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# Zero Water Day: seizing the opportunity from a public health perspective

## Zero Water Day: Die Herausforderung aus einer Public Health Perspektive annehmen

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**Abstract:** Water is a finite natural resource. Zero Water Day(s) scenarios are challenging people and communities in Europe and worldwide. The public health community must seize the opportunity to prepare for Zero Water Day(s) through strengthening capacity and capability to respond to rapidly emerging emergencies as well as protected crises. Collaboration across sectors on water conservation and public health is key to tackling the consumptive environment and extractive economic systems.

**Keywords:** multisectoral collaboration; planetary health; social determinants of health; Zero water.

**Zusammenfassung:** Wasser ist eine endliche natürliche Ressource. Zero Water Day(s) Szenarien stellen Menschen und Gemeinschaften in Europa und darüber hinaus vor große Herausforderungen. Public Health muss die Gelegenheit ergreifen, sich auf Zero Water Day(s) vorzubereiten, indem sie ihre Kapazitäten und Fähigkeiten stärkt, um auf schnell auftretende Notfälle und Krisen zu reagieren, sektorübergreifend beim Wasserschutz und der

öffentlichen Gesundheit zusammenzuarbeiten und vor allem das verbrauchende Umfeld und die auszehrenden Wirtschaftssysteme anzugehen.

**Schlüsselwörter:** multisektorale Zusammenarbeit; Planetare Gesundheit; soziale Determinanten von Gesundheit; Zero Water

In 2018 Western Cape authorities in South Africa projected that the 22nd April would be Zero Water Day. Freshwater use would be strictly rationed in Cape Town with the police and military on hand to provide security at limited number of distribution points across the city. Public health professionals voiced concerns that less hand-washing and poorer hygiene practices might precipitate a steep rise in disease spread via faecal-oral contamination, and water rationing would disproportionately impact vulnerable groups such as the non-mobile older and less-abled people.

This summer has seen parts of Europe as well as provinces of China and states in USA confronted with an increased risk of Zero Water Day(s). The collapse of a section of the Marmolada glacier in the northern Italian Alps is a visible reminder that mountains can be viewed as a sign of the well-being of the planet and by extension human health. Mountains host about half of the world's biodiversity hotspots and 30% of all Key Biodiversity Areas, as well as vital genetic resources for locally adapted crops and livestock [1]. They have been described as the water towers of the world. A paper in fifth Assessment Report of the Intergovernmental Panel on Climate Change noted that “Climate and cryosphere change have negatively impacted the water cycle in mountains, including variable timing of glacier melt and snowmelt stream discharge. These changes have variable impacts on water availability for people and economies, contributing to increasing tensions or conflicts over water resources, especially in seasonally dry regions.” [2]. Rivers are supported by groundwater baseflow during dry seasons. Different

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sectors and industries have indiscriminately pumped groundwater for decades with little regard to integrated conjunctive management with surface water.

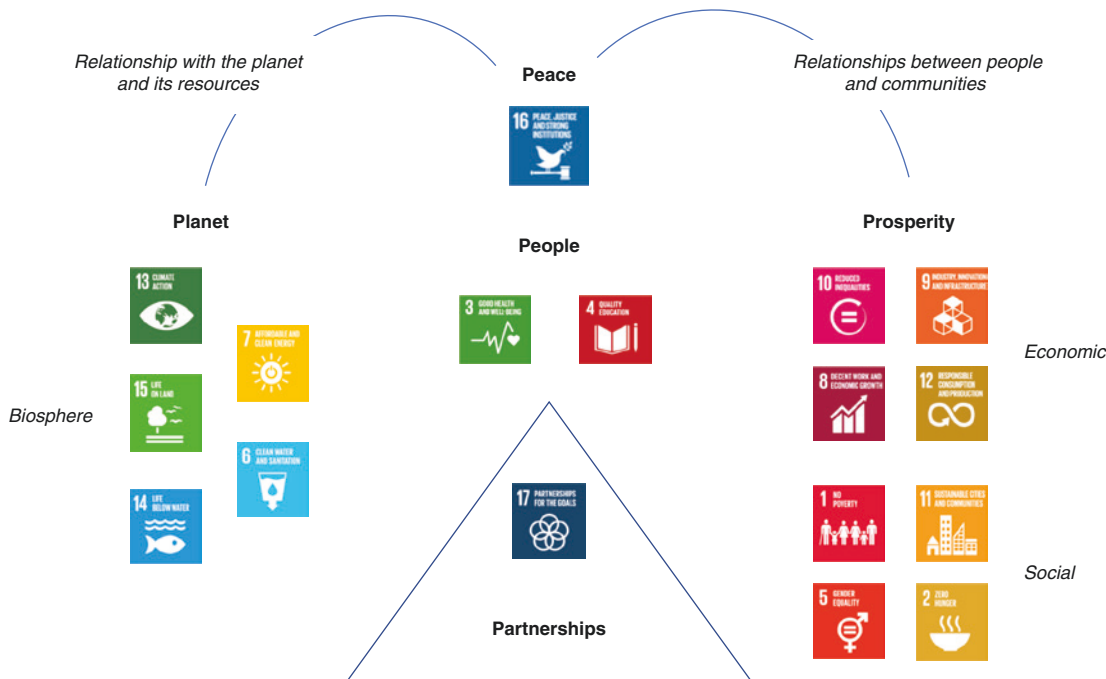
Changes in the biosphere will influence the circumstances and conditions in which people are born, grow, work, live, and age - the social determinants of health [3]. The wider set of forces and systems shaping the conditions of daily life, including economic policies and systems, development agendas, social norms, social policies and political systems influence the integrity and health of the Earth’s natural systems. Water shortage and poor quality water are not inevitable. Among others, the consumptive environment and the extractive economic system can be described as the root causes of Zero Water Day(s) scenarios, which have been exacerbated by poor management and weak regulation. In response, the UN has enshrined the human right to water in 2010 and the right to a healthy environment in 2021.

Water must be assigned its appropriate value, and water production comes at a cost. Yet there is limited political interest in tackling poor water management and its adverse consequences to the environment, as this would significantly inflate commodity prices alongside fuel and food (cost of living). The water, energy, security and food nexus impacts human well-being, poverty reduction and equitable sustainable development [4]. The actions in any one particular area can often have effects in one or both

of the other areas. The ecological public health model as proposed by the Lancet Commission seeks to integrate the material, biological, social, and cultural aspects of public health and accepts the complexity and non-linearity of the dynamics of natural systems [5].

Public health professionals have a critical if neglected role in addressing the social, commercial and environmental determinants to help people achieve good health and well-being, and sustainable livelihoods. This will necessitate such professionals acquiring a broader set of competencies and skills that go beyond health systems to enable them to engage in multisectoral cooperation and collaboration at global, national and local levels. Planetary and human health in all policy approaches can help reimagine the collective idea of intergenerational prosperity, reorient consumption and production to safeguard planetary boundaries, protect the integrity of natural systems, and consider the needs of future generations through wellbeing economy approaches [6].

The 2030 Agenda for Sustainable Development provides the means to develop and implement solutions to complex global challenges, such as Zero Water Day(s) scenarios. Conceptualizations such as the SDG ‘Wedding cake’ have helped to visualize the three dimensions of sustainable development: social; economic; and environmental and their relationship to the 17 Sustainable Development Goals (SDGs) [7]. The 17 SDGs and their targets



**Figure 1:** Using the 17 Sustainable development Goals to describe a socio-ecological public health model for sustainable livelihoods (Source: own research).

can stimulate action in five areas of critical importance for humanity and the planet. These areas, people, planet, prosperity, peace and partnership are closely aligned with the new roles and responsibilities for public health professionals described above.

Education and lifelong learning opportunities are critical to enabling people to live with health and well-being. These opportunities can empower people to actively participate in adapting to and changing the conditions and circumstances that impact their daily lives, as well as contribute to transforming our world. The principles and rationale underpinning the WHO conceptual framework for action on the social determinants of health could equally be applied to social determinants of lifelong learning [8]. Figure 1 recognizes the centrality of health and education in securing a sustainable future.

Understanding the nexus of health and education could provide an opportunity for the public health community to adopt common guiding and organizational principles for sustainable development and wellbeing

economies. This could catalyze new ways of thinking and working for example transdisciplinary learning with teachers through the WHO UNESCO Global School Health Initiative to implement SDG target 4.7 ‘Education for sustainable development and global citizenship’ and SDG 13.3 ‘Build knowledge and capacity to meet climate change’ in a consistent and reinforcing manner.

At the same time, teaching on the social determinants of health and planetary health is frequently framed within stable contexts and presented as chronic and protracted problems. Zero Water Day(s) scenarios emphasize the need to develop education and training for acute and rapidly emerging public health emergencies and humanitarian crisis that are transboundary in nature. Designing and rolling out public health graduate tracking programmes will enhance curriculum and quality improvement, and can contribute to disaster preparedness. Figure 2 illustrates the expanded role and responsibility of the public health professional in the Anthropocene epoch in which we anticipate, at least in the short-term, more Zero Water days.

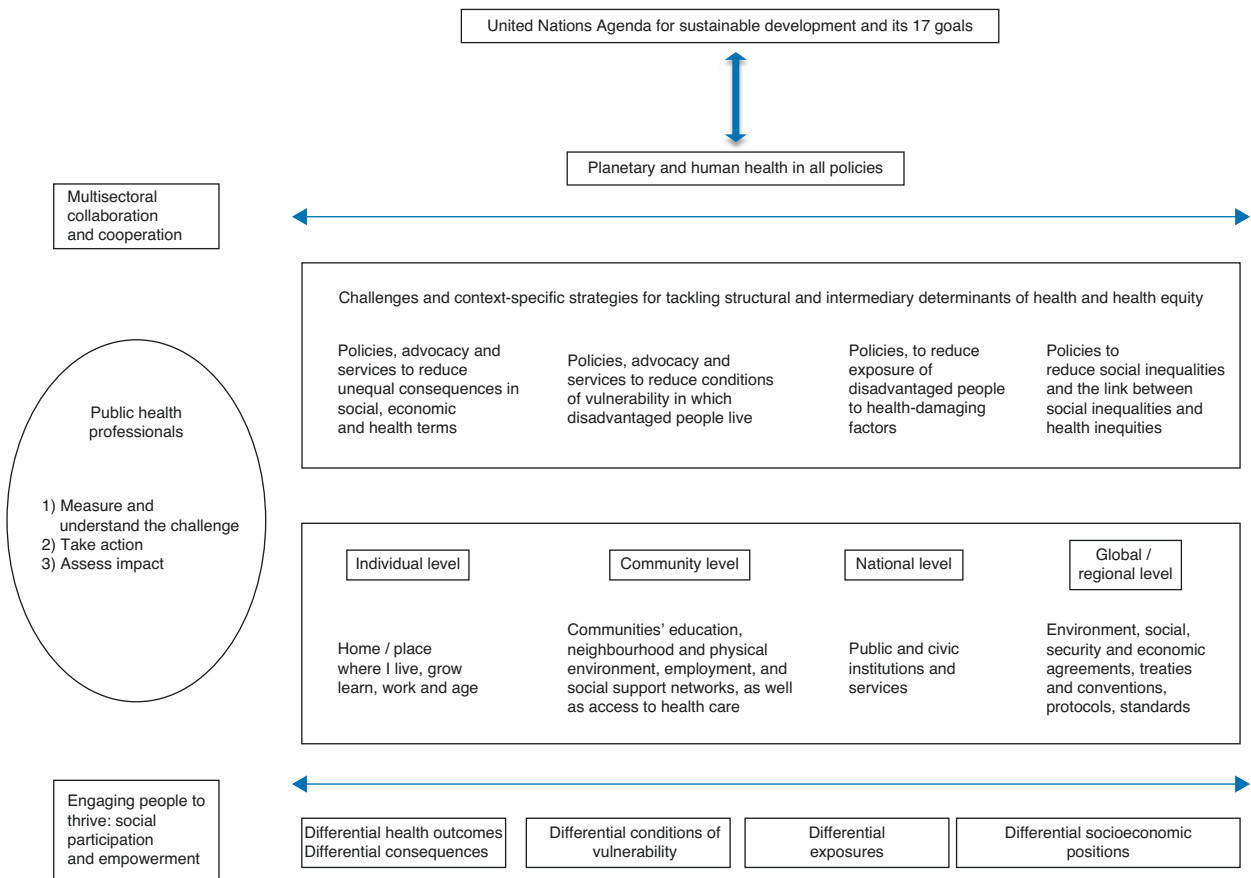


Figure 2: Adapted from *Integrating the social determinants of health into health workforce education and training* [9].

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### Autorenerklärung

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