunctive water management in national and transboundary contexts through the sharing of good practices and lessons learnt.	The Global Workshop was organized by UNECE in collaboration with different partners. The workshop was organized under the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention). The workshop took place from 16-17 October 2024. Outcome: Participants were empowered through the sharing of practical tools, innovative solutions, and best practices to drive the promotion of efficient and sustainable conjunctive water management.

5 Priority Area 5: Water Governance based on science for mitigation, adaptation, and resilience

5.1 Sub-priority Area 5.1: Awareness raising of decision makers at all levels on the importance of science- based water governance by the UNESCO Water Family supported, to enhance the overall resilience of communities to effects of global change.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
2	Virtual IHP Regional Meeting 14 th to 16 th May 2024	IHP Committee members (UNESCO)	To discuss and update regional members with reports on activities carried out and to plan and prepare for the 26 th IHP intergovernmental Council Session.	Activity: Members participated in a three-day virtual meeting held at the UNESCO office in Accra. During this regional meeting, - Ghana's 2023 annual activity report was presented. - The Ghana IHP Committee received commendations from committees in other countries for its innovative approach to funding activities and meetings.  <i>Participants present at the Virtual Regional Meeting</i>
2	Participation in 26 th UNESCO IHP Intergovernmental Council Session in Paris, June 3-7, 2024	IHP Committee members	To receive progress updates and reports on ongoing initiatives while engaging in discussions, planning, and decision-making on crucial matters concerning water	Output: Ghana composed a delegation of experts from GWL, VRA, BPA, CWSA, WRC and Ghana Commission for UNESCO to attend the 26th IHP Council Session.

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
			resources management, hydrology, and related issues.	Outcome: Ghana made three interventions on the floor during the conference.  <i>Ghana's delegation to IHP Intergovernmental Council Session</i>
4	Presidential Compact and Road Map	CONIWAS	To prioritize Water, Sanitation, and Hygiene (WASH) issues at the highest levels of government	Activity: In 2023, CONIWAS urged the government to establish a presidential compact, expressing its commitment to assisting in the development of this important initiative. On August 28, 2024, CONIWAS proudly witnessed the signing of the Presidential Compact for WASH in Ghana. The organization also played an active role in the launch of the compact and contributed to discussions regarding its implementation roadmap. In recognition of their expertise, the government has invited CONIWAS to support the execution of the compact, including monitoring its progress to ensure effective implementation.

5.2 Sub-priority Area 5.5: Capacities of the scientific community and decision makers strengthened on new frameworks and tools, to underpin water governance and build resilience

Activity No	Title of Activity	Institution (Support)	Objective	Activities / Outcome
4	Capacity building on Climate Resilient Water Safety Plans for selected water treatment plants and their distribution areas across the country	CWSA	To improve water quality, reliability and resilience in selected communities To improve water supply services and reliability and construction of water systems for deprived communities	Activities: • Water safety plans prepared by water systems and regional offices • Regional water safety plans submitted to CWSA Head Office • Implementation of water safety plans by water systems Supplied and installed water treatment plant on water systems across the country Outcome: • Ejura water system reconstructed with improve water service delivery • Yeji water system reconstructed with improved water service delivery • Additional water sources established for various water systems across the country • Distribution pipelines extended new areas • Wassa Dunkwa water system constructed

6. Conclusion

The committee successfully documented 38 activities outlined in the 2022-2028 work plan, covering all priority areas except for Priority Area 3, which focuses on “Bridging the Data-Knowledge Gap.” Priority Area 1 recorded the highest activity rate, with Sub-Priority 1.3 generating the most frequent activities.

Moving forward, the committee must be intentional in undertaking activities under Priority area 3. Additionally, members must collaboratively address all sub-priorities and organize joint programs, rather than relying solely on individual institutional efforts. Furthermore, members are encouraged to familiarize themselves with the key performance indicators to enhance the quality and effectiveness of their activity reports. This understanding will facilitate accurate progress measurement and help identify areas needing improvement.

The committee appreciates the collaboration of all institutions in integrating these activities into their work plans. We extend our gratitude to UNESCO and all donor agencies for their invaluable support in advancing the hydrological sector. The Ghana Committee for UNESCO-IHP exemplifies dedication and collaboration in hydrological development within the country. Through the meticulous compilation of annual reports, the committee highlights the unwavering commitment and collective efforts of its members and underscores their vital role in enhancing Ghana's hydrological landscape.

Looking ahead, the Ghana Committee for UNESCO-IHP remains steadfast in its mission to promote sustainable water resource management and research. By fostering partnerships and collaborative initiatives, the committee is well-positioned to continue making significant strides in advancing Ghana's hydrological sector for the benefit of current and future generations.

7. ANNEXES

Annex 1: MEMBERS OF THE GHANA COMMITTEE FOR UNESCO-IHP

	NAME	ORGANIZATION	DESIGNATION
1	Bob Alfa	WRC	Chair
2	Emmanuel Obuobie	CSIR - WRI	Vice-Chair
3	Suzzy Abaidoo	MSWR	Secretary
4	Apollonius O.A Asare	Ghana Commission for UNESCO	Member
5	Philip Tetteh Padi	VRA	Member
6	Oduro Donkor	CONIWAS	Member
7	Samuel Owusu Ansah	GMet	Member
8	Jewel Kudjawu	EPA	Member
9	Sylvester Darko	HSD	Member
10	Philip Ato Ankoh	BPA	Member
11	Margaret Macauley	GWCL	Member
12	Michael Tuffour	UESD	Member
13	James Ashaley	GIDA	Member
14	Joseph Tawiah Ayer	CWSA	Member
15	Mawutor Ablo	MOGCSP	Member

SECRETARIAT

Adwoa O. A. Afran	WRC	Coordinator
Priscilla Gyamfi	WRC	Asst. Coordinator
Florence M. Dagbanu	WRC	Administrator

Annex 2: 2022 - 2028 WORK PLAN FOR GHANA COMMITTEE FOR UNESCO IHP**Proposed Activities Priority Areas****Priority Area 1: Scientific research and innovation**

“By 2029, the Member States have the knowledge, sound scientific and research capacity, new and improved technologies, and the management skills that allow them to secure water resources for human development and healthy of ecosystems within a sustainable development context.”

Priority Area 1: Scientific research and innovation		
Sub-Priority Area	Proposed activities:	Performance indicators:
1.1. National and International scientific cooperation strengthened and fostered to address unsolved problems in hydrology, improving scientific understanding of hydrological cycles across river basins and aquifers.	1. Establishment of the UNESCO Scientific Network for Unsolved Problems in Hydrology, in partnership with IAHS and other water related scientific associations.	Cooperative framework established; publication of proceedings and Special issue of the biennial conference in a respected journal; number of articles/publications on unsolved hydrology problems from UNESCO water family; number of scientists benefiting from the exchange and Award.
	2. Establishment of exchange scheme among UNESCO water family and partners for research on Unsolved Problems on Hydrology.	
	3. Establishment of UNESCO Biennial Award for Ph.D. studies on Unsolved Problems in Hydrology.	
	4. Biennial Conference series on Unsolved Problems in Hydrology, in partnership with IAHS and other water related scientific associations.	
1.2. Ecohydrology research and innovation at UNESCO-designated sites conducted and shared by the scientific community and UNESCO Water Family, communicated to assess the impact of ecohydrological and nature-based solutions on water cycles and include such solutions in Integrated Water Resource Management (IWRM) and services at all scales and in Sites' management.	1. Development of a National network/hub for interdisciplinary ecohydrological research, education and dialogue on ecohydrology and nature based solutions.	Number of scientists, professionals, and policy-makers reached out; number of relevant institutions supported through capacity building and symposia; number of publications and knowledge products developed; Three Open Access Special Issues from the symposia in the journal of Ecohydrology & Hydrobiology or similar journal; number of trained people; number of eco-hydrology sites; number of UNESCO designed sites applying eco-hydrology
	2. Expansion of UNESCO ecohydrology sites to demonstrate ecohydrology and nature-based solutions as the sustainable way of water resources management.	
	3. Application of the eco-hydrology approach within UNESCO water related designated sites including biosphere reserves, geoparks and natural heritage sites for sustainability and resilience.	
	4. Publishing, sharing and promotion of the research and innovation at UNESCO-designated sites through articles, case studies and a compendium of case studies.	
	5. Three International and National Symposia on Water and Circular Economies, Ecohydrology and Nature-based Solutions.	
	6. Scientific support and capacity building for coordinated implementation of ecohydrology principles, UNSC SEEA ecosystem valuation, IUCN NBS Global Standard, FAO/TNC and World Bank guidelines,	

Priority Area 1: Scientific research and innovation		
Sub-Priority Area	Proposed activities:	Performance indicators:
	<u>7. Enhancement and promotion of Ecohydrology Web Platform (http://ecohydrology-ihp.org/demosites/) and organization of various related training activities.</u>	approach for sustainability and resilience.
1.3. Research on uncertainty in climatic scenarios, hydrological projections and water use scenarios conducted and recommendations communicated to decision makers and the general public to elaborate adaptive water management strategies.	1. Preparation of state-of-the-art publications on uncertainty in climatic scenarios, hydrological projections and water use scenarios and intersectoral consultations among research teams.	Number of professionals, policy makers, and scientists benefiting from dialogue and capacity building; number of institutions reached out; Publication on the state of the art on uncertainty in climatic scenarios, hydrological projections and water use scenarios; Number of institutions benefiting from the pilot on CRIDA, bottom up approaches, dialogue and capacity building; proceedings of the international conference
	2. Preparation of “Key Recommendations to Decision Makers and General Public” on water management under climatic, hydrological and water use uncertainties and “Compendium of Concepts, Terminologies and Perspectives for Water-Energy-Food-Ecosystems Nexus Dialogue”.	
	3. Regional and national inter-sectoral dialogue and capacity building for adaptive water management in the face of uncertainty.	
	4. Formulation and implementation of International Conference outcome on Future of Water, Food, Energy Systems and Ecosystems at the National level.	
	5. Implementation of Pilot projects on Climate Risk Informed Decision Analysis (CRIDA) and other bottom up approaches, in different institutions within the country	
1.4. Conducting scientific research on the exploration of new business models, the role of water utilities, broadening engagement and partnerships, and infrastructure by the scientific community supported to accelerate the circular economy transition of the water sector.	1. Preparation of the state-of-the-art (best practices) publications on new business models, the role of water utilities, broadening engagement and partnerships, disclosure practices, and infrastructure in accelerating the circular economy transition of the water sector.	Number of professionals, public, civil and business decision makers benefiting from the dialogue; number of groups reached out; number of institutions reached out; number of publications produced.
	2. Intersectoral dialogue among public, private and civil water stakeholders for promoting the circular economy transition of the water sector and expansion of good practices.	
	3. International Conference tentatively titled “Water Management, Dollars and Sense, Going beyond Corporate Social Responsibility” (2024) and publication of proceedings.	
	4. Preparation of a white paper for insurance sector, pension fund, and investment companies’ involvement; case studies on science-informed good business practices; and a compendium of case studies in water sector’s transition to circular economy.	
1.5. Undertaking and sharing assessments on the interaction	1. Preparation of IHP White Paper on Socio-hydrology and IHP Position Paper on socio-hydrology.	Number of professionals, decision-makers, scientists reached out

Priority Area 1: Scientific research and innovation		
Sub-Priority Area	Proposed activities:	Performance indicators:
between humans and water, in line with socio- hydrology by the scientific community supported to develop adaptive pathways, scenarios and strategies for water management.	2. Formulation and initiation of a socio-hydrology scientific dialogue among hydrological, social, and climate scientists and researchers (human-water models, case studies).	through dialogue and capacity building; number of institutions benefiting from dialogue and capacity building; number of institutions (public & private) using a socio- hydrologic approach in water management.
	3. Preparation and dissemination, through capacity building and other means, of Case Studies in Socio-Hydrology; Compendium of Case Studies; Training modules for professionals.	
	4. Review the findings and recommendations of 1st Socio-hydrology Conference, Delft, Sep 2021; substantial contribution to the future editions.	
	5. Promotional activities to advance the concept of socio-hydrogeology and its use to improve the governance of aquifers and better address the impacts of global change.	
1.6. Scientific knowledge, methodologies and tools in addressing water-related disasters, such as flood and drought elaborated and/or enhanced towards timely forecasting.	1. Preparation of state-of-the-art publications on the scientific advances in addressing water-related disasters, such as flood and drought including good practices and lessons learned.	Number of professionals, decision-makers, and scientists who participated in the activities or/and were trained; number of institutions and RBOs involved; number of publications.
	2. Science-policy dialogue and capacity building on water management and extremes (floods and/or drought).	
	3. Preparation, dissemination and use in capacity building of joint training material on droughts and climate resilient water management, bridging disaster risk reduction, climate resilience and water management.	
	4. Preparation, dissemination and use in capacity building joint training material on floods and climate-resilient water management, bridging disaster risk reduction, climate resilience and water management.	
	5. International Water Conference on Disasters, Climate Change and Sustainable Development and publication of proceedings.	
	6. Implementation of projects at country level or/and basin level in addressing water related disasters through deployment of EWS and building capacity.	
1.7. Development and sharing of knowledge-base on the impacts of global change and human usage on river and lake basins, aquifer systems, coastal areas, and cryosphere and human settlements by the scientific community supported	1. Series of scientific thematic workshops on “Water in the Anthropocene” (e.g. Water Management in Coastal Areas; Water and Land Management in Low Lying River Deltas; Aquifer Systems; Management of Hydrosphere- Cryosphere- Climate Change Nexus).	Number of professionals and decision-makers capacitated; number of scientists benefiting from interdisciplinary dialogue; number of institutions supported; number of publications.
	2. Status Reports on large rivers, by World’s Large Rivers Initiative in partnership with World Bank, UNESCO Chair for Integrated River Research and Management, and other members and partners of water family; dissemination in related events.	

Priority Area 1: Scientific research and innovation		
Sub-Priority Area	Proposed activities:	Performance indicators:
so as to embed it in water resources and services management plans.	3. Continued work on assessment of water resources; monitoring of water resources; water availability scenarios; and education and capacity building.	
	4. Assessment of magnitude and risks linked to land subsidence from global to local level, preparation of case studies.	
	5. Development and compilation of the assessments and reports, training material on state of the art and case studies/best practices; and building capacity at country level.	
1.8. Development and sharing of knowledge and innovative solutions on improving water quality, and reducing water pollution by the scientific community supported and communicated to support science-based decision-making, improve knowledge, services and reduce health related risks.	1. Thematic assessments of water quality at the basin, city, and national scales to identify key water quality and pollution challenges.	Number of professionals and policy-makers supported; number of scientists involved or trained; number of institutions supported; number of knowledge products (assessments, case studies, etc) and tools developed.
	2. Promotion of innovative tools and policies for water quality management and pollution control, by identifying and disseminating best technological solutions and policies.	
	3. Development of science-based policy guidance on ecosystem-based approaches to water quality management.	
	4. Capacity building on 'innovative solutions to improve water quality and reduce pollution' for different stakeholders.	
1.9. Development and sharing of new technologies using, earth observation, Artificial Intelligence and Internet of Things by the scientific community and service providers are communicated to and/or used for capacity strengthening of water stakeholders to increase their use in hydrological planning and assessment as well as monitoring and distribution networks.	1. Improving and expanding the use and users of the RHA (rainwater harvesting) app and continued work on sensor technologies and AI/ ML methods.	Number of relevant institutions with capacities strengthened in the use of technology and innovation; number of technology products/innovations promoted; number of projects, programs, case studies implemented; number of professionals and policy-makers supported.
	2. Pilot projects and programs on the effective use of new technologies to examine applicability to country conditions, barriers to adoption/upscaling and to produce recommendations.	
	3. Joint development of scientific activity and capacity building program with AMCOW and NEPAD Water CoE on technologies and innovation to support African Water Vision 2025 and Agenda 2063.	
	4. International Conference and Technology Fair on CIT in Water Management.	
1.10. Conducting and sharing of research on integrating citizen science in the hydrological discipline by the scientific community and other	1. Citizen science pilot studies in different regions within the country for water resources monitoring and crowdsourced assessments by local stakeholders.	Number of regions and institutions supported in monitoring and assessment capacity; number of people trained and collaborated; number of projects/case studies in
	2. Country and community level projects integrating indigenous knowledge in water and land management, through citizen and open science methodologies to build water resilience.	

Priority Area 1: Scientific research and innovation		
Sub-Priority Area	Proposed activities:	Performance indicators:
stakeholders supported, to improve understanding of the water cycle enabling science-based decision making.	3. Collaboration with AMCOW and/or NEPAD Water CoE to pilot crowdsourced/citizen science based project monitoring water quality towards improved water management.	progress/conducted; number of knowledge products and tools developed.
	4. Continued R&D and capacity building work, including development of citizen science toolbox and its promotion through trainings.	

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability

“By 2029, a critical mass of decision makers, educators and citizens worldwide will be trained, have their awareness raised and their knowledge enriched on water related challenges and opportunities based on sound scientific and research information to facilitate sustainable water management and governance. Networks of scientists will be strengthened to develop and disseminate related material and conduct the training / awareness-raising sessions.”

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability		
Sub-Priority Area	Proposed activities:	Performance indicators:
2.1. Public’s awareness at all levels raised towards better understanding their contribution to the important multi-functions of water in domestic life, ecosystems and productive development.	1. National-level awareness-raising using special days and observances such as World Water Day, World Toilet Day, Global Hand Washing Day, International Day of Forest, World Meteorological Day, World Environment Day, International Women Day among others.	Number of stakeholders (Traditional Authorities etc) reached out; number of mentions/pieces in mass media; number of likes/Followers/retweets etc, RTs in social media; number of advocates, academics and policy makers benefitting from capacity building.
	2. Capacity-building of advocates (CSOs and NGOs), academia, Traditional Authorities, Assemblies and policy-makers (Ministers, MPs) on national level through information, education and communicating materials, cost effective technology, workshops and webinars on various water-related topics with cross-cutting emphasis on youth, women and indigenous communities (also see output 2.3).	
	3. Monitoring and assessing mainstreaming of water’s importance in broader awareness raising events (such as sustainable development, environment, climate change, desertification, cities etc., at the national level.	
	4. Engage the media, the Ghana WASH Journalist Network and the learning alliance platform and creating social media handles (twitter, facebook page etc) to increase coverage in mass media and social media, using easy-to-understand facts, statistics, infographics, and video clips by public figures.	

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability		
Sub-Priority Area	Proposed activities:	Performance indicators:
2.2. Development and implementation of transdisciplinary research collaborations and educational approaches by UNESCO Water Family promoted to enhance participatory holistic practices	1. Using already existing platforms (MOLE Conference, University conference, seminars) to enhance collaboration between transdisciplinary research to enhance participatory holistic practices. CONIWAS	Number of Schools (Faculties, Centre of Excellence) contacted. Number of scientists reached out; number of early career researchers supported;
	2. Research and education collaboration with water centers (Regional Water Environment Sanitation Centre - KNUST, University of Environment and Sustainable Development, etc) suggesting thematic areas for research. Seeking Financial support from UNESCO Water Family (FAO, UNEP, UNWATER, UNWOMEN, UNHCR, UNICEF), among others.	
	3. Organise thematic sessions for early-career researchers (PHD and masters students) on participatory, transdisciplinary and holistic research collaboration, held by UNESCO Water Family members.	
	4. Collaborative scientific study examining gaps and opportunities in participatory, transdisciplinary and holistic research and education in water sciences.	
2.3. Teaching and learning materials on water-related matters for formal, non-formal and informal education at all levels elaborated towards a better understanding of the importance of water in lives and communities.	1. Compilation, harmonization, and dissemination of UNESCO Category II Centre based training materials related to importance of water in lives and communities.	Number of toolkits made available. Consistency of use of these toolkits. Number of Guest Lecturers used. Number of lectures conducted. Number of educational institutions involved. Number of modules developed.
	2. Development of a series of modules, using the available material (Category II) and developing new learning material and tools catering to the priorities and needs of Ghana and partners for training and seminars.	
	3. Compilation, revision, and harmonization of toolkits for early, primary, and secondary education for subsequent dissemination and use.	
	4. Initiation of a “Guest lecturer on demand series” for promotion of water security concepts in tertiary education, made available to students and stakeholder institutions in Ghana. Universities and Centers of Excellence in water could be identified.	
2.4. Development and sharing of methods and tools based on new practices by the scientific community supported to translate scientific information into a format facilitating education, decision-making and policy formulation.	1. Methodology and practical guide for the identification of capacity gaps and needs in the tertiary and vocational education agents (professionals, teachers, technicians etc.), prepared by core group of UNESCO Water Family members; syllabus, programmes, courses and professionals	Number of modules, toolkits, and promotional material developed; number of stakeholders benefitting; number of learners who benefit from the methods and tools developed.
	2. “Water science for policy” toolkit and e-learning module (similar to the current UNESCO Inclusive Policy Lab content but specific to water) for early to mid-career scientists.	

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability		
Sub-Priority Area	Proposed activities:	Performance indicators:
	3. “Evidence-based water policy-making” toolkit and e-learning module for middle to upper level civil servants, managers, professionals, and advisers. 4. “Water education for inclusive outcomes and sustainable development” toolkit and e-learning module for educators and skilled professionals and technicians in tertiary and vocational education. 5. Capacity building module, training material, and communications tools on ensuring stakeholder trust and engagement in water management.	
2.5. Capacities of skilled professionals and technicians at water-related tertiary and vocational education strengthened to identify the main gaps for sustainable water management towards providing appropriate tools to governments and societies to address those gaps and the Agenda 2030 targets.	1. Identify the gaps Full development and promotion of the new water education indicator for SDG 6. (pending the development of the new water education indicator)	Number of member states supported; number of professionals and technicians trained/capacitated; platform established and operational.
	1. Intersectoral dialogue and consultation at country level, with Government Ministries, educators and IHP National Committees, to identify capacity gaps and needs; training of trainers.	
	2. Country-level implementation of “Water education for inclusive outcomes and sustainable development” toolkit and e-learning module. Refer to output 2.	
	3. Capacity building to bridge education-policy gaps in water and sustainable development by equipping professionals and technicians with relevant tools and knowledge.	
	4. Establishment of a UNESCO water family educational platform open to the member states and partners to enhance learning opportunities and sharing of good practices and lessons learned.	
	5. Expanding and upscaling the NEPAD/EU Human Capacity Development project in Africa.	
2.6. Capacities of decision makers, and water managers and key water sector institutions strengthened allowing them to take advantage of new technologies and research to enhance better	1. Coordination with UN-Water initiative to building capacity to accelerate SDG 6, with UN DESA as co-lead; using decision makers and water managers.	Number of professionals, decision makers and water managers who benefited. Number of Institutions involved.
	2. Building capacity to mainstream research recommendations and relevant technology in decision-making to increase a collaborative research between the middle/upper level civil servants, water managers, and professionals.	

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability		
Sub-Priority Area	Proposed activities:	Performance indicators:
decisions, design and implementation of integrated and efficient water policies.	3. Create a platform for science-policy dialogue, including workshops to bridge the science-policy gaps and to strengthen institutional capacities in water and sustainable development.	
	4. Capacity building, including refresher, hands-on workshops, to showcase the effective use of new technologies, good practices and to jointly assess applicability opportunities and barriers: through a three day conference.	

Priority Area 3: Bridging the data-knowledge gap

“By the year 2029, significant advances will have occurred in transparency, comparability and accessibility of water data, which made possible further development of open-access science platforms and generated facilitating instruments for integrated watershed management, for all water resources, including transboundary ones.”

Priority Area 3: Bridging the data-knowledge gap		
Sub-Priority Area	Proposed activities:	Performance indicators:
3.1. Development and use of scientific research methods by the scientific community supported to correctly collect, analyse, interpret and exchange data.	1. Advocate for stakeholders to participate in International Open Water Symposium to advance cloud-computing for remote sensing applications, big data and Spatial Data Infrastructures to support water resources management.	Number of participation in open water forum. Number of Institutions that participated. Number of people who participated.
	2. Facilitate the compilation and harmonization of knowledge products across sources and custodians of data and monitoring systems from collection, validation, analysis and assessment perspectives.	
	3. Scientific examination of existing and emerging standards and protocols and preparation of a compendium of methods, standards, and recommended practice.	
	Compendium of indigenous methods, standards, and recommended practice.	
	4. Dialogue between scientific community and custodians/managers of monitoring and database systems on the needs and the-state-of-the-art to stimulate research and enhance data services.	
3.2. Establishment of harmonized experimental basins by Member States,	1. Expansion and harmonization of the experimental basins including through regional networks, FRIEND-Water activities, and twinning new ones with the existing basins.	Number of new experimental basins; number of basins supported to collect scientific data. Number of

Priority Area 3: Bridging the data-knowledge gap		
Sub-Priority Area	Proposed activities:	Performance indicators:
scientific and research communities, supported to collect scientific data and gain knowledge for hydrological research and holistic water management.	2. Identify an experimental basin; support and assist, for the inclusion of targeted aquifer systems in the network.	people (Ghana) who participated in the 9th Global Flow Regimes: Number of dialogue activities organized. Number of Basins revamped.
	3. Revamping and expansion of the HELP basin network.	
	4. Participate in the “9th Global Flow Regimes from International Experimental and Network Data (FRIEND)-Water Conference”; publication of proceedings.	
	5. FRIEND-Water and HELP basin dialogue activities by bringing together existing basins on collaborative learning opportunities and involving non-experimental basins.	
3.3. Comparing and validating open access data on water quantity, quality and use and their sharing by the scientific community supported for sustainable water management.	1. Contribute to the enhancement of the capabilities and user- friendliness of IHP-WINS, including access to validated data, and coordinated access across the major data bases.	Number of data bases, platforms and services enhanced or better coordinated; number of data users benefitting.
	2. Development and improvement of platforms to make groundwater-related data accessible to multiple stakeholders.	
	3. Participation in and support to coordination of water data services, including with UN-Water, FAO, UNICEF, WMO, WHO, and water operators.	
	4. Scientific data comparison and cross validation across domains and the creation of platforms for use by the scientific community to enhance compatibility and harmonization across disciplines and teams.	
3.4. Capacity of scientific community strengthened to develop, share and apply scientific tools for data processing (like data assimilation and visualization methods, quality assurance protocols to connect existing databases and outreach protocols).	1. Share with scientist to participate in International Symposium by “FREEWAT - FREE and coordinate with the UNESCO Commission for Ghana to encourage the development and provision of open source software and tools from software developers for WATER resource management”.	Number of professionals, decision-makers, scientists benefiting; number of systems and methods developed or improved.
	2. Capacity development of stakeholders in public and private sectors, and civil society in surface and groundwater data collection, validation, interpretation and sharing processes.	
	3. Extension of IHP-WINS with new members, new data and new contributions invited from members.	

Priority Area 3: Bridging the data-knowledge gap		
Sub-Priority Area	Proposed activities:	Performance indicators:
	4. Development and sharing of data analysis methods including data fusion, assimilation and visualization.	

Priority Area 4: Integrated water resources management under conditions of global change

“By 2029, most societies have managed to adapt to or mitigate water risks derived from, among others, climate change and the human factor, such as global pandemics, generating better participatory management practices and new opportunities for the future of our planet.”

Priority Area 4: Integrated water resources management under conditions of global change		
Sub-Priority Area	Proposed activities:	Performance indicators:
4.1. Conducting and sharing of research on inclusive and participatory approaches by the scientific community, to ensure open, active, meaningful gender-responsive engagement of youth, local and indigenous communities supported to enable all stakeholders to be part of the water management process.	1. Conducting and sharing scientific research in inclusive and participatory water management with gender emphasis and engagement of youth, local and indigenous communities.	Number of professionals, policy-makers, youth, scientists reached out; number of relevant institutions (public & private) supported; number of best practices developed.
	2. Scientific study including country-level stocktake on stakeholder participation in water management, and a country pilot showcasing modalities and benefits of engagement.	
	3. Development and dissemination of best practices in engagement of communities, youth, and women in water management, including country-level dialogues.	
	Compendium of indigenous methods, standards, and recommended practice.	
	4. Capacity building on ensuring stakeholder trust and engagement in water management and on water education for inclusive outcomes and sustainable development.	
4.2. Research on upstream-downstream river uses for hydropower, navigation, irrigation, fishery, leisure activities, water supply, drought risk management and flood risk management conducted and shared by the	1. Publications and capacity building on good practices in upstream-downstream river uses for hydropower, navigation, irrigation, fishery, leisure activities, water supply and risk management.	Number professionals and policy-makers benefitting; number of relevant institutions supported; number of publications; number of systems and platforms developed to support relevant institutions.
	2. Development of GIS, remote sensing, and model-based platforms for flood and drought monitoring.	
	3. Research projects to examine the upstream-downstream effects of river uses and their interactions, to balance competing objectives and manage cross-border environmental risks.	

Priority Area 4: Integrated water resources management under conditions of global change		
Sub-Priority Area	Proposed activities:	Performance indicators:
scientific community and UNESCO Water Family to minimize socio- economic and ecological consequences.	4. Assessment, in selected basins, of the impacts of groundwater over extraction on the upstream-downstream dynamics, with focus on dependent surface water and ecosystems.	
	5. Implementation of Flood and Drought Early Warning Systems (FEWS) to monitor floods and droughts in different river basins and to inform river management decisions.	
4.3. Conducting and sharing of research on non-conventional Water Resources (NCWRs) such as wastewater reuse, desalination, rainwater harvesting, and the Management of Aquifer Recharge (MAR) by the scientific community, in support of improving Water Cycle Management (WCM), strengthening capacities of local, regional, and national decision-makers, and enhanced acceptance of public.	1. Expansion of the aquifer coverage and improvement of the capabilities of the global MAR portal hosted by UNESCO-IGRAC.	Number of professional and policy makers capacitated; Ghana added to MAR portal; number of publications; Ghana benefitting; number of global processes and events informed.
	2. Research projects and compilation of the-state-of-the-art in NCRWs and circular economies to improve WCM and to enhance efficiency and effectiveness of public and private investments.	
	3. Support to knowledge and policy development towards good implementation of Managed Aquifer Recharge in targeted aquifers, and its inclusion in IWRM planning.	
	4. Promotion of NCRWs for better WCM through sessions and events at regional and global water events, COPs and other fora to mainstream it in broader contexts.	
4.4. Development and sharing of knowledge on using the source- to-sea and nexus approaches by the scientific community supported, and capacities strengthened to improve integrated water resources management for all watersheds, including transboundary ones.	1. Intersectoral science-policy dialogue on integrative approaches and cooperation opportunities across sectors; case studies; dissemination through symposia/workshops.	Number of relevant institutions supported; number of professionals and policy-makers capacitated; number of knowledge products developed; Special issue in a respected journal and publication of Unifying Glossary of Intersectoral, Integrative Approaches.
	2. Promotion of source-to-sea and nexus approaches in water quality, ecosystems and biodiversity interlinkages; development of science-based guidance.	
	3. Compilation and dissemination of best practices in water- food-energy-ecosystem nexus, including wastewater reuse and byproducts (nutrients, energy) in a circular economy context.	
	4. Knowledge generation for implementation of source-to-sea and nexus approaches in transboundary aquifers; pilot study on a selected transboundary aquifer.	

Priority Area 4: Integrated water resources management under conditions of global change		
Sub-Priority Area	Proposed activities:	Performance indicators:
	5. Development and dissemination of knowledge on the source-to-sea approach to reduce land and water pollution- including plastic/microplastic pollution-for freshwater and oceans' health.	
	6. Promotion of the nexus approach to water quality, ecosystems and biodiversity interlinkages, through science-based guidance.	
4.5. Understanding and knowledge on pollutants sources, fate and transport in freshwater systems, including surface waters (rivers, lakes, wetlands) and groundwater improved by the scientific community and UNESCO Water Family to prevent and reduce water pollution and underpin water resources management strategies.	1. Knowledge generation and research on emerging pollutants in freshwater systems and their impacts on ecosystems, as well as on solutions for pollution prevention and control.	Number of professionals, water managers and decision makers reached out; number of knowledge products developed; number of publications; participated in International Conference on Microplastics in Freshwater at UNESCO (in 2023).
	2. Focused sessions in international fora, on pollutants' sources, fate and transport in surface and groundwater systems, gaps in related standards, and management responses.	
	3. Dissemination of the state of the art and experience sharing in SARS-CoV-2 in water and wastewater systems with case studies, best management practices, and policy guidance.	
	4. Knowledge generation and dissemination on microplastics in freshwater; raising stakeholder engagement and scientific awareness, including projects, roundtables discussions and meetings.	
	5. Identification and promotion of best practices and appropriate solutions to reduce surface and groundwater pollution; a compendium of such solutions and technologies.	
4.6. Undertaking and sharing assessment of ecosystem services and environmental flows in ecohydrology pilot sites by the scientific community supported, to improve integrated water resources management.	1. Support to relevant institutions in assessing environmental flows and ecosystem services to inform their IWRM practices and to improve their monitoring and achievement of SDG 6.	Number of relevant institutions supported; and number of professionals and water managers capacitated; number of publications produced; Case studies and Compendium of best practices published; number of member states contributing to the Conference.
	2. Development/dissemination of case studies from current ecohydrology sites to improve the understanding of water- ecosystem-human interactions and highlight ecohydrology-NBS synergies.	
	3. Establishment of an internet-based platform on assessment of ecosystem services and environment flows through a category II centre or international research institute.	
	4. Scientific study on the relationships between ecosystem processes to better manage catchment landscapes and maintaining ecosystem health in an IWRM context.	

Priority Area 4: Integrated water resources management under conditions of global change		
Sub-Priority Area	Proposed activities:	Performance indicators:
	5. Participate in International Conference in partnership with UN-Water, IUCN, FAO, World Bank externally and UNESCO Water Family, MAB and World Heritage Center internally; Special issue in a respected journal	
4.7. Undertaking assessments and developing and sharing of methods to monitor changes in runoff formation from erosion and sediment transport by the scientific community supported for improved understanding of their potential use to inform decision makers at all levels.	1. Compilation of an inventory of Glacial Lake Outburst Floods (GLOFS) Early Warning Systems and identification of capacity needs in the respective regions.	Number of member states supported; number of professionals and decision-makers capacitated; number of knowledge products, systems developed; number of publications.
	1. Assessment of snow glaciers and water resources in selected regions; recommendations to reduce vulnerabilities from glacier lake outburst under climate change scenarios/projections.	
	2. International symposium on the scientific understanding on current and future water availability and the risks from highly glacierized basins; IHP position paper to guide forthcoming research.	
	3. Capacity building to support cryosphere system assessments and vulnerability reduction.	
	4. Establishment of internet-based data bank to support assessments and sharing of methods to monitor changes.	
4.8. Development and sharing of methodologies and tools in mainstreaming global changes within water management by the scientific community supported for improved planning by decision makers at all levels.	1. Cross-sectoral dialogue and research on methodologies and tools in mainstreaming global changes within water management, under recent assessments on climate change, loss of biodiversity, degradation and desertification, and pollution.	Number of relevant institutions supported; number of professionals and water managers capacitated; number of knowledge products developed.
	2. Promotion of bottom-up approaches to address climatic uncertainty and improve water management, tailored to local needs;	
	3. Scientific studies on the implications of the global changes on water resources and the role of water management in response to global changes, in support of adaptive decision-making.	
	4. Building capacity of the professionals and decision-makers in the use of methodologies and tools to inform planning and management of water under global changes.	
4.9. Implementing integrated water resources management at all levels, through	1. Capacity building in transboundary cooperation to support the technical and political actors in implementing integrated water resources management at all levels in transboundary settings.	Number of member states supported; number of professionals and water managers capacitated;

Priority Area 4: Integrated water resources management under conditions of global change		
Sub-Priority Area	Proposed activities:	Performance indicators:
transboundary cooperation as appropriate by Member States, supported, in coordination with UN-Water and UNECE, to achieve SDG target 6.5.	2. Experience sharing and dialogue to connect riparian actors through multi-track and multi-sectoral approaches, to enhance mutual trust and mutual understanding.	number of knowledge products developed; number of publications; monitoring reports and updates published.
	3. Country level capacity building for promotion of SDG 6.5 targets and for proper monitoring and reporting of the SDG 6.5.2 indicator.	
	4. Global reporting on the SDG 6.5.2 indicator to UNSD Database (2023, 2026, 2029); Periodic progress reports on transboundary water cooperation status and SDG indicator, for UN-Water, with UNECE.	
	5. Continued collaboration on promotion of transboundary cooperation; publication and promotion of the UN-Water policy brief on transboundary cooperation with UNECE.	
	6. Support and capacity building to countries, including through publication of recommendations, guidelines, good practices and using monitoring as a basis to foster cooperation.	

Priority 5: Water Governance based on science for mitigation, adaptation, and resilience

“By 2029, Member States use science-based tools, capacity and knowledge addressing adaptation and mitigation to climate change. to significantly reduced water governance gaps.”

Priority 5: Water Governance based on science for mitigation, adaptation, and resilience		
Sub-Priority Area	Proposed activities:	Performance indicators:
5.1. Awareness raising of decision makers at all levels on the importance of science-based water governance by the UNESCO Water Family supported, to enhance the overall resilience of communities to effects of global change.	1. Organizing, co-organizing sessions in international and regional events with relevant tailored messages: World Water Day. World Water Week in Stockholm, annual. Groundwater Summit. Asia Water Forum, Arab Sustainability Week, Africa Water Week, Arab Water Week UCLG World Summit, 2022, Korea, and 2025/2027 SIWI World Water Week World Bank Water Week OECD Water Days	No of processes and events where a support, advocacy, impact function was provided; number and composition (by gender, country group) of professionals and decision- makers reached out. Number of stakeholders supported.

Priority 5: Water Governance based on science for mitigation, adaptation, and resilience		
Sub-Priority Area	Proposed activities:	Performance indicators:
	2. Active participation and engagement in international, regional and national campaigns/processes to promote the role of science- based water governance in resilience against global changes. 3. Active presence and (co)organization of sessions and events at COPs, MOPs, and intergovernmental meetings, including those of UNFCCC, UNCCD, UNCBD, Water Convention. Compendium of indigenous methods, standards, and recommended practice. 4. Engagement with public decision makers in development planning, pandemic and disaster response, and climate change adaptation/mitigation to provide science-based water input.	
5.2. Integration of sound science in water governance instruments improved reflecting adaptation to climate change and IWRM, integrating surface and groundwater for their uptake by decision makers.	1. Facilitate the publication and dissemination of case studies on science-informed water governance for management of surface and groundwater, in IWRM context and for climate change adaptation. 2. Encourage state-of-the-art research and publications on the instruments of water governance through research institutions for increased climate resilience and IWRM implementation. 3. Capacity development of stakeholders in implementing sound and adaptive water governance in transboundary water resources with focus on climate change and water-related disasters. 4. Support for sustainable management of transboundary groundwater resources through integrative approaches such as IWRM, nexus, landscape.	Number of professionals and water managers capacitated; number of publications and knowledge products developed;
5.3. Sciences-based assessment and development of guidelines, for strengthening water-related content in Nationally Determined Contributions and National Adaptation Plans, conducted to strengthen water-based climate policy-	1 Facilitate the scale-up and implementation of vulnerability assessment framework for hydro-climatic hazards in SIDS, and practices towards climate adaptive paths. 2. Facilitate the development of a service for coordinated support to national stakeholders for incorporating water solutions into NDCs and NAPs with a view to mobilizing public/private funds and investments. 3. Advocate for development of a science-based framework and guidelines for the assessment and inclusion of groundwater- related content in NDCs and NAPs: adapted from other countries or EPA.	Number of knowledge products (guidelines, tools, services etc.) developed; Compendium of science-based assessment tools and guidelines published.

Priority 5: Water Governance based on science for mitigation, adaptation, and resilience		
Sub-Priority Area	Proposed activities:	Performance indicators:
action nexus for adaptation and mitigation.	4. Participate in joint assessment of selected NDCs and NAPs with country partners and recommendations to incorporate water- related content in adaptation and mitigation components.	
5.4. Conducting and sharing of research on novel approaches of adaptive water management by the scientific community supported and capacities of Member States strengthened to enhance sound water governance.	1. Encourage research projects to develop novel approaches to adaptive water management.	Number of professionals and policy-makers capacitated; number of knowledge products developed; number of publications.
	2. Facilitate the development and pilot implementation of guidelines for incorporating science-based tools and methodologies into the principles of good groundwater governance.	
	3. Science-policy dialogue in support of stakeholders to incorporate in their policies and practices, sound water governance and adaptive water management approaches.	
	4. Collaboration with AMCOW and/or NEPAD Water Centres of Excellence on the development and implementation of projects and activities, in novel approaches in adaptive water management.	
5.5. Capacities of the scientific community and decision makers strengthened on new frameworks and tools, to underpin water governance and build resilience.	1. Engagement with the science community and government partners, for state-of-the-art research, publications and capacity building on new and emerging frameworks and tools to support water governance and build resilience.	Number of professionals and policy-makers capacitated; number of knowledge products developed; number of publications. Number of engagements / collaborations.
	2. Facilitate the development and implementation of up scalable, multi-purpose projects to strengthen water governance, build resilience across sectors, and encourage positive behavior change.	
	3. Collaboration with AMCOW and NEPAD Water CoE to support recommendations of African Development Bank Water Strategy 2021 – 2025 “Towards a Water Secure Africa”, for an evidence-informed change.	
	4. Facilitate the development and implementation of projects to strengthen efficiency, effectiveness, and stakeholder confidence and engagement, around frameworks and objectives such as IWRM, nexus, resilience to shocks, disasters, and climate change.	

Annex 3: Developed flyer for the Ghana Committee for UNESCO IHP




GHANA COMMITTEE FOR UNESCO IHP

ABOUT US

The Ghana Committee for UNESCO IHP was established in line with UNESCO guidelines and is the primary scientific and technical body to direct the implementation of the UNESCO IHP programme in Ghana. The Ghana Committee is accountable to the Ghana Commission for UNESCO. The Ghana Committee was inaugurated on 12th October, 2021 by Hon. Cecilia Abena Dapaah, former Minister for Sanitation and Water Resources. The Water Resources Commission (WRC), which is the national institution responsible for the regulation and management of the country's water resources, hosts the Ghana Committee for UNESCO IHP and is the national focal institution on all IHP platforms. The WRC, host the secretariat for the Ghana Committee which is anchored within the Directorate of the Executive Secretary. The Secretariat co-ordinate the work of the Ghana Committee and is responsible for the preparation and distribution of official documents of the Ghana Committee.

PRIORITY AREAS

Priority Area 1: Scientific research and innovation

Priority Area 2: Water Education in the Fourth Industrial Revolution including Sustainability

Priority Area 3: Bridging the data-knowledge gap

Priority Area 4: Integrated water resources management under conditions of global climate change

Priority Area 5: Water Governance based on science for mitigation, adaptation, and resilience

MEMBERSHIP

The Ghana Committee for UNESCO IHP is composed of fifteen members with diverse expertise nominated from relevant research, academia, water user and data management institutions, gender and water ministries, NGOs, and UNESCO agencies in Ghana. The tenure of the nominated member is for a term of three (3) years, not exceeding two (2) term period. The Executive Secretary of the WRC is the Chairperson of the Ghana Committee. A Vice Chairperson and Secretary are elected from members of the committee for a three-year term.

Composition of Membership

1. Water Resources Commission
2. Volta River Authority
3. Universities (University of Environment and Sustainable Development)
4. Ministry of Sanitation and Water Resources
5. Ministry of Gender, Children and Social Protection
6. Ghana Hydrological Authority
7. Ghana Water Limited
8. Ghana Meteorological Agency
9. Ghana Irrigation Development Authority
10. Ghana Commission for UNESCO
11. Environmental Protection Agency
12. Council for Scientific and Industrial Research - Water Research Institute
13. Coalition of NGOs in Water and Sanitation
14. Community Water and Sanitation Agency
15. Bui Power Authority

FUNCTIONS

- Advise the government on all hydrological related research and educational matters.
- Ensure a harmonised development of hydrological related programmes in Ghana.
- Provide input in the shaping of national research and policies on hydrological issues.
- Responsible for planning the national UNESCO IHP, defining its priorities, and supervising its execution.

- Establish working groups of specialists to examine specific activities and projects.
- Coordinate all activities at the international level through and with the UNESCO IHP.
- Work closely with the UNESCO Regional Hydrologist and the Vice-Chair of the IHP Council from the region.
- Establish and maintain strong links with the Ghana Commission for UNESCO.

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