

Policy Brief Water and Sanitation

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Safe drinking water and sanitation are recognized as human rights by the United Nations General Assembly and the Human Rights Council.¹ The improvement of Water, Sanitation, and Hygiene (WASH) standards is particularly important in informal settlements. It reduces access disparities between geographical areas, encourages safe drinking water in schools as well as religious and other public facilities, and ensures equality for vulnerable groups in society. These issues are particularly relevant to informal settlements, due to problems such as illegal tenure, low quality of rented accommodation, squatting, and discrimination against ethnic minorities. The COVID-19 pandemic has exacerbated these underlying issues, undermining recovery.

This policy brief shows how informal settlements can improve WASH for an emergency COVID-19 response, and improve resilience-building for future shocks through medium to long term measures.

Context

Informal settlements are densely populated, face challenges in water and sanitation, have little or no waste management, can have overcrowded public transport, and limited access to formal health care facilities. They suffer from inadequate housing, lack of basic services and insecurity of tenure. Urgent action is needed to help residents stay safe and healthy, thereby increasing resilience to future pandemics and natural disasters. Informal settlements are particularly vulnerable to the impact of disease outbreaks, particularly water-related diseases. Lack of safe infrastructure makes disease monitoring and containment particularly challenging due to inadequate data for appropriate policy responses.

The *COVID-19 Recovery Action Plan for Informal Settlements in the UNECE Region* prioritizes the issue of informal settlements. The legalization of informal buildings is of primary importance. Integrating informal constructions into formal land markets provides clear ownership and security of tenure. It gives economic security to residents via greater access to credit and mortgages. It also helps remove barriers to the deeper inclusion of human capital - the informal residents – and land capital within the formal employment and land markets. In turn, security of tenure encourages residents to invest in their homes. Formalization is therefore a tool to increase security of tenure and ownership rights and can promote human rights while helping achieve growth targets for formal and informal markets.

During or following formalization, investment should begin upgrading the infrastructure of informal settlements, to turn them into more inclusive, safe, resilient, sustainable and livable city neighbourhoods.

¹ See for instance Human Rights Council resolution 15/9 and General Assembly Resolution 70/169.

Taking action on COVID-19 recovery in informal settlements

This policy brief on water and sanitation is part of a set of policy briefs covering different urban sectors including energy efficiency, accessibility and sustainability, nature-based solutions, urban mobility, and innovative financing. These policy briefs should be read in conjunction with **COVID-19 Recovery Action Plan for the UNECE Region** as they complement and expand on Policy Areas, proposed goals, targets, and actions included therein.

Sustainable Development Goals related to water and sanitation in informal settlements



SDG 1.4, 1.5



SDG 3.9



SDG 4.a



SDG 6.1-6.5



SDG 9.1



SDG 11.1

The attainment of SDG targets must be viewed holistically, as there are cross-sectoral benefits. For instance, an improvement of SDG 11 facilitates SDG 1. Similarly, promoting SDG 9 leads to sustainable economic development which supports SDG 4 by ensuring equitable access to infrastructure.

Actions to achieve SDG 6 ensure that formalization facilitates infrastructure improvements. Notably, the adoption of adequate regulation and quality standards through formalization leads to better access to water distribution and sanitation utilities. Moreover, there is a potential for economic development through:

- Reducing population illnesses which impact productivity.
- Limiting the social and financial cost of human suffering.
- Increasing disposable income otherwise spent on medicines and healthcare.
- Increasing business development and reducing investment risk by preventing bad water management and disease challenges.
- Decreasing the risks of exogenous shocks, such as floods and droughts, which impact the local and domestic economy.
- Limit absenteeism in educational institutions, particularly girls in relation to menstrual hygiene management, to foster increased human capital.

Overall, the benefits to economic development through water and sanitation are shown in a study by [WHO](#)² which estimates that a 0.3 percent increase in investment in household access to safe water is associated with a one percent increase in GDP. Similarly, the WHO Regional Office for Europe estimates that while closing the sanitation gap in the pan-European region requires public investment, the returns can be significant. Every US dollar spent on improving sanitation brings a return of five dollars by keeping people healthy and productive. Consequently, action in water and sanitation through formalization would enhance the public health of informal settlements in the face of COVID-19, lay the basis for future economic development, and increase resilience to future pandemic threats.

Challenges

Challenges that limit human rights to safe drinking water and sanitation in informal settlements

² WHO (2005), Making Water a Part of Economic Development. Available from https://www.who.int/water_sanitation_health/watandmacr2.pdf.

The following challenges hamper the realization of human rights to safe drinking water and sanitation:

- **Affordability constraints:** Households in informal settlements often lack income to pay water and sanitation bills.
- **Lack of available water supply and sanitation infrastructure:** Sections of the population, particularly in European informal settlements, face access barriers. Around 16 million people in the pan-European region do not have access to safe drinking water and 31 million people lack basic sanitation.³ This situation specifically concerns some rural areas as well as urban informal settlements.
- **Availability of water resources:** The Pan-European region uses a relatively small portion of its total renewable water resources each year. This is particularly true for informal settlements. These settlements are in densely populated areas and tend to provide the least amount of available water per capita. Additionally, these communities may also be in regions with severely polluted water sources.⁴

Challenges of water on sanitation in informal settlements amplified by COVID-19

The provision of safe water, sanitation, and hygienic conditions is essential to preventing human-to-human transmission of COVID-19. Globally, major health organizations have advised people to frequently wash their hands for more than 20 seconds and maintain a two-metre social distancing rule. It has been exceptionally difficult to implement this in informal settlements due to population density, lack of water and sanitation or hygiene facilities, and affordability limitations. In this sense, informal settlements are at the forefront of the Public Health crisis that COVID-19 has created.

Emergency responses

Emergency responses are short-term actions to minimize the virus spreading, as well as to limit the socio-economic impact of COVID-19 on informal settlements. These actions should be implementable within a few months only and last for a short-term period of up to a few years. Please refer to [UNECE/WHO guidance provided here in forming an emergency response](#).

Identify

It is advised that the methodology of the [Equitable Access Score- Card](#)⁵ is applied to assess quantitative and qualitative data in a timely manner, and inform policy development. Indicators include:

- **Socioeconomic and sector data:** What is the population, GDP per capita, population living in urban areas, population without access to wastewater treatment, and public financial resources spent on ensuring equitable access to water?
- **Information on Geographic disparities:** To what extent is there a public policy for reducing disparities between urban, peri-urban and rural areas? To what extent are there mechanisms in place to track prices, as well as cost, of provision of water and sanitation services?
- **Information on vulnerable and marginalized groups:** To what extent is there a water and sanitation policy recognizing the special and differentiated needs of vulnerable and

³ WHO, Water and Sanitation are Still a Luxury for Millions of Europeans, available from <https://www.euro.who.int/en/health-topics/environment-and-health/water-and-sanitation/water-and-sanitation>

⁴ UNECE (2012), *No one left behind: Good practices to ensure equitable access to water and sanitation in the pan-European region*. Available from www.unece.org/env/water/publications/ece_mp.wh_6.html.

⁵ The Equitable Access Score-Card. Available from www.unece.org/env/water/publications/ece_mp.wh_8.html.

marginalized groups? To what extent is there data on the levels of access to safe drinking water and sanitation in health facilities?

- **Quantitative information on affordability;** To what extent does water and sanitation policy include affordable access as one of its objectives? Is there specific public funding to address affordability concerns?

Immediate solutions

The following solutions have been identified as being implementable in the short-term. For more information please read [Overview of Water, Sanitation, and Hygiene \(WASH\) COVID-19 Responses from Governments, Regulators, Utilities and other Stakeholders in 84 Countries](#).

Intensify behavior change through population-wide initiatives and awareness-raising campaigns for hand washing in households and institutions

- Promote handwashing behaviors through communication channels.
- Identify and train community leaders to promote proper handwashing, and participation in monitoring.
- Prevent disinformation campaigns and fake news.
- Performance of collective systems in schools; raise awareness for teachers of the importance of hygiene and sanitation practices.

Strengthen infection prevention and control (IPC) in households and institutions

- Promote IPC measures in households such as wearing masks, disinfecting surfaces and isolating people with symptoms of COVID-19.
- Construct handwashing stations in exposed collective sites and public spaces, including schools, healthcare facilities, markets and transport locations.
- Ensure the availability of basic products such as chlorine tablets for domestic water treatment and family hygiene.
- Conduct rapid assessments of the WASH situation informal settlement health care facilities, including frequent hand hygiene, disinfection, and chlorine-based products.

Preserve the ability of all people to meet their basic needs in water and sanitation services

- No cutting of the water supply to households unable to pay bills.
- Reconnecting free of charge all households disconnected for non-payment that do not currently receive water services.
- Ensure provision of services to all segments of population living outside a home.
- Identify priority area interventions, mapping areas most at risk from COVID-19.
- Ensure public or community bathrooms are open and accessible free of charge.

Guarantee the continuity, affordability and safety of water and sanitation services

- Regular monitoring of WASH supplies and service access and prices.
- Ensure proper operation of sewage system and non-centralized sanitation solutions at every point of the sanitation chain.
- Securing access to energy and utilities, ensuring the operation of water and sanitation services.
- Distribute personal protective equipment (PPE) to informal sanitation workers.
- Adapting a social pricing mechanism through use of municipal subsidies, long-term mechanism for backloading use-based cost recovery, or long-term cost sharing by formal and informal communities together.

Provide technical and financial support to utilities

- Technical assistance to utilities for management, financing, planning, operation and maintenance.
- Activating special funds to guarantee service operation.

- Ensure that urban utilities and small-scale operators receive the necessary financial support and supplies to guarantee proper service operation.

Building back better

The following solutions have been identified as being implementable in the medium to long term:

Comprehensive financing strategies (more information available on [Costing and financing of small-scale water supply and sanitation services](#))

- Increase taxes for subsidizing to small-scale water and sanitation systems.
- Clarify tariff policies, legislation, and regulation.
- Provide financial incentives linked to performance levels.
- Provide incentives for household investments.
- Seek financial agreements with bodies such as the World Bank and the EU.
- The creation or use of national ecological and municipal development funds.

Changing governance frameworks

- Introducing legislative reforms such as the guaranteed provision of free public freshwater fountains, toilets, and showers.
- Implement the concepts of equitable access to water and sanitation for vulnerable and marginalized groups, in laws and regulations.
- Regulations to reflect minimum requirements for water and sanitation.

Improvements in infrastructure (more information available at [Compendium of Sanitation Systems and Technologies](#))

- Investment in the reconstruction, or creation, of sufficient water pipelines. For instance, support the extension of low-cost networked water supplies to underserved areas.
- Implementation of solid waste management services to informal settlements, such as dehydration vaults, septic tanks and simplified sewers.
- Strengthen supply chains for essential WASH products.
- Addressing water quality concerns through WHO [water and sanitation safety plans](#).

Improve collaboration

- Establish a coordination platform, or communication channels between government and utilities operators and their associations, for exchange of experience, good practice and crossover learning. This enables real-time information collection and advice.
- Develop business plans to analyze the economic viability of utilities in the short and mid-term.
- Promote Public-Private-Partnerships with multinational companies to provide soap and other hygiene materials.
- Encourage local private sector actors to promote local design and production of handwashing stations and sustained access to soap.

Set specific policy goals and targets to address the situation of WASH in informal settlements. In particular use the framework provided by the Protocol on Water and Health to set COVID-19 sensitive targets. These should be related to policy developments, improving sanitation and hygiene conditions, and affordability constraints.

Policy goals, targets and actions⁶

Goal: The public physical infrastructure, water and sanitation networks, and energy grids adequately, sustainably, and equitably support informal communities.

| Goal | Targets and actions | Time frame ⁷ | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------|--------------------|-----------|
| | | Emer-gency, short-term | Short term | Inter-mediate term | Long term |
| The public physical infrastructure, water and sanitation networks, and energy grids adequately, sustainably, and equitably support informal communities | There is safe, adequate, affordable and equitable access to clean water, sanitation services, and hygienic infrastructure. Over time, climate resilient water and sanitation as well as energy efficiency measures should be practically applied as economic feasibility is achieved or donor funds become available to fill resource gaps. | | X | X | X |
| | <ul style="list-style-type: none"> • <i>Study and map</i> existing water and sanitation service provision and the legislation supporting it. Determine where the systems are centralized or decentralized, adequate, affordable and equitable and the risks they face, including climate change related or natural disaster risks. Determine where they fail and why, including potential governance bottlenecks. | | | | |
| | <ul style="list-style-type: none"> • <i>Identify</i> and map which minority groups, women, vulnerable groups or locations are underserved with water and sanitation services. A potential tool for this is provided by the Equitable Access Score-card,23F⁸, a self-assessment methodology developed under the UNECE-WHO Regional Office for Europe Protocol on Water and Health. It supports policy makers in establishing a baseline measure of equity, and supports development of action plans to achieve the human right to water and sanitation. | | | | |
| | <ul style="list-style-type: none"> • <i>Develop a fit-for-purpose water and sanitation budgeted action plan</i> that balances human rights, design feasibility options, affordability, and available upfront and ongoing fee-based funding realities. In terms of ensuring equitable access to water and sanitation, a Guidance Note on the Development of Action Plans⁹ is available under the abovementioned UNECE Protocol on Water and Health. It should also be carefully noted that while COVID-19 is an air and animal borne virus, another pandemic threat may be waterborne. In that scenario there may be little time to adjust to the threat, so investment now would be wise. | | | | |
| | <ul style="list-style-type: none"> • <i>Develop a funding strategy</i> including government, donors and NGOs and consider that informal settlement residents are unlikely to be able to afford significant upfront development costs, so subsidized and back loaded costs should be explored. Low, subsidized, or no upfront connection fees should be applied. | | | | |

⁶ For more information see UNECE (2022): COVID-19 Recovery Action Plan for Informal Settlements the UNECE Region (forthcoming)

⁷ **Emergency goals:** Categorized targets and action points to reach and secure short-term goals, loosely defined as those to be accomplished in less than 6 months. **Short term goals:** Categorized targets and action points to reach and secure short-term goals, loosely defined as those to be accomplished in less than 1 year. **Intermediate term goals:** Categorized targets and action points to reach and secure intermediate-term goals. The greater complexity is expected to require approximately 6 to 18 months to accomplish. **Long term goals:** Categorized targets and action points to reach and secure long-term goals. The greater complexity and nature of the solutions are expected to require over a year to accomplish, often one to five years.

⁸ For more information see <https://www.unece.org/index.php?id=34032>

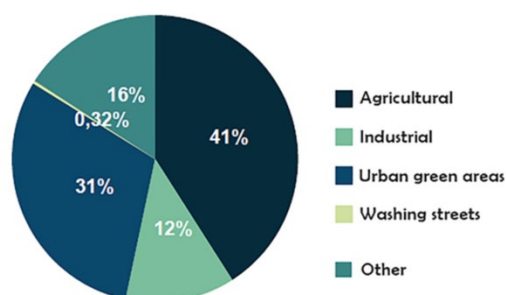
⁹ Available online from <https://www.unece.org/index.php?id=44284>

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| | <ul style="list-style-type: none"> • <i>Affordably facilitate</i> clean water as well as adequate and equitable sanitation services within informal settlements through infrastructure programmes, and consider innovative low-cost and smaller scale solutions if larger infrastructure projects are not feasible, or funding is unavailable. If necessary, consider installing temporary sanitation facilities, including regular desludging and cleaning services to reduce sharing of facilities. |
| | <ul style="list-style-type: none"> • <i>Expand</i> the hygienic infrastructure so that access to public handwashing stations is common and properly located, and public high traffic spaces are cleaned and disinfected regularly. Handwashing should be required in all high traffic public places and anywhere with likely high viral transmission potential. |
| | <ul style="list-style-type: none"> • <i>Provide a consistent science-based communication strategy</i> so that most people comply with water, sanitation and hygienic provisions. Water management and household storage in informal settlements is key to ensuring water quality. Important considerations include hygienic maintenance of the sanitation infrastructure and waste management systems. |
| | <ul style="list-style-type: none"> • <i>Increase</i> the frequency of solid waste disposal and management, and <i>identify</i> locations for garbage collection, supplementing them if necessary. |

Examples from around the world

Water scarcity presents a threat for many cities. This threat can be mitigated through **efficient water management**. Critically, a holistic approach to freshwater distribution and sanitation could ensure sustainable availability of water to all.

Reclaimed water is treated urban wastewater fit for non-domestic uses, such as irrigation of crops and urban vegetation. This is particularly useful in arid areas such as Central and Southern Spain, as it contributes to the preservation of natural water bodies and aquifers.¹⁰



More efficient use of reclaimed water in and around informal settlements allows for greater effective capacity in the broader community. This improves water access for formal and informal residents alike. Additionally, improved water and sanitation infrastructure for informal residents improves health and saves residents time, generally enhancing growth, equity, human rights, and the potential for sustainability within these settlements.

Efficient water distribution and sanitation infrastructure are essential for cities to build back better in a post-pandemic world. For example, new utility networks could be directly connected to integrated water systems resulting from formalization.

In arid areas of Israel such as Bat Yam and Ramle, biofilter facilities allow the purification of both wastewater from domestic and industrial uses as well as rainwater which travels through flood drainage systems.¹¹

¹⁰ Navarro, T. (2018). "Water reuse and desalination in Spain challenges and opportunities" in *Journal of Water Reuse and Desalination*. 08.2. pp. 153-168.

¹¹ KKL-JNF (2015). "New Bio-filters Purify Surface Runoff Water for Reuse". Available from <https://www.kkl-jnf.org/about-klk-jnf/green-israel-news/march-2015/biofilters-ramle-bat-yam/>

To build back better from COVID-19, one of the requirements for formalization could be localized separation of rainwater from wastewater. Rainwater could then drain into reservoirs and feed domestic water distribution, relieving sewage systems. The Vernes Lake in the Geneva area is filled by drained rainwater and can hold up to 25,000 cubic meters; this body of surface water hosts rich biodiversity and regulates the flow of local streams.¹²

All these actions can be highly beneficial for enhancing the sustainability of access to water, sanitation and hygiene. This is even more so in informal settlements where infrastructure is incomplete and often needs to be built or rebuilt from scratch. However, the costs for such infrastructure should not inhibit the formalization process. It should be a condition for aid and assistance packages, and not a burden placed upon informal residents.

Conclusion

In order to mitigate the spread and impact of COVID-19 in informal settlements, it is critical that solutions in water and sanitation proposed in this policy brief are implemented. Moreover, *build back better* measures will foster greater protection for highly vulnerable groups in the event of a future shock. These solutions have positive impact on the public health of vulnerable groups in urban regions who are at the forefront of COVID-19. They also support progressive realization of the human right to safe drinking water and sanitation, align with the UN's Sustainable Development Goals, and facilitate economic development.

Further reading

[The UNECE-WHO Regional Office for Europe Protocol on Water and Health](#) is an international legally binding agreement designed to achieve adequate supply of safe drinking water and adequate sanitation for everyone. It is available in English, French, German and Russian. Unofficial translations were made into Finnish, Slovak, Ukrainian and several other languages.

Under the Protocol, the following tools have been developed to assist countries in ensuring equitable access to water and sanitation:

[“No-one Left Behind”](#), a publication presenting good practice in terms of policies and measures to increase accessibility to water and sanitation. It is available in English, French, and Russian.

[The Equitable Access Scorecard](#), an analytical tool that assists policymakers in measuring the accessibility of water and sanitation through self-assessment. It is available in English, French and Russian. Unofficial translations were made into Albanian, Armenian, Azerbaijani, Hungarian and Macedonian.

[The Guidance Note on the Development of Action Plans to Ensure Equitable Access to Water and Sanitation](#), is a publication which translates priorities identified through self-assessment into measurable actions. It is available in English, French, and Russian.

The lessons learned from using these tools in 11 countries of the UNECE region are summarized in [“The human rights to water and sanitation in practice: Findings and lessons learned from the work on equitable access to water and sanitation under the Protocol on Water and Health”](#).

[Technical brief Water, sanitation, hygiene and waste management for COVID-19](#) is a publication created by the WHO providing evidence-based responses in water and sanitation which governments can undertake to mitigate the impact of the pandemic.

¹² Ville de Meyrin (2017). « Lac des Vernes ». Available from : <https://www.meyrin.ch/votre-mairie-administration-urbanisme-travaux-publics-et-energie-territoire/lac-des-vernes>

[Interim recommendations on obligatory hand hygiene against transmission of COVID-19](#) is a publication by the WHO on measures to promote sanitation and prevent the spread of COVID-19.

[Overview of Water, Sanitation, and Hygiene \(WASH\) COVID-19 Responses from Governments, Regulators, Utilities and other Stakeholders in 84 Countries](#) is a technical document produced by UNICEF which illustrates initiatives that countries and WASH stakeholders have taken.

[Guideline for densely populated slums and low-income communities COVID-19 Response: Hygiene, Sanitation and Water](#) is a publication created by WaterAid in 2020.

[Managing the Unexpected - European Public Water Utilities Facing the Coronavirus Emergency](#) is a publication created by Aqua Publica Europea in 2020, in collaboration with UN-Habitat and Global Water Operators' Partnership Alliance.

[COVID-19 Information and Guidance for Programmes](#) is a short document on how to encourage good water and sanitation practice in informal settlements. It was created by the Water Supply & Sanitation Collaborative Council in 2020.

[Costing and financing of small-scale water supply and sanitation services](#) is a document created by the WHO and UNECE, clarifying financing options for water supply and sanitation projects. It is available in English and Russian.

[Prioritizing pupils' education, health and well-being: Water, sanitation and hygiene in schools in the pan-European region](#) is a document published by the WHO addressing the importance of water and sanitation in schools, and illustrating good practice.

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More information: <https://unece.org/housing/post-covid-19-recovery>