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The Secretary-General has received the following statement, which is being circulated in accordance with paragraphs 36 and 37 of Economic and Social Council resolution 1996/31.

¹ The present statement is issued without formal editing.



Statement

Alleviating the psychological effects of water stress on children, families, and communities

In July 2010, the United Nations General Assembly recognized the human right to water and sanitation as essential to the realization of all human rights and called upon all Member States to support and provide safe, clean, accessible, and affordable drinking water and sanitation for all of the world's people (Resolution [A/RES/64/292](#)).

Water is a connector touching all aspects of society and is required to achieve progress on the United Nation's 17 interrelated Sustainable Development Goals (SDGs) including poverty reduction (SDG 1), promotion of health and wellbeing (SDG 3) and most centrally clean water and sanitation (SDG 6; Sachs et al., 2019; *The World in 2050*, 2019). Currently, nearly 1.1 billion of the global population lack access to clean, safe drinking water (UNICEF, 2019). By 2025, half of the global population will live in water-stressed locations (World Health Organization [WHO], 2019), where availability, quality, and accessibility of water fails to meet human demand (Shulte & Morrison, 2014).

In this statement, we share psychological and medical evidence that establishes that water stress caused by pollution, forced migration, and agricultural production contribute directly and indirectly to poor physical and mental health beginning in childhood (Landrigan et al., 2019; Wasserman et al., 2007). We also recommend multidisciplinary approaches to sustainable water practices to address the adverse impact of water pollution, forced migration and failed agricultural production on children's health.

Water pollution and children's health

Children's immature metabolic pathways limit their ability to excrete toxic pollutants (National Research Council, 1993). In 2016, approximately 940,000 children died from water, air, soil, or chemical pollution (Landrigan et al. 2019). Nearly 1,000 children die daily from water related diarrheal disease (United Nations, 2020). Children are 12 times more likely to die of lung cancer and other respiratory ailments as a result of prenatal and early childhood exposure to arsenic in drinking water (Smith et al., 2006). Moreover, high fluoride composition in water, resulting from industrial wastes, causes fluorosis and sclerosis of children's bones (WHO, 2006).

These contaminants also negatively impact the cognitive development and mental health of children, although there are few reliable Children's Environmental Health Indicators (CEHIs) that focus on these aspects. Evidence from Bangladesh, China and the U.S. suggest that pollutants such as arsenic, lead, and other toxic chemicals depress children's growth and cognitive functioning, leading to long-term impacts on cognitive abilities and risks of developing mental illnesses such as bipolar and post-traumatic stress disorder as adults (Aschengrau et al., 2012; Cuthbertson et al., 2016; Wang et al., 2007).

Toxic chemicals in water also cause language and speech impairments, poor motor skills, learning disabilities, depression, and anxiety in children (U.S. Environmental Protection Agency, 2017). Similar negative associations between mental health and unsafe water collection were reported among rural Malawi communities (Slekiene & Mosler, 2019) and in Flint, Michigan, where the search for a cheaper water source for a low-income community, and lax adherence to sound water treatment practices, resulted in lead seeping into the drinking water.

Preliminary results from Flint reveal increased rates of anxiety, stress, and depression in children and adults (Cuthbertson et al., 2016). This evidence highlights the need for better health effect and intervention indicators to enumerate the problem and identify appropriate interventions.

Forced migration and children's health

Inadequate access to clean water due to pollution, droughts, or floods may force families to migrate, leading to higher susceptibility to illnesses and diseases. In this age of COVID-19, rates of illness and deaths in refugee camps will rise, in part due to inadequate access to clean water and sanitation. Data from 7,000 migrants in 13 countries revealed that “disastrous” living and hygiene conditions of most migrants, the lack of access to healthcare and the inability to pay for such care were it available, loss of income, and racism and xenophobia which are experienced by these refugees are harbingers of what may come (MMC, 2020).

Approximately 30.8 million people were newly displaced in 2018 (Internal Displacement Monitoring Centers, 2018): 18.8 million, due to weather related disasters, and another 11.8 million, due to conflicts. UNHCR estimates that children under the age of 18 comprise 52 per cent of all displaced persons, more than the 2007 figure of 41 per cent (UNHCR, 2018), but a possible undercount because demographic data on displaced persons is often reported in aggregate.

Psychological evidence shows that almost all children who are forced to migrate will develop intrusive psychological symptoms, including trauma, anxiety, depression, and other mental illnesses (Fazer et al., 2005). Children forced to relocate due to climate related weather conditions, such as Hurricane Katrina in the U.S., will often endure higher levels of depression and trauma compared with those who faced similar circumstances but remained at home (Pfefferbaum et al., 2015).

Families migrating due to reoccurring droughts or floods or other environmental conditions are now considered “environmental refugees” (El-Hinnawi, 1985), a status not currently identified in the United Nations Convention Related to the Status of Refugees (UNHCR, 2000). Their lack of status under the Convention may decrease their ability to receive appropriate services for their psychological and physical health needs.

Failing agricultural production and children's health

Global warming and decreased precipitation reduce agricultural productivity, especially in regions dependent on rainfed agriculture (Ervin & Gayoso de Ervin, 2019; Food and Agricultural Organization [FAO], 2013), and increase the likelihood of forced migration. In rural farming communities in Paraguay, for example, reduced productivity negatively impacted income and health. Weather related reduction of crop yields directly contributed to increased food insecurity —here meaning no reliable access to a sufficient quantity of affordable, nutritious food, and decreased calorie consumption among low-income farmers, raising concerns of under-nourished populations, especially undernourished children. Going forward, the combination of higher temperatures and lower precipitation levels may result in an eight percent reduction in food security for Paraguay (Ervin et al., 2019). Climate change's negative impacts on rainfed agriculture are expected to increase by 2050 when river runoffs in high altitude and wet tropic areas are expected to increase by 10-40 per cent but decrease by 10-30 per cent in dry tropic areas (Chen & Davis, 2014). Such change will negatively impact productivity, food security, and nutrition in Paraguay as well as Zambia (Alfani et al., 2019) and other regions similarly dependent on rainfed agriculture. Such conditions also increase the likelihood that these populations will be forced to migrate to survive.

Recommendations

We recommend that Member States, United Nations agencies, NGOs, civil society and humanitarian groups adopt multidisciplinary approaches to sustainable water management practices to address the adverse impact of water pollution, forced migration, and failed agricultural production on children's health and wellbeing.

Establish Sustainable Water Management Practices to Enhance Health Outcomes

- Promote a culture of water conservation with improved irrigation practices for rainfed agriculture-dependent rural regions.
- Develop data-driven actions and strategies to combat water pollution and its impact on children's health.
- Include a multidisciplinary team of psychologists and other healthcare professionals in policymaking to assess the impact of water pollution on the physical and mental health of children.
- Involve community members in developing, implementing, and assessing culturally specific practices and educational resources to enhance water management strategies.

Ensure protections for environmental migrants and for migrant children's mental health

- Propose revisions to the United Nations Convention Related to the Status of Refugees to include rights for "environmental migrants."
- Create a mental health "First Aid" initiative across international, regional, and domestic levels, such that migrant children have access to both physical and psychological services.
- Develop more granular CEHIs that also include psychosocial impacts.
- Ensure migrant children's access to education and health services.

Foster intergovernmental and civil society cooperation on sustainable water practices

- Prioritize investments in water infrastructure and management in all regions, especially those plagued by severe weather conditions due to climate change.
- Prioritize transboundary cooperation for equitable use and distribution of water between countries.
- Improve metrics for drinking water quality in developing and developed regions.
- Investigate and address the root causes of unsafe water sources, food insecurity, climate change and poverty to minimize forced migration.
