



Swiss Working Paper on Water in the Post-2015 Agenda

Draft 14 February 2014

Water is a limited, non-substitutable primary resource essential for social well-being, economic development and maintenance of ecosystem services. Water is also directly linked to peace and security. If water issues will not be addressed adequately, this would not only mean a water crisis, but several other crises in water-dependent sectors. Therefore, water security has to be addressed as one of the highest priorities in the Post-2015 Agenda and water must feature prominently as a dedicated Post-2015 Sustainable Development Goal on Water with measurable targets and indicators in support of life, well-being, economic development and the environment.

Water in the Post-2015 Agenda: Key messages

- **Water is at the core of the three dimensions of sustainable development – social, economic and environmental**
- **Safe drinking water and adequate sanitation is a human right and together with practicing good hygiene a prerequisite for healthy human living and productivity;**
- **Water challenges for a sustainable world go beyond access to safe drinking water, adequate sanitation and hygiene;**
- **Water resources management at the basin level is key for ensuring food and energy security, economic growth and sustaining ecosystems;**
- **Water resources management is a key instrument for climate change mitigation and adaptation;**
- **Management of water resources and the polluting impact of wastewater is a universal challenge for all countries;**
- **International stability and peace increasingly depend on effective management of the limited freshwater resources and their benefits;**
- **Water cannot be looked at merely as a transversal topic; water needs to have its own integrated approach which calls for a dedicated Post-2015 SDG on Water;**

I. To ensure (global) water security and universal access to sanitation, drinking water and hygiene

Water challenges for a sustainable world includes (i) access to safe drinking water, sanitation and hygiene (WASH), (ii) sustainable management of water resources, (iii) wastewater management and issues of water quality and (iv) resilience to water-related disasters. When dealing with these issues, inequality aspects need to be considered. There are not only strong inequalities in the access to drinking water and sanitation, but poor and marginalized people are also the ones who are most affected by the unsustainable management of water resources, by water pollution due to inadequate wastewater management and by the impacts of water-related disasters. According to a recent assessment of the U.S. Intelligence

Community, water insecurity can generate widespread social and political instability. The resulting water stress may well contribute to instability, state failure and even expand to regional tensions or conflicts, particularly when combined with poverty, social tensions, environmental degradation, ineffectual leadership, and weak political institutions. In its 3rd consecutive year, the WEF Global Risks Report states water crises among the three top global risks with regard to seriousness, likelihood and potential impact. However, in the current MDG framework, the goal of environmental sustainability - with the targets for water and sanitation - did not address the broader water agenda and its manifold links to poverty reduction and economic growth.

1. Water Supply, Sanitation and Hygiene (WASH): Millennium Development Goal No. 7 includes the target “to halve by 2015 the proportion of people without sustainable access to safe drinking water and basic sanitation”. Moreover, in 2010 the UN General Assembly adopted a resolution recognizing safe and clean drinking water and sanitation as a human right and this was reaffirmed in the Rio+20 outcome document. And yet, at least 780 million people still lack access to an improved water source and many more use water that is dangerous to health. 2.5 billion people live without improved sanitation and 1.1 billion of them still practice open defecation. There are significant disparities and inequalities in access, for instance between and within regions, between urban and rural areas, between the rich and poor sections of the population and between women and men, with women being disproportionately affected. Most of the water collecting is done by women and girls - a time consuming and burdensome activity. This prevents women and girls from being engaged in productive activities or education and also has an adverse impact on their health. Equally the lack of access to basic sanitation infrastructures in their homes forces especially women and girls to practice open defecation only under cover of darkness in order to protect their dignity – and risking their safety and health. Furthermore the absence of safe toilets in schools is a reason for drop-out amongst young girls and thus an obstacle to girls’ education and economic opportunities.

Therefore, realizing the human right to safe drinking-water and sanitation by eliminating inequalities and achieving universal access to WASH must be one of the targets of a dedicated SDG on Water in the post-2015 agenda.

2. Water Resources Management: Access to WASH, food and energy production, disaster risk reduction, economic development, and healthy ecosystems rely on the availability and sustainable management of water resources - surface as well as groundwater. In the 2002 Johannesburg Plan of Implementation and reaffirmed in the Rio+20 outcome document, it was agreed that all countries should develop integrated water resources management (IWRM) and water efficiency plans adopting an integrated water basin approach. However, the results of a survey carried out in 2011 show that in recent years, progress towards sustainable water resources management has slowed or even regressed in both developing and developed countries despite the fact that it is essential for a balanced development and that trans-boundary water resources - surface and groundwater - are becoming increasingly important for peace and international security.

The demand on water resources and the competition among user groups will increase drastically. By 2030, feeding a world population of 8 billion people will require 14% more water for irrigation, the demands on water for energy production will more than double and higher rates of urbanization will increase demand for water for domestic and industrial use with consequent higher production of wastewater. Due to unsustainable human activities, ecosystems and their services are degrading rapidly. All this has disproportionately negative effects on the poor and on women who are the primary caregivers, subsistence food providers at

small scale for consumption on household levels and the ones to collect water that is less and less available. These challenges are exacerbated by the additional level of complexity considering that there are more than 260 major trans-boundary rivers and lakes. Their basins account for 40% of the global population and 60% of global freshwater. The same issue applies to the additional 300 trans-boundary groundwater basins. The level of cooperation in most basins is not adequate to tackle the growing challenges, thus the development and long-lasting implementation of treaties and arrangements to manage sustainably these trans-boundary water bodies is crucial for national, regional and international peace and security.

Therefore, water productivity for growth while protecting ecosystems must be one of the targets to be included in a dedicated Post-2015 SDG on Water. Water resources must be managed at the basin level and allocated in a transparent, equitable and participatory way that allows for the maximization of the derived benefits.

3. Wastewater Management and Water Quality: Globally, about 80% of wastewater from human settlements and industrial sources are discharged into the environment without any treatment with detrimental effects on human health, economies and the ecosystems. Organic, chemical and thermal pollution from urban and industrial wastewater and agriculture is projected to worsen in most regions of the world, intensifying eutrophication and damaging ecosystems and oceans. The people affected the most by the discharge of untreated wastewater are the most vulnerable, poor and marginalized people living in informal settlements and in poorer urban communities or in rural areas. The need to reduce water pollution and improve water quality was strongly underlined in the Rio+20 outcome document. On the other hand, wastewater is an underutilized resource and reuse/recycling can ensure an effective environmental and health protection as well as recovery of water, nutrients and energy.

Therefore, the management of wastewater to protect water resources and ecosystems and to make better use of wastewater as a resource should be also one of the targets in a dedicated Post-2015 SDG on Water.

4. Resilience to water-related disasters: Climate change is anticipated to increase the spatial and temporal variability of water availability, as well as the frequency and magnitude of extreme events such as floods and droughts. This will threaten human well-being, economic activities and put further strain on ecosystems. Water-related disasters are the most economically and socially destructive of all natural disasters. Since the Rio Earth Summit in 1992, floods, droughts and storms have affected 4.2 billion people (95% of all people affected by disasters). The number of people at risk from floods is projected to rise from 1.2 billion today to around 1.6 billion in 2050 (nearly 20% of the world's population). Also in this case, women are the most vulnerable making up the majority of fatalities of natural disasters. The Rio+20 outcome document underlined the need to adopt measures to address floods, droughts and water scarcity.

Therefore, improved resilience to floods, droughts and other water-related disasters must be one of the targets to be included in the dedicated Post-2015 SDG on Water.

II. Links of the water sector with other sectors

Water issues are closely linked to other sectors/challenges of the post-2015 agenda, especially poverty reduction, education and (gender) equality, health, food security, environment and energy.

Link between Water and Poverty, Education and (gender) equality: There is a close link between poverty and lack of sustainable access to safe drinking water and basic sanitation.

For instance almost 2/3 of those people who have no access to improved sanitation survive on less than 2\$ a day with 1/3 living on less than 1\$ a day. For hundreds of millions, adequate water supply and sanitation is a prerequisite for escaping the poverty trap. Apart from the direct impact on people's health and the resulting financial burden for medical treatment (see water and health link), inadequate water supply and sanitation also has negative effects on educational opportunities, gender equality and social inclusion of the most vulnerable groups. An estimated 443 million school days are lost each year due to diseases related to water and sanitation, and the lack of toilets in schools serving the poor is known to be a major factor in deterring girls from continuing their education, particularly after puberty.

Water and Health Link: 3 million people, mostly children, die each year from waterborne diseases while hundreds of millions fall sick. Poor water supply impacts health by causing acute or chronic infectious diseases as well as non-infectious diseases which can arise from chemical substances such as arsenic and fluoride. The poor are mostly affected, though their better-off neighbors may also have to live with insanitary conditions, and may succumb to communicable diseases. It reduces their income and forces them to spend a significant portion of their earnings on medical treatment. It also harms the economy as a whole because of lower productivity and lost output. Recent studies are suggesting that diseases related to poor sanitation are to blame for child stunting. Stunted children grow into less productive adults.

Water and Energy Link: Water and energy are both fundamental requirements for development and are deeply interrelated. On one hand, water supply, sewer, wastewater treatment and irrigation systems use large amounts of energy, whether for pumping, treatment or desalination; on the other hand, energy production often depends critically on water (e.g. for hydropower and cooling) and can in turn jeopardize the proper functioning and even the existence of ecosystems. In addition, increasing water productivity will also lead to energy savings.

Water and Food Security Link: Water is key to food security since crops and livestock need water to grow. Agriculture and food industry requires large quantities of water for irrigation and water of good quality for food processing. While feeding the world and producing a diverse range of non-food crops such as cotton, rubber and industrial oils, agriculture is the biggest user of water on the globe with irrigation claiming close to 70% of all freshwater appropriated for human use. The unsustainable management of water in agriculture can cause wide-scale changes in ecosystems and can undermine the provision of a wide range of ecosystem services. Agriculture also contributes to climate change through its share of greenhouse gases emissions, which in turn affect the planet's water cycle, adding another layer of uncertainties and risks to food production. More productive and efficient use of water while protecting ecosystems is essential.

Although water is closely related to these and other sectors, **it is inappropriate and risky to look at water merely as a transversal topic.** All water issues are basically connected through the hydrological cycle and the complex interrelations between the various water-related needs require an integrated approach which is best catalyzed by keeping these aspects together in a dedicated Goal on Water in the post-2015 agenda, with four targets focusing on (i) Water, Sanitation and Hygiene (WASH), (ii) Water Resources Management, (iii) Wastewater Management and Water Quality, and (iv) Resilience to water related disasters. In order to take into consideration the close links to other sectors, specific nexus targets might also be included under the SDG on Water while in turn specific water targets should be included in other SDGs. There is obviously an ever increasing competition between different users and user groups in different sectors for the available water resources and an

integrated view is required to decide on a “fair” allocation of the limited water resources for the optimal benefit of the entire society giving priority to the fulfillment of human rights. If all water-related targets are divided and just included in other SDGs, the existing tendency that each sector is just fighting for a maximum water share will be enforced and the risk for conflicts will increase. Furthermore, pursuing an approach to include all development-relevant water aspects in different SDGs would make it almost certain that water would be underrepresented in the process of determining the SDGs.

III. Universality of water challenges

Due to the interconnections it creates, water is a global issue. However, since the situation and challenges in each country are different, countries will focus on different issues to achieve the overarching goal and targets. The lack of access to safe drinking water, adequate sanitation and hygiene is most serious in the lower income areas of the developing countries (with negative impacts on the entire population and economy). On the other hand, sustainable management of the limited water resources and especially the proper wastewater management to control the polluting impact of increasing wastewater production due to fast urbanization, industrialization and industrialized/intensive agriculture are universal challenges equally or even more important for middle and high income countries. Especially in emerging economies but also in many already industrialized countries, large amounts of wastewater from human settlements and industrial sources are discharged into the environment without or only with a minimal treatment.

Against the backdrop of the ever increasing demand and competition for the limited water resources, the amount of water being utilized for the production of goods and services consumed by the society as well as the impact of wastewater discharged into the environment as a result of this production is another issue which is especially relevant for higher income countries (water footprint concept). For instance a country like Switzerland, where local water resources are available in abundance, is importing large amounts of virtual water in the form of agricultural and other products (roughly 80% of the total Water Footprint) - partly from areas where water is scarce and/or where the wastewater is not adequately treated.

IV. Outline of a dedicated Post-2015 Sustainable Development Goal on Water

The importance of an integrated approach to water as a fundamental enabler of sustainable development and primary resource for social well-being, economic development and maintenance of ecosystem services calls for a dedicated Post-2015 Sustainable Development Goal on Water with “water targets” focusing on: WASH, Water Resources Management, Wastewater Management and Water Quality and Resilience to water-related disasters, and possibly 3-4 “nexus targets”. As shown in the attached figure, it is suggested that this goal be under a general concept of ensuring “water security for all” referring to human security and vital needs: health; safe, sufficient and affordable drinking water; adequate sanitation; hygiene; protecting ecosystems; water for food security, energy and economic growth; wastewater management and reuse.

V. Conclusion

Water is at the core of sustainable development. Without proper management of water resources, health, food and energy security, education, ecosystem services and other crucial elements of human development are put at risk. Due to the irreplaceable nature, the complexity and essential socio-economic as well as environmental role of water, **it is fundamental to include an explicit SDG on Water in the post-2015 framework.**



Goal

A Water-secure¹ World for All

Water, Sanitation and Hygiene (WASH)

Water Resources Management

Wastewater Management and Water Quality

Resilience to Water-related disasters

Achieve universal access to safe drinking water, sanitation and hygiene

Increase water productivity for growth while respecting ecosystem requirements

Manage all wastewater to protect water resources and aquatic ecosystems

Increase resilience to water related disasters

- No one practices open defecation
- Universal access to basic drinking water, sanitation and hygiene for households, schools and health facilities
- Halve the proportion of population without access at home to safely managed drinking water and sanitation services
- Inequalities in access are progressively eliminated

- Freshwater withdrawals are brought in line with available water resources
- Water resources are managed at the basin level
- Water resources and the derived benefits are allocated in a transparent and participatory way.
- Water efficiency is increased in support of sustainable and equitable growth
- Ecosystems (water) requirements are respected and their services ensured
- Effective cooperation arrangements are in place in all trans-boundary basins

- Wastewater production is prevented/reduced
- Wastewater and sludges are adequately collected, treated and safely reused
- Wastewater which cannot be reused/recycled is discharged after adequate treatment

- Mortality and economic losses from water related disasters are reduced
- Building resilience of poor and marginalized people to the impacts of water-related disasters is prioritized
- Integrated disaster risk management, including structural and non-structural approaches, is applied
- Risk analysis are elaborated and early warning systems for communities at most risk to water-related disasters are in place

Water Targets

Fields of measurements

Nexus Targets

Water-Health

Cases of water and sanitation related diseases are decreased by X%

Water-Energy

Productive use of water for hydropower generation is increased by X% while respecting requirements of ecosystems.

Water-Food security

Water productivity and water efficiency in agriculture are increased by X% and Y%, respectively.

Water-Energy-Food

Nutrients and energy in wastewater and sludge are safely recovered and reused by X% and Y%, respectively.

¹“Water secure” referring to human security and vital needs: health; safe, sufficient and affordable drinking water; adequate sanitation; hygiene; protecting ecosystems; water for food security, energy and economic growth; wastewater management and reuse.