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**COVID-19, wastewater,
and sanitation**

**NO UNCONTROLLED DUMPING,
NO OPEN BURNING**

Protect the environment and our health

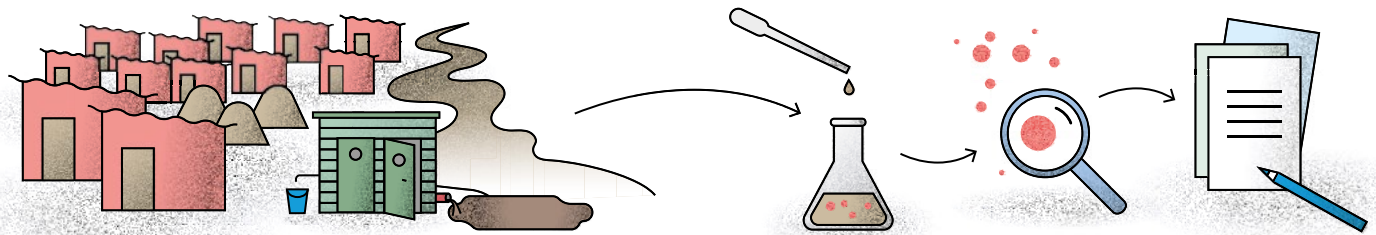
For more information visit unep.org or contact **Kevin Helps** (Head, GEF Unit, Chemicals and Health Branch, UNEP) kevin.helps@un.org

"Wastewater is a precious resource that the world needs to learn how to tap. Not only can it be reused to feed crops, the water in our sewers can act like an early warning system that could alert us when diseases begin to move in our urban populations. The freshwater we have left in the world is an incredibly precious resource, we have to get used to using it more than once and should also scan it for clues for future health crises."

Susan Gardner, Ecosystem Division Director, UNEP

The problem

There is an inextricable link between COVID-19, wastewater, and sanitation. The COVID-19 pandemic has highlighted the threats and opportunities regarding sanitation and wastewater management.

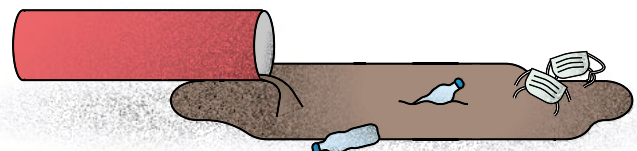
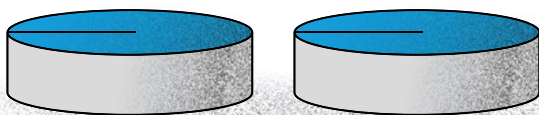


Threats

Many people who live in disadvantaged conditions lack basic services, such as access to clean water and basic sanitation. These practices ensure good hygiene standards, and prevent the spreading of bacteria and viruses, including COVID-19.

Opportunities

COVID-19 has encouraged us to explore the way wastewater could help us detect the spread of this virus by analyzing the [presence of Ribonucleic Acid \(RNA\) linked to it in the sewage](#). Detecting its concentration in the sewage could help the adoption of restrictive measures in specific areas to contain the virus and its effect on the local community.



COVID-19 also highlights **the need to invest in wastewater treatment facilities and adequate sanitation**. In many areas of the world, huge quantities of wastewater are released in the environment without treatment or adequate treatment, deteriorating our environment, and posing serious risks to human health. Raw sewage, and partially-treated wastewater, are vehicles for spreading diseases, and in this case, a potential mechanism for COVID-19 to spread faster, for example in areas where sanitation is poor, or where the communities are exposed to open-sewers and black water.

Wastewater is a natural vehicle for dissolved pollutants (nutrient, chemical, pathogens) as well as solid waste. As such, COVID-19 brings additional challenges with the increased use of medical products, including masks and gloves made of plastics, textiles, and other single-use products. These extra loads of solid waste discarded in the open environment or in existing drainage system, could degrade in smaller pieces and contribute to the already [alarming amounts of plastics](#), microplastics, and microfibers pollution in wastewater.

Guidance



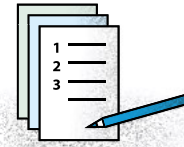
Investing in the wastewater management sector and in wastewater collection, transportation, treatment, and disposal is key for the health of the community and the planet. One publication in support of the need for investing in the wastewater sector is the ["Economic Valuation of Wastewater."](#)



Local communities in certain areas of the world, are exposed to the risk of encountering sewage and polluted water and are likely to come in contact with bacteria and viruses, including, potentially, COVID-19. **Raising awareness** on the challenges related to wastewater is key to sensitize the relevant stakeholders. Example such as the Story Map ["Sanitation and Wastewater in Africa"](#), can be used.



Working in partnerships with relevant stakeholders, including the private sector, finance institutions and local communities is key to provide solutions for sustainable wastewater management. Adequate sanitation, especially in areas where the community is or may be exposed to polluted water, and sewage should be prioritized. One example are the ["Guidelines for the Application of Small-Scale, Decentralized Wastewater Treatment Systems."](#)



Guidelines for monitoring epidemics and pandemics such as COVID-19 in wastewater will be key in the future. Monitoring devices and staff are needed to support these efforts.

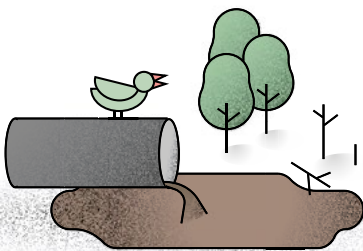


Reusing wastewater, especially greywater (the relatively clean waste water from households, except from toilets), potentially reduces water stress, tackles water scarcity, and increases the availability of drinking and clean water for domestic use, especially for flushing toilet. For more information consult ["Safe Reuse of Wastewater in Agriculture."](#)

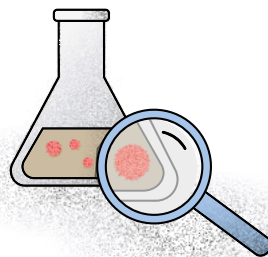


Research and demonstration projects on the relationship between wastewater and COVID-19 will help further understand this link and act accordingly.

Facts



Large amounts of wastewater are released in the environment without treatment or adequate treatment. This trend poses serious risks to the environment and human health, as communities are exposed to polluted water or raw sewage that contain bacteria and viruses, including COVID-19. These pathogens can spread through the fecal-oral route and affect a large community within a short time.



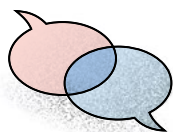
Traces of COVID-19 were found in wastewater samples worldwide for example in the USA, Europe (Finland, Netherlands, Sweden and Switzerland) and Israel. Monitoring wastewater and the presence of COVID-19 can help understand the magnitude of the infection, and take precautionary measures, such as mass tests, or temporary lockdowns to isolate the community.



One of the measures to prevent and break the transmission chain of COVID-19 is to **wash one's hands with soap and water**. This requirement increases the production of wastewater.

Way forward

Short term



Share knowledge and raise awareness about the link between wastewater and COVID-19, and the consequences of poor sanitation and unsustainable wastewater management. At the same time, promote good practices, and highlight the benefits of investing in sustainable wastewater management, including alternative and low-cost treatment systems, and adequate sanitation solutions.



Work in partnership with key stakeholders, including the governments, the private sector and financial institutions to identify needs and response to the issue of COVID-19, sanitation, and wastewater management.



Reuse wastewater, especially greywater, to the extent possible, in order to reduce stress on the drinking water reserves and leave adequate quantities of clean water for other uses, above all, personal hygiene.

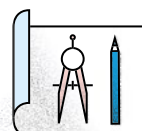


Improve the working conditions of workers who come in contact with wastewater and sewage, especially in informal settlements, where the availability of protective gear is limited, or absent.

Mid-term and long-term



Work together with the relevant stakeholders, especially the private sector, to invest in the wastewater management sector and in wastewater collection, transportation, treatment and safe disposal.



Develop guidelines for the monitoring of COVID-19 and other potential contaminants in wastewater, and invest in monitoring devices and build capacity of the institution and staff who could support these efforts.



Invest in further research and demonstration projects in better understanding the relationship between wastewater and COVID-19.



Work with countries to develop national regional and local level wastewater treatment capacity.