



ACTIONS PROPOSAL

Action Group : 1.B Improve water quality and waste management

Coordinators(s) IWRA

Group members : Sones, Agence Française de Développement (AFD), ONAS, Technical University of Cologne, Syndicat interdépartemental pour l'assainissement de l'agglomération parisienne (SIAAP), Institute for Global Environmental Strategies (IGES) /Water Environment Partnership in Asia (WEPA) Programme, Municipality of Barreiro, Association des Maires et Parlementaires du Gorgol, Ministry of Agriculture and Forestry, General Directorate of Water Management, Treatment Section

Pilot Group observer : Aquafed

ACTION 1 : Address all kinds of water pollutions, including industrial pollutants and Contaminants of Emerging Concerns

Overall Objective : The objective of this action focusing on water pollutions, including industrial pollutants and Contaminants of Emerging Concerns, is to provide not only existing solutions and case studies on how to address the issue of water pollution, but also to raise awareness about new kinds of pollutants which are not yet taken -or barely- into account in regulations, laws and water treatments.

Overall purpose and expected results : Water is an essential constituent for humans, and for life. Polluted water is often identified as the main vector to infectious pathogens, toxins and organic contaminants, which can be associated with a large number of chronic diseases worldwide. In the past decades, an increase in the human population and human activities have not only increased the quantity of waste discharged into water bodies, but also introduced emerging substances, including pollutants of industrial source, pharmaceuticals or micro plastics.

Results (outcomes)

The projects gathered under action 1 will be a useful way to gather knowledge on how to tackle some specific sources of pollutants, as well as better understand the issue of emerging contaminants.

*we note that there is so far no project specifically focused on CECs, so we open the door to contributions on the topic

Overall SDGs Alignment : 6.3 11.6 12.4, 12.5

Coherence with other Priorities : 1A, 1D

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY	REGIONAL SCOPE	COHERENCE WITH OTHER AGs
<p>Project 1 - ONAS – Sénégal : Polluted groundwater recovery program to increase drinking water supply capacities and for economic activities in the city of Dakar, Senegal.</p> <p>Status : Not started</p>	<p>Polluted groundwater recovery program to increase drinking water supply capacities and for economic activities in the city of Dakar, Senegal.</p> <p>Type of project: Applied research and action</p>	<p>This programme aims at recovering polluted groundwater tables and making additional resources available for domestic consumption and other economic activities. For instance, it is the case of the Thiaroye groundwater tables in Dakar, Senegal, polluted by nitrates due to poor sanitation. First, this project requires applied research to find the most efficient decontamination processes. Then, it will be necessary to implement the selected processes in a second step.</p>	<p><u>On a technical standpoint :</u></p> <ul style="list-style-type: none"> - the pumping system of the Thiaroye drillings will be rehabilitated to help reduce the supply deficits in the city of Dakar ; - the pumping will have a sure impact on the recurrent floods due to the drawdown of this water table; - the substitution of resources currently allocated to market gardeners and the extension of agricultural activity in the Niayes market gardening zone; 	<p>1.5 1B 2.1 2.3 2.4 3.2 3.9 3D 4.1 5.1 6.1 6.2 6.3 6.4 6B 8.3 11.1 11.5 17.6 17.7 17.8</p>	<p>As indicated in the column of “collaborative structures” targeted at first intention, the actors present various profiles. We can enumerate the structures dependent on the State or the central administration such as the ministries other than that in charge of water and sanitation (Health, Environment, Finances, Agriculture, Governance, Local communities, the police hygiene etc.). Other stakeholders are also identified such as consumer associations, NGOs,</p>	<p>Office national de l'assainissement du Sénégal (ONAS).</p> <p>Point of contact : Dr Papa Samba Diop.</p>	<p>carry out the hydrological analysis of the Thiaroye aquifer and the interconnections potential with other aquifers:</p> <p>A cartography of hydrological basins and water tables makes it possible to supplement the numerous databases (BD) which make it possible to anticipate the development of projects. Having it facilitates visibility of the hydrological potential, at country level such as the case of Senegal and in African sub-regions in</p>	<p>Dakar, Senegal</p>	<p>1.A #3</p>

		<p>To this end, it is necessary to ensure a good decontamination upstream in order to keep the area from being polluted again. A large-scale project in the suburbs of Dakar should be envisaged with the conviction that it will be a question of autonomous sanitation both in the concessions and on the public highway. A programme for the construction of public toilets is in the pipeline. This programme is integrated with applied research on the decontamination of water resources. Its exploitation will reduce the deficits observed in the city's water supply and the satisfaction of demand for agriculture. Agriculture constitutes a lever for job creation and potentially, an "impact on the household basket" through an improvement in the supply of market garden produce. The water cluster being created in the direction of the WEF can be the prime contractor.</p>	<p>- the gain in water following the disconnection of the market gardeners; - the supply of water for other activities such as construction, vehicle washing and other non-domestic activities;</p> <p><u>On an economic standpoint :</u></p> <p>job creation in the agricultural sector and revival of the market gardening sector in the immediate vicinity of the city of Dakar; an increase in the supply of market garden produce for the markets with a real impact on the drop in prices, to the delight of the population;</p> <p><u>On a financial standpoint :</u></p> <p>financial resources from the sale of water for construction and other related activities ; marginal cost reasoning for better planning of water supply projects in Dakar ;</p>		<p>mayors and other local authorities and the populations of the targeted areas. Then come the private sector, educational and research establishments at local and international level, technical and financial partners and structures for the operation and management of sector infrastructures such as SONES, SEN'EAU and " ONAS or the Directorate of Water Resources Management and Planning (DGPRE) ...</p>		<p>relation to possible interconnections between basins. So, by extrapolation, these are studies and research that can be the subject of separate projects to strengthen comics; which is beneficial in making good forecasts for easy duplication of the project. Speaking of these comics, the fight against floods in Dakar and its surroundings comes up against strategic approaches resulting in the execution of pumping operations which suggest that the pumped water is discharged into the same water table which is pumped ... as a scenario worthy of the myth of Sisyphus.</p> <p><i>Project that can be replicated in its broad outline and to leave a little more room to take into account the specificities of the destination localities (like polluted bays such as Hann in Dakar and Cocody in Côte d'Ivoire). This will involve stopping the inflow of wastewater and supporting the regeneration of ecosystems by nature and other seabed cleaning action, for example ...</i></p>		
<p>Project 2 - AFD - France:</p>	<p>Exploring the challenge of reducing</p>	<p>Reducing pollution and contamination from</p>	<p>- Better knowledge on the constraints to be</p>	<p>This project includes water-related and</p>	<p>Launch of a collective initiative allowing to</p>	<p>Agence Française de Développement</p>	<p>n/a</p>	<p>Global</p>	<p>n/a</p>



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<p>reducing industrial pollution and launching a worldwide initiative to address it</p> <p>Status : Already launched</p>	<p>industrial pollution and launching a worldwide initiative to address it.</p> <p>Type of project:</p> <p>Stakeholder coordination, Data /Knowledge, Experience sharing, Awareness raising and others</p>	<p>industrial wastewater is a key step to achieving many of the UN Sustainable Development Goals, to adapt to climate change and to protect the biodiversity. Unfortunately. The action proposed is composed of various activities:</p> <p>1) Data/knowledge /experience sharing : put in common success and failures experiences in the field of Industrial pollution reduction by a variety of actors</p> <p>2) Stakeholder coordination: such an action will require to involve a variety of stakeholders including governments, private sector, environmental organizations, industrial associations, technical associations (ASTE, IWA, etc), development banks, commercial banks and other actors active on that issue (eg. ZDHC foundation, Fashion pact, ICS, Sustainable Apparel coalition https://apparelcoalition.org/).</p> <p>3) Launch of a collective initiative allowing to change the</p>	<p>faced to reduce the industrial pollution issue</p> <p>- Better mutual knowledge and cooperation among the variety of actors involved</p> <p>-an innovative initiative to be announced and implemented after the Forum</p> <p>Appendix: some background on industrial pollution reduction</p>	<p>infrastructure goals (SDG 6¹ and SDG 9 Target 9.4²) as well as targets focused on the preservation of the natural environment, biodiversity and reduction of marine pollution (SDG Target 14.1 and SDG 15) .</p>	<p>change the actual paradigm with precise roadmap on that issue: objectives / operational and/or financing tools</p>	<p>(AFD), IWA (tbc), ASTEE (tbc), ZDHC foundation (tbc), Fashion pact (tbc), ICS (tbc), Sustainable Apparel coalition (tbc), BMCE Bank of Africa (tbc)</p> <p>Point of contact : Olivier Crespi Reghizzi, Sarah Hassan</p>			
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¹ e.g. “By 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater and substantially increasing recycling and safe reuse globally” (source: <https://www.un.org/sustainabledevelopment/infrastructure-industrialization/>, January 2020)

² “By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities (source: <https://www.un.org/sustainabledevelopment/infrastructure-industrialization/>, January 2020)

		<p>actual paradigm with precise roadmap on that issue: objectives / operational and/or financing tools , etc.</p> <p>----</p> <p>AFD has already financed projects on this field (example Blue Credit line in Morocco) and developed knowledge activities (on this topic in cooperation with other actors (industries, governments, IWA collective book to be published on that issue, etc).</p>							
<p>Project 3 - SIAAP – France: River rehabilitation in Manilla, Philippines</p> <p>Status : Already launched</p>	<p>Rehabilitation of the Pasig River in Manilla.</p> <p>Type of project: Local Initiative, Funding mechanism, Stakeholder coordination, Data/Knowledge/experience sharing.</p>	<p>In Manilla, the Pasig River is nowadays emblematic for the submersion of the waterways by sewer waters. SIAAP is involved in the Phillippines since a few years for phytoremediation of wastewaters. MMDA (Metropolitan Manilla Development Authority) entrusted SIAAP the experimentation of this technology in a pumping station in the North of Manilla.</p> <p>Therefore, MMDA contacted the SYCTOM in order to conduct demonstration at this station. However, SIAAP noticed that the wastes were predominantly constituted of household waste. SYCTOM will try</p>	<p>This deposit represents 40 to 50% of the uncollected households wastes.</p>	<p>6 to 11</p>	<p>Demonstrate phytoremediation of wastewaters in a pumping station of t²he Pasig River.</p>	<p>Direct : SIAA, MMDA, SYTCOM. Undirect : UNESCO recorded rehabilitation of the Pasig River as a project supported by the Alliance of the Megalopolis, Alliance in which UNESCO is part of the secretary.</p> <p>Points of contact : Joakim Giacomoni / Tristan Milot</p>	<p>The aim of the project is to propose a project that is replicable in other countries.</p>	<p>Manilla, Philippine</p>	<p>1.D</p>



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<p>Project 4 – SUEN - Evaluation of Reuse of Used Water in Agriculture from the Covid-19 outbreak perspective</p> <p>Status : Already launched</p>	<p>Use of effective treatment methods for reuse of used water</p>	<p>consequently focus on organic wastes.</p> <p>The coronavirus disease outbreak has become a public health emergency worldwide. The virus, SARS-CoV-2 is spread by human-to-human transmission via droplets or direct contact. Although, there is no evidence of its transmission from wastewater, the virus has been discovered in wastewater. Recent studies showed that SARS-CoV-2 is very sensitive to oxidants such as chlorine. Therefore, disinfection units of treatment plants need to be operated to avoid virus existence in the environment. Moreover, disinfection process is vital if treated water is used in irrigation. More than one-third of the effluents of wastewater treatment plants in Turkey reaches to agricultural irrigation facilities. The majority of these WWTPs do not have a disinfection unit. Agricultural areas irrigated with treated wastewater have a rich crop pattern. Almost half of these agricultural areas used to grow raw-consumable products. Therefore, disinfection units need to be operated properly and</p>	<p>The audience will understand how disinfection of effluents is critical in order to reduce exposure to outbreaks, especially COVI-19.</p>	<p>6.3, 6.A, 6.B</p>	<p>Innovation</p>	<p>Turkish Water Institute (SUEN) and DG Water Management, Ministry of Agri-culture and Forestry of Turkey</p>	<p>Strong</p>	<p>Actively seek regional actors during the consultative process)</p>	<p>1.C</p>
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		the facilities without disinfection unit should be re-vised. Disinfection process is important to kill not only SARS-CoV-2 virus but also especially to destroy pathogens of water-borne diseases. The case study is located in Turkey .							
Project x - The group expects to gather new project proposals linked to <i>Contaminants of Emerging Concerns</i> though the upcoming consultation Process.									



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ACTION 2: Implement water quality protection through sound governance, using an inclusive multi-stakeholder approach and knowledge-based policymaking

Overall Objective : The objective of this action focusing on water quality protection is to show how governance practices, inclusiveness among stakeholders and policies built on sound science and data, can really help improve water quality management. A particular focus will be given to the *impact* of those practices on water quality, not to duplicate the work of groups focusing on governance.

Overall purpose and expected results : Water quality is a crucial consideration for efficient water resources management. Improving water quality management is seen as essential for a more balanced and multidimensional approach to the research, policy-making, governance, operations and management of water resources. In order to improve water security, water quality management must improve through sound governance, using an inclusive multi-stakeholder approach and knowledge-based policymaking. The projects gathered under action 2 will provide elements to better understand how governance, partnerships, inclusiveness and strong policies can have a significant impact on the quality of water.

*Most of the projects under action 2 are multi stakeholder, however none of them focus on policy making. Therefore we open the door to contributions on the topic.

Overall SDGs Alignment : 6.3, 6a, 6b, 10.4, 10.6, 17.17

Coherence with other Priorities : 1D Action2, 4E, 3D, 1F

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY	REGIONAL SCOPE	COHERENCE WITH OTHER AGs
<p>Project 1 - IGES – Japan: “Water Environment Partnership in Asia (WEPA)”, regional network</p> <p>Status : Already launched</p>	<p>Institute for Global Environmental Strategies (IGES) has been operating a platform called “Water Environment Partnership in Asia (WEPA)”, which is a regional network comprising 13 Asian countries (Cambodia, China, Indonesia, Malaysia, Myanmar, Nepal, Laos, Thailand, Vietnam, Sri Lanka, South Korea, Japan) with a major aim is to improve the water quality in Asia by strengthening water quality governance. It would be great if this platform/network can be scaled-up to or adapted by other regions around the world.</p> <p>Type of project: Water quality governance, data/knowledge/experience sharing</p>	<p>Based on partnerships established between policymakers and relevant stakeholders in Asia, WEPA has been facilitating exchange of knowledge and dialogues on water environmental management, including critical water environmental issues, key institutional issues for management, efforts in resolving them by WEPA partner countries, and the lessons learnt from these activities among WEPA partner countries. As an information platform for water environmental management, WEPA Database, which consists of four parts: policy, technology, activities by NGOs and community-based organizations, and Links to useful sites on water environment,</p>	<p>Through the above activities 1), 2), and 3) it is expected that WEPA and other information networks will collaborate with each other under WWDI, and synergies will be achieved by sharing the information and knowledge they have. Regarding the above activities 3), cost-effective training can be expected by jointly developing common training programs on water environment governance. It is recommended that initial outcomes be shared with stakeholders within a year after discussing the framework of activities at the World Water Forum.</p>	6.3 12.5	<p>A series of actual pilot projects (namely WEPA Action Programs) have been implemented so far in the member countries in order to address the challenges of severe water quality pollution due to the discharges of untreated or improperly treated domestic wastewater into receiving water bodies.</p>	<p>Institute for Global Environmental Strategies (IGES) – Japan Point of Contact : Pham Ngoc Bao.</p>	<p>The aim of the project is to propose a replication of this approach to other regions. A new initiative/partnership should be considered to facilitate cross-region cooperation and collaboration in the field of water quality improvement.</p>	Asia	AG 1.D – Action 2 – project 5

		<p>developed in collaboration with the partner countries. In order to provide the most up-to-date and useful information on the water environment and its management in WEPA partner countries. The "WEPA Outlook on Water Environmental Management" has been published every three years based on the accumulated information and knowledge through WEPA activities. Based on WEPA's experience above, the following contributions can be made in relation to the proposed action III. E. 'Enhance North-South, South-South and triangular cooperation on data and information sharing, and capacity building'</p> <p>1) Introduce knowledge about the capacity building of water environment governance and the database construction at the Worldwide Webinar on Water Information System (III. E. a)</p> <p>2) Support the promotion of the World Water Data Initiative (WWDI) by providing information on the WEPA database and information newly collected from WEPA partner countries (III. E. b)</p>							
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		<p>3) Develop common training programs on water environment governance in Asian countries and others in cooperation with the International Water Training Center (III. E. f)</p> <p>4) Sharing WEPA experience with stakeholders to strengthening the African Water Information System (III. E. g)</p>							
<p>Project 2 - Technical University of Cologne – Germany - ‘DrinkPani’ : ‘Youth-led Participatory Sensing’ - YPS Model to enhance ‘Drinking Water Security’</p> <p>Status : Already launched</p>	<p>Technical University of Cologne – Germany: ‘Drinking Water Information Kit’ for water supply and quality monitoring using emerging technologies, led by Young Water Volunteers</p> <p>Type of project: Local initiative, Governance, Stakeholder coordination, Data/Knowledge/Experience sharing, Awareness Raising, other, <i>Incorporating ICTs in Water Supply and Quality Monitoring /Digital Water</i></p>	<p>‘drinkPani’ simply refers to the term ‘Drinking Water Information Kit’ and we do believe in ‘Shaping Digital Water Future’. This is a part of on-going doctoral research where ‘water supply and quality monitoring using emerging technologies’ is the main- focus area. In this research initiative, Youth are the key-actors as Young Water Volunteers (YWVs) assigned officially in ‘Water Clubs/ drinkPani Clubs’ and Information and Communication Technologies-ICTs are the main tools. We have launched our own app and website – ‘drinkPani’. It reflects the continuous iteration process since a year, with users and advisors to come to this point.</p>	<p>This research project- initiative- ideas, action and on-going plans are focused towards filling the gap in water supply and quality monitoring in terms of data and knowledge sharing which involves engaging ‘Youth’ from their early age with the use of adequate tools and techniques including the support mechanism required to facilitate the initiative for a sustainable practice. In addition, capacitating youth in a regular basis and community awareness campaigns, on site and through digital platforms are also in our priority as this initiative is using ICTs as some required tools to communicate data, knowledge and information on water supply and quality between local to national stakeholders</p>	<p>6.1 6.3 6a 6b</p>	<p>Youth-led Participatory Sensing’ Model to enhance ‘Drinking Water Security’</p>	<p>drinkPani (Drinking Water Information Kit)</p> <p>Point of contact : Amrita Gautam</p>	<p>High</p>	<p>Pokhara Metropolitan City, Nepal</p>	<p>Means and tools, science and technology</p>

		<p>This platform is designed to collect, store, transfer and share information on drinking water supply and quality monitoring under the recommended 'Model' of the on-going doctoral research (led by Amrita Gautam) – 'Youth led Participatory Sensing-YPS'. This YPS Model works under 'Techno-Socio-Institutional-TSI' Framework, where different components of the model represent all these three aspects of the framework to enhance 'Drinking Water Security'. Now, with the regular workshops, seminars & training sessions including direct consultations with water utilities, other stakeholders and advisors, Young Water Volunteers-YWVs tend to support in Climate Resilient Water Safety Plan (CR-WSP) for the respective water supply schemes. And, we follow 'TMPI' method for our model, activities and products. (Iterative Design Cycle, TIMPI: Think, Make, Play and Improve).</p> <p>'drinkPani' Team has a vision to support in filling the knowledge-data gap about 'drinking water security' and</p>	<p>and beyond. Most of the developing countries are suffering in regular and effective communication of drinking water quality to take necessary decisions and actions when it is needed. If we are-able to connect this loop right from the early start of emerging water leaders in making. i.e. capacitating Youth (from high school to university level) in actual understanding and work of water supply and quality monitoring using ICTs understanding and analysing all detected and possible risk factors, which ultimately leads to the sustainable development of the sector.</p> <p>'Drinking Water Security' and opens-up future doors of 'Water Innovations and Technologies'.</p>						
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		<p>converting data to information-communication into evidence-informed decision making. We look forward to upscale YPS Model and activities in advancing the required tools and targets to serve and support in solving the issues regarding 'Water Supply and Quality Monitoring'.</p>							
<p>Project 3 - Municipality of Barreiro, Portugal - Reinforcing the resilience of water services to security risks</p> <p>Status : Already launched</p>	<p>Municipality of Barreiro – Portugal: <i>Reinforcing the resilience of water services to security risks</i> (good practices guide)</p> <p>Type of project : Governance, Data/knowledge/experience sharing, Awareness raising.</p>	<p>The security situation in the world is changing and the risk of malicious acts is present. Water infrastructure is considered as critical in almost all countries in Europe. But in the world? We must strive to analyse any security-related vulnerabilities and take effective measures to mitigate them. Consideration must be given to cyber-security and interdependencies with other sectors (power, telecommunications, etc.).</p> <p>Mitigating security-related risks should build on synergies with managing other risks, like natural disasters, pandemics and climate change-related.</p> <p>We could develop a guide of good practices that could help more developed entities and entities with more difficulties. Reconcile</p>	<p>A collaborative project, with several realities and contexts that can enrich the production of a final guide.</p>	<p>6a 6b</p>	<p>Develop a guide of good practices that could help more developed entities and entities with more difficulties. Reconcile the guide with the development</p>	<p>Municipality of Barreiro – Portugal</p> <p>Point of contact : David Cabanas</p>	<p>High</p>	<p>Barreiro, Portugal</p>	<p>AG 3D and 1.F</p>



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<p>Project 4 – AFD - Exploring the challenge of reducing eutrophication of water bodies and launching a worldwide initiative to address it</p> <p>Status : Already launched</p>	<p>Exploring the challenge of reducing eutrophication of water bodies and launching a worldwide initiative to address it</p> <p>Type of project : -Stakeholder coordination, Data/knowledge/experience sharing, awareness raising, Other : launch of a collective initiative on this issue</p>	<p>the guide with the development</p> <p>A major concern lays with the water quality degradation and eutrophication: Increase in population and urbanization, poor wastewater treatment, deforestation and resulting soil erosion have led to more nutrients, more pollution and more sedimentation in Lake Victoria. This has resulted in a drastic modification of the algal population, both quantitative and qualitative, and an increase in the frequency of algal blooms, in many water bodies around the world, which causes serious threat to both water uses and biodiversity. This phenomenon has a strong impact on water and sanitation services in the sub-region as it strongly affects water treatment processes (high presence of algae in the raw water) and makes wastewater treatment an even greater challenge for environmental, sanitary, social and economic reasons. AFD has already financed projects on this field and developed knowledge activities on this topic,</p>	<p>-Better knowledge on the constraints to be faced to reduce the industrial pollution issue</p> <p>-Better mutual knowledge and cooperation among the variety of actors involved</p> <p>-A set of innovative tools / practice to better manage the important issue of eutrophication to be announced and implemented after the Forum</p>	<p>6.3</p>	<p>The action proposed is composed of various activities:</p> <ol style="list-style-type: none"> 1) Data/knowledge /experience sharing in the field of monitoring of eutrophication 2) Stakeholder coordination: such an action will require involving a variety of stakeholders including governments, water and wastewater services, agriculture. 3) Launch of a collective initiative allowing to change the actual paradigm with precise roadmap on that issue: objectives / operational and/or financing tools, etc. in a number of area exposed to critical eutrophication (example given : Lake Victoria, Guiers lake in Senegal, ...) 	<p>AFD, Victoria Lake Bassin Commission - tbc, Société Nationale des Eaux du Sénégal (SONES) - tbc, INRAE/IEES Paris</p> <p>Point of contact : Frédéric Maurel / Sarah Hassan</p>	<p>High</p>	<p>Global (pilots in Victoria lake riparian countries and Senegal)</p>	<p>1.D</p>
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		especially in the mentioned areas, in cooperation with local authorities and with the French Facility for Global Environment.							
<p>Project 5 - Mayor associations of Gogol-Improving drinking water supply in the Senegal River basin</p> <p>Status : Not started</p>	<p>Type of project : Local initiative, Governance, Awareness raising</p>	<p>Awareness-raising campaign on the dangers related to water quality and waste management, more specifically on:</p> <ul style="list-style-type: none"> -Garbage dumping nearby the borehole, -Repeated interruption of water supplies and delivery of unsafe water to consumers especially during winter, due to broken pipes and rainwater intrusion in the drinking water network, -Large-scale use of chemicals (herbicides) in irrigated perimeters contaminating the river through drains. 	<p>The expected results are as follows:</p> <ul style="list-style-type: none"> -securing the perimeter of the borehole with a good wire mesh or wall fence, and preventing waste disposal in areas surrounding water sources, -ensuring use of good quality pipes and secured connections to avoid water service interruption, which will require capacity-building of water technicians, -Limiting or banning use of chemical pesticides nearby the water sources 			<p>Local stakeholders</p> <p>Point of Contact : Bakary Amara KOITA</p>			
<p>Project x – Further addition during the consultation process</p>									



ACTION 3: Apply Nature based solutions including green infrastructure to improve water quality and resources

Overall Objective : The objective of this action focusing on Nature based solutions is to show how green solutions and infrastructure can be used to offer as a means of moving beyond business-as-usual to address many of the world’s water challenges, including water quality while simultaneously delivering additional benefits vital to all aspects of sustainable development.

*A particular focus will be given to **the impact of nature-based solutions on water quality**, not to duplicate the work of groups focusing on NBS and ecosystems.

Overall purpose and expected results : There is a strong need for solutions in managing water resources and to meet emerging water security challenges caused by population growth and climate change. Nature-based solutions can play an important role in improving the supply and quality of water and reducing the impact of natural disasters. ‘Green’ infrastructure, as opposed to traditional ‘grey’ infrastructure, focuses on preserving the functions of ecosystems, both natural and built, and environmental engineering rather than civil engineering to improve the quality of water. The projects gathered under action 3 will concentrate on one particular of nature based solutions and green infrastructure: how they can improve the quality of water and resources. Action 3 will show in many ways how impactful those solutions can be in project management, both in waste water treatment or for ecosystems.

Overall SDGs Alignment : 6.3, 3.9, 6.6, 11a, 11b

Coherence with other Priorities : 3A, 4A, 1F, 3E

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY	REGIONAL SCOPE	COHERENCE WITH OTHER AGs
<p>Project 1 - AFD – France: guidance to include nature-based solutions into project designs (pilots in Dakar and Mombasa)</p> <p>Status : Already launched</p>	<p>To provide practical guidance to include nature-based solutions into the design of projects and programs that aim to strengthen water security.</p> <p>Type of project : Local initiative, funding mechanism, stakeholder coordination</p>	<p>The role that green infrastructure and nature-based solutions can play to support water security has long been recognized but projects that incorporate these solutions at the heart of their design remain few and far between. Achieving water security is the objective of Sustainable Development Goal 6, which itself underpins the achievement of all Sustainable Development Goals. The SDG framework will not be achieved unless the ecosystems from which all water is derived are protected rather than encroached upon and relentlessly degraded, as is currently the case. Providing water services to rapidly growing cities, in Sub-</p>	<p>-Better knowledge on the constraints / limitation of including green infrastructures -Pilot case are implemented at water basin scale (Dakar in Senegal and Mombasa, Kenya) -Guidance document for DFIs for presentation / dissemination during the WWF</p>	6, 9.4, 9.a	<p>AFD has entered into a partnership with The Nature Conservancy which includes the preparation of a guidance document for development finance institutions (DFIs), with the intention for this guidance to be usable by DFIs around the world, as well as other types of public and private financiers where appropriate. On the ground activities are also implemented as pilot in Dakar and Mombasa.</p>	<p>AFD, TNC</p> <p>Point of Contact : Frédéric Maurel, Sarah Hassan</p>	High	Global (pilots in Dakar and Mombassa)	3.A, 4.A



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		Saharan Africa, Asia or Latin America critically depends on protecting upstream watersheds. Such investments can dramatically reduce overall investment costs, long-term operational and maintenance costs and provide multiple co-benefits in terms of carbon, biodiversity and jobs.								
<p>Project 2 - AFD – France: Implement local Nature-based solutions for domestic wastewater treatment (Morocco)</p> <p>Status : Already launched”</p>	<p>Implementing and locally adapting nature-based solutions (reed filters, aerated lagoons and wetland rehabilitation, etc.) for domestic wastewater treatment</p> <p>Exchange of knowledge and expertise for new developments - Case of Morocco and development in Tunisia, Lebanon and Kenya</p> <p>Type of project : Stakeholder coordination, Data/knowledge/experience sharing, Awareness raising</p>	<p>The use of nature-based solutions is an opportunity to ensure better wastewater treatment at lower costs (investment and operation). Their implementation requires the support of institutions and operators in the sector, from planning to operation.</p> <p>In the framework of the implementation of Morocco's national sanitation program implemented by ONEE with AFD financing in co-financing with the EU, the EIB, and KfW, AFD financed an exchange of knowledge and expertise between ONEE and Irstea (National Institute for Research in Science and Technology for the Environment and Agriculture), now INRAE), for a short-term technical expertise aiming at determining the causes of</p>		6, 9.4, 9.a	<p>During the preparatory process, produce a communication to capitalize on these experiences and create a space for dialogue within Action Group 1B and/or with other interested entities.</p> <p>During the Forum, organize a restitution and collective reflection session to replicate this methodological approach on other countries/sectors.</p>	<p>Agence Française de Développement (AFD), Office National de l'électricité et de l'eau potable (ONEE - Maroc) (tbc), INRAE, ECOBIRD (tbc).</p> <p>Points of contact : Olivier Crespi, Sarah Hassan.</p>	High	<p>It has also made it possible to develop low-cost alternative sanitation solutions in Morocco for small urban and rural centres.</p> <p>It thus constitutes a lever for optimising and developing alternative sanitation techniques on a larger scale. This approach is also being developed in other countries, notably Tunisia, Palestine and Lebanon, including with AFD support.</p> <p>In addition, other SFN treatment approaches have been tested in Kenya in the framework of a sanitation project in Kisumu where wastewater is treated in interaction by rehabilitated lagoons and feeds wetlands on the shores of Lake Victoria.</p>	Global, (pilots in Morocco, Tunisia, Lebanon, Kenya)	1.F, 3.E

		<p>nonconformities of the WWTPs, at analyzing the technological choices as regards purification and at highlighting the possible technological evolutions adapted to the Moroccan context, in particular by using purification solutions such as Nature-based Solutions. Several exchanges and field missions made it possible to develop these exchanges of expertise and knowledge and to involve all the actors of the sector.</p> <p>The methodological approach of this partnership has enabled a technical expertise that responds directly to the problems of the operators while providing the Research Institute with additional testing grounds.</p>							
<p>Project x - The group expects to gather new project proposals linked to <i>Nature-Based Solutions</i> through the upcoming consultation Process.</p>									



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ACTION 4: Implement sanitation systems adapted to local contexts that meet standards by prioritising the reuse of by-products (circular economy)

Overall Objective : The objective of this action is to show that there are many ways to improve conventional sanitation systems and adapt them to local contexts and constraints, by reducing the use of water or to efficiently recycle the generated wastewater and nutrients on any level. A circular economy and improved reuse of by products can transform sanitation from a costly service to a self-sustaining and value adding system of resources, and that is what this action will demonstrate.

Overall purpose and expected results The provision of sanitation is a key to a sustainable development: simply having access to sanitation increases health, well-being and economic productivity. The sense of urgency for dignified sanitation is compounded by the fact that the benefits provided by improving access to sanitation can have repercussions on all dimensions of sustainable urban development.

A Circular Economy in the context of sanitation focuses on the whole sanitation chain which includes the provision of toilets, the collection of waste, treatment and transformation into sanitation-derived products including fertiliser, fuel and clean water. In other words, a circular economy and improved reuse of by products could transform sanitation from a costly service to a self-sustaining and value adding system of resources. Treating sludge to reduce volume and to transform it into recoverable products has become a necessity.

The projects gathered under action 4 will show how an adapted sanitation system including reuse of its by products can impact not only people's water security but also the quality of water resources along the whole cycle.

*A particular focus will be given to the impact of the reuse of by products and sanitation systems adapted to local context on the quality of water resources. We warmly welcome contributions on the topic.

Overall SDGs Alignment : 3d, 6.2, 6.3, 11.1,

Coherence with other Priorities : 1A Action 3, 1A

PROJECTS INCLUDED	OBJECTIVE	DESCRIPTION AND PURPOSE	EXPECTED RESULTS	SDGs	IMPLEMENTATION	PARTICIPANTS AND STAKEHOLDERS REPRESENTATIVENESS	REPLICABILITY	REGIONAL SCOPE	COHERENCE WITH OTHER AGs
Project 1 - ONAS – Sénégal: Public toilets' installations and water reuse in Dakar, Senegal	Programme for the construction of public toilets in the city of Dakar, Senegal. Type of project : Construction of sewerage infrastructures	This programme aims to fill a gap in the architecture of sanitation infrastructures with the construction and management of toilets in Dakar, everywhere and for everyone, both in private and public areas, for any citizen in need of relief. Observations can be made through the streets, public spaces, places of economic activities in general (markets, stations, garages, various workshops, health centres and hospitals, etc.), places of worship, and resort areas (public gardens, beaches) which are experiencing important and almost permanent flows of people who go about their daily activities	<u>On a social standpoint :</u> This situation of deficit in public edicts is even more degrading for the elderly, people with disabilities, women and girls. -The most vulnerable layer is made up of women, and especially girls suspend their social, economic and school activities during their menstruation period due to the lack of adequate facilities that take care of their specific needs in several places. <u>On a economical standpoint, mainly dry losses correlated to a performance deficit on economic activities of certain categories and social strata such as :</u> -> Negative impacts on people's activities :	1.1 1.3 1.5 1B 3.2 3.9 3D 4.1 5.1 6.2 6.3 6.4 6B 7.2 7.3 8.3 9.3 9.4 9.5 9A 9B 11.6 11.7 11A 17.7	Based on an inclusive approach so that the toilets are appropriate, several actors must be involved, beyond the State structures which are responsible for the environment, urban planning, decentralization, spatial planning. ... Among the other players, we can mention: Professional organizations in the sector; Private sector companies and offices; Socio-professional groups of actors who do not have a toilet in their workplace; ONAS and other departments of the ministry in charge of	ONAS Point of contact : Dr Papa Samba Diop	This project is replicable from all points of view through the activities to be carried out; it is, at the limit, a project that can be described as standard regardless of the city targeted to host it. It is true that a number of essential prerequisites are satisfaction such as the availability of water. It would also be necessary, according to the beliefs and customs in place, to conduct an important IEC component so as not to relive the JAKARTA syndrome or a major public toilets program had failed.	Dakar, Senegal	AG 1.A – Action 3

		<p>day and night. About 80% of travel in Dakar is on foot. Daily motorized travel needs in Dakar are estimated at 1,169,488 units. As a result, faced with a lack of public toilet facilities, street corners, wall surrounds, abandoned houses or houses under construction, the beach and open rubbish dumps become the "places of ease". This situation exposes the inadequacy of the sanitation architecture in the city of Dakar, which could affect a large number of people every hour. Statistics on the number of people outside the concessions and private places seem to be non-existent; a deficit that must be correlated to the lack of studies as a consequence, the lack of interest of the community of experts of the sub-sector, etc. The statistics are edifying; based on the hypothesis of the number of people on foot in Dakar (more than 935,000), it can be estimated that at least a third (or 312,000 people) would need a toilet without finding a satisfactory solution. This estimate takes into account</p>	<p>-who cannot access or share other people's washrooms; -whose socio-economic activity forces them to stay more in the public street and for whom, returning to the toilets in their own homes could lead to a loss of income in their business (a waste of time); -whose economic activity forces them to stay all day long in places without toilets (e.g. shopkeepers, tailors, etc.); -> A lack of well-being in public transport and during religious holidays. <u>On a financial standpoint :</u> ->Job creation through delegated management to the private sector in collaboration with local authorities and women's organisations; -> A profit for the private sector which has a stable drainage activity allowing them to invest without risk and create other jobs; ->A reduction in health expenses linked to a lack of hygiene due to the absence of toilets.</p>		<p>sanitation to ensure the role of Project Manager; Groups of women, young people and others from the municipalities for the future management of the structures</p>				
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ACTIONS PROPOSAL

		people moving for different reasons and all socio-professional categories whose activities do not allow them to travel to their homes to relieve themselves.						
<p>Project 2 - Ministry of Agriculture and Forestry – Turkey: Wastewater treatment and reuse</p> <p>Status : Already launched</p>	<p><i>Wastewater treatment and reuse</i></p> <p>Type of project : Governance, Data/knowledge/experience sharing, awareness raising</p>	<p>Worldwide drought, water stress and many other problems highlight water safety and sanitation. Many studies have been carried out across countries on this issue. 9th World Water Forum will be useful to listen and interpret the works of the participants who participated in this subject. In addition to this, mutual exchange of ideas will be provided by explaining the works we have done in our country. Thanks to this forum, studies on water stress will be in a coordinated order, especially in arid and semi-arid countries. For example; “The project of evaluating the reuse alternatives of used water” in our country will present an idea to stakeholders on this issue. Brainstorming every member of the action group on the subjects or studies he / she makes will make the group more active. For this reason, every topic</p>	<p>It is important to present the management of water resources and the stages of cooperation with other countries, especially in the forum, which brings together many participants worldwide. It is important that the decisions taken at the end of each group are for all practitioners and that the documents prepared are outputs for the next forum.</p>	6.2, 6.3.1	Ministries, municipalities and local organizations	<p>Ministry of Agriculture and Forestry , General Directorate of Water Management, Treatment Section – Turkey</p> <p>Point of contact : Onur Altun</p>		Ankara, TURKEY



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		<p>discussed in the action group will be recorded and updated. In the future, there will be an opportunity to examine the people in the action group and the work done in the countries on the spot. As a result, we will contribute by taking an interactive role in the action group, both by explaining the work done in our country and by listening to the work of other members.</p>							
<p>Project x - The group expects to gather new project proposals <i>insisting on the circular economy aspect</i> though the upcoming consultation Process</p>									