
Monitoring Climate-Resilient WASH JMP/GLAAS

Wednesday 5 November
09:00-10:00 CET
16:00-17:00 CET



Housekeeping



Please **turn off your microphones** (except for the final discussion/Q&A).



In case of **technical problems**, feel free to **ask for assistance in the chat**.



Please **use the chat** for questions and comments – which will be address at the end of the webinar, or later by email.

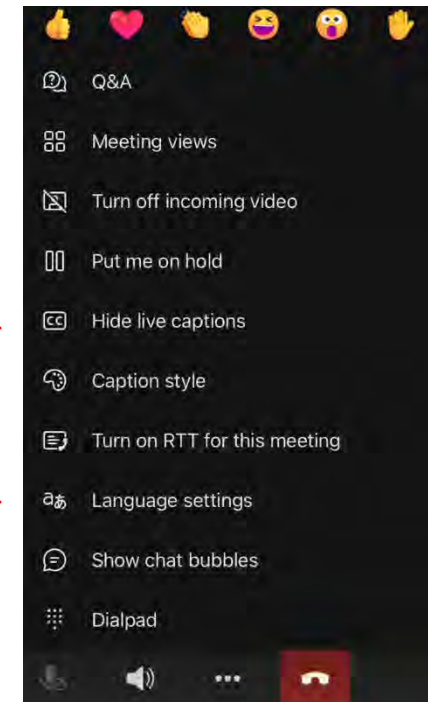


Webinar will be recorded – recording and slides will be shared with attendees.



Please keep your **questions relevant to the topic of the webinar**.

Live captions automatically generated in English. To turn off, go to '...' in the menu and click 'Hide live captions'. Depending on your version of Teams or computer settings, you may be able to select another caption language under 'Language settings'.



Introduction to WHO/UNICEF JMP/GLAAS Secretariat



Marina Takane
WASH accounts Project
Manager
WHO



Betsy Engebretson
GLAAS team
WHO



Janet Atim
GLAAS team
UNICEF



Tom Slaymaker
JMP Team Lead
UNICEF



Rick Johnston
JMP Team Lead
WHO



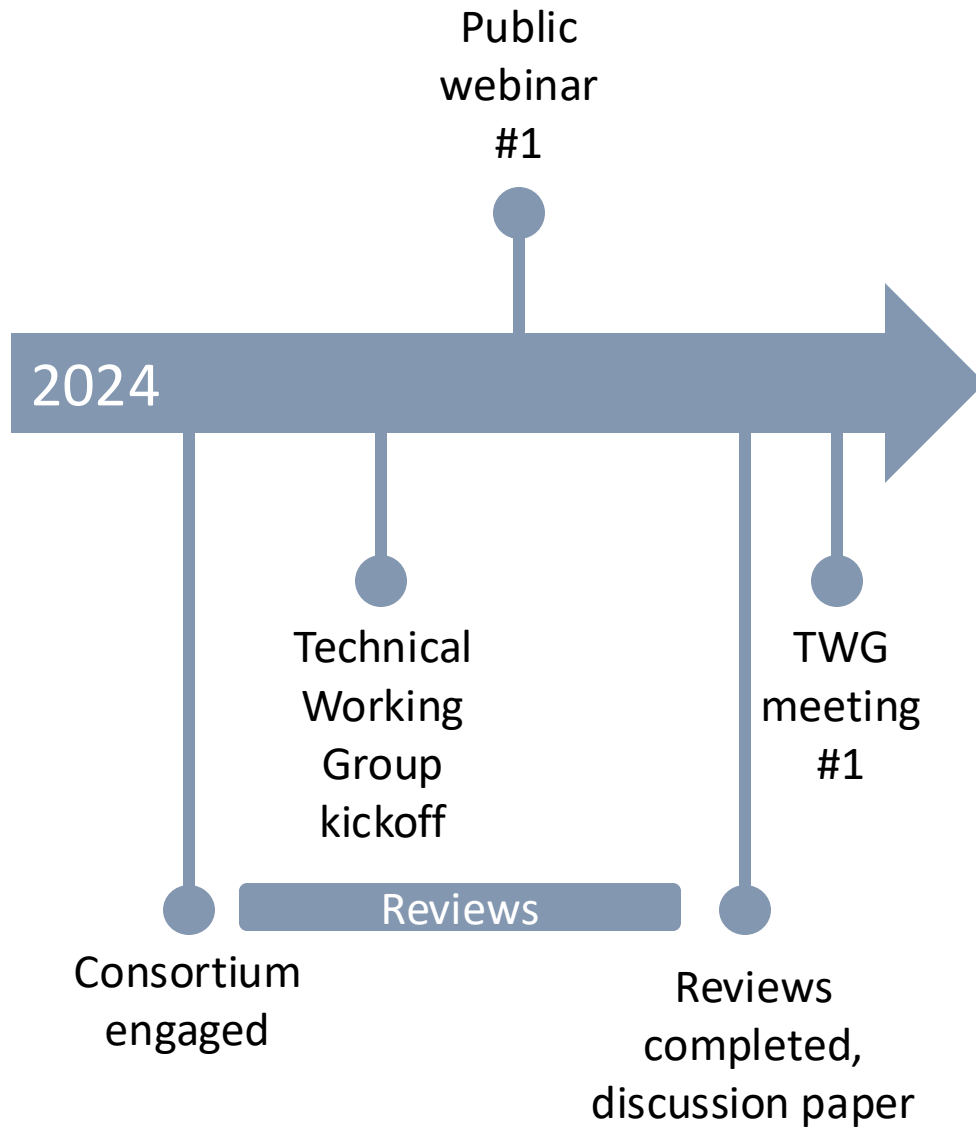
Fiona Gore
GLAAS Team Lead
WHO

Review process: monitoring climate resilience and WASH

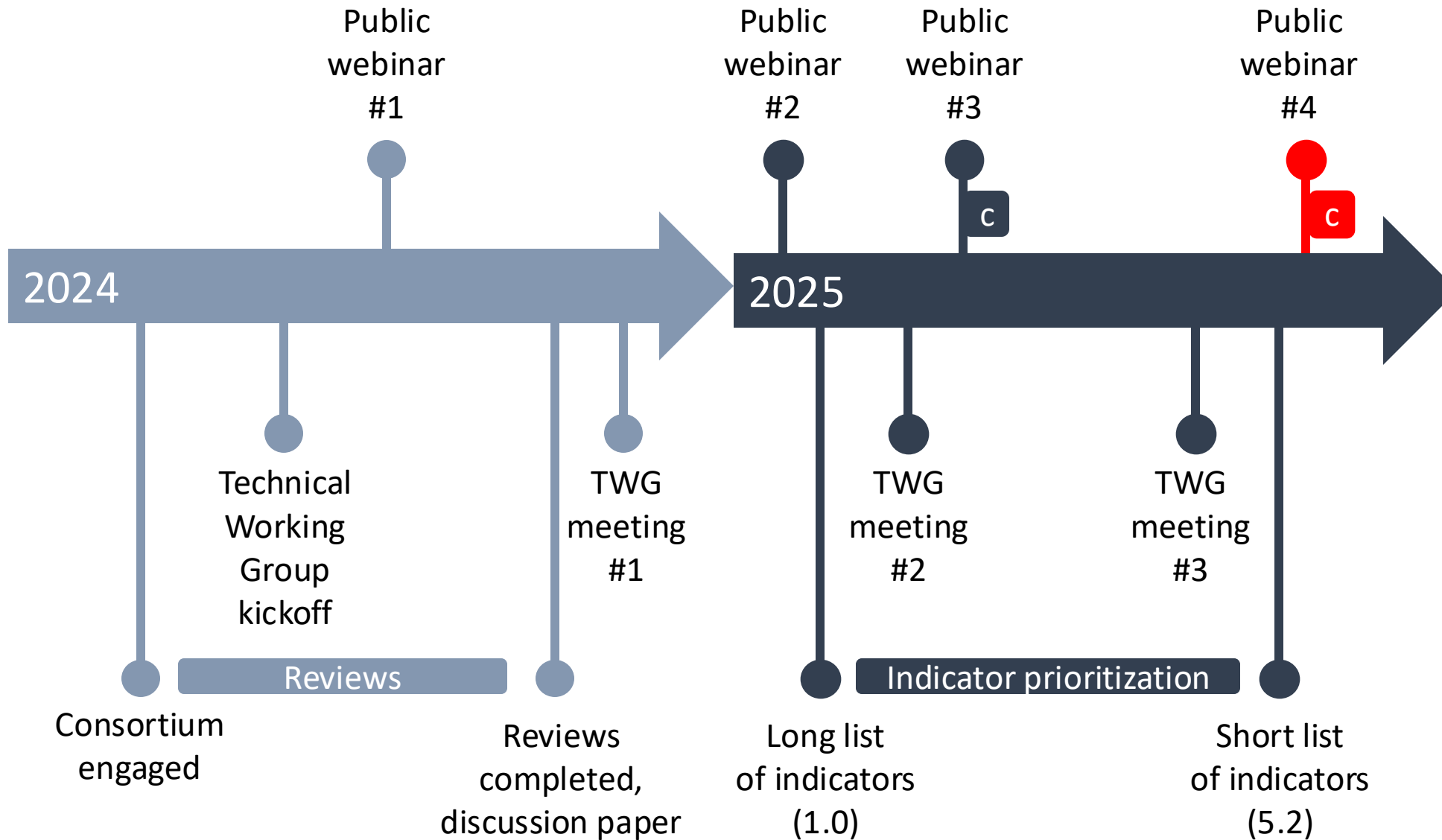
- GLAAS and JMP are conducting a review of monitoring climate resilience and WASH:
 - Identifying frameworks, indicators, data collection opportunities, and data describing links between climate resilience and WASH.
 - A consortium of research partners (Leeds, Bristol, Oxford, UTS) were selected to support the work.
 - A Technical Working Group (TWG) provides inputs and reviews outputs.
 - Outputs will identify areas where GLAAS and JMP could focus future monitoring efforts.
- Engaging with multiple stakeholders
- Feeding into work on Global Goal on Adaptation
 - Identification of indicators for GGA Water target 9a



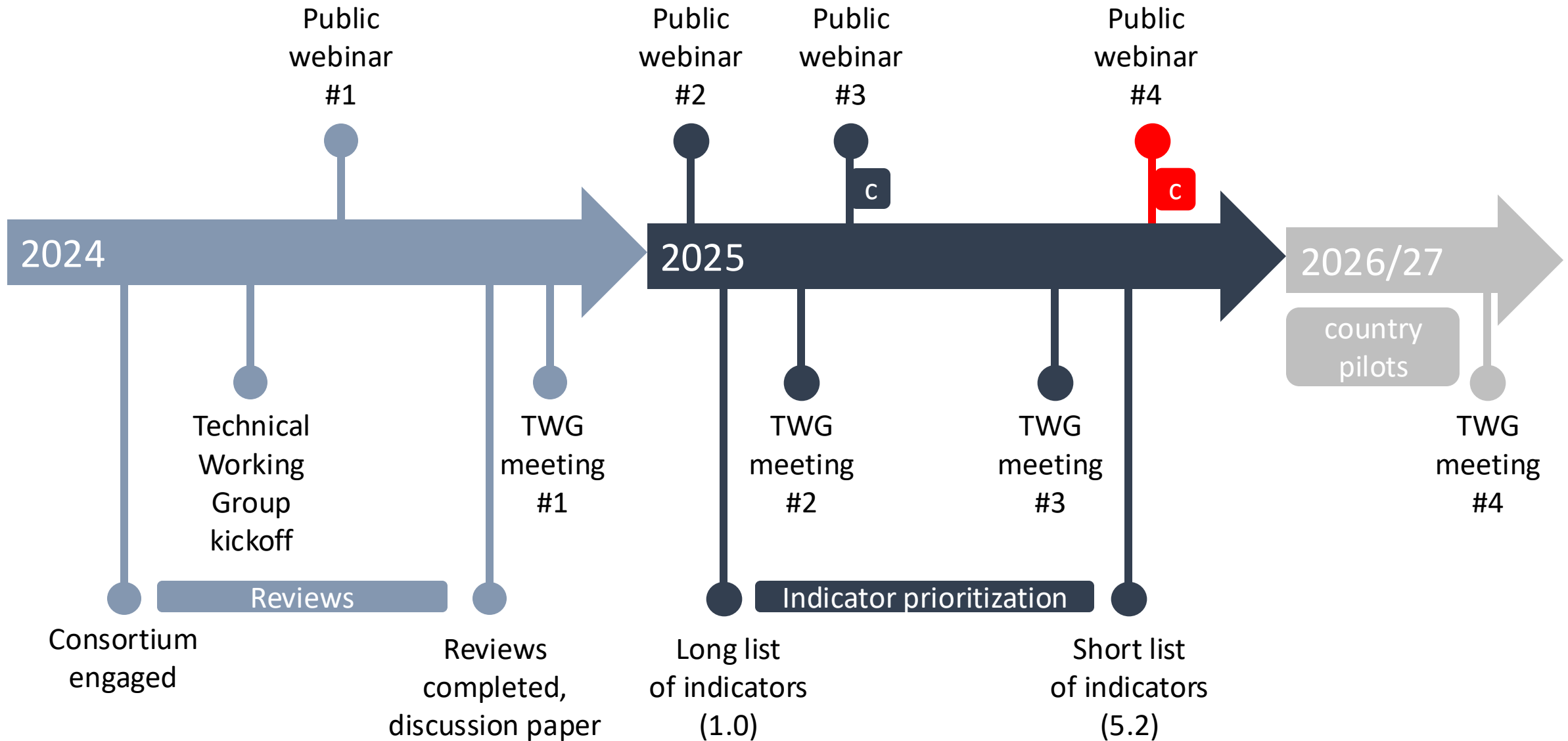
Timeline and milestones



Timeline and milestones



Timeline and milestones



Reviews and conceptual framework

The academic support team



Prof Barbara Evans



Dr Miller Alonso
Camargo-Valero



Dr Anisha Nijhawan



Prof Guy Howard



Prof Juliet Willetts



Dr Jeremy Kohlitz



Kelly Moon



Prof Katrina Charles



Freya Mills



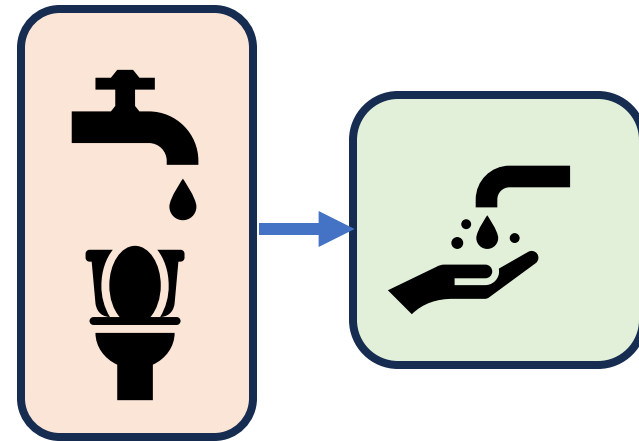
Prof Evangelos
Pournaras



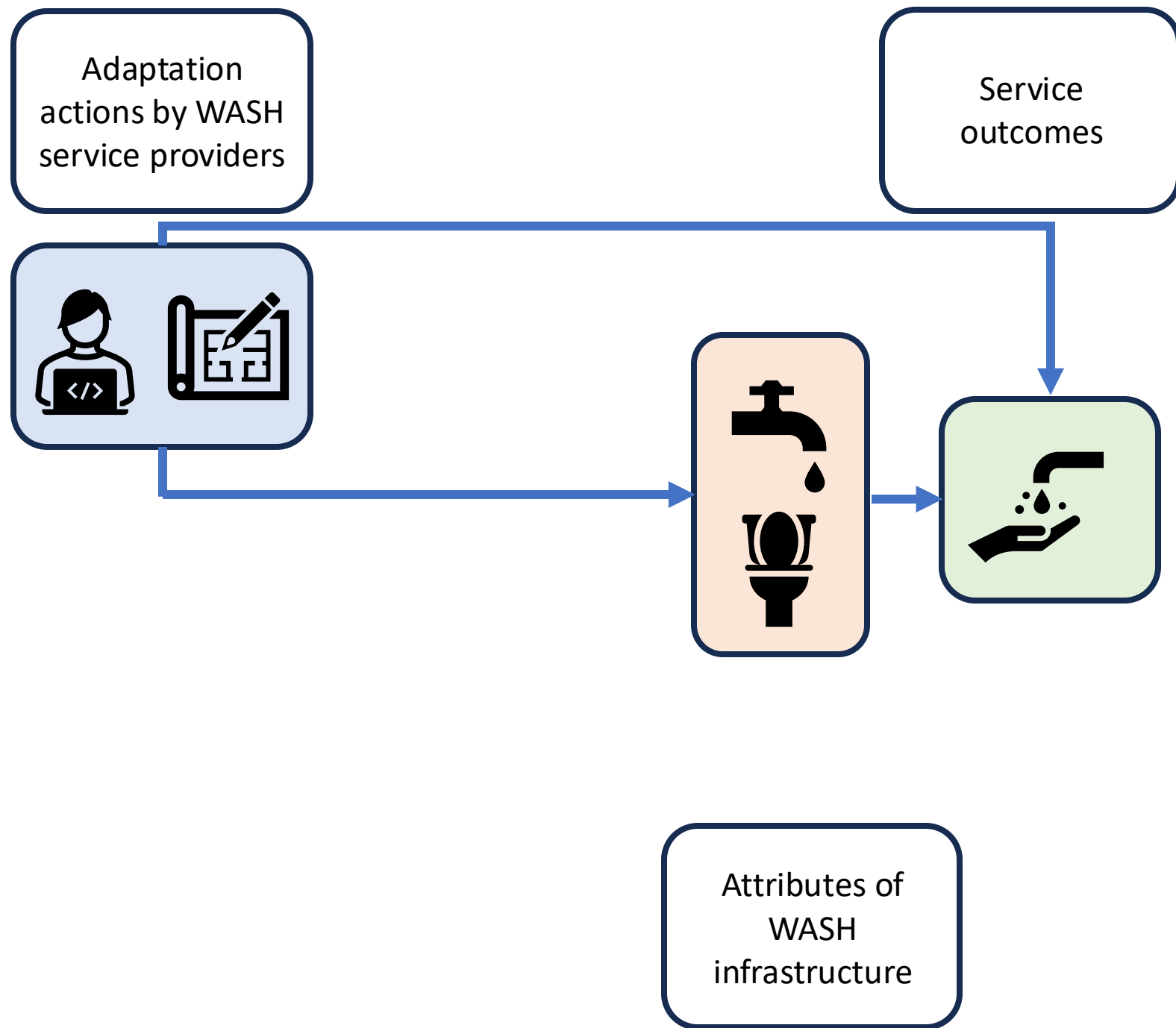
Lily King

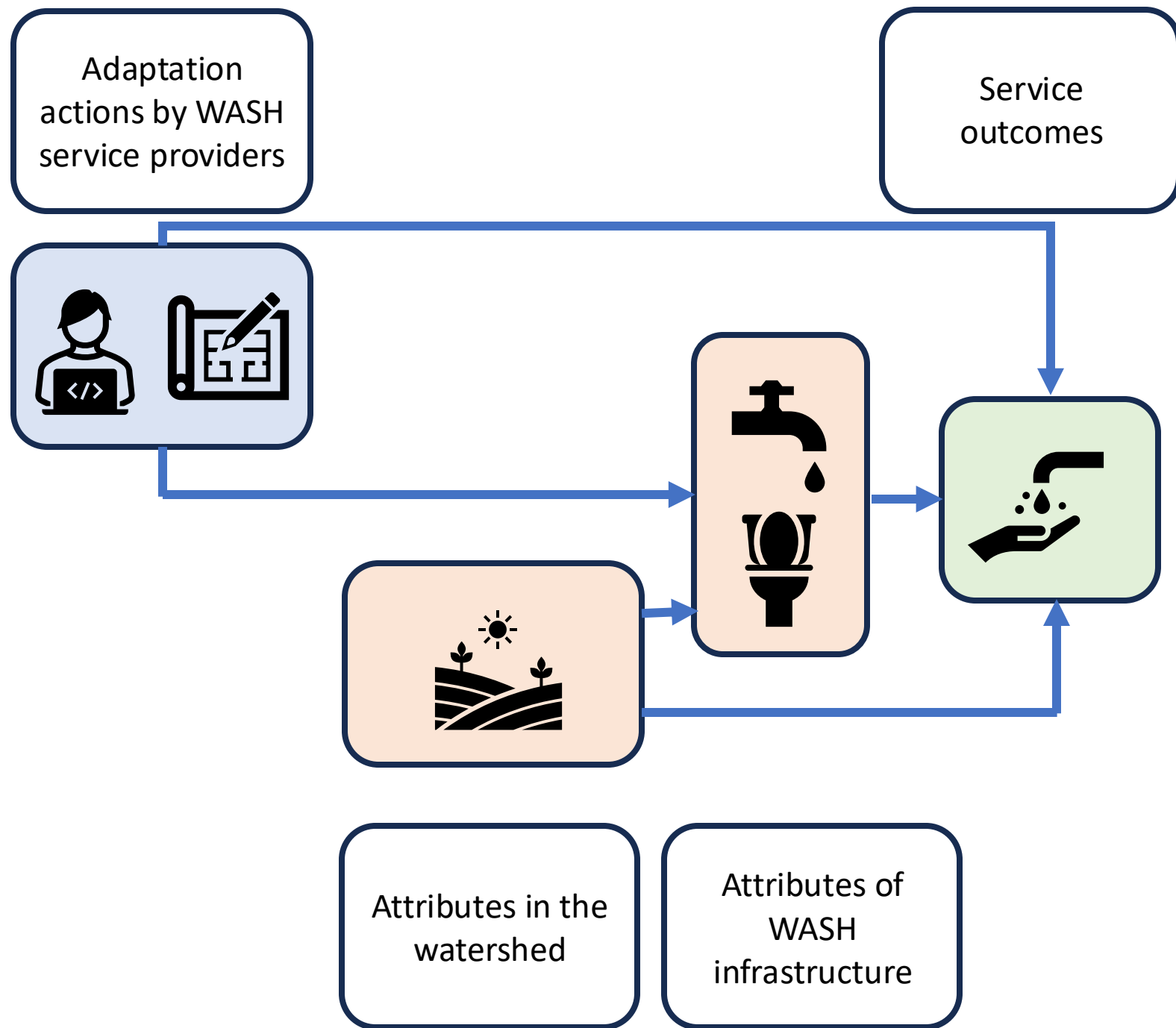
James Wallace

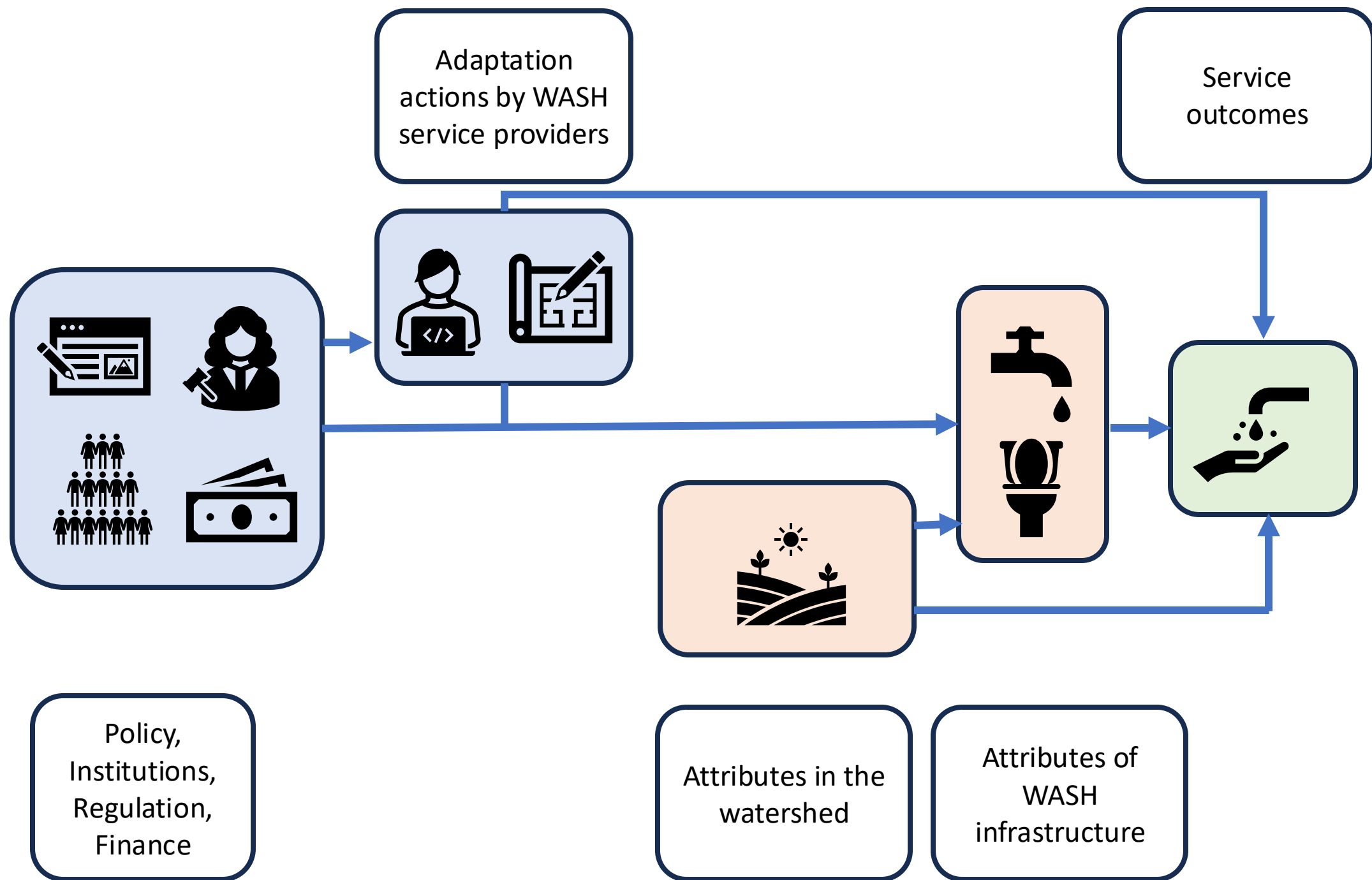
Service
outcomes

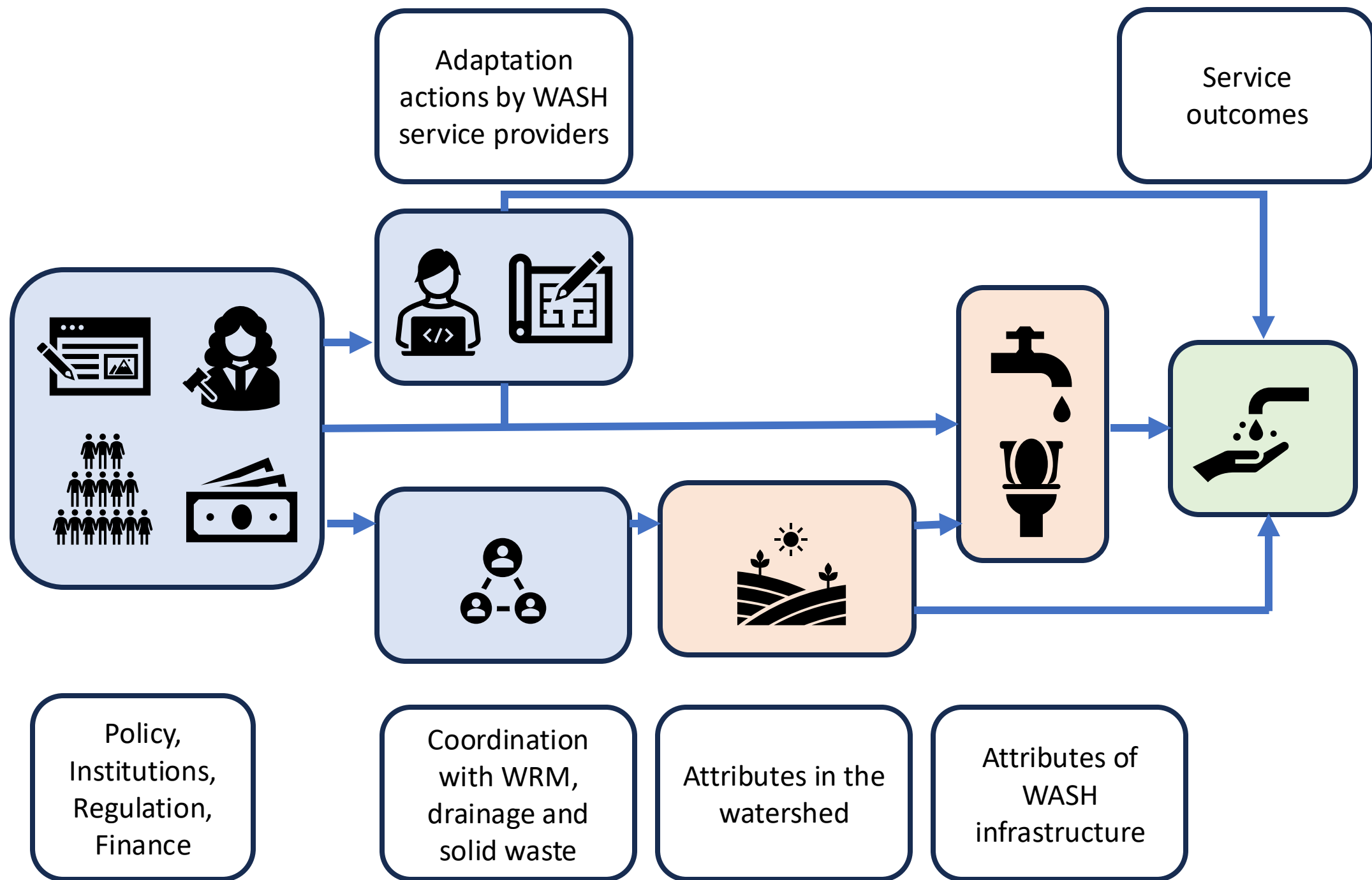


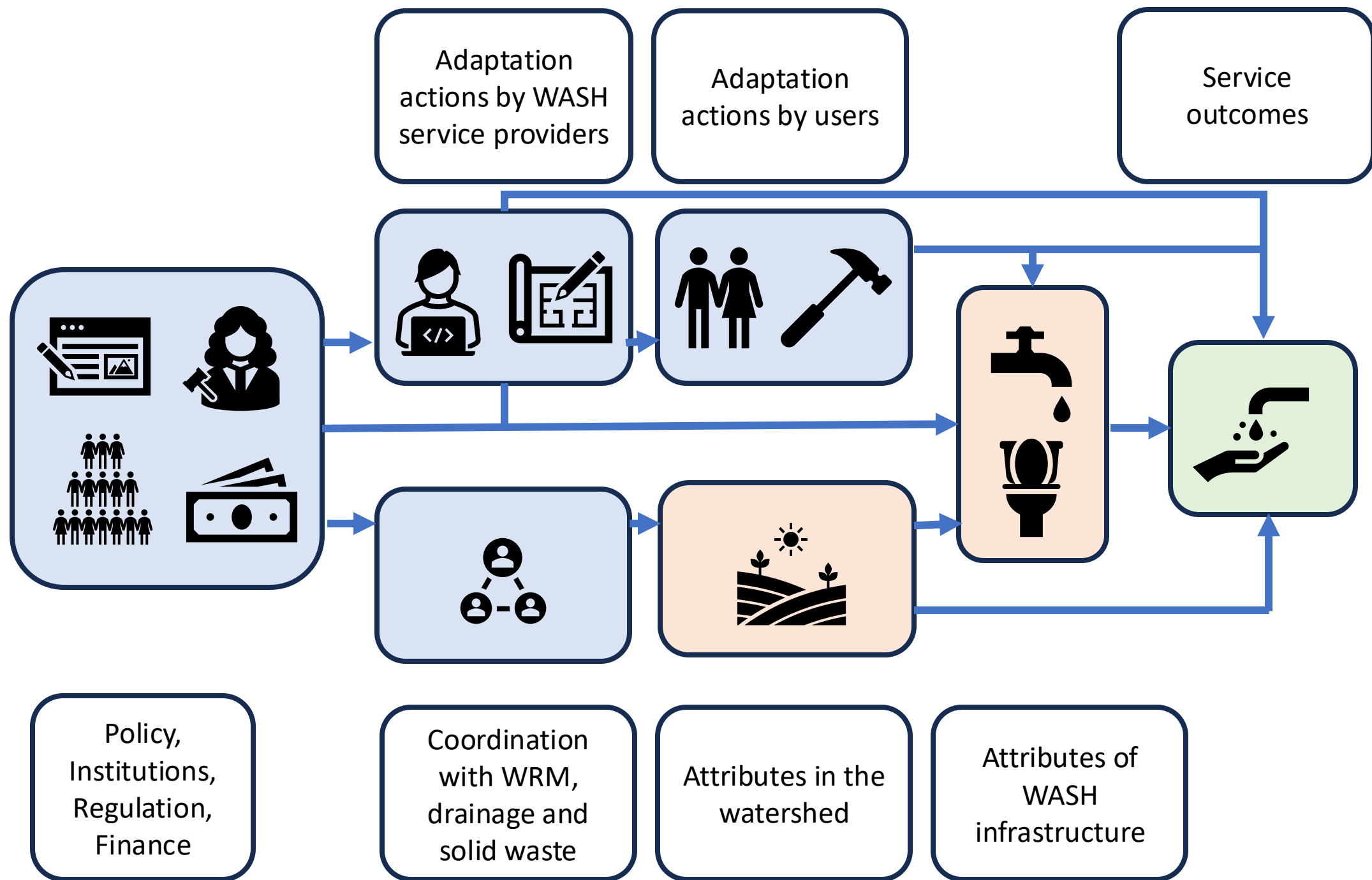
Attributes of
WASH
infrastructure

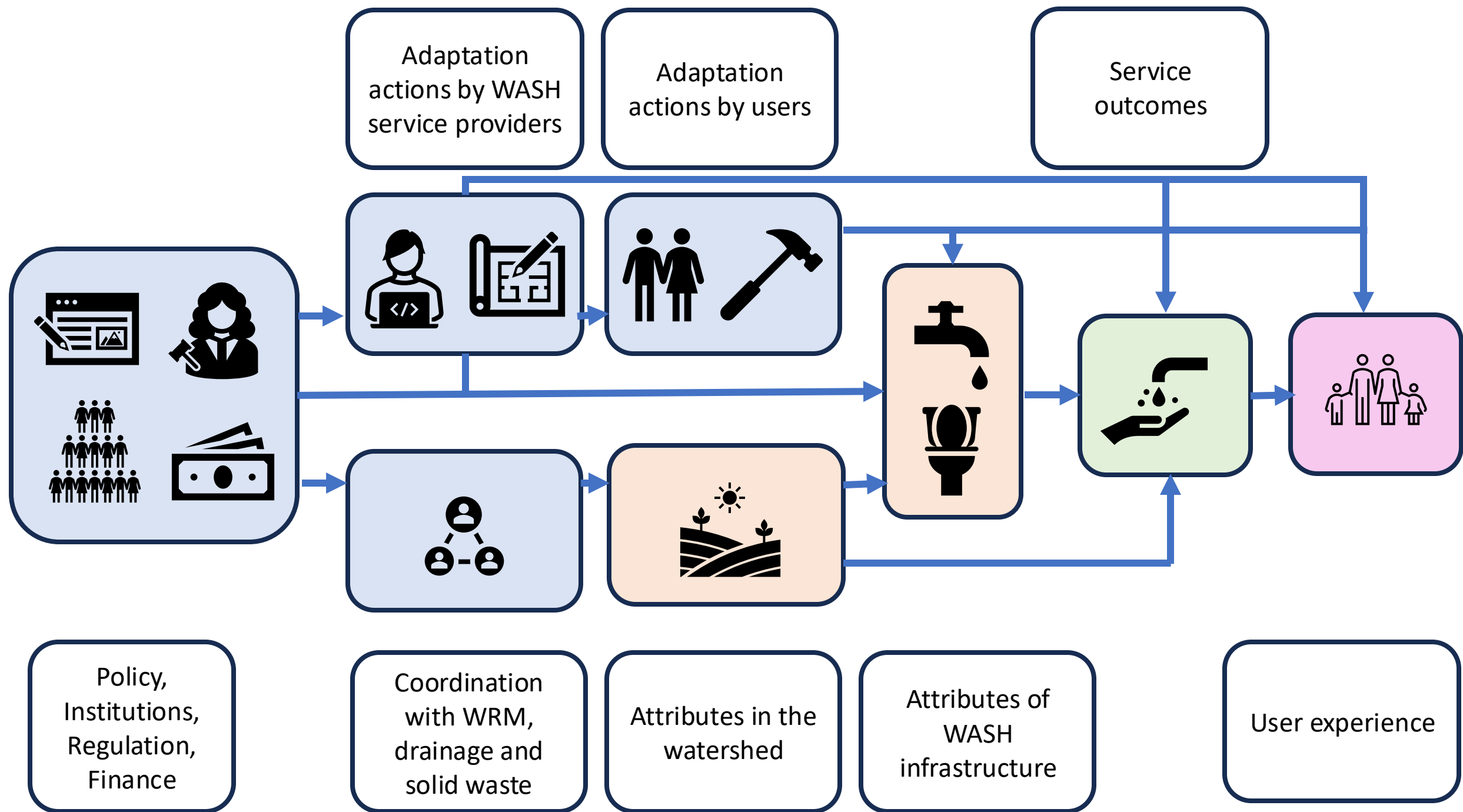


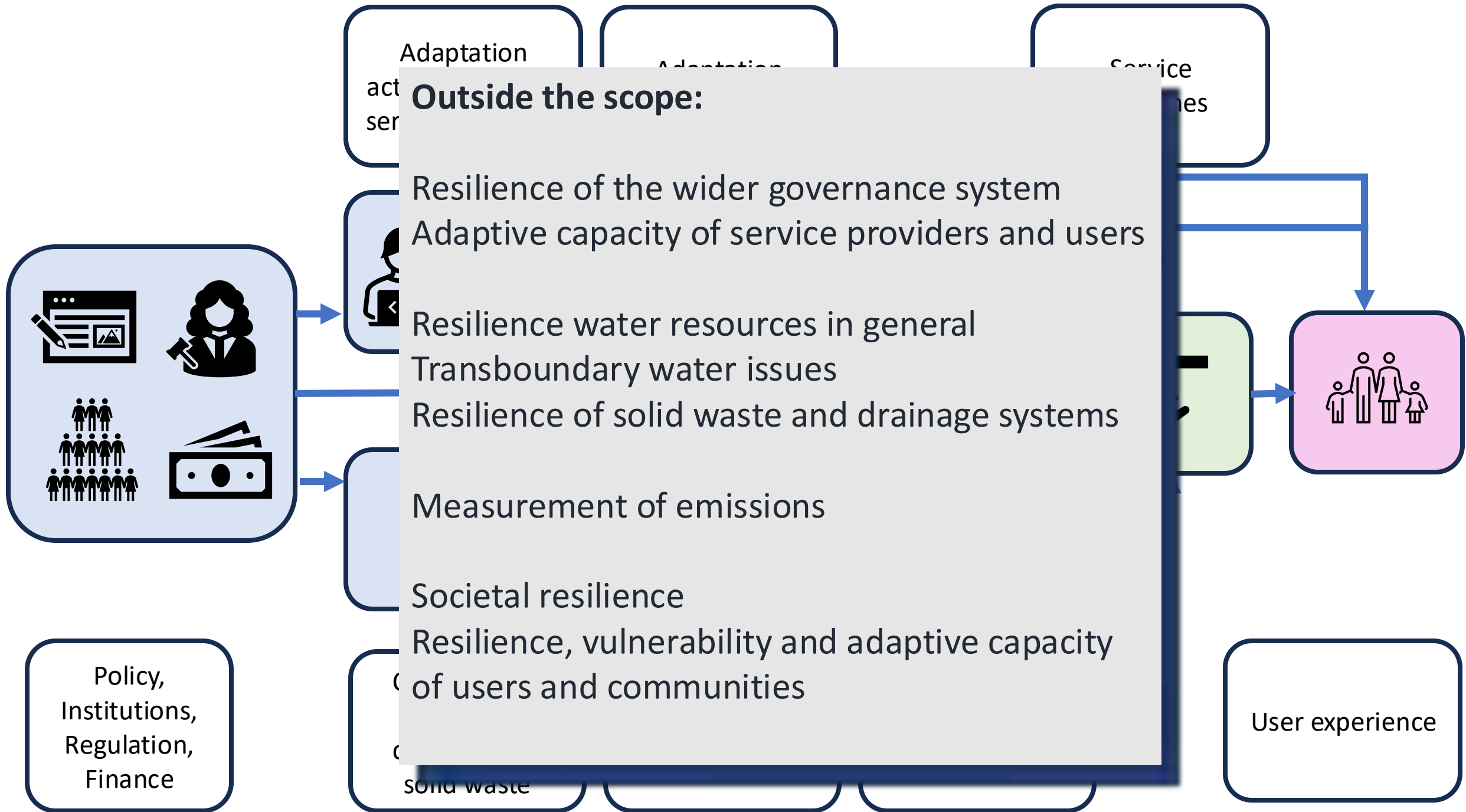












Where did the list of candidate indicators come from?

- Using our framework we carried out 3 systematic reviews looking for adaptation actions or attributes that have been linked to climate-resilient WASH outcomes in the academic literature and in sector documents:
 - Sanitation
 - Hygiene
 - WASH in general

Where did the list of candidate indicators come from?

- Using our framework we carried out 3 systematic reviews looking for adaptation actions or attributes that have been linked to climate-resilient WASH outcomes in the academic literature and in sector documents:
 - Sanitation
 - Hygiene
 - WASH in general
- We carried out 2 further reviews looking for adaptation actions or attributes that have been linked to climate resilience:
 - An umbrella (review of reviews) for water supply
 - A scoping review on how resilience is conceptualised in WASH and adjacent sectors

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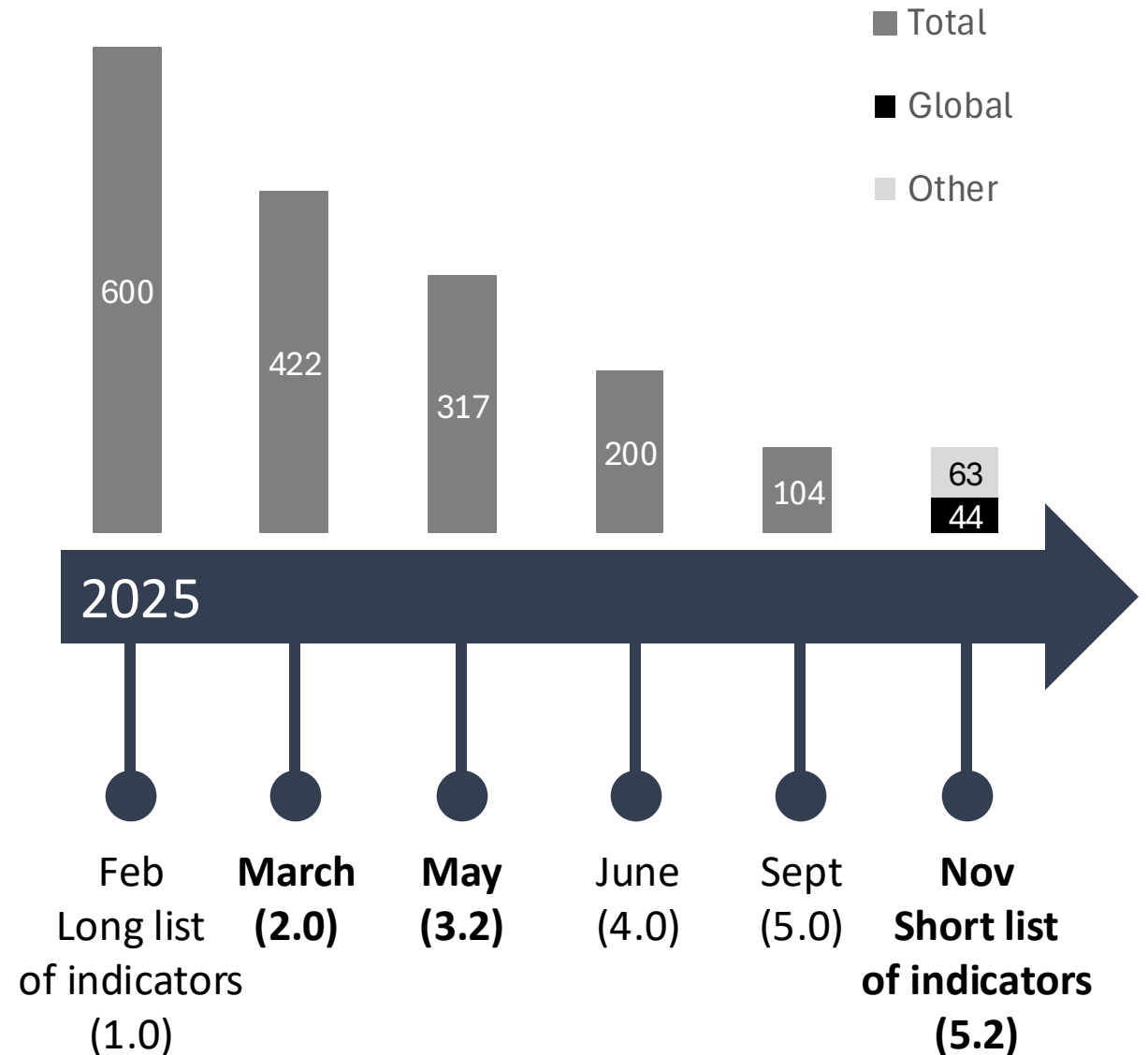
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- We then mapped more than 600 **candidate indicators** that had been identified from our research to each objective

Towards a short(er) list

- Long list derived from reviews
 - ~600 candidate indicators (February, 1.0)
- Public consultation
 - April (2.0)
- Technical working group meetings
 - March (2.0), September (5.0)
- Combination/synthesis of related proposed indicators
- Mapping to conceptual framework, indicator objectives
- Examining balance
 - Across framework components
 - Rapid and slow onset events
 - Water, sanitation, hygiene
 - Equity



**Proposed shortlist of indicators to develop for
global monitoring by JMP and GLAAS teams**

Policy: 1 and 2 (of 5)



Objective	All WASH
WASH policy and planning incorporates current and future climate risk	101: WASH sector policy and plans which integrate climate adaptation measures for households and institutions *: (a) are in place; (b) align with national adaptation plans; and (c) are regularly revised using updated climate projections
Management is appropriate to ensure and advance climate resilience	102: WASH Sector policy mandates the use of risk-based management plans that take into account current and future climate

* And which (i) identify current and future climate risks to WASH, (ii) identify at risk populations, (iii) include costed climate adaptation measures and (iv) mandate 'build-back-better' principles for post climate-event recovery

The icons include: a document with a checkmark and a person (top left, red border); a group of people and a factory (top left, red border); a person with a graduation cap (top middle); a family and a hammer (top middle); a water tap with a drop (top right); a hand holding a leaf (middle right); a group of people (middle right, pink background); a person with a graduation cap (bottom left); a factory with smoke (bottom left); a person with a graduation cap (bottom middle); a factory with smoke (bottom middle); a water tap with a drop (bottom middle); a hand holding a leaf (bottom middle); a group of people (bottom middle, pink background).

Objective	All WASH
National climate resilience planning incorporates climate resilient WASH	103: National adaptation plans are in place and include: (a) targeted WASH objectives for households and institutions; (b) and a strategy for WASH adaptation for households and institutions; (c) or a costed strategy for WASH adaptation for households and institutions
	106: National mitigation plans are in place and include: (a) a national protocol for measuring and reporting emissions from WASH; (b) and an estimate of the contribution of WASH to NDCs; (c) and a strategy for mitigating emissions from WASH; (d) or a costed strategy for mitigating emissions from WASH

Policy: 5 (of 5)



Objective

All WASH

Climate resilient
WASH strategy is
equitable

105: Sector strategies include measures to ensure climate resilient WASH investments are focused on **populations vulnerable to and disproportionately affected** by climate change

Not shortlisted (an example):

Objective

Water supply

Access to a minimum
service level is
maintained

104: Regulation mandates that sufficient quantities of domestic water supply be provided as a priority before allocations to other water uses are made

Institutions: 1 (of 3)



Objective

All WASH

Data are available for CR WASH planning

201: Climate data and seasonal forecasts for WASH service delivery are:

- (a) downscaled to a scale relevant for WASH service delivery;
- (b) accessible to WASH sector stakeholders;
- (c) include content directly relevant to the delivery of WASH services;
- (d) reviewed and updated regularly; and
- (e) used to inform updates to WASH policies and plans

Institutions: 2 and 3 (of 3)



Objective

All WASH

Early warning systems in place that support actions to reduce impact of climate events

202: Multi-hazard **early warning systems** are:
(a) accessible to WASH sector stakeholders;
(b) and include information directly relevant to the delivery of WASH services;
(c) and are reviewed and updated regularly;
(d) and are used to inform updates to WASH policies and plans

National **WASH monitoring systems** collect information on impacts of climate on WASH services

203: WASH **monitoring systems** collect data on the impact of climate on WASH services in households/ schools/ health care facilities disaggregated by service levels, geography, and population subgroups

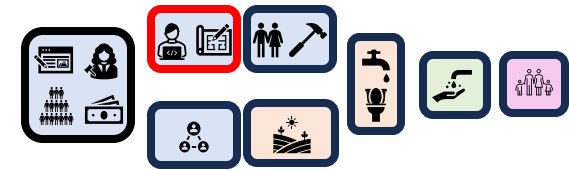
Objective	All WASH
Design and construction standards and guidance exist for CR WASH	301: Standards and regulations that take into account current and future climate are available to support the design and construction of resilient infrastructure
Operation and maintenance standards and guidance exist for CR WASH	302: Standards and regulations that take into account current and future climate are available to support the operation and maintenance of resilient infrastructure 303: Standards and guidance exist for restoration of services during and following a climate event

Finance: (2)



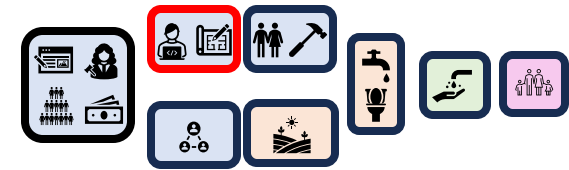
Objective	All WASH
Sufficient budget allocation for WASH climate adaptation	401: Ratio of total annual budget available (all sources) to total annual costs identified for WASH climate adaption
Funds for WASH climate adaptation are utilized	403: Ratio of total annual expenditure (all sources) to total annual costs identified for WASH climate adaption

Adaptation actions by hygiene promoters & supply chain actors (1)



Objective	Water supply	Sanitation	Hygiene
Support to households provided to undertake actions for climate resilience/ recovery	-	-	503: Proportion of population covered by well-defined, event-specific preparedness plans which include: (a) education/ messaging on hygiene behaviour; and (b) stockpiling, storing, and distribution of hygiene products

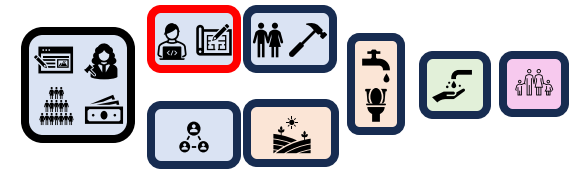
Adaptation actions by service providers: 1 and 2 (of 4)



Objective	Water supply	Sanitation	Hygiene
Management is appropriate to ensure and advance climate resilience	602: Proportion of population/ schools/ healthcare facilities served by water service providers that implement risk management plans which consider current and future climate (for example climate-resilient water safety plans)	702: Proportion of population/ schools/ healthcare facilities served by sanitation service providers that implement risk management plans which consider climate variability and climate projections (for example flood and drought preparedness plans)	-

Adaptation actions by service providers

3 and 4 (of 4)



Objective	Water supply	Sanitation	Hygiene
Operation and maintenance standards for climate resilient WASH are implemented	604: Proportion of population/ schools/ healthcare facilities served by water supply services that conform to national regulations and standards for operations and maintenance that take into account current and future climate	703: Proportion of population / schools/ healthcare facilities served by sanitation services that conform to national regulations and standards for operations and maintenance that take into account current and future climate	-

Coordination with Water Resources Management (2)



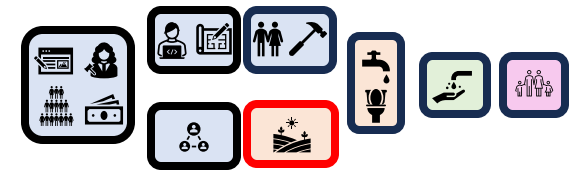
Objective	Water supply and Sanitation	Hygiene
Coherence and cooperation between agencies to deliver climate resilient WASH	1101: Investment and operational plans for WRM are referenced in investment and operational plans for (a) Water supply (b) Sanitation and wastewater	-
	1102: Proportion of population in catchments where water resource management plans address climate risks to (a) Water supply (b) Sanitation and wastewater	-

Coordination with Drainage and Solid Waste Management (1)

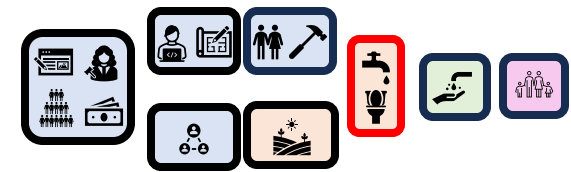


Objective	Water supply and Sanitation	Hygiene
Coherence and cooperation between agencies to deliver climate resilient WASH	1202: Investment and operational plans for (a) Water supply (b) Sanitation and wastewater reference drainage investment and operational plans.	-

Attributes of water resources for water supply and receiving waters (3)



Objective	Water supply	Sanitation	Hygiene
Water quality is maintained	1301: Proportion of raw water intakes/boreholes which meet design quality standards , disaggregated by groundwater/ surface water	1302: Number of incidents of water quality non-compliance downstream of a wastewater treatment plant	-
Water quantity is maintained	1303: Proportion of raw water intakes/boreholes which meet design production rates , disaggregated by groundwater/ surface water		

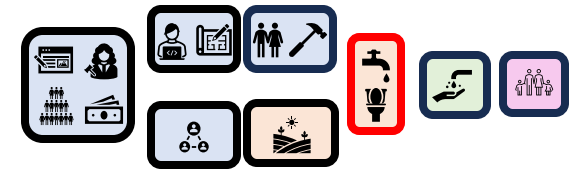


Attributes of infrastructure: 1 and 2 (of 4)

Objective	Water supply	Sanitation	Hygiene
Construction and design standards for climate resilient WASH are implemented	1401: Proportion of population/ schools/ healthcare facilities served by water supplies that conform to national regulations and standards for design and construction that take into account current and future climate*	1501: Proportion of population/ schools/ healthcare facilities served by sanitation services that conform to national regulations and standards for design and construction that take into account current and future climate**	See next

* water supply source, water treatment, water storage and distribution

** capture and containment, conveyance, treatment



Attributes of infrastructure: 3 and 4 (of 4)

Objective	Water supply	Sanitation	Hygiene
Construction and design standards for climate resilient WASH are implemented (cont.)	See previous	See previous	1601: Proportion of schools where hygiene services conform to national regulations and standards for design and construction that take into account current and future climate* 1602: Proportion of healthcare facilities where hygiene services conform to national regulations and standards for design and construction that take into account current and future climate*

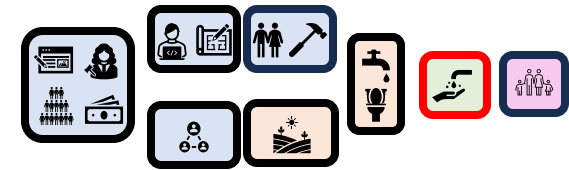
* Hand hygiene and menstrual hygiene



Service functioning: 1 and 2 (of 8)

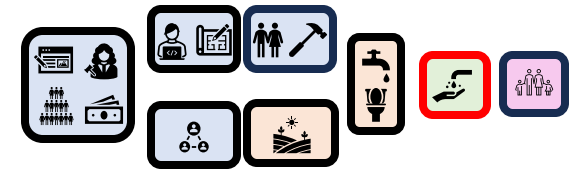
Objective	Water supply	Sanitation	Hygiene
Access to safely managed services is maintained	1704: Proportion of population / schools/ healthcare facilities within nationally determined climate hazard zones using basic/safely managed drinking water services	1805: Proportion of population/ schools/ healthcare facilities within nationally determined climate hazard zones using basic/safely managed sanitation services	-

Service functioning: 3 (of 8)



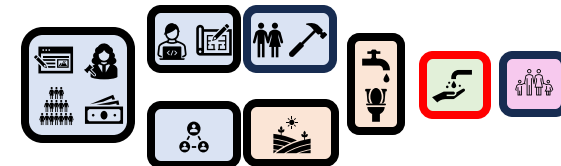
Objective	Water supply	Sanitation	Hygiene
Access to basic hygiene facilities is maintained	-	-	1905: - Proportion of population/ schools/ healthcare facilities with access to soap and water at a handwashing facility within nationally determined climate hazard zones

Service functioning: 4 and 5 (of 8)



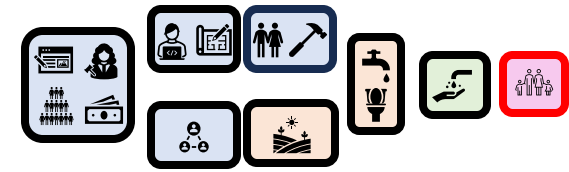
Objective	Water supply	Sanitation	Hygiene
Access to a minimum service is maintained	1701: Proportion of population/ schools/ healthcare facilities whose domestic water supply infrastructure is damaged due to a climate event.	1801: Proportion of population/ schools/ healthcare facilities whose domestic sanitation infrastructure is damaged due to a climate event	-

Service functioning: 6, 7 and 8 (of 8)



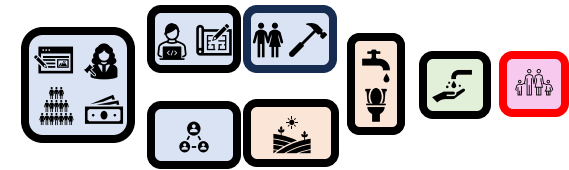
Objective	Water supply	Sanitation	Hygiene
Access to a minimum service is maintained (cont.)	1703: Proportion of population/ schools/ healthcare facilities reporting at least 1 period of disruption to water supply at home in the last Y due to a climate event	1803: Proportion of population / schools/ healthcare facilities reporting at least 1 period of disruption to sanitation at home in the last Y due to a climate event	1902: Proportion of population/schools/ healthcare facilities reporting at least 1 period of disruption to access to a soap and water for hygiene practices at home in the last Y due to a climate event

User experiences: 1 and 2 (of 8)

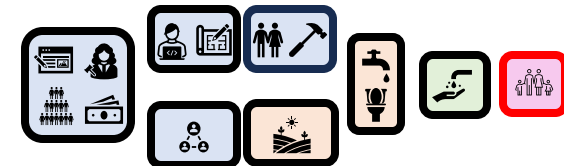


Objective	Water supply	Sanitation	Hygiene
Access to a minimum service level is maintained	2005: Proportion of population/ schools/ healthcare facilities who report easy access to alternative water supply facilities that meet minimum national/local standards of service when needed during a period of disruption due to a climate event	2104: Proportion of population/ schools/ healthcare facilities who report easy access to alternative sanitation facilities that meet minimum national/local standards of service when needed during a period of disruption due to a climate event.	-

User experiences: 3 and 4 (of 8)



Objective	Water supply	Sanitation	Hygiene
Access to hygiene materials is maintained	-	-	2203: Proportion of women, girls, and menstruators that report having enough MHM materials to change as often as they wanted before, during, and following climate events 2205: Proportion of population that report having enough soap and water to practice hand hygiene behaviours as often as they wanted before, during, and following climate events



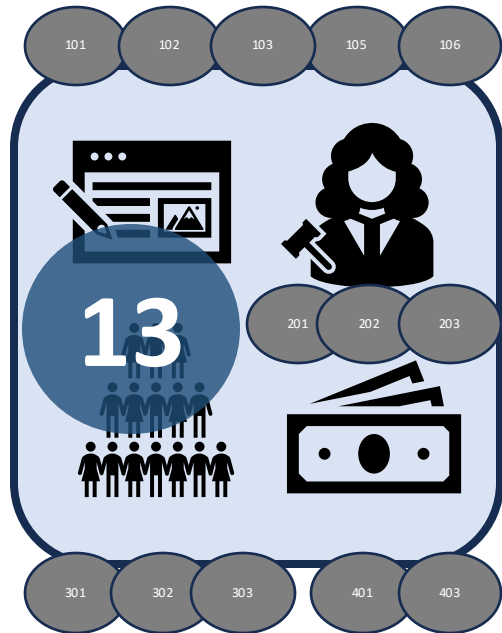
User experiences: 5 and 6 (of 8)

Objective	Water supply	Sanitation	Hygiene
Users are protected from distress related to service disruptions	2001: Proportion of population reporting that they worried about not having enough water for all household needs due to a climate event	2101: Proportion of population who felt safe at the sanitation locations they used most before, during, and following a climate event in the [last Y]	-



User experiences: 7 and 8 (of 8)

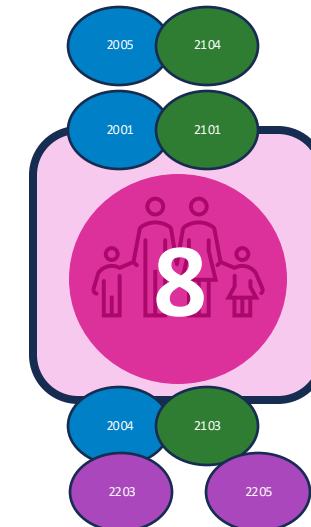
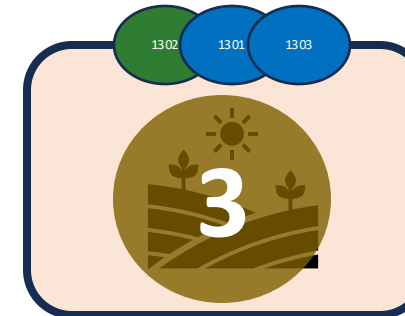
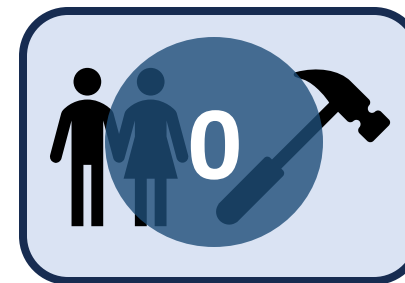
Objective	Water supply	Sanitation	Hygiene
User complaints / requests for assistance are dealt with in a timely manner	2004: Total complaints per 1000 customers before, during, and following a climate event (a) received by drinking water service providers or regulators (b) received and analysed by drinking water service providers or regulators (c) received, analysed and acted upon by drinking water service providers or regulators	2103: Total complaints per 1000 customers before, during, and following a climate event (a) received by sanitation service providers or regulators (b) received and analysed by sanitation service providers or regulators (c) received, analysed and acted upon by sanitation service providers or regulators	-



Adaptation
actions by WASH
service providers



Adaptation
actions by users



Service
outcomes

Policy,
Institutions,
Regulation,
Finance

Coordination
with WRM,
drainage and
solid waste

Attributes in the
watershed

Attributes of
WASH
infrastructure

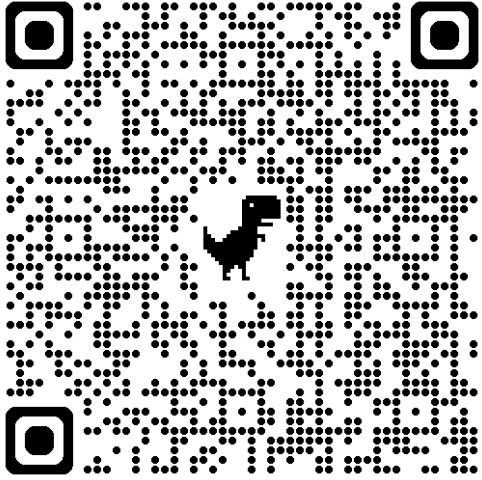
User experience

Consultation objectives and timeline

- We are seeking your feedback on the proposed shortlist (44 candidates)
 - Is the proposed shortlist too long? If so, what could be reduced?
 - Is anything critical missing?
 - Is the shortlist well balanced among...
 - Framework components, from policies through to user experiences
 - Water, sanitation and hygiene
 - Rapid onset and slow onset events
 - Anticipate, Respond, Cope, Recover, Adapt, Transform (SWA definition)
 - Any opportunities for piloting?
- Provide feedback by 30 November, 2025
 - Email to washmonitoring@who.int, or
 - Complete Microsoft Form ([link](#)), QR code

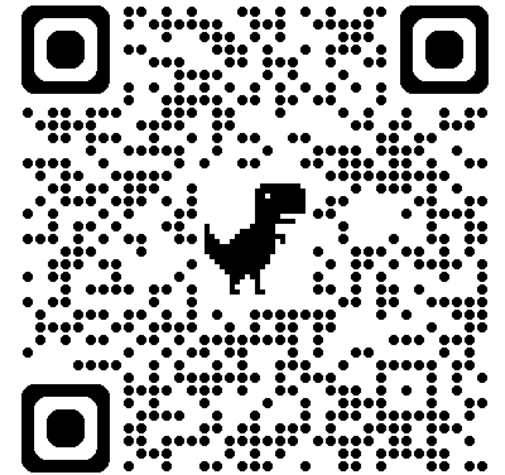


Q & A



Project website

UNICEF and WHO gratefully acknowledge the financial support provided by the Directorate-General for International Cooperation (Kingdom of the Netherlands) and the Foreign, Commonwealth & Development Office (United Kingdom).



Sign up here to receive updates!

Thank you!

washmonitoring@who.int



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