The Global Water Crisis

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The term "global water crisis" refers to an assemblage of globally faced major challenges related to water. Water scarcity, the deterioration of water quality, the failure to provide safe drinking water and sanitation services, the devastation and in some cases annihilation of ecosystems and the looming threat which climate change poses – and the way in which it is likely to exacerbate the said issues – are some of the challenges which the world currently faces. The global water crisis poses a serious threat to human civilisation. It merits our full attention and necessitates global action.

UN-Water estimates that by 2025, 1.8 billion people will live in regions with absolute water scarcity[2] and roughly two-thirds of the world's population, that is estimated to be nearly 8 billion people by then, may live in water scarce conditions (UN-Water 2012). Even after the MDG process completed, that was declared successful yet huge differences still exist particularly in case of the LDCs and sub-Saharan Africa, nearly 800 million people do not have access to adequate drinking water. Six to eight million people die annually on account of water-related disasters and diseases (UN-Water 2015). A growing number of regions are facing chronic water shortage. Although there is enough freshwater on the planet to sustain life for our world's current population, it is distributed unevenly, wasted, polluted and unsustainably managed (UN-Water 2005–2015). Water scarcity is therefore both a natural and human-made phenomenon. In terms of water usage, our agricultural systems currently exhaust the preponderance of our water resources: approximately 70% of global freshwater withdrawals can be traced back to the agricultural sector. An increase in the global standard of living will lead to an increase in demand for these "water-intensive" products. Water demand in the manufacturing industry alone has seen an increase of 400% between the years of 2000 and 2015 (UN-Water 2015). The increasing standard of living which we are witnessing throughout the world has the (unwanted) effect of dramatically increasing our per capita consumption of water. According to current projections, the Earth's population will increase by roughly 2–3 billion people by 2050 totalling 9.2 billion. This surge in the global population will be accompanied by an increase in the demand for food amounting to circa 70%, thereby further exacerbating water scarcity as the increased production of food will drastically increase the global demand for water.

It is therefore imperative not to lose sight of the fact that global water demand is correlated with macro-economic processes such as globalisation, in particular trade globalisation.

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[2] According to the Falkenmark indicator if the amount of renewable water in a country is below 500 m^3 per person per year, that country is said to be experiencing absolute water scarcity.

https://doi.org/10.36250/00698_04

Global leaders are slowly coming to the realisation that modern consumerism itself is placing a considerable strain on our water resources. Notwithstanding all of the current "green" or sustainable development initiatives, the global demand for water is expected to increase by as much as 50 percent by 2050 (UN-Water 2015, 2). Over and above this, the effects of climate change will place a heavy burden on the water resources; various regions in the world are already suffering from unusual periods of drought or flooding as well as extreme weather conditions, all of which lead to vast economic losses. As climate change progresses, these trends will likely only worsen by the end of the 21st century (World Economic Forum 2017).

As water scarcity increases, the tension between various states is predicted to increase (Global High-level Panel on Water and Peace 2017). The water crisis is therefore not only real, it is also global. The environment, international security and the survival of humanity cannot but be considered global issues. The severity of the world water crisis is evinced by its ranking in the World Economic Forum's yearly global risk reports: since 2013, it has been ranked as one of the greatest global risks.[3] In tandem with this assessment, water-related issues have assumed an ever-more prominent position on the international agenda – water is, in fact, currently considered one of the cornerstones to sustainable development. This integrated view of water, including the relevant governance issues, such as integrated institutions, is a paradigm shift from earlier approaches.

1. Global water governance

1.1. Governance defined

The global water crisis is not the crisis of running out of water but rather a crisis of governance.[4] In its first Water Development Report, the document stated that the "water crisis is essentially a crisis of governance and societies are facing a number of social, economic and political challenges on how to govern water more effectively" (World Water Assessment Programme 2003). Some would argue that, given the nature of the crisis, in order to cope with the said challenges, we must create a coherent, effective and global water governance system. Before addressing the global water governance system and the ways in which it could be improved, one must first go about defining the term "governance".

While it is not easy to define "governance" and there is no shortage of differing definitions, governance as a concept is fundamentally concerned with the interactions of power as epitomised in the forms of agency and structure. Governance may be defined as:

> "The interactions among structures, processes and traditions that determine how power and responsibilities are exercised, how decisions are taken, and how citizens or other stakeholders have their say. Fundamentally, it is about power, relationships and accountability: who has influence, who decides, and how decision-makers are held accountable. While good governance can be seen as an end unto itself, it is also a process that can be undertaken by any number of actors, and is not solely tied to the institutions of government" (Graham–Amos–Plumptre 2003, 2).

[3] World Water Council, Gupta, etc.

[4] Ibid.

Water governance, on the other hand:

> "…refers to the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society" (Rogers–Hall 2003, 7).

In defining water governance we are asking ourselves the question: What are the right things to do? This obviously should not be mixed up with water management where we ask ourselves the question: How to do things right?

Building on the above definition, one may suggest that governance involves a high degree of managing resources, such as water, and balancing various – often conflicting – interests. Political decisions involving opportunity costs must be taken. As it stands to this day, the fact remains that the state as a sociological construct is (one of) the most effective means of conveying political decisions that reflect (at least amongst the more democratic states in the world) the will of its citizens. Yet when it comes to water, the international community has not yet created a forum – an intergovernmental platform – in which it can discuss the most crucial of issues pertaining to the global water crisis. In the absence of such a forum, it is difficult to see how an effective governance system could be created at the global level. In order to tackle these global issues, the aim should not only be to create a global water governance system, but one that is "good", i.e. facilitates action, promotes development, reduces risks and – perhaps most importantly from the perspective of most states – reduces costs while emphasises the rule of law, fairness, equity, public participation, gender balance, scientific research, data and institutions.

1.2. An appraisal of the current global water governance system

For most of the 20th century, water governance efforts were centred on local or regional initiatives to tackle what were perceived as local or regional problems (Cooley et al. 2014, 10). Towards the end of the 20th century, there was a growing recognition of the extensive scope of water-related issues, most of which transgressed national and/or regional boundaries and became global. As mentioned above, climate change, water scarcity and the lack of access to drinking water and sanitation have pervasive, destabilising socio-economic effects, thereby also threatening international security. Water, as conceptualised through the term "virtual water", is heavily implicated in international trade. Upon recognising the *global, intricate* and *complex* nature of the issues pertaining to water, it became clear that formulating a new, more comprehensive approach to solving these challenges was necessary. This epiphany culminated in the emergence of the Integrated Water Resources Management (IWRM) approach around the mid 1970s at the Mar del Plata UN Conference on Water:

> "The coordinated development and management of water, land, and related resources in order to maximize economic and social welfare without compromising the sustainability of vital environmental systems" (United Nations Water Conference 1977, 11).

Today it is widely understood that, in light of the intricacies of the global water crisis, it would make sense to have an organisation that is intergovernmental and focuses on global water issues in an integrated and comprehensive manner. And yet, despite the global nature of the problem at hand, such an intergovernmental organisation does not exist. As the Secretary-General of the UN outlines in his report *Repositioning the United Nations development system to deliver on the 2030 Agenda: our promise for dignity, prosperity and peace on a healthy planet* (UN General Assembly, Economic and Social Council 2018), SDG6 is amongst the goals where the UN development system needs to respond more effectively to gaps in SDG coverage.

The current global water governance system is comprised of numerous transnational or international institutions, multilateral and bilateral treaties, as well as other international legal instruments, including many soft law instruments. Indeed, a plethora of international organisations, governmental and non-governmental in nature, exist which deal with global water governance (UN General Assembly, Economic and Social Council 2018, 14).

The recently adopted Sustainable Development Goals, as adopted in UN General Assembly Resolution 70 of 2015 entitled *Transforming our world: the 2030 Agenda for Sustainable Development,* represents a significant leap forward in terms of addressing the global water crisis. Water, as elaborated further below, has its own dedicated goal,[5] yet the SDGs are not enough in and of themselves: they are not binding *per se* and scarcely do anything in terms of laying out a concrete roadmap or strategy in tackling the issues identified therein. Agenda 2030 is more of a statement of aspirations than a thoroughly thought-out action plan. Many fear that, like its "predecessor", Agenda 2030 may likely be hindered by insufficient funding and the absence of a centrally coordinated action and review plan.

Nevertheless, the International Hydrological Programme of UNESCO is the only intergovernmental programme under the remit of the UN which focuses on water, particularly the research and educational dimensions of it.[6] It is led by an Intergovernmental Council open to all UNESCO Member States. While this Programme has been highly beneficial to many aspects of water governance,[7] its focus resides only on the scientific and educational aspects of water management. The problem, therefore, is that there is no intergovernmental forum in which comprehensive discussions regarding all aspects of water may take place. At the same time there are too many bodies, most of them NGOs, which deal with different although often overlapping aspects of water issues, therefore, the problem is that they do so in accordance with their own restricted mandates and without any real coordination. The figure below illustrates the complexity of the current system.

[5] The UN Resolution and the Sustainable Development Goals can be accessed here: https://sustainabledevelopment.un.org/post2015/transformingourworld (Accessed: 12.02.2020.)

[6] For more information see UNESCO 2019.

[7] See, for instance, the IHP-WINS database developed by UNESCO. The database has only been launched relatively recently and therefore it is still rather lacking in substance. The project is, however, a great leap forward.

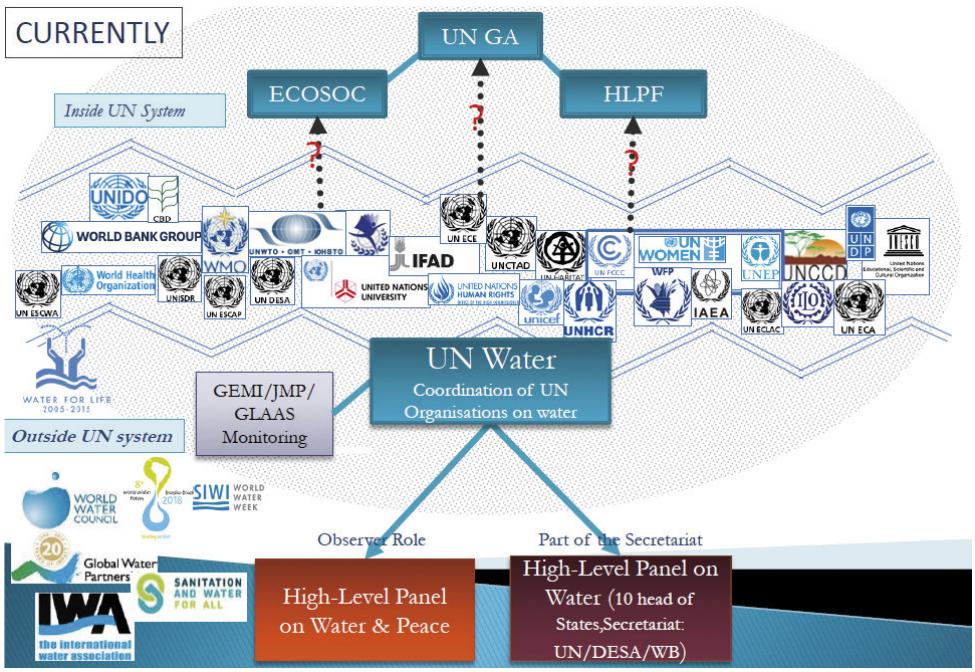

Figure 1.

Global water governance system

Source: drawn by the Author

It is therefore the exception rather than the norm that UN Member States discuss water issues in an integrated manner on a global scale. The first and so far the only full-fledged UN Conference was held in Mar del Plata, Argentina, in 1977. By and large governments discuss water issues although in a non-governmental setting at the World Water Forum (held every three years); or at the initiatives of individual governments organising specific events, conferences (such as the Budapest Water Summits or the Bonn Freshwater Conference); and at the UN as expert meetings or as part of other agendas, such as the IPCC process, for instance.

In order to address the coordination problem, UN-Water was created in 2003, in following the Sub-Committee on Water of the Administrative Committee on Coordination (ACC), in order to coordinate the various agencies, programmes and organisations operating in the field of water. It was intended, as its mandate stipulates, to serve as a coordinating mechanism of UN system actions and other partners:

> "The goals of UN-Water are to promote and provide an efficient, coherent and proactive mechanism for coordination of the UN System agencies and programmes, and to contribute substantially to the achievement of global water and sanitation related targets and goals."[8]

[8] UN-Water 2010. See in particular Article I, Section 1.

UN-Water suffers from several debilitating deficiencies. It does not have a strong mandate approved by Member States, nor does it make centralised policies as it basically is a coordination body amongst the UN agencies (COOLEY et al. 2014, 15). UN-Water was not designed to make "firm decisions that strongly impact the water agenda of its individual members" (DELLAPENNA et al. 2013, 4). Besides this, its mandate is indeed limited to coordination matters concerning the secretariats of various UN entities and other NGO partners that might be interested, and does not cover the full spectrum of global water issues in an integrated fashion. Moreover, it lacks the personnel and funding as it is funded primarily through voluntary contributions that are needed to adequately coordinate international efforts. Some even went further by stating that it is the Members States that should guide the UN system in their tasks and not the other way around.

As such, the current water governance system is poorly equipped to deal with the increasing socio-economic pressures on our global water resources. Having said this, and in view of the previously expounded dimensions to global water governance, it would be incorrect to say that the current system is fully absent or ineffective. Although it is true that the system is not institutionalised for the most part, there have been several major instances in which water as a vital resource and the challenges associated with it have been recognised (relatively systematically) on a high level. In illustrating this point, one might point to the Stockholm UN Conference on the Human Environment in 1972 and the 2012 UN Rio + 20 Earth Summit, the various international legal instruments related to water and transboundary water resources cited above and the numerous international conferences and summits. The fact that water also has its own dedicated Sustainable Development Goal in Agenda 2030 represents a huge leap forward, especially when comparing SDG 6 to the treatment of water in the MDGs. SDG 6 represents a paradigm shift because it is the first instance in which water is viewed in an integrated, comprehensive manner on a truly international scale in line with the new IWRM approach. This dedicated goal includes all major water and sanitation issues. Water is even mentioned in some of the other targets, for instance SDG 3 (health) and 11 (cities):

Figure 1.
Sustainable Development Goals

Source: www.un.org

In summary, the greatest problem with the current architecture of global water governance is perhaps that it is overly fragmented and lacks a strong decision-making (or, as it were, governing) body, thereby leading to diffuse global water governance and weak political accountability. Many would even go so far as to suggest that it is because the system is so decentralised that it lacks coordination and fails to realise concrete progress. While it is true that the role of the State in the 21st century has greatly diminished at the behest of various networks, associations and international organisations, it still remains a vital actor in governance; yet there is no intergovernmental platform in which States could debate, on a regular basis, water issues in a *comprehensive, integrated* and *encompassing* manner. Indeed, the current system has been aptly described by one observer as "more fuzzy, Mobius web-like system that is less subject to control, less predictable, less in line with good governance principles" (Gupta 2011).

2. The way forward

The UNSGAB on Water and Sanitation recently put forth several key recommendations for better implementing the 2030 Water Agenda. Without reciting all the recommendations in full, it is worth recounting several of them. First of all, the report promotes a more global approach to water:

> "While many water impacts are found at local and regional levels, climate change and the globalized economy make the strong global dimension of water increasingly evident. Globalizing forces, such as virtual water flows, increasing water scarcity, water pollution and ecological degradation, intensifying water-related disasters and persisting and emerging public health threats from the WASH crisis, which remains unresolved in many parts of the world, need to be more systematically addressed from a global perspective. This will call for greater awareness about water on the part of politicians and in the climate community, promoting action on water within national and global climate change policies. Businesses, [*sic*] and national and local governments have to translate their growing awareness about water risks into comprehensive strategies for action" (UNSGAB 2015, 14).

The creation of an intergovernmental organisation dedicated to water would, in the best case scenario, satisfy most of these recommendations, above all paving the way for better coordination between and amongst States. Albeit such an organisation may well solve the coordination dimension of the current problem, changes must also be wrought on the functional and operational levels. Countries must be further encouraged to form (more)[9] effective regional water governance systems. Such regional governance systems can be fashioned along hydro-geographical boundaries, such as river basins (Rogers–Hall 2003, 21). River basins represent closed regions that cross jurisdictional boundaries wherein people have incentives to come to agreements, thereby allowing local governments and

[9] Cooperation systems which function at a relatively proficient manner do exist, such as the EU Strategy for the Danube Region. The EU has indeed built a rather effective governance *framework* when it comes to water. The Water Framework Directive and the related EU instruments are comprehensive. Unfortunately, according to recent communications, reports and assessments by the EU, the level of implementation is worryingly low.

other public and private entities to work together. Such regional agreements should prove to be attractive solutions, since governments alone cannot regulate effectively or efficiently transboundary river basins. Although the global water crisis by definition involves issues that concern the international community as a whole, it is nevertheless important to emphasise that each country and/or region of the world suffers from different problems (e.g. some countries or regions struggle with droughts, others with floods). Since the challenges are idiosyncratic, regional responses are necessitated. For this reason, an effective global water governance system must account for regional and individual idiosyncrasies or particularities and provide for regional systems of governance as well. Moreover, issues such as lack of access to adequate sanitation, although it could benefit from a global response (funding, advise, etc.), are issues which require implementation at ground level (Dellapenna et al. 2013, 4). The global water governance system must therefore focus on the creation of enabling environments in which efficient public and private initiatives can address not only global, but local challenges or crises.

In line with the UNSGAB recommendations, the three most viable ways forward probably involve the creation of a UN intergovernmental mechanism on water and sanitation, the strengthening of UN-Water and/or setting up a comprehensive global water and sanitation monitoring framework. Unfortunately, the greatest obstacle to the realisation of either of these recommendations is the lack of political will amongst states to implement such measures on a universal level. Nevertheless, the current setup of the UN institutional water architecture will not allow for an effective and coordinated policy guidance by UN Member States in implementing the 2030 Agenda. While a multitude of forums, including UN agencies, deal with water, they treat it as a sub-topic and/or look at it from single-issue perspectives. It will be up to the Member States to decide whether they will face the looming water crises with the current system or will recognise the opportunity to change and adapt themselves.

References

Cooley, H. – Ajami, N. – Ha, M.-L. – Srinivasan, V. – Morrison, J. – Donnelly, K. – Christian-Smith, J. (2014): Global Water Governance in the Twenty-First Century. In Gleick, P. H. ed.: *The World's Water.* Washington, D.C., Island Press. 1–18.

Dellapenna, J. W. – Gupta, J. – Li, W. – Schmidt, F. (2013): Thinking about the Future of Global Water Governance. *Ecology and Society,* Vol. 18, No. 3. DOI: https://doi.org/10.5751/es-05657-180328

Global High-level Panel on Water and Peace (2017): *A Matter of Survival.* Source: www.genevawaterhub.org/sites/default/files/atoms/files/report_of_the_ghlpwp_final_withcover_20171220.pdf (Accessed: 12.02.2020.)

Graham, J. – Amos, B. – Plumptre, T. (2003): *Governance Principles for Protected Areas in the 21st Century.* Ottawa, Institute on Governance.

Gupta, J. (2011): An essay on global water governance and research challenges. In van der Valk, M. R. – Keenan, P. eds.: *Principles of good governance at different water governance levels.* The Netherlands National Committee IHP-HWRP.

Rogers, P. – Hall, A. W. (2003): *Effective Water Governance.* Global Water Partnership.

UNESCO (2019): *Hydrology (IHP).* Source: http://en.unesco.org/themes/water-security/hydrology (Accessed: 12.02.2020.)

UN General Assembly, Economic and Social Council (2018): *Repositioning the United Nations development system to deliver on the 2030 Agenda: our promise for dignity, prosperity and peace on a healthy planet.* Source: https://undocs.org/A/72/684 (Accessed: 12.02.2020.)

UNSGAB (2015): *The UNSGAB Journey.* New York, United Nations Secretary-General's Advisory Board on Water and Sanitation.

UN-Water (évszám): *Facts and Figures.* Source: www.unwater.org/water-cooperation-2013/water-cooperation/facts-and-figures/en/ (Accessed: 12.02.2020.)

UN-Water (2005–2015): *International Decade for Action "Water for Life" 2005–2015.* Source: www.un.org/waterforlifedecade/scarcity.shtml (Accessed: 12.02.2020.)

UN-Water (2010): *Operational Guidelines.* Source: www.unwater.org/downloads/UN-Water_Operational_Guidelines.pdf (Accessed: 12.02.2020.)

UN-Water (2012): *United Nations world water development report 4: managing water under uncertainty and risk.* Source: http://unesdoc.unesco.org/images/0021/002156/215644e.pdf (Accessed: 12.02.2020.)

UN-Water (2015): *The UN World Water Development Report: Water for a Sustainable World.* Foreword by Irina Bokova.

United Nations Water Conference (1977): *Mar del Plata Action Plan.* Source: www.internationalwaterlaw.org/bibliography/UN/UN_Mar%20del%20Plata%20Action%20Plan_1977.pdf (Accessed: 12.02.2020.)

World Economic Forum (2017): *The Global Risks Report 2017. 12th Edition.*

World Water Assessment Programme (2003): *The United Nations Water Development Report: Water for People, Water for Life.*