

# Connecting the SDGs through resilient water management

Input to the 2019 High-level Political Forum on Sustainable Development (HLPF)

Stockholm International Water Institute (SIWI) and the Alliance for Global Water Adaptation (AGWA)

## Who is SIWI?

SIWI is a water institute. We leverage knowledge and our convening power to strengthen water governance for a just, prosperous, and sustainable future. SIWI focuses on a range of research and development topics within and around water that support decision-makers worldwide. SIWI hosts the World Water Week, the world's leading annual water event, and awards the Stockholm Water Prize the most prestigious water award, and the Stockholm Junior Water Prize fosters future generations of water excellence. SIWI also hosts several flagship programs, including the UNDP-SIWI Water Governance Facility, the International Centre for Water Cooperation (ICWC), the Action Platform for Source-to-Sea Management (S2S Platform), and the Alliance for Global Water Adaptation (AGWA). Through the Swedish Water House, we connect Swedish water stakeholders with each other and to international processes.

## Why we focus on water?

The SDGs describe an integrated trajectory for global development where focus falls not on single goals in isolation; but the entire suite of goals constitutes a pathway to the “future we want”. In this way, water serves as an exemplary, if not the single most important, connecting factor for reaching the Global Goals beyond SDG 6 itself. Water is essential for basic human needs as described in the human rights to water and sanitation, but also for marine and land ecosystems, for producing food and energy, and supporting livelihoods and industry. Water has a critical role to play in both mitigation of and adaptation to climate change. And not least, water is an important factor in the spiritual and aesthetic lives of billions of people. SIWI's focus on water governance places SDG 6 and its relations to the other goals in a central position for our work, driving analysis on the need and state of its implementation within the framework and processes of the HLPFs.

## Introduction

Freshwater is essential to all aspects of inclusive, equitable and sustainable development and is embedded in all of the sustainable goals – not only Goal 6. Water resources, and the wide range of services they provide, underpin poverty reduction, economic growth and environmental resilience. From food and energy security through decent work, cities and production to human and environmental health, water improves social wellbeing and inclusive growth, affecting the lives and livelihoods of billions.

Because water is a master variable for life on earth, if we fail to consider water management within our broader development plans and actions, we will fail to reach our targets. This risk is underscored by the annual World Economic Forum *Global Risks Report*, which, for the last five years in a row has included water crises in their list of top global risks. At the same time, resilient water management tools and approaches not only improve water security, but can provide important co-benefits across a range of sectors and economies, improving the overall resilience of our communities and ecosystems.

Reducing inequality, providing decent work and education opportunities, and promoting peace and justice for all requires integrated approaches that protect vital environmental functions that allow for human flourishing. Our current development patterns of overexploitation, pollution, modification, and degradation of water is a threat to many ecosystem services on which we depend. Ongoing changes to the hydrological cycle mean that conditions, fundamental to our lives and livelihoods and to the technical and cultural fabric of our societies, is changing. Increasing frequency and intensity of extreme water events emphasizes the need to adapt to climate change through resilient infrastructure, planning and governance.

Further, many regions that will be most severely affected by water scarcity related climate change impacts are also, in parallel, impacted by political tensions, armed violence, and internal water mismanagement necessitating urgent efforts to build trust and strengthen transboundary water cooperation at the intra and inter-state levels. These are daunting challenges indeed, but they also present a unique opportunity for communities to cooperate, learn, and adapt together.

The recommendations below highlight how improved water governance, management tools and approaches can contribute to reaching the SDGs under review during the 2019 HLPF. While water isn't mentioned explicitly in each of these Goals, it is essential to reaching many of the targets being addressed.

## Policy Messages, recommendations and case studies in order to fulfil the 2019 SDGs under review (4, 8, 10, 13, 16)

### ***SDG4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all***

There are many water-related barriers to education, including the need for women and children to spend hours collecting water or the limited availability of sanitation services at school.

Furthermore, extreme water such as floods and drought keep children out of classrooms.

**Addressing local water challenges is a key element to improving opportunities for all children to learn and thrive. (4.1)**

- Improving local access to clean water and sanitation can help reduce child absenteeism in school due to sickness, water collection-related chores, and lack of sanitary services and supplies. (4.1).
- Children spend a significant portion of their day at school where WASH services can improve educational opportunities and decrease the potential for disease transmission between students, in addition to addressing issues around dignity, particularly for girls. **The importance of WASH in schools has been recognized globally by its inclusion in the SDGs (targets 4.a, 6.1, 6.2) as key components of a 'safe, non-violent, inclusive and effective learning environment' and part of 'universal' WASH access.**
- Since the task of fetching water most often falls upon girls and women, this prevents them from attending school or participating in any additional learning modules. **Enabling access to safe water close to home or in homes will liberate girls and women from this task and enable them to pursue an education and contribute to their empowerment.**
- Improve education and ownership opportunities for marginalized populations. For example, with equal access and ownership of resources and knowledge, female farmers, who account for the majority of all subsistence farmers, could produce enough additional food to reduce the number of the world's hungry by 150 million. (4.3)
- Women worldwide act as safeguards for water and have a wealth of local water knowledge to share. Bottom-up approaches to water management that take into consideration the needs and expertise of key local stakeholders, including women and indigenous communities, can help improve water management practices in the region as a whole. These stakeholders should be empowered to use and share their knowledge and skills regarding local hydrologic conditions and community needs in order to educate their peers and promote more sustainable development practices. This also contributes to SDG10. (4.7)

***SDG8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all***

Sustainable economic growth is not possible without the sustainable use of natural resources. Global freshwater resources are finite and poor water governance have detrimental impacts on economic productivity and the availability of decent work. **The shift to a sustainable circular economy in which the central role of water is fully recognized, leads to the creation of more jobs, an increase in the number of decent jobs and much greater social inclusion.**

- Both economies and the environment are boosted by investments in infrastructure – for water, agriculture and energy – as well as by provision of water services in these sectors (including industry, energy, agriculture, tourism, recreation, research and various public sector organizations, including municipalities, ministries, and public research, management and international organizations). (8.1, 8.4)
- Three out of four jobs worldwide are water-dependent. From its collection, through various uses, to its ultimate return to the natural environment, water is a key factor in the development of job opportunities directly related to its management (supply, infrastructure, wastewater treatment, etc.) and in water-dependent economic sectors including agriculture, fishing, energy, industry and health. (8.1, 8.2, 8.9)
- **Furthermore, good access to drinking water and sanitation promotes an educated and healthy workforce, allowing sustained economic growth.** Lower absenteeism leads to high productivity given a more capable workforce and lower factory error rates. Through the HERproject, Levis Strauss provided women at factories with health education and improvement of on-site health services, such as access to toilets and drinking water. Absenteeism fell by 55% and staff turnover has dropped from 50% to 12%. One factory calculated a \$4: \$1 return on investment (ROI).

- **The inclusion of menstrual hygiene management can help women stay in work and ensure gender equality in the workplace.** In Kendougou, Senegal, 96% of the women surveyed said they did not regularly go to work while they were menstruating. Access to sanitation services in the workplace can consequently facilitate more women to stay in work and increase productivity.

### ***SDG10: Reduce inequality within and among countries***

It is now universally accepted that water is an essential natural resource upon which nearly all social and economic activities and ecosystem functions depend. **Sustainable development and human rights perspectives both call for reductions in inequities and tackling disparities in access to WASH services as access to clean water and sanitation is a universal human right.**

- Reducing unequal access to safe, clean water is essential to reducing poverty, increasing economic productivity and sustaining growth, promoting peace and reducing instability. (10.1, 10.2, 10.7 and SDG16)
- Poverty-oriented water interventions can have direct, immediate and long-term social, economic and environmental results, making a difference to billions of people in both developed and developing countries. (10.1)
- **Today, two thirds of the global population are estimated to live under conditions where water is scarce for at least one month of the year.** Climate change is expected to increase that exposure, especially for disadvantaged groups such as rural households engaged in agricultural production in low income countries. (10.1)
- **Equitable access to water for agricultural production, even if only for supplemental watering of crops, can make the difference between farming as a mere means of survival and farming as a reliable source of livelihoods.** While smallholder farmers constitute the backbone of national food supplies, contributing to more than half of the agricultural production in many countries, they themselves often suffer from food insecurity and malnutrition.
- The wealthy generally receive high levels of water service at very low price, while the poor often pay a much higher price for services of similar or lesser quality. People living in informal settlements ('slums') with no formal physical address are regularly excluded from reticulated water and sanitation networks and therefore must rely on (usually more costly) alternatives, such as water vendors.
- Disadvantaged groups and people living in poverty are more susceptible to water borne diseases causing diarrhea due to lack of access to piped water. There were reports of greater incidence of diseases among residents of low-income slums in Mumbai in the wake of monsoon floods. Haiti children in the bottom 20% (household income group) have 2.4 times the risk of contracting an enteric disease than children in the top 20%. This illustrates the intrinsic linkages between inequalities, access to clean water and health effects.
- The 2018 world-wide water tariff survey indicated a 3.8% year-on-year increase in water tariffs. Wastewater prices specifically are rising faster than water prices globally, pushing bills up around the world. Basic guaranteed water standards must be affordable to all persons to respect and advance the human right to water while sufficiently recognizing and accounting for the diverse values of water (economic, environmental, cultural, social etc.).
- In 2017 alone nearly 100 million people were directly affected by natural disasters, 78% of which were the result of floods, storms or drought. **Communities subject to multiple stress from climate-driven water hazards and political instability may experience growing conflicts, with vulnerable groups finding themselves pushed further into poverty and some forced to migrate.** (10.7)

- Refugees and internally displaced people often face barriers in accessing water supply and sanitation services. Mass displacement places strain upon natural resources and water-related services at transition and destination points for both existing populations and new arrivals, creating potential inequalities and a source of conflicts among them.
- **Inequalities related to WASH are reinforced and are formed by structural social, political, economic and cultural inequalities that permeates each society, but take on different expressions over time, scale and location.** As a consequence, women’s control and access to and use of a range of resources (e.g. land, income, social networks) and services (e.g. health, education, justice) affect and is affected by inequalities in WASH access, management and use.
- **Indigenous peoples and ethnic minorities suffer disproportionately from economic, social and political marginalization and human rights violations, including poor access to water and sanitation services.** As custodians of many of the world’s most fragile and important ecosystems their knowledge and participation are essential to ensure respect for their rights and to achieve equitable and sustainable water management.

*Case study:*

The initiative **Transforming Investments in African Rainfed Agriculture (TIARA)**<sup>1</sup> is one example of how rainfed agriculture and the storage and capture of green water can contribute to reduce poverty among many subsistent famers in Sub-Saharan Africa, for whom lack of water and land degradation creates food and livelihood insecurity. One third of people across the African continent are facing food insecurities and 22.7 per cent of the population in Sub-Saharan Africa are undernourished. By scaling up water solutions and rainfed agriculture, inequalities both within countries and between countries can be addressed.

***SDG13: Take urgent action to combat climate change and its impacts***

People and nature alike experience climate change primarily through impacts to the water cycle. Changes to the frequency, timing and magnitude of hydrologic events as a result of increasing temperatures are becoming the new normal. **While water is often the instrument of disaster, it is also a key to resilience in the face of climate change and essential to sustainable development, peace, security, and economic wellbeing.** (13.1)

- In 2017 alone nearly 100 million people were directly affected by natural disasters, 78% of which were the result of floods, storms or drought.
- According to climate change projections, 3.9 billion people – 40% of the global population – will soon reside in basins experiencing severe water stress, including nearly all of Central and South Asia, the Middle East, North Africa and much of China.
- **Climate change fundamentally alters the ways in which we manage water.** We can no longer use past models to predict future outcomes with the same level of confidence. The uncertainties we face around future water means that in order to achieve positive sustainable development outcomes, we must implement robust and flexible poverty reduction and economic growth strategies that take this uncertainty into account. (13.1)
- Accounting for water use in our climate mitigation and adaptation activities is essential. **While water is not mentioned in the Paris Agreement, it is necessary for nearly all of our mitigation and adaptation strategies – from carbon storage in terrestrial ecosystems, to**

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<sup>1</sup> Policy brief “Unlocking the potential of rainfed agriculture” <http://www.siwi.org/publications/unlocking-the-potential-of-rainfed-agriculture/>

**emerging clean energy technologies, to adapting to new extreme weather events – water is an essential and often overlooked component**<sup>2</sup>. Our strategies, policies and solutions must, at a minimum, ensure that they do not exacerbate existing water stress, particularly for poor and marginalized communities, and ideally help to alleviate those stresses. (13.2)

- This can be accomplished at the National level through the implementation of the NDC's that countries submitted and are revising for 2020. Water is presented as the number one priority for most of the NDC's whilst majority of other priority areas and identified hazards are water related or water dependent. Since many of the SDG's and their relevant targets are also addressed by these NDC priorities, transforming water related commitments into national adaptation/action plans gives the opportunity for countries and cities to address the needs in an integrated, holistic, effective, efficient and sustainable manner in order to build resilient societies
- Reducing risk to infrastructure, people and the ecosystems upon which they depend requires the adoption of risk-based approaches to adaptation and the pursuit of no- or low-regret options that will protect against a range of future climate scenarios. Traditional grey infrastructure often has an operational lifetime of 30-100 years or more; climate-proofing infrastructure in ways that also take into account changing water availability and timing will be essential to ensure that infrastructure remains viable over its lifetime. (13.2, 13.3, 13B)

*Case studies:*

UNESCO recently released a handbook for decision-making under climate uncertainty called **Climate Risk-Informed Decision Analysis (CRIDA)**<sup>3</sup>. This bottom-up approach to decision-making under climate change engages local stakeholders from the outset to identify risks and solutions. It has been piloted in over a dozen countries and is currently being used by cities as diverse as Lusaka, Zambia and San Francisco, California to increase the resilience of local populations, ecosystems and infrastructure. (13.1, 13.2)

Trees, forests and agriculture are key to reducing carbon emissions and assisting countries in adapting to the adverse effects of climate change<sup>4</sup>. In addition, sustainable forest and land management provide essential ecosystem services that regulate both surface and groundwater flows. To achieve the Paris Agreement and meet major water challenges, water wise management and productive multifunctional landscapes are crucial. **The Ethiopia Water and Landscape Governance programme** hosted by SIWI is developing a water governance program in select river basins in Ethiopia with the overall ambition of translating water management policy into action through the improvement of governance arrangements at a basin scale. One of the main components of the program is landscape restoration through stakeholder dialogues involving farmers, foresters, pastoralist and local communities. (13.1, 13.2)

Marine, riparian, and aquatic ecosystems provision critical adaptation and ecosystem services for communities and economies. Integrated basin-scale management from source waters to coastal, estuarine and marine systems is essential to ensure that the full range of fresh and saltwater

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<sup>2</sup> Policy brief "Watering the Paris Agreement" <http://www.siwi.org/publications/water-management-key-to-tackling-climate-change/>

<sup>3</sup> CRIDA [https://agwaguide.org/docs/CRIDA\\_Nov\\_2018.pdf](https://agwaguide.org/docs/CRIDA_Nov_2018.pdf)

<sup>4</sup> Policy brief "How landscapes and water mitigate climate change" <http://www.siwi.org/publications/how-landscapes-and-water-mitigate-climate-change/>



resources are sustained. **The Action Platform for Source-to-Sea Management (S2S Platform)**<sup>5</sup> is a multi-stakeholder initiative that helps freshwater, coastal and marine experts to contribute to global knowledge generation on source-to-sea interconnections, which are crucial for climate change mitigation and adaptation. The platform engages in collaborative projects, promote best practices, and take action for improved integrated management. (13.1)

**The Marrakech Partnership for Global Climate Action (MPGCA)** is a UNFCCC initiative that supports implementation of the Paris Agreement by enabling collaboration between governments and key stakeholders to lower emissions and increase resilience against climate impacts. SIWI and AGWA are focal points for water, leading activities to integrate water into the global climate action agenda and further strengthen linkages to other policy frameworks (such as Agenda 2030 and Sendai Framework), a variety of institutions (multilateral and bilateral institutions, NGOs, academia, the private sector) and ensure interlinkages with other thematic communities and partners. (13.3)

***SDG16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels***

Water is a resource shared by all and water cooperation can be an important factor in strengthening political stability and peace. **At the international level, established water cooperation systems in shared river basins can be a critical feature of international cooperation and of the pursuit for solutions to transboundary problems.**

- The likelihood and intensity of water conflicts is linked to the rate of physical or institutional change in the water system, as well as the strength of the cooperative institutions linking countries sharing the same water basin. Hence, very rapid changes that cannot be managed by the existing institutional capacity are at the root of most water conflicts. Global warming causing rapid physical changes can factor increasing the risk for conflict, while having systems in place for transboundary cooperation can reduce the risk.
- **Good water governance can serve as a model for improving governance in general.** For example, the UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) can serve as a model for promoting peace, inclusivity, transparency and cooperation between neighboring states. (16.6, 16.7, 16.8, 16A)
- Working on water integrity, which includes key elements such as transparency, accountability and participation, is also key to build systems and decision-making processes that prevent corruption.
- Building effective, equitable and accountable institutions requires the input of all relevant stakeholders throughout the decision-making and implementation process. Effective and sustainable approaches to water management includes stakeholders from the onset, asking them to define the challenges or need as well as determine the acceptable range of outcomes in order to identify the best solutions. **Inclusive and equitable decision-making also require taking into account women's perspectives on water and development issues.** These approaches are relevant not only to water management and can be adapted to a range of governance issues and scales. Further, promoting peaceful and inclusive societies through inclusive governance increases political buy-in and data and information sharing while creating opportunities to resolve challenges before they become crisis. (16.7, 16.8)

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<sup>5</sup> Policy brief "The blue trinity: freshwater, oceans and climate change" [http://siwi.org/wp-content/uploads/2018/11/PB\\_Oceans-freshwater\\_updated-2018-11.pdf](http://siwi.org/wp-content/uploads/2018/11/PB_Oceans-freshwater_updated-2018-11.pdf)

- Transboundary water cooperation is essential in situations where there are competing or conflicting interests on how water should be allocated or managed. **Water diplomacy approaches can also support peace building in situations characterized by conflict and hostile relations between countries over issues other than water.** In such situations, the shared water resources can serve as an entry point for dialogue that over time can lead to the identification of mutual gains and confidence building beyond the water sector.
- Transboundary water management plays a particularly important role in promoting peaceful and inclusive societies by strengthening synergies across and between actors and sectors.
- Water is significant in all major religions, as a symbol of life and peace. In many indigenous cultures water is described as the lifeblood of the earth, her most sacred resource. Faith Based Organizations have long played an important role in community development and many works to promote sustainable development at local, national, and global levels, holding foundational roles in guiding community values, beliefs and behaviors. Moreover, in areas of the world with the highest levels of water stress, religion often plays a definitive role in the daily lives of community members. Promoting and understanding the faith based, spiritual and cultural values of water can help increase engagement in our water resources, promote goodwill and understanding between neighboring communities.

*Case study:*

SIWI regularly organizes experience sharing workshops and informal meeting opportunities for senior negotiators on water issues from basin states in conflict affected regions that provide key opportunities for knowledge exchange, development of shared vision and prioritization of key areas of cooperation. One example of is the SIWI organised Annual **“Women in Water Diplomacy” Workshops**. The 2<sup>nd</sup> training workshop was held outside Addis Ababa, Ethiopia in December 2018, and participants were 19 women government representatives engaged in transboundary water management in the Nile Basin. Participating countries included Ethiopia, Egypt, Sudan, South Sudan, Burundi, Democratic Republic of Congo, Kenya, Rwanda and Uganda. The majority of participants represented Ministries of Water and Foreign Affairs. SIWI’s engagement with women water leaders contributed to mitigation of regional tensions and the development of more inclusive and equitable basin-level decision-making that represents women’s perspectives on water and development issues.

## Conclusion

The SDGs is a complex and intertwined framework with a diverse set of goals and targets. However, when looking for solutions, one goal cannot be tackled in an isolated manner. Its achievement can be enhanced when taking into consideration other goals; hence avoiding trade-offs.

**One trait that is common to most of the SDGs goals and targets, is their dependence upon sustainable water resources.** Sustainable water resources form the basis of a resilient, thriving society. We will not deliver on the 2030 Agenda without considering and enhancing the role that water can play in achieving the SDGs.

Water can bridge the overall 2030 Agenda and we can make great strides in reducing poverty, inequality, hunger, aquatic and terrestrial environmental degradation, economic disparity and injustice by

- ensuring equitable access to clean, reliable water resources for both humans and nature,
- improving the effectiveness, fairness and transparency of water governance from the local to transboundary level,
- climate-proofing our water management tools and approaches,



- recognising water's value when it comes to social, environmental and economic prosperity, and
- taking a human-rights based approach to water and ensuring that women, youth, indigenous populations and vulnerable groups are empowered to take action and become right holders as well as duty bearers.

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