

# Launch of the public consultation on indicators to monitor climate-resilient WASH

Wednesday 23 April  
9:00 – 10:00 am and 4:00 – 5:00 pm CEST



# Objectives of today's webinar

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- To provide an update on the review process for identifying indicators to monitor climate-resilient WASH
- To launch the public consultation on the long list of potential indicators for monitoring climate-resilient WASH



# Housekeeping

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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.

# Agenda

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Time	Content	Person responsible
0.00	Opening	Fiona Gore, WHO (am) Aidan Cronin, UNICEF (pm)
00.10	About the project	Rick Johnston, WHO (am) Betsy Engebretson, WHO (pm)
00.30	About the long list	Barbara Evans, University of Leeds
00.50	Next steps and closing	Tom Slaymaker, UNICEF (am) Fiona Gore, WHO (pm)

# About the project

Rick Johnston (WHO/JMP) / Betsy Engebretson (GLAAS/WHO)

# Introduction to WHO/UNICEF JMP/GLAAS Secretariat

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**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



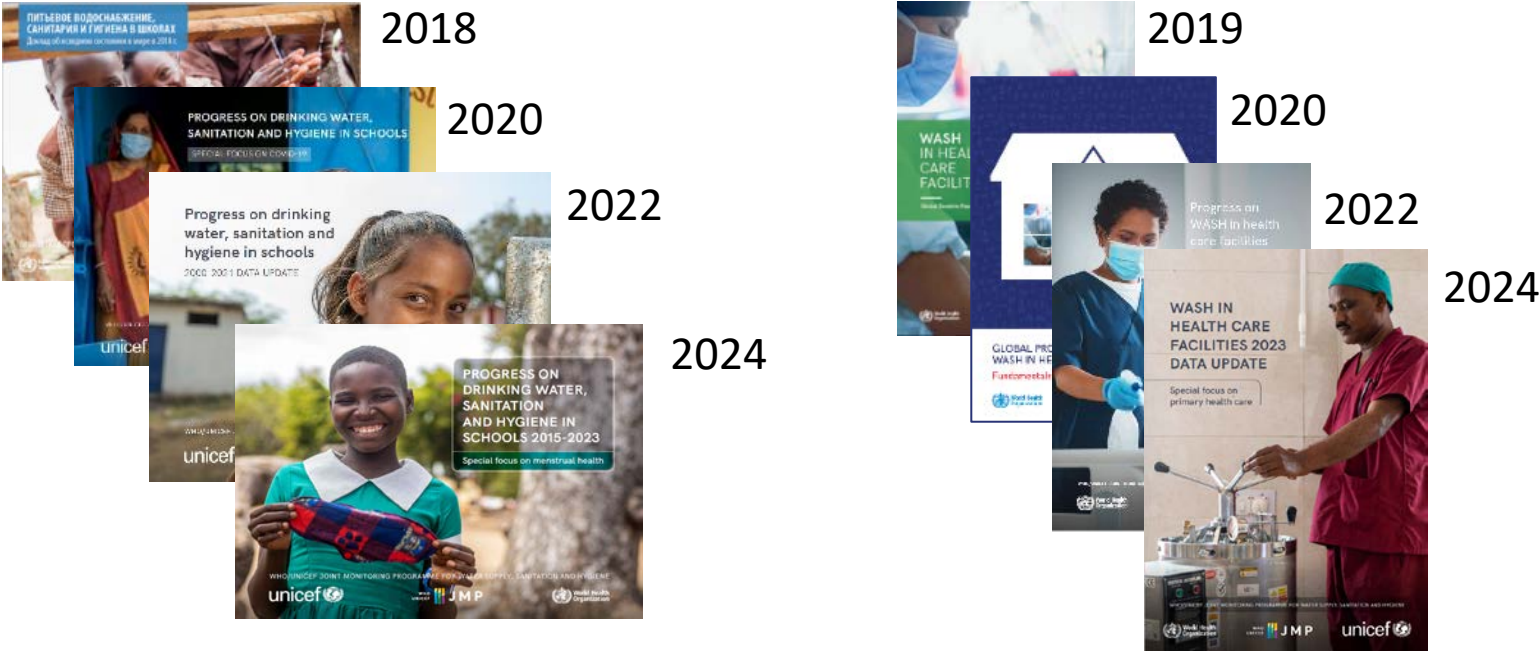
**Fiona Gore**  
GLAAS Team Lead  
WHO

# WHO/UNICEF JMP global monitoring of drinking water, sanitation and hygiene

## WASH in Households in odd years



## WASH in Schools and Health Care Facilities in even years

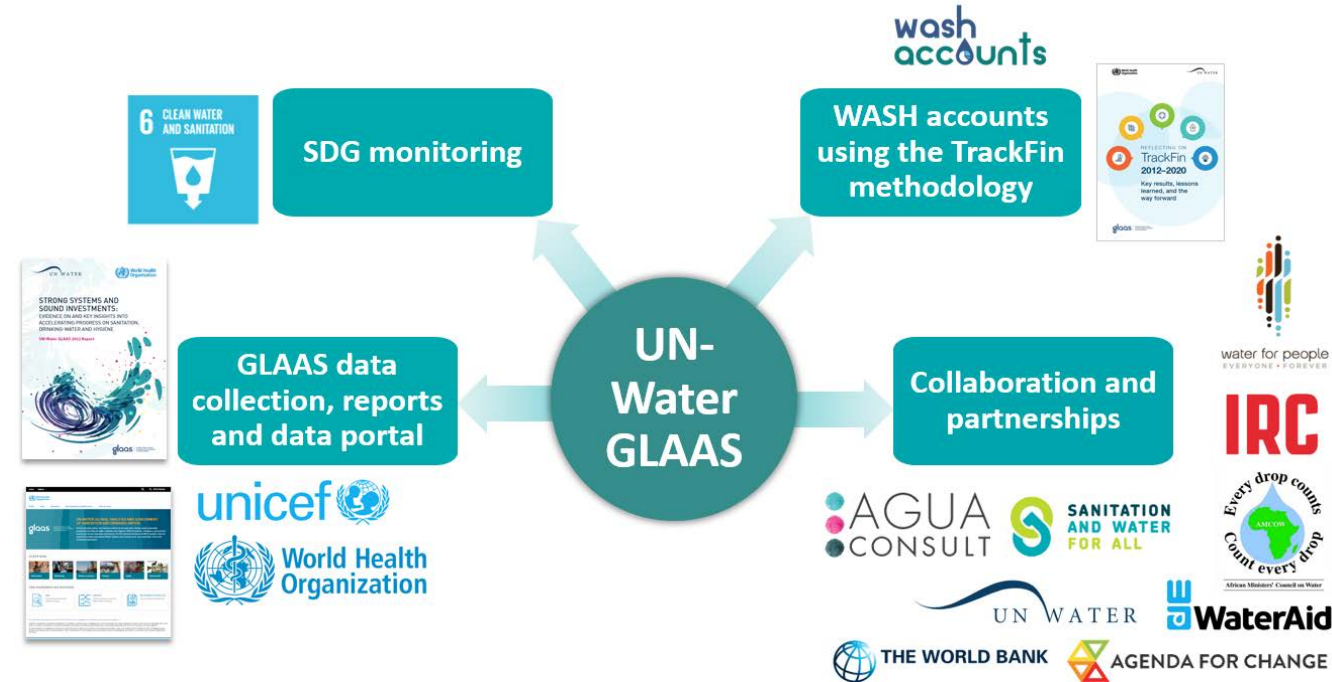


[washdata.org](http://washdata.org)

# UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)

The GLAAS country survey covers key elements of WASH systems, finance, monitoring, governance and human resources that contribute to countries making progress towards SDG 6.

- Monitor the inputs
- Support country-led processes
- Identify drivers and bottlenecks of progress
- Analyze and highlight results
- The next GLAAS report will be launched later this year!



The GLAAS country survey results contribute towards monitoring 6.a and 6.b.



# Review process: monitoring climate resilience and WASH

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- 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 in March 2024 to support the work.
  - A Technical Working Group provides inputs and reviews outputs.
  - Outputs will identify areas where GLAAS and JMP could focus future monitoring efforts.
- Engaging with multiple stakeholders
  - Public webinars: July 2024, February 2025, **April 2025**
  - **Public consultation launched in April 2025**
  - Outreach about the initiative will continue through global events, conferences, trainings and webinars
- Results to feed into work on Global Goal on Adaptation
  - Identification of indicators for GGA Water target 9a



# UNFCCC Global Goal on Adaptation (Dec 2023)



United Nations

Framework Convention on  
Climate Change

9. Urges Parties and invites non-Party stakeholders to pursue the objectives outlined in paragraph 8 above and to increase ambition and enhance adaptation action and support, in order to accelerate swift action at scale and at all levels, from local to global, in alignment with other global frameworks, towards the achievement of, inter alia, the following targets by 2030, and progressively beyond:

- (a) 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**;
- (b) Attaining climate-resilient **food and agricultural production** and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all;
- (c) Attaining resilience against **climate change related health impacts**, promoting climate-resilient health services, and significantly reducing climate-related morbidity and mortality, particularly in the most vulnerable communities;
- (d) Reducing climate impacts on **ecosystems and biodiversity**, and accelerating the use of ecosystem-based adaptation and nature-based solutions, including through their management, enhancement, restoration and conservation and the protection of terrestrial, inland water, mountain, marine and coastal ecosystems;
- (e) Increasing the **resilience of infrastructure and human settlements** to climate change impacts to ensure basic and continuous essential services for all, and minimizing climate-related impacts on infrastructure and human settlements;
- (f) Substantially reducing the adverse effects of climate change on **poverty eradication and livelihoods**, in particular by promoting the use of adaptive social protection measures for all;

# UNFCCC Global Goal on Adaptation (Dec 2023)



United Nations

Framework Convention on  
Climate Change

10) Decides that the UAE Framework for Global Climate Resilience includes the following targets in relation to the dimensions of the **iterative adaptation cycle**, recognizing the need to enhance adaptation action and support:

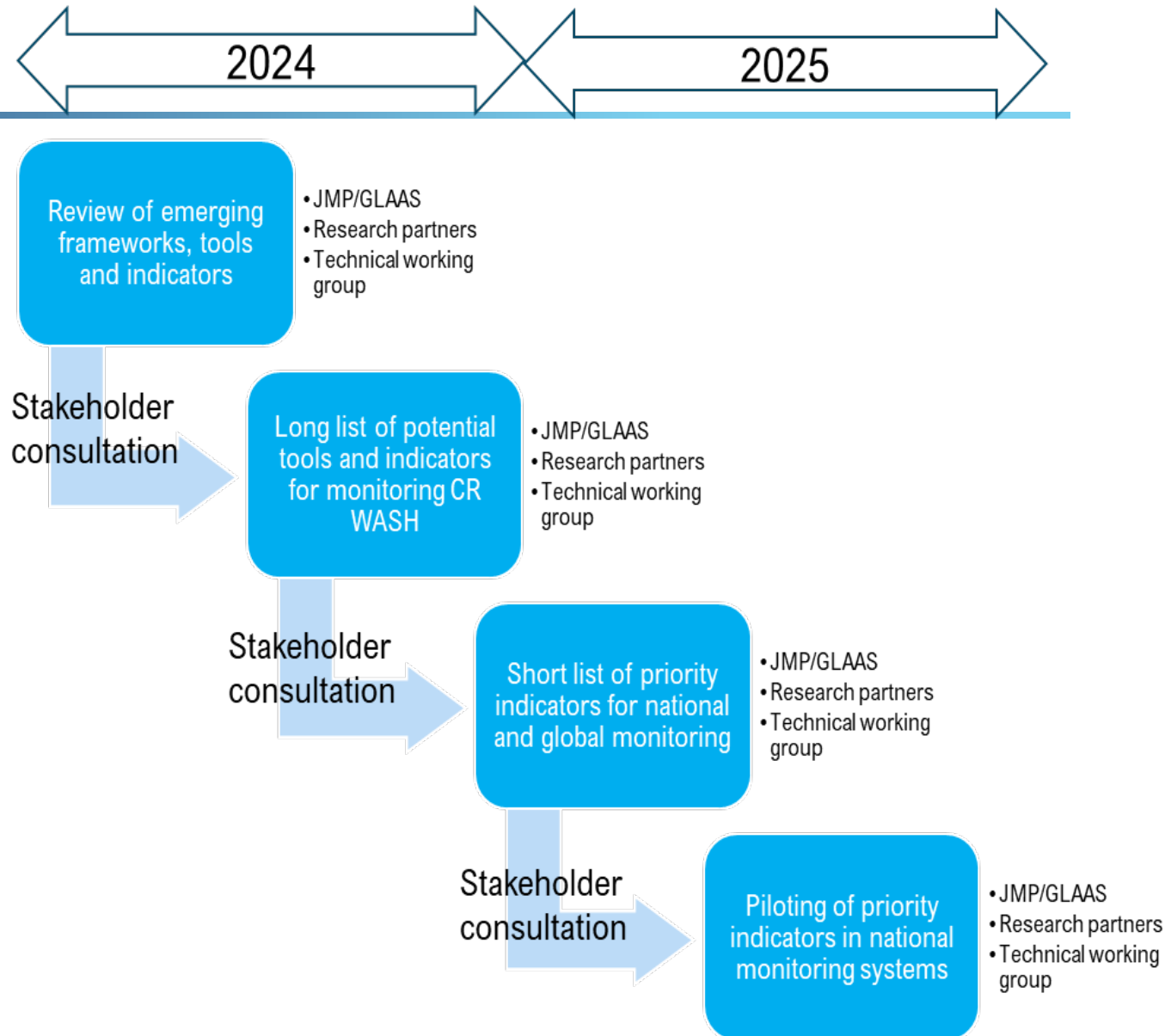
- (a) **Impact, vulnerability and risk assessment:** by 2030 all Parties have conducted up-to-date assessments of climate hazards, climate change impacts and exposure to risks and vulnerabilities and have used the outcomes of these assessments to inform their formulation of national adaptation plans, policy instruments, and planning processes and/or strategies, and by 2027 all Parties have established multi-hazard early warning systems, climate information services for risk reduction and systematic observation to support improved climate-related data, information and services
- (b) **Planning:** by 2030 all Parties have in place country-driven, gender-responsive, participatory and fully transparent national adaptation plans, policy instruments, and planning processes and/or strategies, covering, as appropriate, ecosystems, sectors, people and vulnerable communities, and have mainstreamed adaptation in all relevant strategies and plans;
- (c) **Implementation:** by 2030 all Parties have progressed in implementing their national adaptation plans, policies and strategies and, as a result, have reduced the social and economic impacts of the key climate hazards identified in the assessments referred to in paragraph 10(a) above;
- (d) **Monitoring, evaluation and learning:** by 2030 all Parties have designed, established and operationalized a system for monitoring, evaluation and learning for their national adaptation efforts and have built the required institutional capacity to fully implement the system;



Moving towards a “manageable set of no more than 100 indicators” by November (COP-30, Belém)

# Review timeline

- Consortium engaged (March 2024)
- Kick-off meeting with technical working group members (22 and 23 July 2024)
- Public webinar launch (29 and 30 July 2024)
- 1st working group meeting on the scope, **evidence review and discussion paper** prepared by the research partners (December 2024)
- Public webinar and consultation on findings of reviews (February 2025)
- 2<sup>nd</sup> working group meeting to discuss the **long list of indicators** prepared by the research partners (March/April 2025)
- **Launch of public consultation on the long list of indicators (April 2025)**
- Prioritization and shortlisting (May – September 2025)
- 3<sup>rd</sup> working group meeting to finalize the **short list of proposed indicators** (September 2025)
- Public consultation on the short list of indicators
- 4<sup>th</sup> working group meeting to review the **indicator pilots** (May 2026)



# Review outputs

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## Scoping document

- Climate resilient WASH global monitoring: scope and definition

## Discussion paper

- Indicators, measures and methods for monitoring climate-resilient WASH: discussion paper

## Long list of indicators

- Available as an Excel file and an interactive PowerPoint

## Project website

- <https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/monitoring-and-evidence/monitoring-of-climate-resilience>
- [Sign up](#) to receive information and updates about the project

# Key points from the reviews

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- There are many “frameworks” for climate resilience both within and outside the WASH sector (\*but there are a LOT in the WASH sector!)
- These frameworks propose many **attributes** and **adaptation actions** that could be used as *indicators* for climate resilient WASH (our count is >550)
- A lot of individual indicators have also been proposed (>1000 from our reviews). There is *limited evidence* to show how good these indicators are at predicting climate resilience
- Frameworks used in WASH-adjacent sectors give us some good information about how to express indicators for **service outcomes** and **user satisfaction**
- We will be able to propose a subset of indicators for adaptation actions, attributes, service outcomes and user satisfaction with a degree of confidence but the level of evidence to back these will be variable
- **From the >1,500 individual proposed indicators we have read about, we have developed a long list of ~400 indicators to consider as candidates for monitoring climate-resilient WASH**

# About the public consultation

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- It's an opportunity to:
  - Review the long list of candidate indicators
  - Help to prioritize indicators
  - Help to fill any gaps
  - Propose new indicators
- The public consultation will take place online until 9 May
- All of the information about the public consultation can be found online



QR code with link to info about  
the public consultation

# About the long list

Barbara Evans, James Wallace (University of Leeds)



# Introduction to the academic support team

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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



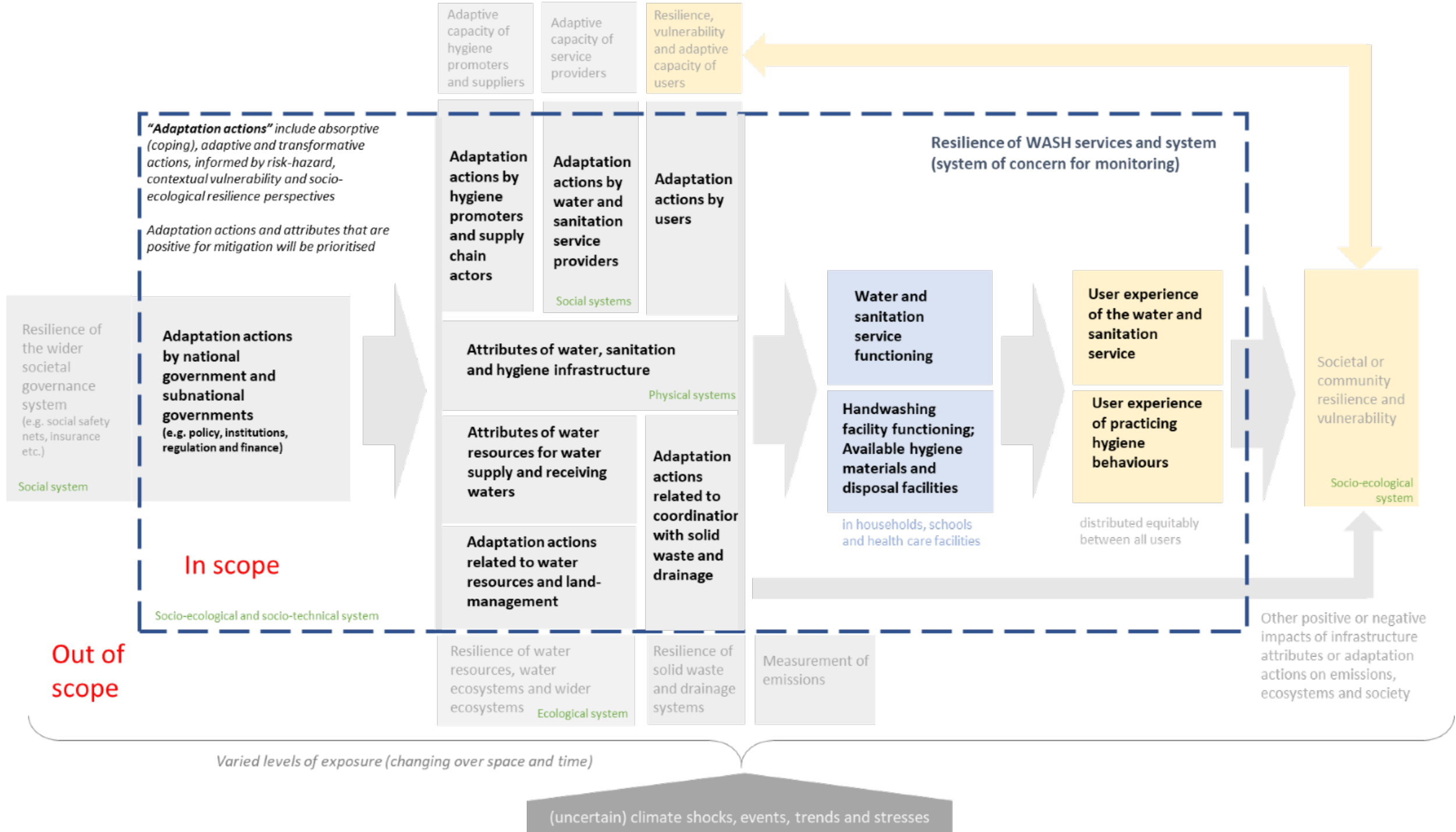
Lily King

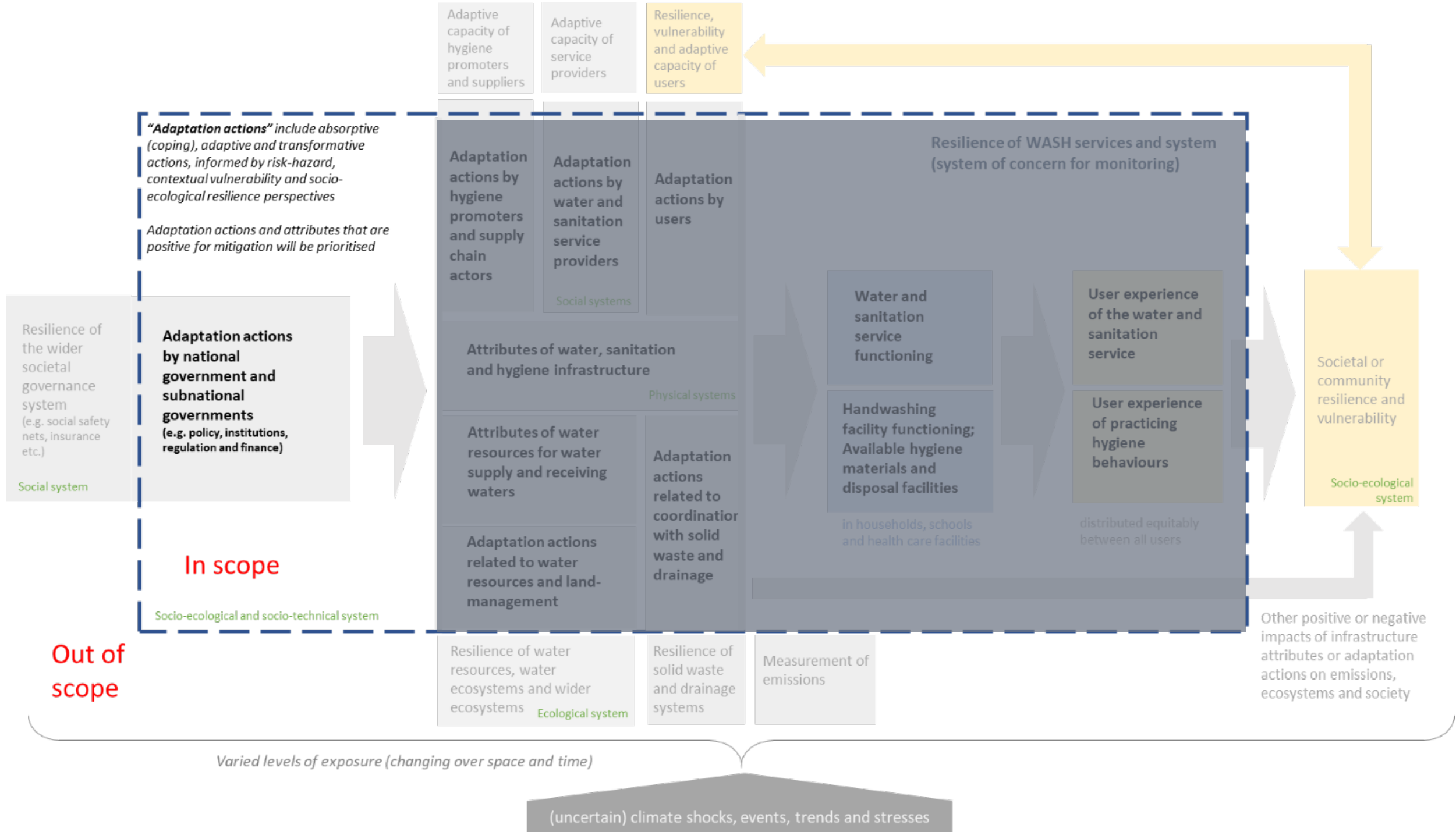
James Wallace

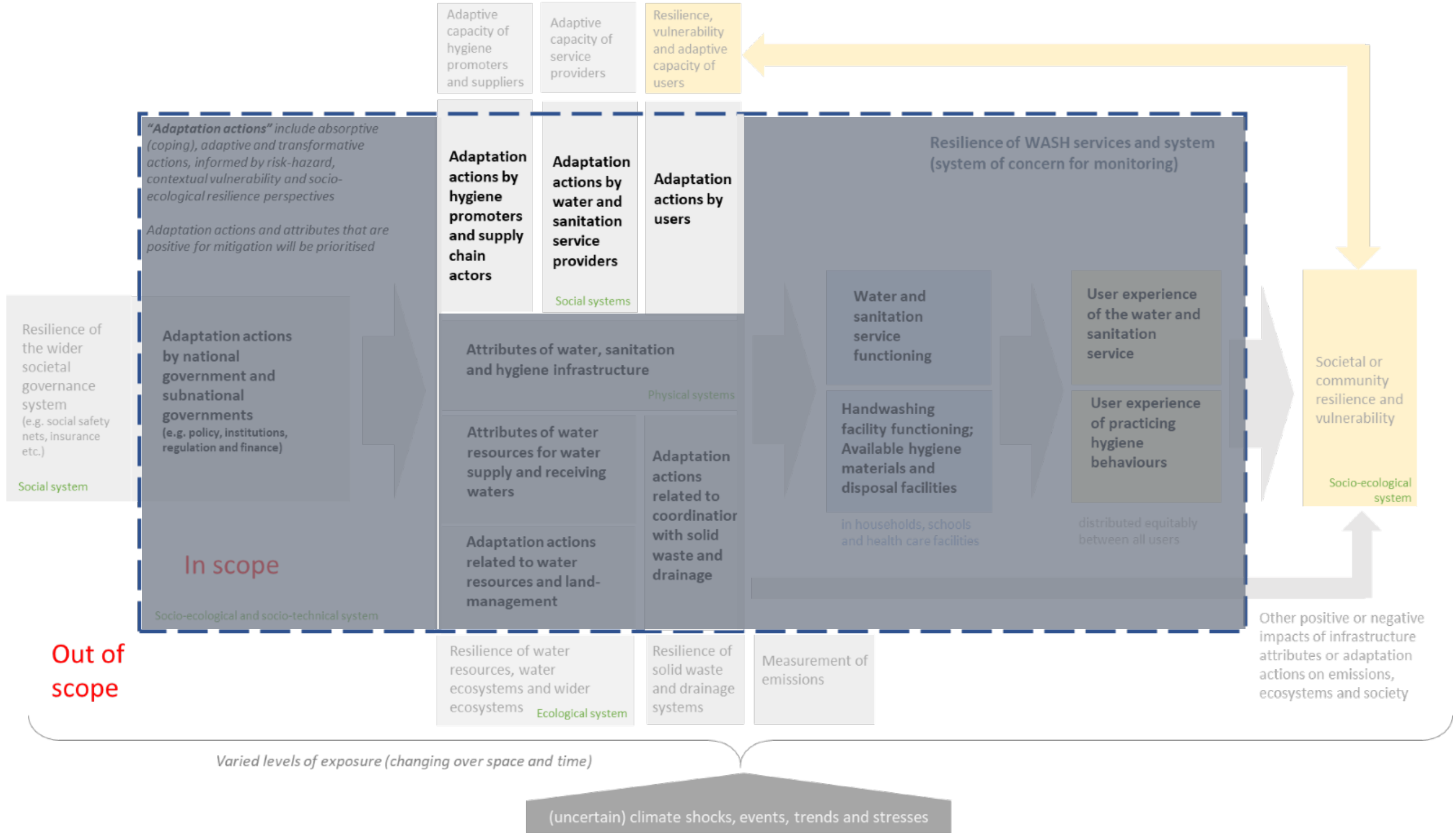
# About the public consultation

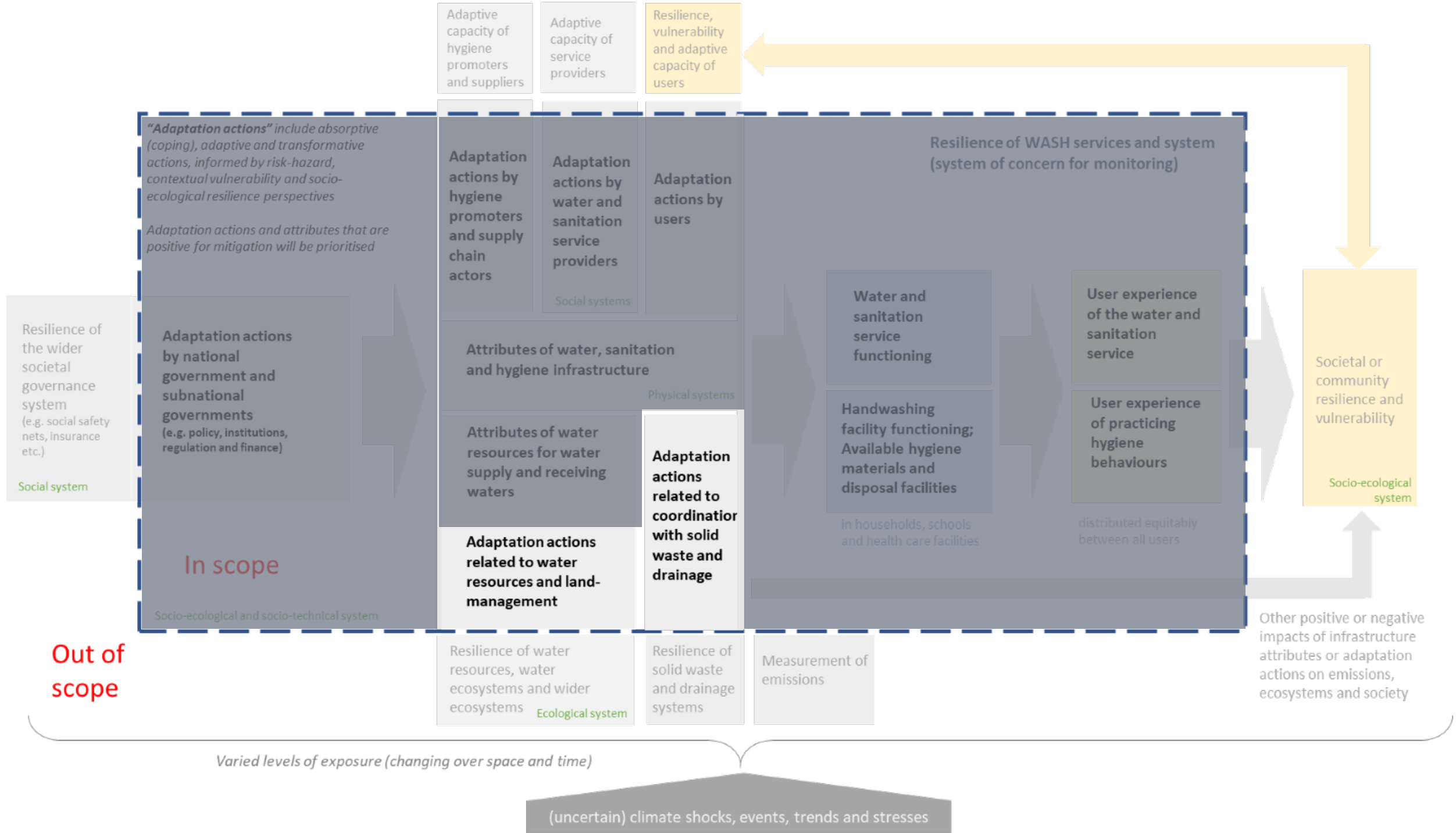
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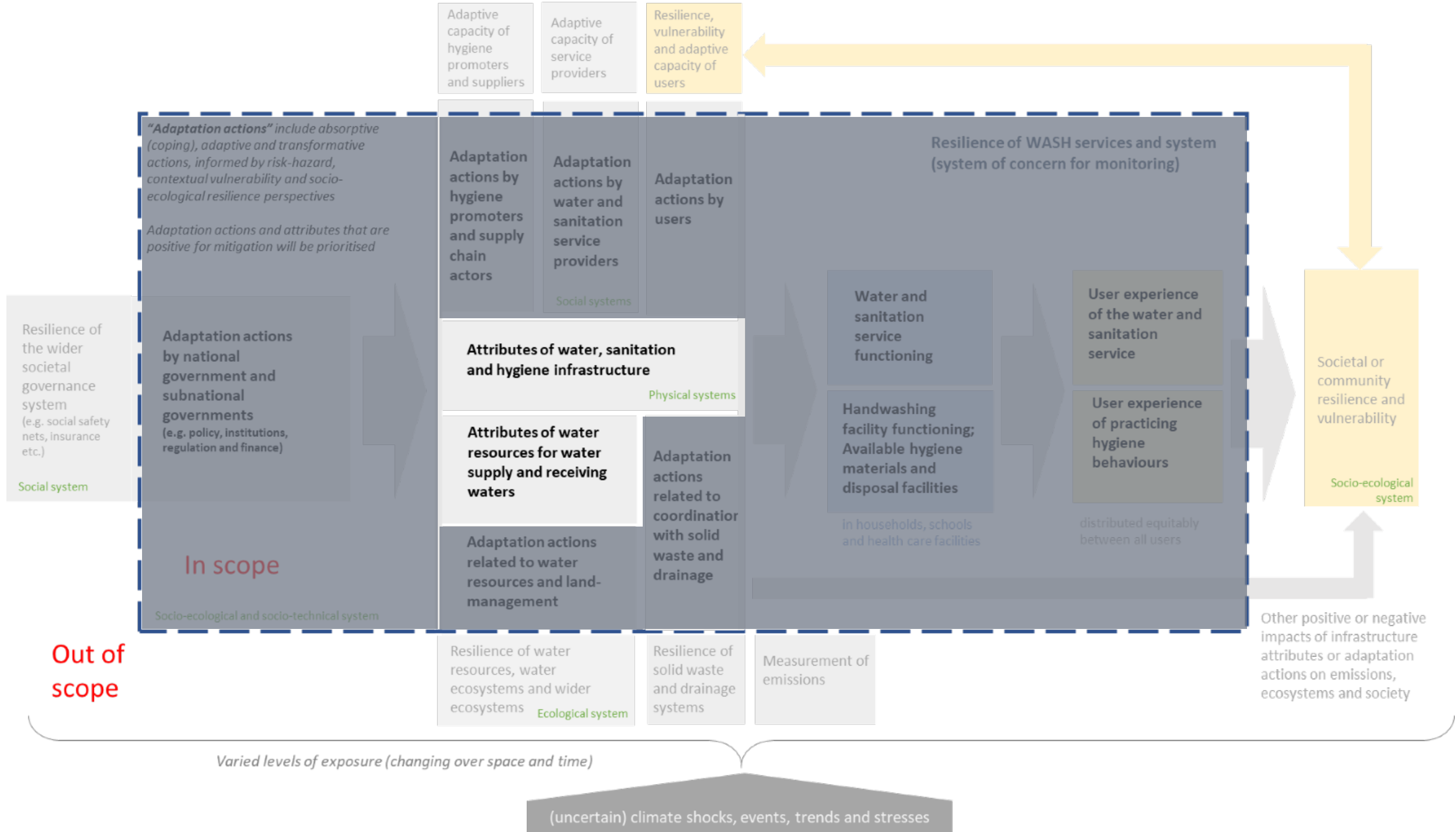
- To help you explore the long list of existing indicators you may first want to look at the two background documents.
- The Scoping and definitions document explains what is included and excluded in this project
- The Discussion document summarises what we found in the review process

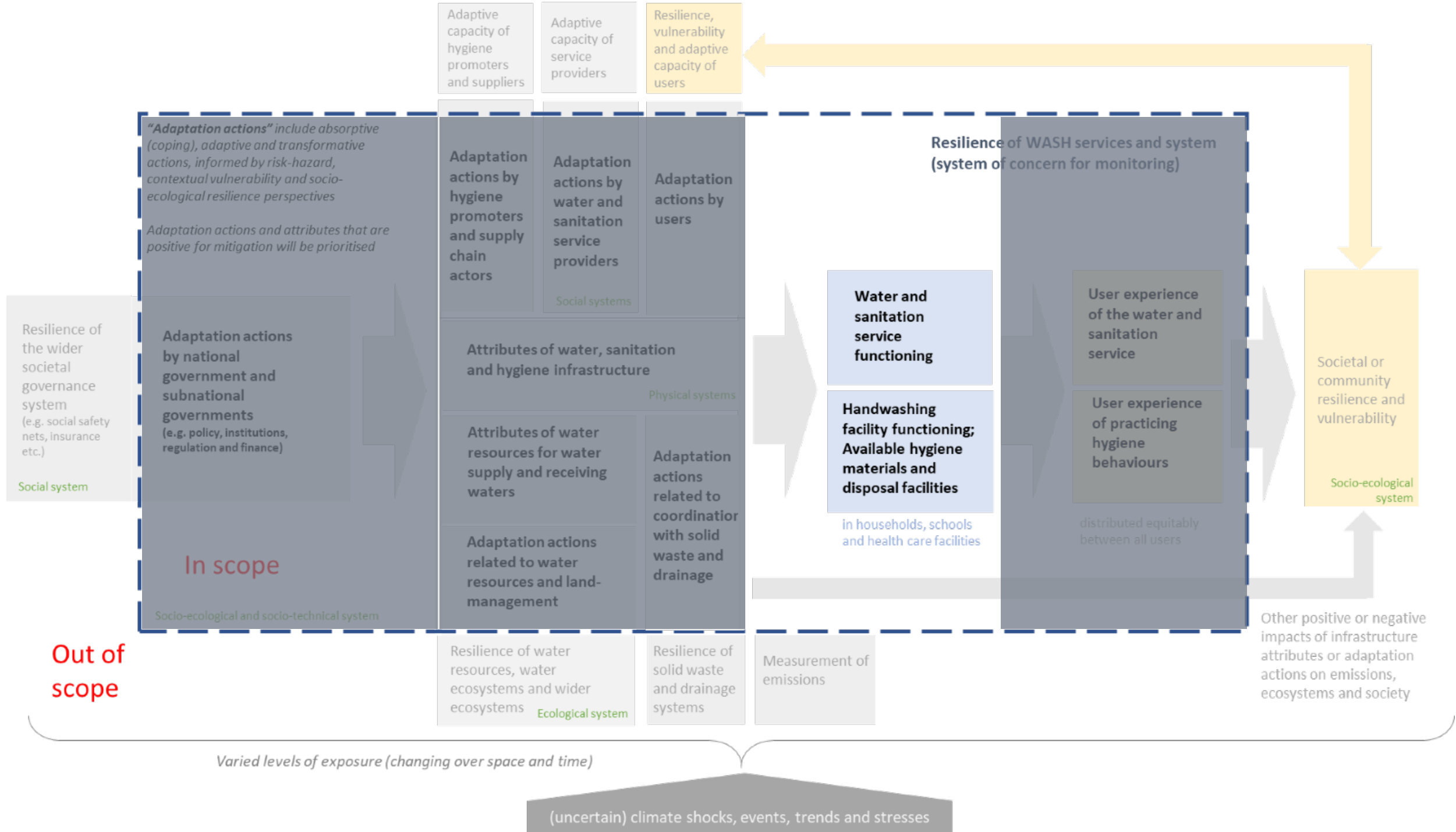














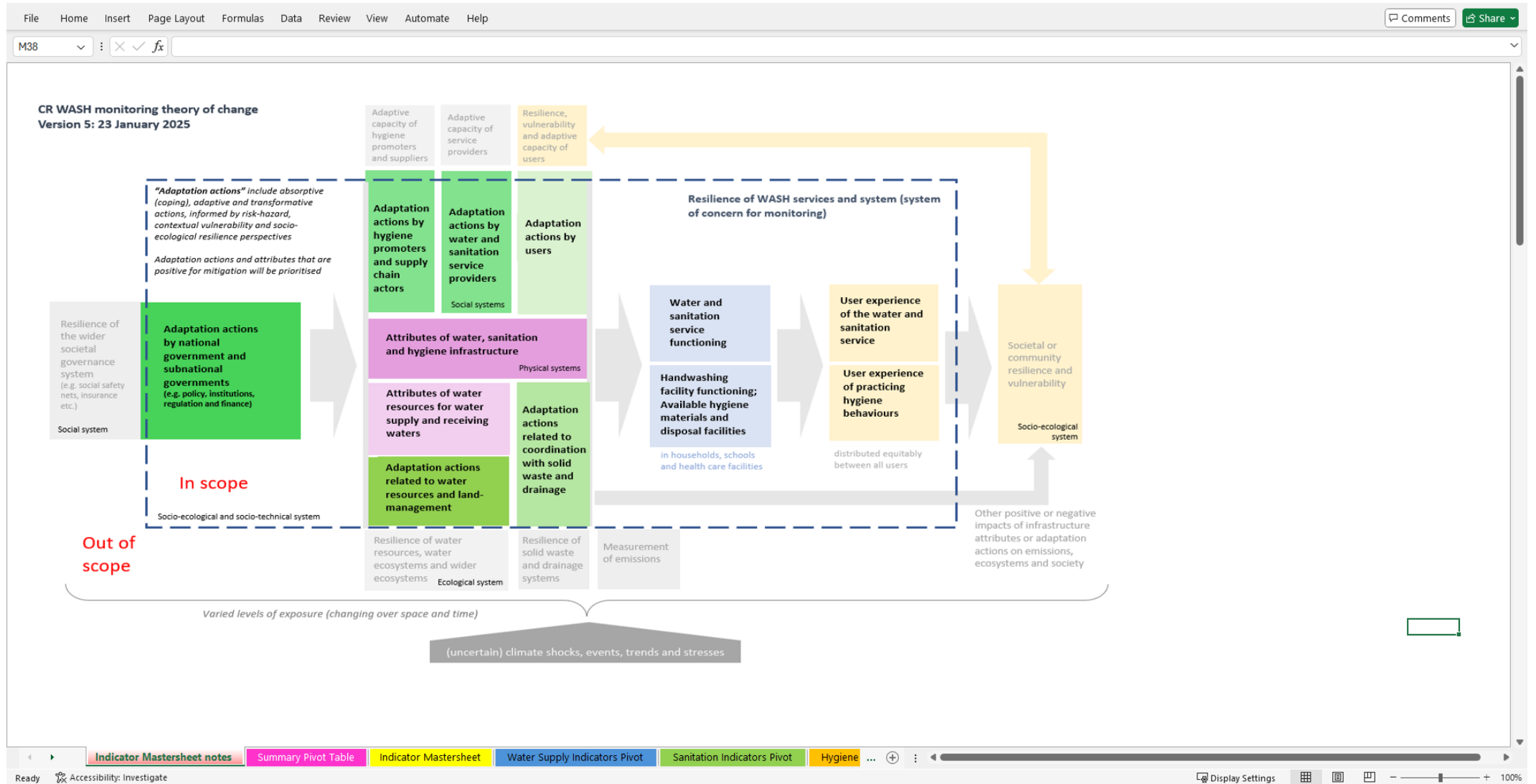


# About the public consultation

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- To help you explore the long list of existing indicators we have prepared two tools. Each shows the *same list of indicators*.
- There is an Excel file
  - <https://washdata.org/reports/monitoring-climate-resilient-wash-long-list-candidate-indicators>
- And there is an interactive PowerPoint file
  - <https://washdata.org/reports/monitoring-climate-resilient-wash-interactive-powerpoint>
- James is now going to introduce you to both tools.
- If you are interested in giving detailed feedback or inputs at this stage, we would encourage you to look at one other of these tools plus the Discussion Document (which are all available on the project website)
  - <https://washdata.org/reports/monitoring-climate-resilient-wash-discussion-paper>

# Navigating the Long List – Excel



# Navigating the Long List – Excel

Count of Attribute or adaptation actions or out Column Lal	Adaptation actions by national and subnational governments - Policy	Adaptation actions by national and subnational governments - Institutions	Adaptation actions by national and subnational governments - Regulation	Adaptation actions by national and subnational governments - Finance	Adaptation actions by water and sanitation service providers	Adaptation actions by hygiene promoters and supply chain actors	Adaptation actions by users	Attributes of water, sanitation, and hygiene infrastructure	Adaptation actions related to coordination with solid waste and drainage	Adaptation actions related to water resources and land-management	Attributes of water resources for water supply and receiving waters	Water service functioning	Sanitation service functioning	User experience of the water service	User experience of the sanitation service	Handwashing facility function: Available hygiene materials and disposal facilities	User experience of practicing hygiene behaviours	Grand Total
Climate Resilient Sanitation User Interface, Capture, and Containment					8		11	18					1		2			40
Climate Resilient Sewer Conveyance				1	3			18					2		1			25
Climate Resilient Conveyance by Road (including emptying)					5			3										8
Climate Resilient Design and Operation of WW and FS Treatment Processes			1		5			19		1			1					27
Climate Resilient Sanitation System	8	6	1	5	15	1			5	2	1		2		4			50
Climate Resilient Water Source	1			1	9			5		10	1	2		2				31
Climate Resilient Water Treatment					1			1		2								4
Climate Resilient Water Storage and Distribution						1					2							3
Climate Resilient Household Water Management	2						1	1										4
Climate Resilient Water Supply System	9	5	4	7	21	1	1	1		1	1	13		1				65
Climate Resilient Hand Hygiene						7										1	5	13
Climate Resilient Menstrual Hygiene Management							14	3	4							1	10	32
Climate Resilient Incontinence Management						1												1
Climate Resilient Hygiene System	11	2	3	3		15	1	1									2	38
Climate Resilient WASH System	20	20	12	28					1									81
<b>Grand Total</b>	<b>51</b>	<b>33</b>	<b>21</b>	<b>45</b>	<b>68</b>	<b>39</b>	<b>17</b>	<b>73</b>	<b>6</b>	<b>16</b>	<b>3</b>	<b>15</b>	<b>6</b>	<b>3</b>	<b>7</b>	<b>2</b>	<b>17</b>	<b>422</b>

# Navigating the Long List – Excel

REF	Indicator	Pertaining to (Water supply/Sanitation or Hygiene)	Attribute or adaptation actions	Specific to which Climate Hazard(s)	Framework component	Indicator Objective	Candidate Indicators	Measurements/targets	Source of indicator	Evidence	Type of Evidence	Review Reference	References of Evidence or source of proposed indicator
2	LL001	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Changing precipitation patterns; Floods	Adaptation actions by users	Construction and design standards for climate resilient WASH are implemented	[Proportion of population using containments in flood prone areas with erosion protection (present) (e.g. riprap, retaining walls, soil binders etc.)]	Presence of erosion protection (Y/N)	Review	Evidence	Qualitative	R4a	Kanda A, Ncube EJ, Voyi K (2022) Drivers and barriers to sustained use of Blair ventilated improved pit latrine after nearly four decades in rural Zimbabwe. PLoS ONE 17(4): e0265077.
3	LL002	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Changing precipitation patterns; Floods	Attributes of water, sanitation, and hygiene infrastructure	Construction and design standards for climate resilient WASH are implemented	[Proportion of population using containments in flood prone areas with erosion protection present (e.g. riprap, retaining walls, soil binders etc.)]		Consortium	Derived from evidence		Adapted 0 from R4a	Kanda A, Ncube EJ, Voyi K (2022) Drivers and barriers to sustained use of Blair ventilated improved pit latrine after nearly four decades in rural Zimbabwe. PLoS ONE 17(4): e0265077. <a href="https://doi.org/10.1371/journal.pone.0265077">https://doi.org/10.1371/journal.pone.0265077</a>
4	LL003	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Changing precipitation patterns; Floods	Adaptation actions by users	Availability and access to climate resilient WASH services	[Proportion of the population with access to] multiple toilet technologies for use during and following flooding events		Review	Derived from evidence	Qualitative	R4a	Alda-Vidal, C., Browne, A. L., Lawhon, M., & Iossifova, D. (2024). Sanitation configurations in Lilongwe: Everyday experiences on and off the grid. Urban Studies, 61(9),
5	LL004	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Changing precipitation patterns; Floods	Adaptation actions by water and sanitation service providers	Availability and access to climate resilient WASH services	[Proportion of users with] access to multiple sanitation technologies during and following flooding events		Review	Derived from evidence	Qualitative	R4a	Lawhon, M., & Iossifova, D. (2024). Sanitation configurations in Lilongwe: Everyday experiences on and off the grid. Urban Studies, 61(9),
6	LL005	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Multiple hazards	Attributes of water, sanitation, and hygiene infrastructure	Construction and design standards for climate resilient WASH are implemented	[Proportion of] containments where containment is lined or sealed		Academic and grey literature outside of reviews	No evidence		0	O., United Kingdom. Dept. For International, D. & United States of America. University of North Carolina at Chapel, H. 2010. Vision 2030 : the resilience of
7	LL006	Sanitation	Climate Resilient Sanitation User Interface, Capture, and Containment	Changing precipitation patterns; Floods	User experience of the sanitation service	Availability and access to climate resilient WASH services	[Proportion of] latrines which remain safe and functional following heavy rains and/or flooding		Review	No Evidence		0 R1a	CR WASH Strategic Framework - UNICEF Strategic Framework for WASH Climate Resilient Development

# Navigating the Long List – Excel

	A	B
1	Pertaining to Sanitation	Sanitation
2		
3	<b>Candidate Indicators by Position Along Sanitation Value Chain</b>	<b>Count of Candidate Indicators</b>
4	<b>Climate Resilient Sanitation User Interface, Capture, and Containment (including flush)</b>	<b>40</b>
5	<b>Construction and design standards for climate resilient WASH are implemented</b>	<b>32</b>
6	<b>Availability and access to climate resilient WASH services</b>	<b>7</b>
7	[Proportion of population] practising open defecation following a flood	1
8	[Proportion of the population with access to] multiple toilet technologies for use during and following flooding events	1
9	[Proportion of users with] access to multiple sanitation technologies during and following flooding events	1
10	[Proportion of] latrines which remain safe and functional following heavy rains and/or flooding	1
11	Proportion of households that have taken action to build/ rebuild and/or upgrade latrines following heavy rains or other extreme weather events	1
12	[Proportion of the population with] access to multiple toilet technologies (one low/no flush) for use during drought	1
13	[Population of households where] latrines collapsed in the last year due to heavy rains or other extreme weather events	1
14	<b>Operation and management is appropriate to ensure and advance climate resilience</b>	<b>1</b>
15	<b>Climate Resilient Conveyance by Road (including emptying)</b>	<b>8</b>
16	<b>Climate Resilient Sewer Conveyance</b>	<b>25</b>
17	<b>Climate Resilient Design and Operation of WW and FS Treatment Processes</b>	<b>27</b>
18	<b>Climate Resilient Sanitation System</b>	<b>50</b>
19	<b>Grand Total</b>	<b>150</b>
20		
21		
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29		
30		

# Navigating the Long List – Powerpoint

The screenshot displays the Microsoft PowerPoint application interface. The ribbon at the top includes tabs for File, Home, Insert, Design, Transitions, Animations, Slide Show, Record, Review, View, and Help. The Home tab is active, showing options for Paste, New Slide, Font, Paragraph, Drawing, Editing, Dictate, Add-ins, and Designer. The main slide area shows a slide with a colorful geometric background and the following text:

## Indicators for Monitoring Climate Resilient WASH

*Indicator Long List:  
Public Consultation and Review*

Logos for the World Health Organization, UNICEF, University of Leeds, University of Bristol, UTS, and University of Oxford are visible at the bottom of the slide.

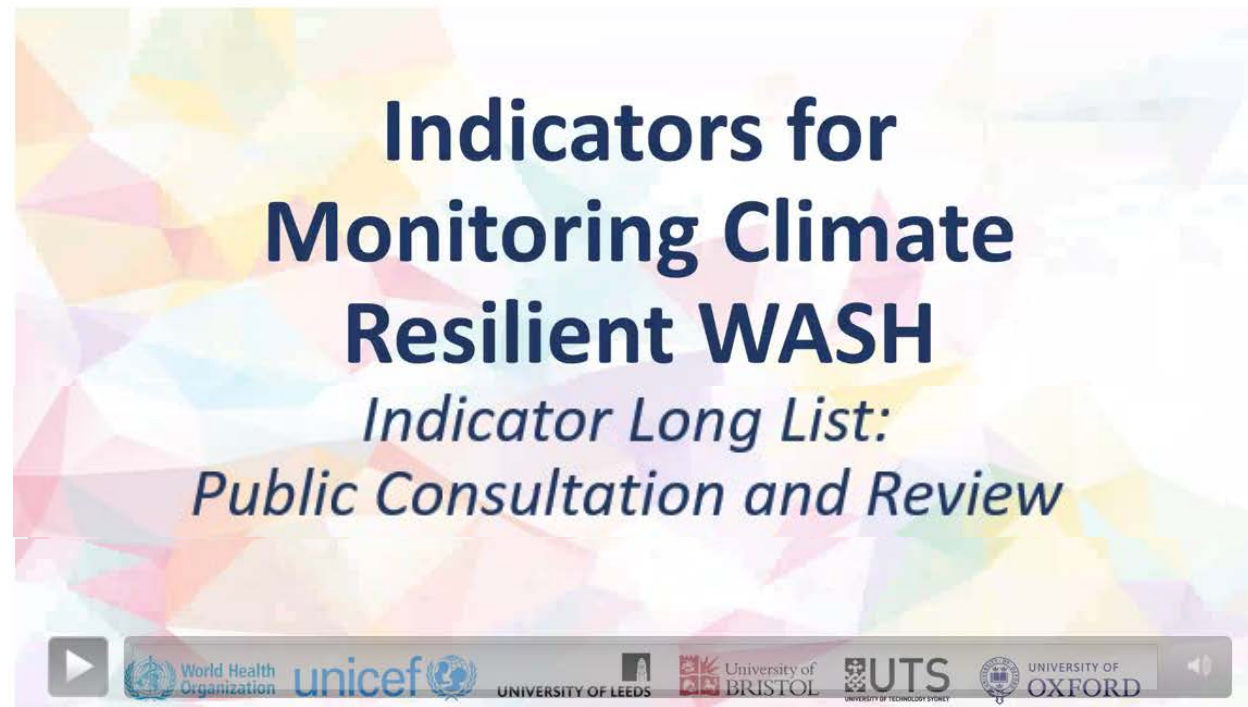
The left-hand navigation pane shows a list of slides, with slide 1 highlighted and circled in red. The status bar at the bottom indicates 'Slide 1 of 513' and 'Accessibility: Investigate'. A red circle highlights the 'View' icon in the bottom right corner of the status bar.

# Navigating the Long List – Powerpoint

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## Navigation Guidance

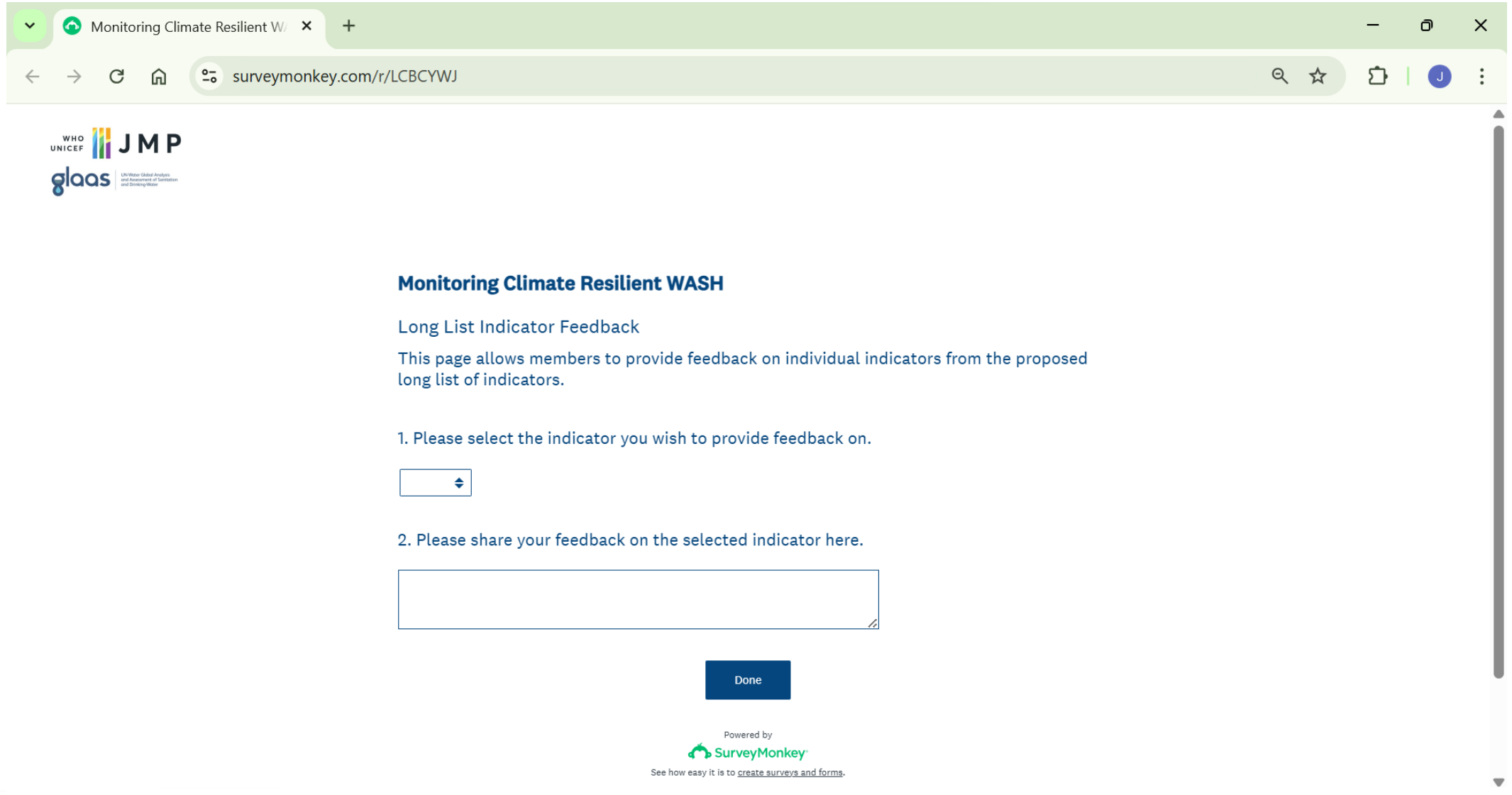
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[Conceptual Framework](#)



# Navigating the Long List – Powerpoint



The screenshot shows a web browser window with the following elements:

- Browser Tab:** Monitoring Climate Resilient WASH
- Address Bar:** surveymonkey.com/r/LCBCYWJ
- Logos:** WHO UNICEF JMP and glaas (UN Water Global Analysis and Assessment of Sanitation and Drinking Water).
- Section Header:** Monitoring Climate Resilient WASH
- Section Title:** Long List Indicator Feedback
- Description:** This page allows members to provide feedback on individual indicators from the proposed long list of indicators.
- Step 1:** Please select the indicator you wish to provide feedback on. Below this is a dropdown menu.
- Step 2:** Please share your feedback on the selected indicator here. Below this is a large text input area.
- Action:** A blue button labeled "Done" is positioned below the text input area.
- Footer:** Powered by SurveyMonkey. See how easy it is to [create surveys and forms](#).

# Thinking about candidate indicators

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**174** indicators from the review of WASH frameworks are included in the longlist

Directly migrated indicators where they aligned with our conceptual framework and filled necessary gaps

LL175 - National adaptation plans address climate risks to water supply

GLAAS 2024/25 survey

LL046 - Early Warning Systems technology and associated policies and procedures (designed to predict and mitigate the impacts of climate change) account for impacts on WASH services

GWP UNICEF - Strategic Framework for WASH Climate Resilient Development  
CR WASH Strategic Framework

# Thinking about candidate indicators

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Amended WASH-adjacent indicators to address gaps

- We considered both what was being measured and how to measure it

LL349 - Solid waste management actions which reduce risks of climate-change related failures (blockages etc) are included in sanitation behaviour change campaigns

LL460 - [Proportion of] menstruators that have access to safe, secure, and private facilities to wash and dry MHM products/cloths\*

\*This is an example of an indicator area which is not (yet) climate specific

# Reasons for excluding existing indicators

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Based on externally generated scenarios specific to the monitoring document

R1 - Expected total duration of solid waste collection interruption period according to CC scenarios

RESCUE 2020

Not an indicator but an action

R1 - Assesses cost-effectiveness of health care facility adaptation to climate change by quantifying the benefits and costs of implementing new or improved measures to address risks

Paterson et al., 2014

Too specific to the sector and too binary

R1 - Average length of flight delays

Poo et al., 2021

# Climate specificity vs climate relevance

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- Amongst the indicators selected, is the balance right between climate specificity, and climate relevance?
  - As an example, should non-revenue water be included since it is climate-relevant even though it also reflects “good” WASH management practices more generally?

LL475 – Percentage of bulk water supply lost as non-revenue water

LL476 – Percentage of water service providers reporting non-revenue water below X%

# Specific Challenge for WASH

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- Shifting or substandard baselines are more complex
  - Service itself is not binary and people navigate a spectrum of inadequate options
  - What counts as “tolerable ” varies by context, and thresholds (e.g., how long without service is acceptable) are rarely defined
- We explored more nuanced ways to capture user experience for example:
  - QALY -> Sanqual
  - HWISE and IWISE

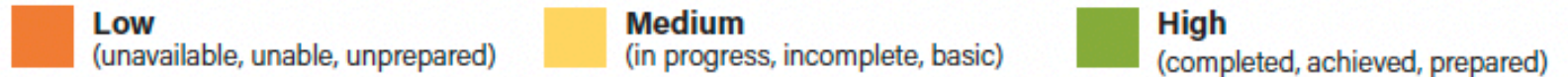
LL466 – [Proportion of household OR population reporting a] change in the frequency of times that they worried about not having enough water or all household needs in the proceeding four weeks/during the dry season/during or after a drought/during floods

# Dealing with temporality

## Learning Not Just *What* to Measure — But *How*

- Temporal thinking
  - Indicators that reflect resilience to short-term and long-term risks
  - Potentially help distinguish between reactive and forward-looking resilience

### Level of resilience:



Resilience to short-term risks (<= 10 years)	Additional resilience to long-term climate change risks (>10 years)
<b>Leadership and governance</b>	
The Ministry of Health has a designated focal point responsible for health and climate change	Adequate and sustained human and financial resources in place to implement, review and update the HNAP
Climate change and health integrated into health sector strategies and UHC, while an HNAP developed with an appropriate review and update cycle	Long-term risks inform the implementation and adaptation measures of key priorities integrated in the HNAP
Institutional mechanisms between the Ministry of Health and key health-determining sectors support implementation of the HNAP	HNAP includes actions that strengthen the resilience of health systems to long-term risks

# About the public consultation

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- To help you give feedback there are three tools
- First there is a standalone Survey Monkey (an interactive survey tool) which you can access directly from the project website. This will walk you through a series of questions and you can provide feedback on any part of the project
- Secondly there is a Survey Monkey embedded in the interactive PowerPoint which enables you to give feedback directly on individual candidate indicator topics
- Finally, there is email! You can send feedback directly to [washmonitoring@who.int](mailto:washmonitoring@who.int).



# Next steps

Tom Slaymaker, (JMP/UNICEF) / Fiona Gore (GLAAS/WHO)

# Next steps

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- The public consultation is open until 9 May 2025.
- After the public consultation, the Technical Working Group will work with the JMP and GLAAS teams and research partners to prioritize the indicators into a short list.
- A public consultation on the short list will happen later this year.



QR code with link to info about  
the public consultation

# Thank you!

Sign up using the [link](#) in the chat to receive updates!