UN 2023 Water Conference

Proposal of Türkiye for the Thematic Concept Papers

Water for Health

I. Introduction

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II. Overview of the challenge, current status and interlinkages

Water is the essential resource for the prosperity and health of world population. Therefore, achieving SDG 6 targets is crucial for achieving other SDGs and ensuring sustainable development. There are many interlinkages between SDG 6 and other SDGs.

Results of water quality monitoring from around the world demonstrate that various hazardous chemicals are detected in water resources and bodies of fish and aquatic biota. Some of these chemicals are known or suspected human carcinogens and endocrine disrupting chemicals. The health effects of chemicals are not limited to these. Systemic metabolic diseases, some neurobehavioral deficits, cardiovascular and ischemic heart diseases and birth defects are attributed to chemical exposure and water and aquaculture consumption is one of the important routes of exposure. Pollution related diseases are estimated to account for up to 7% of annual health spending in middle income countries and 1.7% in high income countries[1]. The World Health Organization estimated the burden of disease from selected chemicals at 1.6 million lives in 2016 and it is likely to be an underestimate. By this feature, SDG 6 is closely related to SDG 3. In addition to this, chemical pollution also threatens a range of ecosystem services[2] and may cause loss of biodiversity. Thus, SDG 6 targets directly affect the achievement of SDG 14 and SDG 15. Therefore, state of the chemical pollution of water must be demonstrated clearly and controlled to ensure sustainable development. Furthermore, microplastics in water resources is an even worsening problem. Studies show that there is significant amount of microplastics in freshwater resources in different regions of the world[3]. However, SDG 6, its targets and indicators are not comprehensive enough to address these problems.

Moreover, wastewater based epidemiology (WBE) enables almost real-time identification and quantification of chemical and/or biological markers using samples from the wastewater treatment plants thus provides information on community circulation of these markers. It is a very efficient tool for detection and population surveillance of illicit drugs, personal care products, industrial chemicals and human enteric viruses (Poliovirus, Hepatitis A, Adenovirus, Corona viruses etc.). It is also a non-invasive tool, which does not require repeated sampling of individuals.

The beginning of Covid-19 pandemic (2020) was a global milestone in WBE studies. Since then, WBE has been actively used to monitor SARS-CoV-2 in 70 countries. Unlike

[1]United Nations Environment Program. (2019).*Foundational paper for Global Chemicals Outlook II- Economic benefits of action and costs of inaction*.

[2]United Nations Environment Program. (2019). *Global Chemical Outlook II-From Legacies to Innovative Solutions: Implementing the 2030 Agenda for Sustainable Development.*

[3]J. Li et al. (2018). Microplastics in freshwater systems: A review on occurrence, environmental effects, and methods for microplastics detection. *Water Research*. 137: 362-374.

clinical diagnostic tests, WBE is an important tool that can be used to monitor the footprint of infectious diseases such as Covid-19 in society and their presence and spread in real time and without presemptomatic/symptomatic/asymptomatic distinction with a small number of samples in a cost-effective manner. Routine monitoring of Covid-19 with WBE enable decision-makers to quickly implement quarantine measures in the right regions at the right time, depending on the trend of increasing disease intensity. In underdeveloped non-sewered countries, WBE studies allows to collect mass case numbers at low costs. Additionally, as approved in many countries, the increase in the number of cases in a community can be observed beforehand on a daily/weekly basis by WBE. Hence, WBE has been accepted as an effective early warning approach to detect the new surge waves and possible new epidemics. The experiences gained from the WBE studies accomplished during the course of Covid-19 will ensure preparedness against possible future pandemics. In addition, under One Health approach, these studies have the potential to be used in tracking viruses and pathogens, as well as antibiotic resistant genes present in wastewater. Very recently announced European Union draft Urban Wastewater Treatment Directive clearly mentioned that Member States shall monitor the public health parameters (SARS-CoV-2 virus and its variants, poliovirus, influenza virus, emerging pathogens, contaminants of emerging concern, antimicrobial resistance and any other public health parameters) in urban wastewater.

WBE discussions under Water for Health theme of UN 2023 will provide a great opportunity to highlight the potential of WBE to ensure One Health approach by monitoring other pathogens, human exposure to environmental contaminants, biomarkers and antimicrobial resistance. The conference will provide a platform to discuss how to establish cooperation with world-wide centers of communicable diseases (e.g., ECDC, CDC, NICD, SAMRC) and global and continental health initiatives (e.g., WHO, HERA) to develop an early warning alert mechanism in case of (re-) emergence of COVID-19 or possible future pandemics. In addition, the conference will increase interest from financial funding agencies, scientific disciplines, water associations, globally active water operators and major actors to develop capacity building activities especially for training of specialists and setting-up infrastructure (e.g., labs) and logistics of WBE activities. Governments (local authorities/mayors, parliamentarians, ministers, heads of governments/state), intergovernmental, bilateral and multilateral organizations, financial institutions and non-governmental organizations, water professionals, scientists, policy and decision makers, representatives of water-related sectors are the major potentially expected audience. The outcomes will support the following Sustainable Development Goals; 2.4, 3.3, 3.d, 6.2, 6.3, 11.6, 14.1.

III. Overview of opportunities for progress and transformative solutions

1. Financing

This section will examine how to improve targeting, better utilization of existing resources and mobilization of additional domestic and international funding for delivery and implementation of all SDG 6 targets, bearing in mind the interlinkages with other goals. It may also explore the barriers that preclude finance mobilisation to date and offer action-oriented solutions.

2. Data and information

This section will discuss how data generation, validation, standardization and information exchange can build trust and support leaders in making informed decisions and increase accountability. It will discuss how to ensure that high-quality information on SDG 6 indicators is shared and can be easily accessible by any decision maker.

3. **Capacity development**

This section will explore how inclusive human and institutional capacities at all levels can enable improved service levels, operating and maintenance technology, increased job creation in the water sector and the retaining of a skilled work force.

4. **Innovation**

World needs innovative tools to monitor and assess the chemical quality of water resources in a faster and reliable manner. This requires enhanced collaboration between countries, academia and governmental institutions and mobilization of additional financial resources to support the research. The process itself will contribute to the technical and human resources capacity development.

5. **Governance**

This section will focus on the need for cross-sector and transboundary collaboration, clear roles, stakeholder involvement and effective and inclusive institutions to make SDG 6 everyone's business.

IV. Recommendations

In order to facilitate the control of the illnesses attributed to hazardous chemicals in water and also the microplastics problem, to reduce the related burden on national and global economies and enhance the wellbeing of world community, SDG 6 needs to be elaborated through a public health perspective not only considering the epidemics but also considering the ecological and health impacts of hazardous chemicals and microplastics in water resources under the theme "Water for Health" in the conference. In this context, Level 2 reporting under SDG indicator 6.3.2 may be reviewed. Moreover, the interlinkages between SDG 6, 3, 14 and 15 must be strengthened, data from SDG 6, 3, 14 and 15 indicators must be assessed together both to check the quality of collected data and to assess the progress more realistically. In addition to these, adoption and implementation of common criteria for the monitoring of SDG 6.3.2 may be deliberated in the conference.

Moreover, with the impacts of climate change, floods and droughts become more frequent and intense in various regions around the globe. Storm water carry a wide variety of contaminants with significant concentrations and causes severe water pollution problems. On the other hand, droughts limit the access to safe drinking water. These problems create public health problems that should also be discussed in the conference.

V. Guiding Questions

- How can SDG 6.3.2 be elaborated to address chemical and microplastics pollution in water resources?
- What can be done to better correlate and evaluate the data from SDG 6.1.1, 6.2.1, 6.3.1, 6.3.2 and SDG 3.3.3, 3.3.4, 3.9.2 and 3.9.3 indicators?
- What are the obstacles to accelerate the actions need to achieve SDG 6 targets?

- In which ways the developed countries support least developed and developing countries to achieve SDG 6 targets?
- Covid-19 pandemic propounded the vitality of water and sanitation services for public health and climate change puts a significant pressure on the availability and supply of drinking water. Under these conditions, what would the governments and UN agencies do and which precautions should be taken in order to ensure safe water supply in case of an upcoming pandemic?
- How can the data collection be improved under SDG 6?

UN 2023 Water Conference

Proposal of Türkiye for the Thematic Concept Papers

Water for Sustainable Development

I. Introduction

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II. Overview of the challenge, current status and interlinkages

Water is the essential resource for the continuity of life and prosperity and health of world population. Therefore, achieving SDG 6 targets is crucial for achieving other SDGs and ensuring sustainable development. There are many interlinkages between SDG 6 and other SDGs.

Water is at the core of sustainable development. Since SDG 6 is the basis for all other SDGs, water action agenda is very crucial for the achievement of 2030 goals. It will foster the action not only for the achievement of SDG 6 but also all other SDGs and will present a momentum for the sustainable development if practical and well-directed commitments would provide by the governments and other stakeholders. On the other hand, failure to achieve water-related goals propagates the risk of failure in achieving other interlinked goals. For instance, investments on water infrastructure may develop new employment opportunities and are very critical for the food and energy supply security. Countries which have inadequate water infrastructure in terms of storage capacity, irrigation and hydroelectric energy facilities facing the unsecure water, food and energy supply especially under impacts of climate change and ongoing wars.

The implementation of SDGs has significant consequences to many water-related problems arise from inadequate governance. Lack of institutional capacity is the central factor explaining the poor performance of water governance in many countries. The SDG implementation process must thus support the building of institutional capacity to achieve its goals. This is also connected to Goal 16 which is related to promotion peaceful and inclusive societies for sustainable development.

Many countries adopt "Integrated Water Resources Management" approach. This approach is promising in terms achieving sustainable management of water resources. On the other hand, sustainable water resources management efforts are not sufficient alone to protect water resources from deterioration. Water resources are vulnerable to the impacts of non-sustainable consumption habits. While world resources run out disproportionally to the increase in world population, consumption habits of people evolve into a more dissipative manner. According to analysis of UN, 1.3 billion tonnes of food is wasted in 2021 globally. The case is similar in Turkey, 7.7 million tonnes of food is wasted annually. Similarly, global textile industry is growing continuously. Production of textile fibers have been increased to 113 million metric tons in 2021 from 24 million metric tons in 1975[1]. More production means more water consumption and wastage. Water footprint

[1] https://www.statista.com/statistics/263154/worldwide-production-volume-of-textile-fibers-since-1975/

of a cotton t-shirt is 2,720 liters, the value for jeans is 10,850 liters[2]. Water footprint of sugar from sugar beet is estimated to be 920 litre/kg, water footprint of sheep meat is estimated to be 10412 litre/kg and water footprint of bread is estimated to be 1608 litre/kg[3]. These facts and figures showcase the urgency of need to action to adopt sustainable production and consumption habits globally instead of greenwashing that is being acted by most of the market leaders of consumer goods, food and textile industry market in order to ensure sustainable development and keep track of the 2030 sustainable development agenda.

III. Overview of opportunities for progress and transformative solutions

The implementation of SDGs has significant consequences to Many water-related problems arise from inadequate governance. Lack of institutional capacity is the central factor explaining the poor performance of water governance in many countries. The SDG implementation process must thus support the building of institutional capacity to achieve its goals. This is also connected to Goal 16 which is related to promotion peaceful and inclusive societies for sustainable development.

1. **Financing**

Developed countries and international agencies may support developing and least developed countries to develop water resources in a sustainable way in order to ensure global food, energy and water supply security.

2. **Data and information**

This section will discuss how data generation, validation, standardization and information exchange can build trust and support leaders in making informed decisions and increase accountability. It will discuss how to ensure that high-quality information on SDG 6 indicators is shared and can be easily accessible by any decision maker.

3. **Capacity development**

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4. **Innovation**

Innovation required to develop less water-intense production processes and better wastewater treatment technologies. Dissemination of existing technologies to developing and least developed countries is also needed to achieve success.

5. **Governance**

Governments need to collaborate better with industries, investors, academia and citizens to develop and implement sustainable water management policies.

IV. Recommendations

[2] https://www.watercalculator.org/footprint/the-hidden-water-in-everyday-products/
[3] https://waterfootprint.org/en/resources/interactive-tools/product-gallery/

Interlinkages between SDG 6, 2, 13, 9, 14 and 15 should be discussed in detail and revealed clearly in the conference under this theme. The correlations should be investigated by assessing the collected data and common actions may be defined. Moreover, good practices of countries may be shared and cooperation opportunities may be discussed. For instance, Türkiye constructed 1620 storage facilities for irrigation and drinking water supply and energy production. Among those facilities 730 are hydroelectric power plants which provide safe and renewable energy. Total share of hydroelectric power plants in Türkiye's total installed capacity is 31 % and installed capacity of hydroelectric power plants is 31.658 MW. Moreover, 4,72 billion cubic meter additional safe drinking water supplied by these facilities till 2022 which corresponds to 48 million inhabitants. The majority of irrigation is realized as gravity irrigation, which leads to low water efficiency. The use of water saving irrigation techniques has gained momentum in the last decade. By modernization of existing irrigation facilities and construction of modern irrigation facilities around 30% water saved annually in irrigation. The Turkish government has provided subsidies and interest-free loans to farmers in order to promote water saving irrigation technologies. Furthermore, increased agricultural production by irrigation services provides additional employment opportunities for 6.2 million people. By these features, water investments of Türkiye are assurance of the sustainable development and food security of the region and key to water-energy-food nexus.

V. Guiding Questions

- How can the data collection be improved under SDG 6?
- How can the correlation between SDG 6, 1, 2, 7, 8, 9 and 12 put forth?
- Which collaborative efforts should be made in order to achieve SGD 6 targets?
- How can the developing countries be supported in order to ensure global food, energy and water supply security?
- In which ways should the consumption habits be changed and how can the cleaner production be generalized around the globe in order to ensure global food, energy and water supply security?

UN 2023 Water Conference

Proposal of Türkiye for the Thematic Concept Papers

Water for Climate, Resilience and Environment

I. Introduction

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II. Overview of the challenge, current status and interlinkages

Climate change has severe impacts on hydrological cycle and water resources. As the world gets warmer, hydrological cycle accelerates and due to the alterations in precipitation regimes, pressure on freshwater ecosystems increases[1]. With the impact of climate change, proportion of saline water increases as compared to fresh water resources, groundwater abstraction increases and land use patterns changes and most importantly the precipitation regimes changes noticeably[2]. According the UN data, 74% of all disasters occurred in world between 2001 and 2018 were water-related, 166.000 people died due to floods and droughts and 700.000 US $ economic damage occurred[3]. In addition to that, 2.3 billion people live in countries experiencing water stress[4]. These facts reveal that adoption and implementation of climate change adaptation strategies in water resources management and developing climate resilient water infrastructure are of significant importance. Therefore, better interlinkages should be established between SDG 6 and 13 in terms of data collection and assessment. Moreover, SDG 12 is closely related to both SDG 6 and SDG 13 since adoption and generalization of sustainable production and consumption habits are crucial to ensure adaptation to climate change impacts. Moreover, SDG 9 targets may support the achievement of SDG 6 targets by supporting innovative, environment friendly industrial production and development of resilient infrastructure. SDG 2 is also closely related to the theme and SDG 6 since droughts pose significant risks on food security.

III. Overview of opportunities for progress and transformative solutions

1. Financing

This section will examine how to improve targeting, better utilization of existing resources and mobilization of additional domestic and international funding for delivery and implementation of all SDG 6 targets, bearing in mind the interlinkages with other goals. It may also explore the barriers that preclude finance mobilisation to date and offer action-oriented solutions.

2. Data and information

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[1] Oki, T., & Kanae, S. (2006). Global hydrological cycles and world water resources. S*cience*, 313(5790), 1068-1072.

[2] Bates, B., Kundzewicz, Z., & Wu, S. (2008). *Climate change and water*. Intergovernmental Panel on Climate Change Secretariat.

[3] UNESCO, UN-Water. (2020): United Nations World Water Development Report 2020:Water and Climate Change, Paris, UNESCO

[4] UN-Water. (2021). *Summary Progress Update 2021 – SDG 6 – water and sanitation for all*. Version: July 2021. Geneva, Switzerland.

Monitoring the quality and quantity of water resources is vital for better understanding the impacts of climate change and enhancing the adaptation to climate change. The forecasts can only be improved by more reliable and extensive data. Therefore, meteorological and water regime data collection systems should be improved around the world. This will also support the disaster risk reduction efforts by enhancing flood and drought early warnings.

3. **Capacity development**

Countries should develop human resources and technical capacity on data collection, assessment and flood and drought forecasting and early warning.

4. **Innovation**

Scientific advances and innovation are required to develop more reliable flood and drought forecasting systems.

5. **Governance**

Governments need to develop better policies to address the challenges of climate change. This requires collaboration between all stakeholders. Strategies and policies should focus on minimization of risks and government and academia collaboration is required for development and implementation of innovative tools in disaster risk reduction.

IV. Recommendations

Interlinkages between SDG 6, 2, 13, 9, 14 and 15 should be discussed in detail and revealed clearly in the conference under this theme. The correlations should be investigated by assessing the collected data and common actions may be defined. Moreover, good practices of countries may be shared and cooperation opportunities may be discussed. For instance, Turkiye is developing flood early warning systems in order to reduce the risk of floods. Pilot scale studies are being conducted in Eastern Black Sea Basin. In scope of this study, real-time flow measurements are conducted in several streams in the basin and this data is assessed in a central station. If flow increases to levels that may cause floods, warnings are given in the areas which could be affected in order to keep the people away from the flood area. Moreover, in order to increase the water storage capacity, enhance the adaptation to risk of droughts and ensure the food and water supply, reservoirs are constructed around the country. By modernization of existing irrigation facilities and construction of modern irrigation facilities 5 billion cubic meter water saved annually in irrigation. Moreover, 10.267 flood control facilities were constructed in Turkiye. These facilities are major contributors to disaster risk reduction since significant decreases observed in last years in both number of deaths and injury and loss of property due to floods.

V. Guiding Questions

- How can the data collection be improved under SDG 6?
- How can the correlation between SDG 6, 2, 13, 9, 14 and 15 put forth?
- Which collaborative efforts should be made in order to better adapt to the impacts of climate change on water resources and develop climate resilient infrastructure?

UN 2023 Water Conference

Proposal of Türkiye for the Thematic Concept Papers

Water for Cooperation

I. Introduction

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II. II. Overview of the challenge, current status and interlinkages

Ensuring sustainable access to clean water and sanitation for all requires further cooperation at all levels. Stability, social cohesion, sustainable development and prosperity can all be strengthened by cooperation over water. Factors such as the climate change, the Covid-19 pandemic and international migration flows have intensified the need for a collaborative approach at different levels in response to water related challenges as the impacts of these phenomenon are felt globally.

Developing water cooperation at all levels (regional/international/transboundary) with all diplomacy tracks is essential for alleviating global water problems and achieving the goals of the SDG 2030 agenda. In this context, countries and initiatives should be supported and encouraged.

In this context, Türkiye carries out projects and studies such as water efficiency in agriculture, water-energy-food-ecosystem, and irrigation governance in order to develop dialogue and strengthen cooperation among the countries of the region under the Blue Peace in the Middle East Initiative.

III. Overview of opportunities for progress and transformative solutions

The existing and future water-related challenges we face require the rapid development and deployment of innovative and transformative solutions that go beyond business-as-usual. The international community must strive for concrete recommendations that can foster progress and transformative solutions. The SDG 6 Global Acceleration Framework aims to deliver fast results at an increased scale. The themes of the interactive dialogues will be addressed through the lens of five cross-cutting and interdependent accelerators namely: Financing, Data and information, Capacity development, Innovation, and Governance.

1. Financing

Investments in water, especially in agriculture sector delivers significant economic, environmental and social benefits and enables cooperation at different levels. Financial resources should be optimized to enhance the efficiency and sustainability of water irrigation infrastructure. Effective planning and priority setting should be realized to ensure sustainability of investments.

2. Data and information

Developing a more comprehensive and tailor-made methodology for reporting the SDG 6.5.2 may provide more reliable and extensive data and ease the monitoring of progress.

3. **Capacity development**

Knowledge and experience exchange and dissemination of good practices is a key for cooperation in the field of water. Strengthening countries's capacities to manage water, to increase water use efficiency and to monitor, collect and analyse data is important for better cooperation at transboundary level. Joint capacity building activities serve to improve transboundary cooperation and dialogue.

4. **Innovation**

Research and development on innovative methods and tools should be enhanced at all levels in a cooperative manner.

5. **Governance**

This section will focus on the need for cross-sector and transboundary collaboration, clear roles, stakeholder involvement and effective and inclusive institutions to make SDG 6 everyone's business.

IV. Recommendations

Water is essential to national, regional and global development. Transboundary cooperation is one among many different levels of water cooperation. Methodology designated for reporting SDG 6 indicator 6.5.2 is not convenient to allow for reflecting the specific circumstances and cannot be tailored to the requirements of different regions in the world. With the current methodology, it would not be possible to report the progress achieved by bilateral cooperation agreements. Therefore, progress under indicator 6.5.2 cannot be tracked realistically and the indicator is far from demonstrating the actual progress and situation in the world. Moreover, the data on SDG 6.5.2 is showing that there is no such a big difference on global levels of operational cooperation in transboundary basins and a number of countries to participate to in reporting between the two periods of reporting 2017 and 2021. At first cycle in 2017, 107 out of 153 countries joined the reporting and only 62 of them were counted as data available. The SDG 6.5.2 indicator was globally calculated as 59 % on the proportion of the transboundary basin area covered with operational arrangements for water cooperation. Similarly, at the second period of the reporting of the indicator, the level of transboundary cooperation stayed as 58 % globally. A number of countries to join to reporting were 129 out 153.

As a result of these information, the proposed methodology for calculation of SDG 6.5.2 indicator by Türkiye at the sub-regional workshop organized by UNESCO-IHP with SUEN in 2019, which is very comprehensive and can assist countries to identify degree of transboundary cooperation as its natural character is seen more accurate than existing format. Through the proposed methodology by our country, measurable and objective results can be achieved and countries and transboundary basins can reflect their own specific characteristics to the calculations for transboundary cooperation. Therefore, Türkiye reiterates its own proposal as a comprehensive methodology for the calculation of indicator SDG 6.5.2.

V. Guiding Questions

- How can the data collection be improved under SDG 6?
- How can the reporting of SDG 6.5.2 be improved to better reflect the situation around the world?
- Which efforts should be made by governments and UN agencies in order to enhance the collaboration on water issues?