Indicators, Measures and Methods for Monitoring Climate Resilient WASH – Scoping and Definitions

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In collaboration with University of Technology Sydney: Institute for Sustainable Futures, The University of Bristol, and Oxford University

Contents

Scope and definitions: working document

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Background

The World Health Organization and United Nations Children's Fund (WHO/UNICEF) Joint Monitoring Programme for Water Supply, Sanitation and Hygiene (JMP: https://washdata.org/) and the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS: http://glaas.who.int/) are responsible for monitoring of drinking water, sanitation and hygiene (WASH) including for SDG targets 6.1 and 6.2 (JMP) and 6.a and 6.b (GLAAS). Together, the JMP and GLAAS teams have launched a two-year project to **identify indicators for monitoring '*climate resilient water, sanitation and hygiene (WASH)*' at the global level**, to support progressive integration of information on climate resilience into national and global frameworks for monitoring WASH.

This project contributes to WHO and UNICEF's broader work on climate. Responding to climate change is a strategic objective of WHO's Fourteenth General Programme of Work, which guides WHO's work in support of Member States and partners for the four-year period 2025-2028. The project is also aligned to UNICEF's WASH strategy 2016-2030, strategic objective on promotion of resilient development, with a focus on climate resilient WASH development.

Accelerating efforts to manage climate and water and sanitation in a more coordinated and sustainable manner is also a cross-cutting theme with the UN System-Wide Strategy for Water and Sanitation. This work on developing indicators for climate resilience was endorsed by UN-Water at its 39th meeting, while efforts to prepare for fit-for-purpose post 2030 monitoring is included as a Priority Collaborative Action of the UN System Wide Strategy implementation plan.

This project is being conducted in collaboration with the University of Leeds, University of Technology Sydney, University of Bristol and Oxford University and is supported by the Ministry of Foreign Affairs, Directorate-General for International Cooperation (DGIS) and the Foreign, Commonwealth and Development Office of the United Kingdom (FCDO).

This background document clarifies the purpose of global and national monitoring, and the scope of indicators, measures and methods that should be considered for inclusion for this project. It also presents a conceptual framework or 'theory of change' that locates these indicators, measures and methods in relation to existing theories and definitions of resilience and related concepts in climate change adaptation.

Global context for monitoring climate resilient WASH

In December 2023, at COP28, the Global Goal on Adaptation was agreed to. The Global Goal on Adaptation framework includes eleven global targets; seven are thematic targets for adaptation action and four targets concern the adaptation cycle: climate risk and vulnerability assessments; planning; implementation and monitoring; and evaluation and learning. The first of the thematic targets is: "*Significantly reducing climate-induced water scarcity and enhancing climate resilience to water-related*

hazards towards a climate-resilient water supply, climate-resilient sanitation and towards access to safe and affordable potable water for all."

The two-year UAE-Belém work programme was also launched at COP28 which will produce a set of indicators to track progress towards these targets, by COP30.

These initiatives require the development of a clear definition of climate resilient water supply and climate resilient sanitation. In response, the Sanitation and Water for All (SWA) Climate Action Task Team has provided a consultation platform and has led the development of a normative definition of 'climate-resilient water, sanitation and hygiene services'.

Purpose of monitoring climate resilient WASH

With the changing global context concerning climate change and climate policy, advancing sectoral thinking on monitoring climate resilient WASH is a key imperative. Such monitoring would build on existing global monitoring systems in the WASH sector:

(1) the WHO/UNICEF JMP produces internationally comparable estimates of progress on WASH and is responsible for global monitoring of the Sustainable Development Goal (SDG) targets related to WASH (primarily SDG targets 6.1 and 6.2); and
(2) the UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS) implemented by WHO in close collaboration with UNICEF provides a global update on elements of WASH systems, including policy frameworks, institutional arrangements, monitoring systems, regulation, human resources and finance required to extend services to all; and is a co-custodian of SDG targets 6.a and 6.b on means of implementation.

The purpose of global monitoring platforms JMP and GLAAS includes two main tasks:

- To provide internationally comparable time series data and a global status update on WASH system elements to track overall progress and trends towards achieving high-level global ambitions (for example universal access to safely managed sanitation); and
- To support countries and provide frameworks for national and local monitoring which engages more directly with implementation and policy-making.

The distinction between these levels is important, both for monitoring WASH and monitoring climate resilient WASH. Globally defined indicators for water and sanitation perform an important role in enabling an overall view on general progress towards internationally agreed targets and the identification of areas (countries, or sectors) showing promise and cause for concern. This can be useful in shaping the international dialogue on policy and provide evidence to support individual nations with domestic advocacy efforts to increase focus and support on WASH. To secure comparability and maintain usefulness at an international level, global indicators must be easy to understand and simple enough that the data needed to calculate them can be collected in every national context. In this way, global monitoring is connected to national monitoring.

Whilst beyond the scope of this work, it should be noted that global indicators rarely capture the detail of national realities and challenges faced by individual countries, and therefore may not address the needs of individual countries to assess all facets of progress. This is particularly the case in the context of climate change, where different countries are likely to experience different climate change impacts. This means that beyond global monitoring indicators, additional indicators are likely needed for use at national and sub national level. While these still need to be robust and based on solid data sources, at national and local level, a larger number of more detailed and nuanced indicators may be appropriate. As with global indicators, however, these must be based on data which are available or for which data can be collected through robust methods and reliable to an acceptable level.

Defining scope

The key dimensions of scope are as follows:

- **Scope of WASH services**: WASH services in households, schools and health care facilities are the main focus. Emerging indicators, measures and methods for monitoring WASH in other institutional settings may be considered where relevant.
- **Scope of climate hazards**: Climate change is associated with climate shocks, events and trends, and may exacerbate existing or historical climate events. The scope of climate hazards is based on IPCC 'climate impact drivers' (IPCC, 2022) relevant to WASH:
    - Floods: Fluvial flooding (overflowing of a river or other water body) and pluvial flooding (precipitation intensity exceeds drainage capacity);
    - Changing precipitation patterns: Increased variability in seasonal precipitation patterns and inter-annual precipitation;
    - Relative sea level: Permanent coastal inundation from sea level rise or temporary seawater intrusion/coastal flooding due to sea level rise, salinization of coastal aquifers, changes in storm surge, high tide or wave setup;
    - Fire weather: Weather conditions (temperature, soil moisture, humidity and wind) that trigger and sustain fires;
    - Severe wind: High wind velocity due to thunderstorms, wind gusts, tornadoes or cyclones;
    - Droughts: Episodic combination of low rainfall and runoff deficit, and evaporation that leads to dry soil and to reduced water availability;
    - Changing air temperature: Increased variability in diurnal and seasonal air temperature; and
    - Extreme heat: Episodic high surface air temperature events, which may be exacerbated by humidity.
- **Climate variability and climate change**: The project scope includes resilience to both existing climate variability as well as resilience to further climate changes, both since resilience to climate variability is important in and of itself, and can also be a useful (though incomplete) predictor of resilience to climate change.
- **Resilience 'of what'**:
    - We propose that indicators and measures need to pertain to climate resilience *of the WASH services and system*, which includes the enabling environment (at national and

subnational levels), service provision (at local level) and WASH infrastructure and behaviours (at local level).

- Note that the focus is on 'climate resilience' and not just 'resilience', which might also include other types of shocks, trends and disturbances (e.g. urbanization, security etc.).
- In defining the 'WASH system', our work will maintain alignment with a concurrent UNICEF/WHO initiative on indicators for WASH systems ('Align to Accelerate') which at present uses the UNICEF WASH Systems strengthening concept note (January 2024) as a working definition as follows: "*A systems approach to WASH is a perspective that looks at the whole system to tackle service delivery challenges. It addresses both the direct and underlying WASH system actors, drivers, and dynamics that affect services, communities, and water ecosystems. WASH systems are made up of and connected by people, infrastructures, water ecosystems, and their governance mechanisms. Sustainable and resilient services depend on the capacity of these system components to play their role adequately, in coordination, for all, and for the long term*." As this concurrent work evolves, we will accordingly adjust the core domains used to characterise the WASH system.
- Resilience of stormwater systems is outside scope, however, it is recognised that stormwater management and drainage systems interact with water supply and wastewater systems, and as such, adaptation actions pertaining to stormwater and drainage systems are within scope.
- Resilience of societies or communities may be enhanced by having reliable access to WASH, since as noted by IPCC's conclusion (2014) the most effective measures to address patterns of risks due to climate change and reduce near-term vulnerability are "programs that implement and improve basic public health measures such as provision of clean water and sanitation [⋯]." . However associated indicators for resilience of societies or communities is beyond the scope of this work

- **Climate mitigation**: The IPCC (2022) definition of 'climate-resilient development', calls for "a process of implementing greenhouse gas mitigation and adaptation options to support sustainable development for all" (IPCC 2022; Chapter 18). This centering of sustainable development guides the approach to mitigation. Our framework therefore prioritises the monitoring of attributes and actions that are likely to promote sustained and resilient provision of WASH services while also placing a value on indicators of intent to limit emissions. Mitigation-related indicators will thus be considered within the broader context of adaptation efforts to make WASH services resilient, which may include tracking efforts to minimise emissions whilst avoiding compromise in service quality or resilience. However, indicators, methods and measurement specifically and solely focused on greenhouse gas emissions from elements of WASH infrastructure are considered beyond scope, as they comprise an extensive body of work in and of themselves, are tracked through other global monitoring efforts, while the evidence base for emissions reduction, particularly with respect to sanitation, requires further advancement.
- **Resilience for what purpose:** Climate change is one of the defining challenges of the 21st century. It will increasingly constrain and challenge water, sanitation and hygiene services, resulting in increased public health risks (Jiménez-Cisneros et al. 2014). At the same time, the provision of safe, sufficient and reliable water and sanitation services is central to building the climate

resilience of societies (Kohlitz et al. 2020), making increased investment in service resilience a global priority. Climate impacts noted by IPCC (2022) are disproportionately affecting the poorest and most vulnerable communities, compounding existing inequalities in access to WASH. This requires placing human values at the centre of climate resilience, offering a politicised and human approach to create solutions and adaptive strategies that are not only scientifically sound but attuned to both the problem and the context (Grasham et al, 2021).

- **Differentiation of country income status**: Priority adaptation actions suitable in high-income countries, middle-income countries and low-income countries are expected to differ and hence where relevant, will be differentiated.

Definitions and key concepts

Key climate change adaptation and resilience definitions and concepts and their relevance to global monitoring of climate resilient WASH are presented below. The concept of resilience is contested in academic and practice-based literature (Eakin and Luers, 2006, O'Brien et al., 2007; Quinlan et al., 2016).

For this reason, it is important to identify key definitions that will underpin the scope and prioritisation of indicators, measures and methods for global monitoring and related national monitoring (Table 1). These definitions align with those being adopted by the concurrent SWA work on a definition for climate resilient WASH.

Table 1: Key climate-related terms, concepts and definitions and their relevance to WASH global monitoring

Terms, concepts and definitions	Relevance to WASH global monitoring
Resilience is the: [c]apacity of social, economic, and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity, and structure, while also maintaining the capacity for adaptation, learning, and transformation (IPCC, 2021).	Widely-accepted definition for resilience that incorporates many aspects of other resilience definitions, and in this case is specifically applied to climate hazards. To note, that the WASH service system can respond and reorganize to still provide the required service, and must maintain capacity to continue to adapt and transform, hence both of these should be in scope of potential adaptation actions.
Resilience is variously defined as trait, process or outcome (Moser et al., 2019).	All three are relevant: Climate resilience as a *trait* (resilience characteristics that the WASH system possesses), a *process* (for identifying coping, adaptation and transformation actions) and as an *outcome* (the desired outcome of the WASH system, WASH services).
Climate resilient development (CRD) is a "…process of implementing greenhouse gas mitigation and adaptation options to support sustainable development for all" (IPCC, 2022; Chapter 18).	Specific definition developed by the IPCC to conceptually link efforts to reduce emissions associated with the core objective of securing services which are critical to broader sustainable development goals and objectives.
Adaptation is defined as: Adaptation in human systems is the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human	Adaptation actions that may be considered in global monitoring include a range of strategies and actions which can be structural, institutional, ecological or behavioural.

intervention may facilitate adjustment to expected climate and its effects. Adaptation is further differentiated as: • **Incremental adaptation**: Adaptation that maintains the essence and integrity of a system or process at a given scale. • **Transformative adaptation**: Adaptation that changes the fundamental attributes of a socio-ecological system in anticipation of climate change and its impacts. (IPCC, 2022; Park et al., 2012)	
Maladaptation is defined as a process through which people become more vulnerable to climate change rather than less vulnerable, and can involve any of three types of maladaptation: infrastructural, institutional and/or behavioral (Schipper, 2020).	Consideration of maladaptation is useful to ensure indicators of decreased rather than increased risk or vulnerability to climate change are included.
Risk is: the potential for adverse consequences for human or ecological systems, recognising the diversity of values and objectives associated with such systems" (IPCC, 2020) and "In the context of climate change impacts, risks result from dynamic interactions between climate-related hazards with the exposure and vulnerability of the affected human or ecological system to the hazards. Hazards, exposure and vulnerability may each be subject to uncertainty in terms of magnitude and likelihood of occurrence, and each may change over time and space due to socio-economic changes and human decision-making." (IPCC, 2020)	It is recommended that global monitoring does not use a simplified definition of risk common in the field of disaster risk reduction (i.e. severity X likelihood X capacity), and instead uses the IPCC definition of risk that better accounts for its complexity, dynamic nature and uncertainty. As such, the conceptual framework covers these key dimensions, and it should be recognized that all are dynamic and not static in nature.
Types of capacity (Bene et al., 2012): • Absorptive capacity refers to a system's ability to cope with stressors or shocks and absorb them whilst retaining its key functions and maintain stability. • Adaptive capacity is the ability of a system to incrementally adjust to change through reorganisation and learning. • Transformative capacity refers to a system's ability to fundamentally change its structure and/or function to a 'new normal'.	Cultivation of all three types of capacity (absorptive, adaptive and transformative) should be considered in adaptation actions, noting that empirical evidence of these is currently limited.
Types of adaptive capacity (Eakin et al., 2014): • Specific adaptive capacity (the ability to plan and prepare for specific climate hazards) • Generic (or general) adaptive capacity (foundational qualities (e.g. good health, funding, good governance) for responding to hazards in general	Cultivation of both specific and generic capacity should be considered in adaptation actions, in that some adaptation actions will pertain to a specific hazard, others to multiple hazards (particularly in the face of uncertainty), and with recognition of differing generic capacity, resilience and vulnerability of different users.
Risk-hazard (or outcome vulnerability) perspective on resilience, originating from field of natural hazards and	Most relevant perspective on resilience for considering adaptations of WASH infrastructure, but less relevant to social

disasters: Makes predictions of impacts and looks at how to offset these. Considers *vulnerability* based on predicted *exposure* and the *sensitivity* of a system to future hazards (Kohlitz et al., 2017).	systems. However, ignores uncertainty, which is a key aspect of climate change, and hence importance of inclusion of other perspectives on resilience. This perspective is more relevant at national rather than local scale given uncertainties related to downscaling climate models to subnational and community level.
Engineering resilience: (i) robustness (the ability to withstand shocks without loss of function), (ii) rapidity (the time required to return to functionality), (iii) resourcefulness (the ability to mobilise resources), and (iv) redundancy (the ability to substitute components) (Bruneau et al., 2003; Chambers et al., 2022).	Relevant to consider adaptations of WASH infrastructure. Existing approaches and rules of thumb within water, sanitation and other infrastructure sectors will be considered and included in evidence reviews.
Contextual vulnerability: Focuses on other non-climatic drivers causing certain groups to be more susceptible to harm from climate change, impacting resilience, drawing on social sciences perspectives. Vulnerability seen as a function of socioeconomic, institutional, and ecological factors (Kohlitz et al., 2017).	Global monitoring should: • include attention to adaptation actions that address the socio-economic causes of differential risks and impacts; and • support disaggregation across different groups, including based on relative exposure to climate hazards, informing allocation of resources to more vulnerable groups.
Socio-ecological systems perspective on resilience: Considers effects of disturbance on a system, to maintain or change its structure and function, and draws from the field of ecology. Influential properties include diversity, redundancy, connectivity and feedbacks. Heightened uncertainty requires flexibility and adaptiveness (Kohlitz et al., 2017).	Addresses uncertainty by including adaptation actions that support the WASH service system to be responsive to a wide range of unknown shocks and trends (in climate change and more broadly) through cultivating properties such as diversity, redundancy, connectivity, flexibility and adaptiveness.
Climate mitigation involves reducing emissions or removing greenhouse gases from the atmosphere (IPCC, 2022).	There is opportunity for adaptation options concerning water, sanitation and hygiene services to also support mitigation efforts, in line with a holistic view on climate resilient development, noting that in general, as described above, mitigation is beyond scope.

Conceptual framework

The conceptual framework to guide this work on global monitoring of climate resilient WASH is shown in Figure 1 and elaborated with examples in Table 2. This framework will guide the evidence reviews and organise potential indicators, measures and methods.

Key features are:

- 'Resilience of the WASH services and system' is the focus, including:
    - **Adaptation actions** by national government and subnational governments; by water service and sanitation service providers, supply chain actors, hygiene promoters; by users; adaptation actions related to water resources and land management; adaptation actions related to coordination between sanitation, solid waste management and storm water drainage;
    - **Attributes** of WASH infrastructure and of water resources and receiving waters;

    - **Service functioning** of water and sanitation, hygiene facility functioning and availability of materials; and
    - **User experiences** of water and sanitation services and of practicing hygiene behaviours.
- Equally, to draw a boundary to the work, indicators and measures of societal resilience, water ecosystem resilience, broader resilience of WASH service providers (as businesses/organisations) and resilience of wider governance systems are outside scope. However, we note that these influence the possible adaptation actions of various actors, and will maintain awareness of this interconnection. In the conceptual framework diagram, these areas that are beyond scope of measurement are noted in grey.

Due to practical limitations in what can be monitored, contestations about resilience attributes and capacities, the indicators, measures and methods will only represent partial aspects of resilience and never the whole picture, and will be presented as such.

In addition, example adaptation actions and attributes provided in Table 2 are context-specific, as they must connect with the relevant climate hazards in a given location or context.

Our framework aligns well with the SWA definition, including its five areas for adaptation actions. Like us, SWA notes the value of "an integrated approach [to WASH] that combines climate adaptation and mitigation with sustainable development to enhance the capacity of human and natural systems to withstand and recover from climate impacts". These 'onward' linkages to wider societal resilience lie beyond the scope of sector monitoring. For monitoring purposes SWA defines WASH outcomes in terms of 'service functionality and user experience' which aligns precisely with our two elements relating to outcomes.

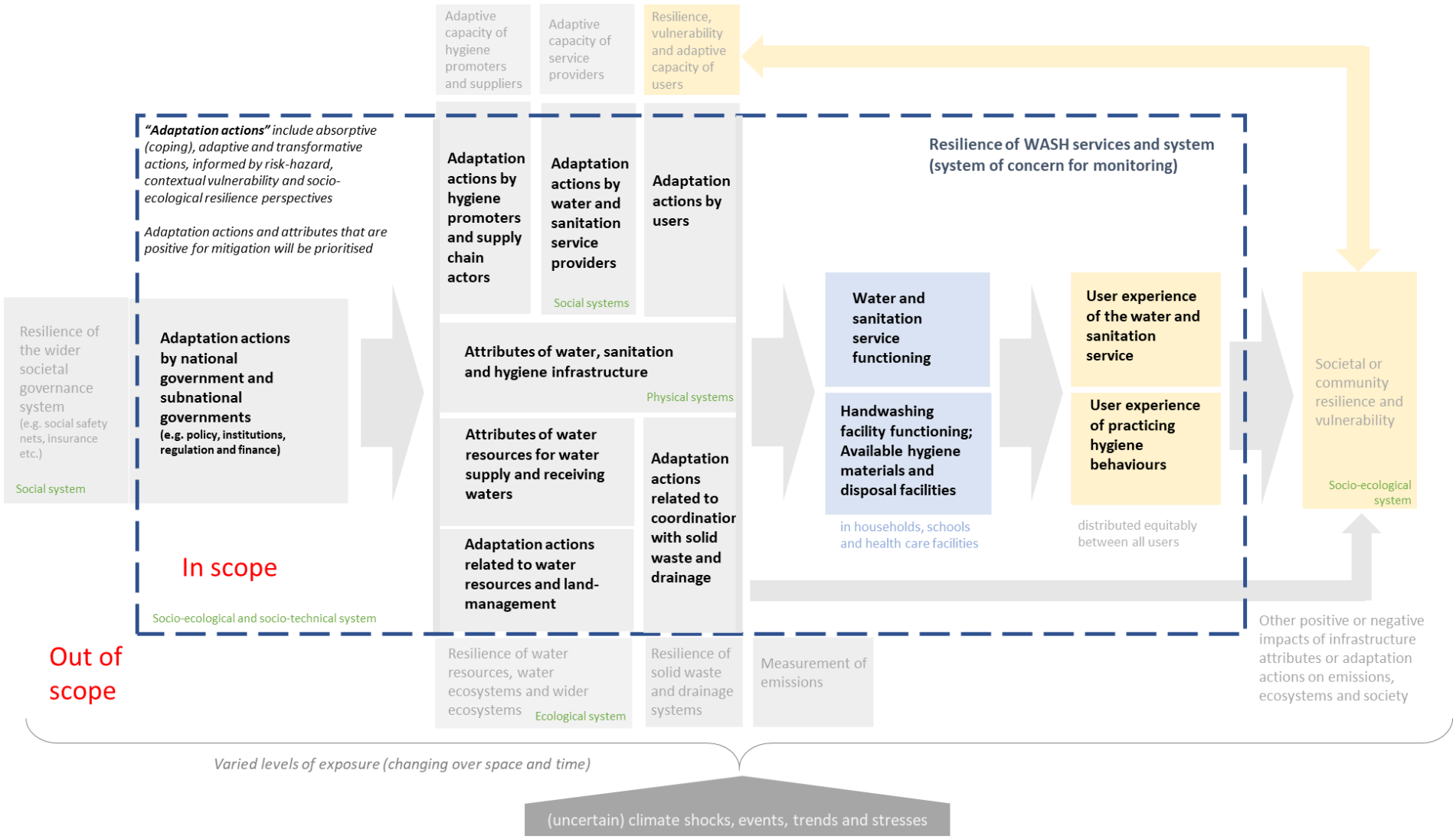

Figure 1: Conceptual framework to guide climate resilient WASH global monitoring

Table 2: Framework component and illustrative examples of areas for which indicators could be considered, noting that adaptation actions and attributes must relate to the specific climate hazards relevant in a given context

Framework component	Water	Sanitation	Hygiene
Adaptation actions by national government and subnational governments	*E.g. Climate resilience integrated in WASH related policy and strategy, institutions, monitoring, planning, finance, regulation etc., including to address differential exposure, inequalities and vulnerabilities, and potentially the inclusion of WASH in climate policy (e.g. NAP and NDCs). Specific domains for global monitoring will be aligned with concurrent UNICEF/WHO work on indicators for the strength of WASH systems (Align to Accelerate).* *Could include monitoring systems at different levels (e.g. real-time water availability or water quality), early warning systems for climate events for service providers etc.*		*E.g. Hygiene promotion education policy, strategy and product subsidies, clear institutional responsibilities, including for emergencies, disease surveillance and outbreak response plans and financing.*
Adaptation actions related to water resources and land-management	*E.g. Reforestation, soil conservation, land management, sustainable agricultural management, aquifer recharge or other measures for surface water or groundwater source protection, optimising quality and quantity of available water, increasing infiltration and strategies that offer protection from flooding.* *This could include adaptation actions by entities beyond those responsible for WASH services, including water basin authorities, irrigation providers, dam and water storage services provided that these map directly onto provision of WASH services within the remit of global monitoring.* *Adaptation actions that impact on multiple uses of water with minimal impact on water supply (e.g. transboundary water agreements, or irrigation policy) would be out of scope.*	*E.g. In addition, climate resilient sanitation and other pollution control prevents contamination of receiving environments, provision of organic fertiliser from sludge or biosolids to enhance soil fertility and sustainable agriculture.*	
Attributes of water resources for water supply and receiving waters	*E.g. Groundwater levels maintained (or even increased), water source catchment well-protected, water quality and quantity maintained.*	*E.g. Receiving water quality and flows maintained.*	

Adaptation actions related to coordination with solid waste and drainage		*E.g. The existence of integrated infrastructure development plans that deliver drainage interventions in tandem with sanitation infrastructure. Also, joint supervision of solid waste and feacal sludge management services to minimise incentives for households to dispose of solid waste in pits or tanks. Also the use of design and development standards that require management of storm runoff to be included in plans for sewerage.* *Design dimensions of drainage, or adaptation actions solely focused on drainage or solid waste such as emptying schedules would be* ***out of scope****.*	
Attributes of water, sanitation and hygiene infrastructure	*E.g. Design features and engineering resilience, (e.g. elevation, robustness, protection, flexibility etc.) accommodates climate shocks and trends for:* • *Hard infrastructure e.g. pump/pipes;* • *Collection location;* • *Treatment method; and* • *Distribution method – containers, pipes, pumps, trucks, tankers.* *Redundancy and availability of alternative water sources and sanitation facilities etc., and enhanced efficiency (e.g. water conservation, reduced leaking etc.).* *Systems interlinkages with other parts of the water cycle (e.g. water efficiency to reduce demand and to reduce wastewater production).* *Selection of low carbon infrastructure, energy sources*	*E.g. Design features and engineering resilience, (e.g. elevation, robustness, protection, flexibility etc.) accommodates climate shocks and trends for:* • *Sewered sanitation – including latrine or toilet, sewer network and pumping stations, treatment plant and disposal method; and* • *Non-sewered sanitation – latrine or toilet, container/pit/tank, conveyance including vacuum truck, roads, highways, bridges /primary emptying/conveyance system, treatment, re-use and disposal method.* *Redundancy and availability of alternative sanitation facilities.* *Systems interlinkages with other parts of the water cycle (e.g. wastewater re-use to*	*E.g. Location of handwashing and menstrual hygiene facilities, such as design features and engineering resilience aspects.*

	and technologies that minimise emissions without compromising service or user outcomes.	*reduce demands on water sources).* *Selection of low carbon infrastructure, energy sources and technologies that minimise emissions (e.g. through reduction in operational energy demand, reduction in direct emissions or transforming waste to energy) without compromising service or user outcomes.*	
Adaptation actions by hygiene promoters and hygiene supply chain actors			*Hygiene promoters: E.g. volunteer health workers etc. addressing water saving behavioural practices, back-up alcohol-based hand sanitisers, distribution of hygiene kits during events (e.g. water purification, portable handwashing, low-water-use technologies).* *Suppliers: E.g. Strategies for emergency provision; supply chains/transport, diversity of suppliers, use of durable eco-friendly materials able to withstand extreme weather.*
Adaptation actions by water and sanitation service providers	Service providers can be public, private, non-governmental organisations or groups, households or institutional. *E.g. Actions to adjust operation, maintenance, management including event preparedness, adaptive planning, training diverse staff, monitoring of vulnerabilities, standard operating procedures for climate events, response readiness etc.*		*E.g. Back-up water-supply arrangements made for handwashing.*
Adaptation actions by users	*E.g. Preparedness in extra water storage, water savings practices, other coping strategies or adaptations such as use of multiple sources, safe re-use of water for non-potable uses.*	*E.g. Ensuring availability of back-up sanitation, preparedness actions such as pre-emptive desludging before rainy season, matching sanitation technology choice to expected climate event exposure etc.*	*E.g. Buying stock of soap.*
Water and sanitation service functioning	*E.g. Continuity of the service-quick to resume/recover service level, frequency of outages etc.*	*E.g. Continuity of the service-quick to resume/recover service level, frequency of outages, continuity of emptying services etc.*	

Handwashing facility functioning; **Available hygiene materials and disposal facilities**			*E.g. Hygiene materials include soap, drying materials and menstrual hygiene materials and dial facilities available.*
User experience of the water and sanitation service	*E.g. (some form of) service always available at a given service level (or within tolerable thresholds).* *Presence/absence of psychosocial distress indicators; equality of access, gendered impacts or workload roles; satisfaction with the service; the maintenance of minimal service levels distributed equitably between different user categories.*		
User experience of practicing hygiene behaviours			*E.g. frequency/timing/continuity of handwashing practices including during events, acceptable water temperature.*

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