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The UN SDGs as Compass for Sustainable Water and Heritage Management

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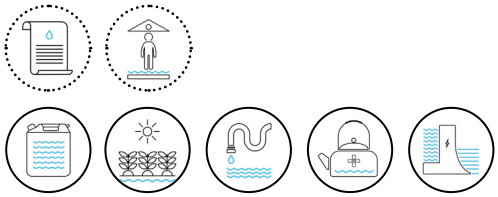
Working toward sustainable development requires careful balancing of the past, present and future. Water is a crucial element of the SDGs, because each intervention in the water system will have either a positive or negative impact on other parts of the system and on other goals. Water connects: literally and figuratively. Working toward sustainable water (and) heritage management is urgent and can greatly contribute to other important goals. In designing a solution for the future, it is necessary to consider not only technical, but also behavioral and cultural perspectives in a comprehensive approach. This article explains the urgency and importance of working through the lens of the SDGs as an encompassing framework.

KEY THEMES



< Fig.1 Traditional Dutch watermill (Source: Sjaak Kempe, 2017. CC BY 2.0, via Wikimedia Commons).

Introduction

The Sustainable Development Goals (SDGs) are a powerful compass for those working for water and a comprehensive approach is key to achieving them all. The conceptualization of water as part of a larger system can help promote overall sustainable development. The 17 SDGs were adopted by all 193 member states of the United Nations in 2015. The ambition is to achieve them by 2030. This deadline is important since failure to solve the challenges expressed in the SDGs will lead to crisis. The goals embody all issues to be addressed for human well-being now and in the future and this means caring for people, for society and for the planet. Economic development is also a goal, but it should be inclusive, sustainable and a means to achieve the other goals.

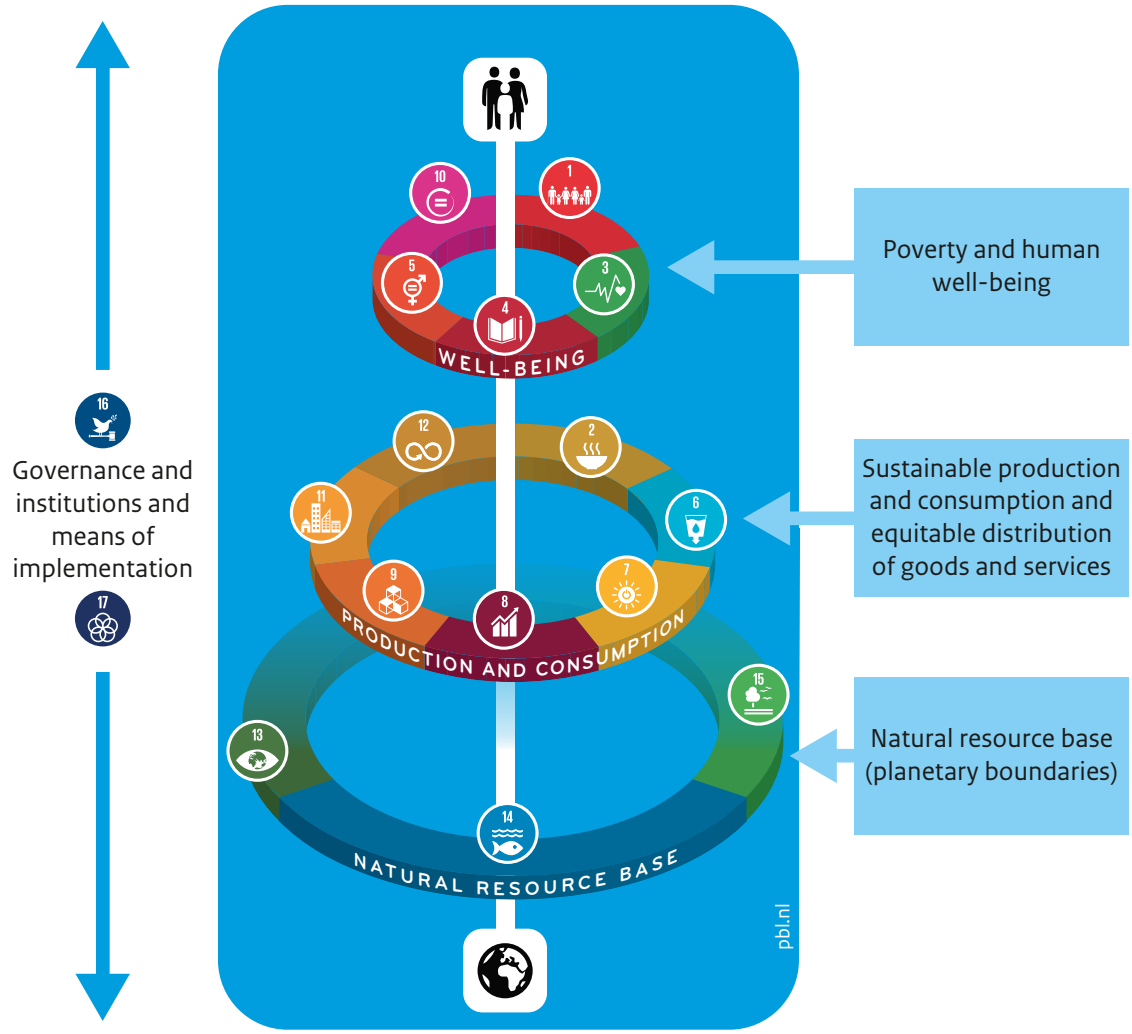
The SDG Agenda

The power of the SDG agenda lies in the interconnections and intersections: the recognition that no goal will succeed without also promoting the other goals. To achieve any success, we need to pursue them all. At the same time, the goals do not always automatically support each other. To avoid inadvertently achieving certain goals at the cost of others, we need to understand and mitigate potential trade-offs. This requires careful assessment, collaboration and sometimes also negotiation. The "SDG Wedding Cake" (fig. 1) shows that people can only live in well-being and peace if their society is inclusive and well-governed (top layer of the cake), if their economy is supportive (middle layer) and if we have a healthy planet that can regenerate the resources we are using (bottom layer of the cake).

SDG 6, summarized as "clean water and sanitation," promotes universal access to sustainably managed water and sanitation services. At first sight, the goal seems to focus on drinking water, however it is effectively tied to the entire water cycle. Failure to protect our water resources means we will run out of water, which is why reducing the pollution of water sources and promoting water efficiency, sustainable water management, and protecting and restoring water-related ecosystems and support for developing and un(der)developed countries and communities are part and parcel of this goal.

Water is a crucial element of the SDGs, because each intervention in the water system will have an impact (positive or negative) on other parts of the system and on other goals. Water connects: literally and figuratively. Many UN reports warn that water stress is increasing worldwide, endangering many, if not all the other goals: human well-being, health, food and economic production all depend on water. Pollution and water-related disasters risk reversing many advances that have been made in human security, housing and infrastructure, and they threaten natural ecosystems as well as biodiversity, forests and soil (HELP, n.d.).

There are many examples that demonstrate the relevance of other SDGs for water managers and other professionals that deal directly or indirectly with water. Consider water smart agricultural methods, such as using geodata to guide water usage or water efficient production processes using gray water. Water agencies in the Netherlands have been looking into filtering reusable materials from wastewater to contribute to the circular economy, and are exploring new energy generation options using water. The Dutch government has recently announced a policy to ensure that water and soil are the leading determinants of spatial planning decisions; this policy will also help boost climate adapta-



^ Clustering of SDGs from the environmental perspective (Source: PBL Netherlands, 2016).

tion in our low-lying country (Government of the Netherlands 2022).

Professionals in a variety of fields are starting to engage with sustainable development through the lens of water, for instance looking at innovations in water filtering and reuse in the realm of building design and housing. There are many opportunities for water professionals to contribute to solving pressing challenges outside of their immediate fields of focus. This involvement also provides opportunities for innovation, partnership and new, more integrated, products and services.

Connections are crucial in the SDG agenda. This also applies to connecting lessons from history and our heritage to our present challenges. In designing tomorrow's solutions, it pays to look at the past.

^ Fig. 2 Water is related (from "strongly" to "indirectly") to all Sustainable Development Goals (Source: PBL Netherlands, 2022).

SDGs: Learning from Past Mistakes to Design Better for the Future

Working toward sustainable development requires careful balancing of past, present and future. Many of the structures and practices that are part of today's unsustainable system are remnants of the past. Our economic successes, for instance, have brought significant improvements to human well-being and food security. However, to achieve a more sustainable, future-proof way of increasing human well-being, we need to find ways to balance the degree to which we pursue different SDGs and to do so over time. This means correcting unsustainable aspects of decisions made in the past and preserving elements that speak to our local and national identity. The SDGs provide a helpful compass as we work toward solutions that balance different ambitions without locking us into short-term solutions that do not work for the future.

The 2030 Agenda for Sustainable Development is future-oriented, but its focus and tenor are very much grounded in recognition of our past. The core lesson is that the economic, social and environmental dimensions of development need to be addressed holistically. Criticism of a one-dimensional approach to growth is not new. The Club of Rome's report, *The Limits to Growth*, warned that infinite growth is impossible on a finite planet (Meadows et al. 1972). Research by the United Nations Development Programme (UNDP 2020) shows that up until now nearly all countries that have raised human well-being standards have done so at the cost of planetary health.

This apparent contradiction was addressed in what is known as the Brundtland report, *Our Common Future* (World Commission on Environment and Development 1987). This was the first call for "sustainable development" in which environment and human well-being were addressed together. The report also stated that only in this way could the needs of the present be met without compromising the ability of future generations to meet theirs. This thinking forms the backbone of the SDGs, in which a systems approach is key.

To be effective, systems thinking needs to acknowledge the power of systems from the

past, both the ones that we want to overcome and those that can serve as stepping-stones to a sustainable future. This means not only looking at interlinkages within environmental systems but also the way environmental systems interact with, for instance, social structures and governance, and the role that culture plays in the choices we have made (Maas et al. 2022). Looking at the past can be informative. The Dutch have managed water successfully for centuries (fig. 3), but it is also important to understand why certain solutions were chosen, as it helps to look more holistically at new approaches. It is also important to understand the trade-offs of the past, for example in terms of social equality. Not all solutions of the past would be acceptable today. For example, the construction of a beautiful city like Amsterdam depended on income generated through trading and sometimes involved exploitative practices.

Achieving a sustainable future will require looking beyond the immediate, technical task at hand; it will mean hard work to forge new coalitions and sometimes it will require compromise. It also means recognizing that we are dealing with complexity and uncertainty, as well as urgency.

Conclusion

These pressures could lead to tunnel vision – focusing only on one goal – but this will not lead to the best solutions, however tempting a single-minded strategy may be. Leaders in business indicate that considering a problem from a broader perspective leads to better and often more cost-effective solutions (e.g., Polman and Winston 2021; Sluijters 2022). Today's challenges are interconnected in so many ways, and therefore the solutions we design must also be connected. Working on water for sustainable development, in short, means avoiding the tunnels but taking the road that allows for a wider view. Many inspiring innovations and partnerships are sure to be encountered along the way.

Screening future scenarios through the lens of the SDGs will help to identify not only potential synergies but also possible negatives: trade-off risks that may be avoided or mitigated once they are understood. An example is looking carefully at the effects of water solutions on women and gender relations, or affordability for everyone. Also, if potential trade-offs are not carefully managed, water could be adversely affected by actions taken in pursuit of food security and renewable energy.

The majority of the interrelations between SDGs are positive, in particular for water – meaning there are many opportunities for synergies and smart investing in water and other goals at the same time – if we take the time to understand the systemic interconnections (UN 2019, 41, box 1–2). The way we deal with our water has a strong influence on the way we live and how we feel. In designing a solution for the future, it is necessary to consider not only technical, but also behavioral and cultural perspectives. Combining the holistic perspective and the systems approach of the SDGs with cultural and historical knowledge will provide water professionals with all the necessary tools to ensure truly sustainable water solutions for generations to come.

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