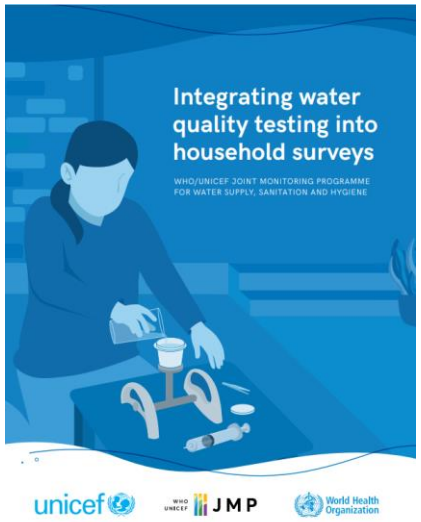
Innovative approaches to monitoring SDG 6.1.1

Integrating water quality testing into household surveys

12th Meeting of Inter-Agency & Expert Group on SDG Indicators
2-4 November, 2021



WHO/UNICEF Joint Monitoring Programme (JMP)
for Water Supply, Sanitation and Hygiene

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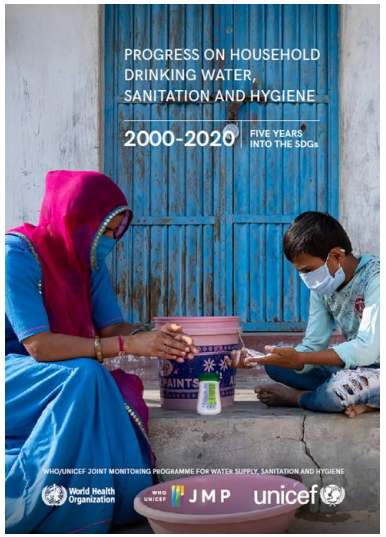

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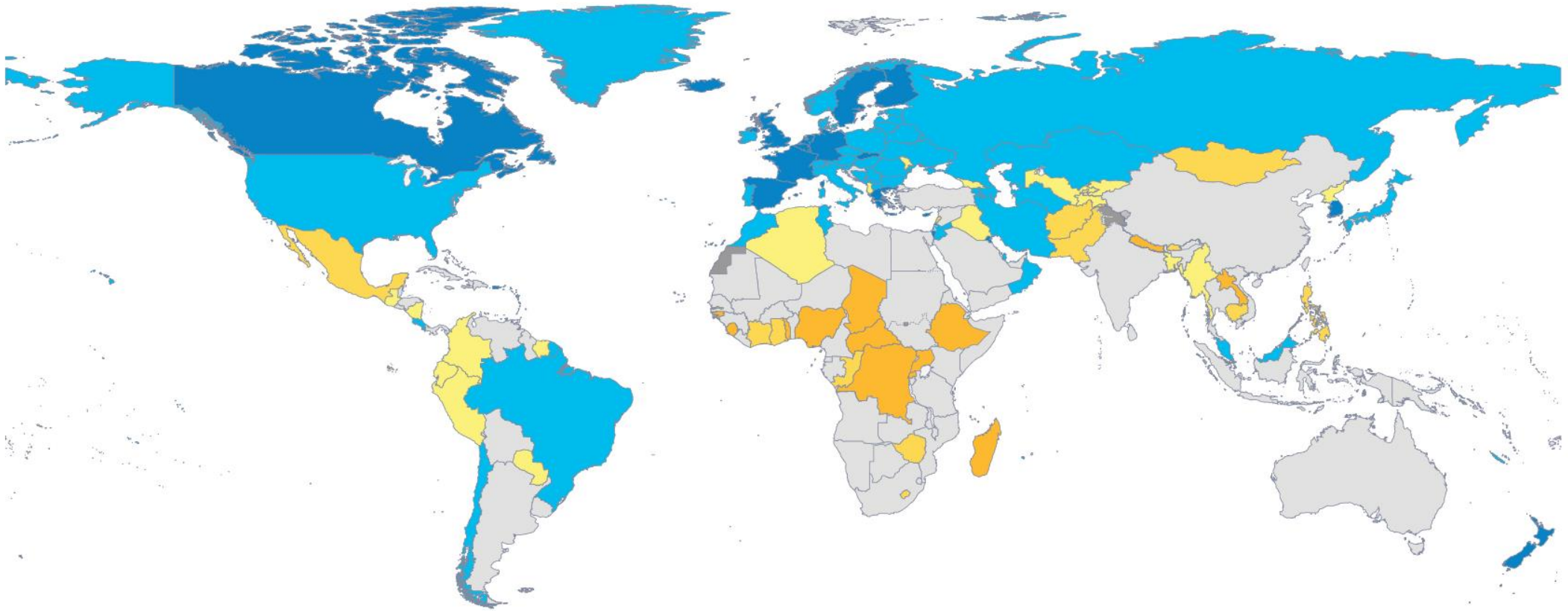
SDG 6.1.1 Proportion of population using safely managed drinking water services

SERVICE LEVEL	DEFINITION
SAFELY MANAGED	Drinking water from an improved source that is accessible on premises, available when needed and free from faecal and priority chemical contamination
BASIC	Drinking water from an improved source, provided collection time is not more than 30 minutes for a round trip, including queuing
LIMITED	Drinking water from an improved source, for which collection time exceeds 30 minutes for a round trip, including queuing
UNIMPROVED	Drinking water from an unprotected dug well or unprotected spring
SURFACE WATER	Drinking water directly from a river, dam, lake, pond, stream, canal or irrigation canal

FIGURE 25 SDG ladder for drinking water services

Note: Improved sources include: piped water, boreholes or tubewells, protected dug wells, protected springs, rainwater, and packaged or delivered water.

138 countries had estimates for safely managed services in 2020



0-25
25-50
50-75
75-99
>99
Insufficient data
Not applicable

* The JMP produces internationally comparable estimates for 234 countries, areas and territories, including all United Nations Member States. Statistics in this report refer to countries, areas and territories.

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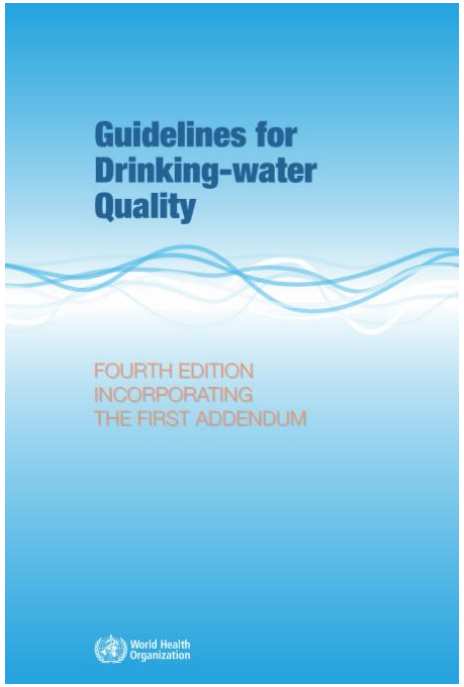
Free from faecal and priority chemical contamination

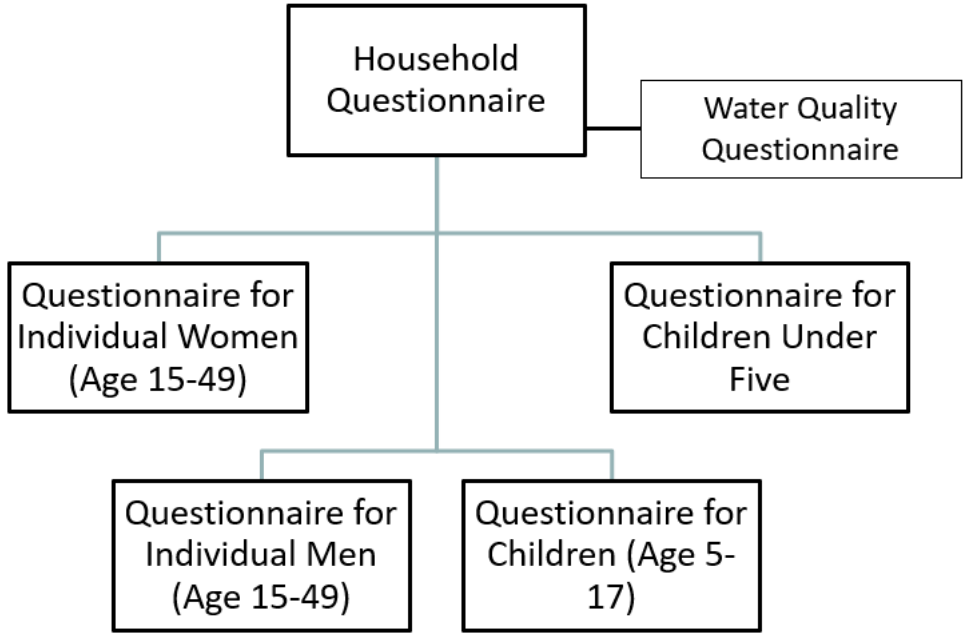
WHO guidelines:

- No *E. coli* (or alternatively thermotolerant coliforms) detected in a 100 mL sample
- Arsenic: a concentration of arsenic not exceeding the WHO provisional guideline value of 10 µg/L (10 micrograms per litre)
- Fluoride: a concentration of fluoride not exceeding the WHO guideline value of 1.5 mg/L (1,500 micrograms per litre)



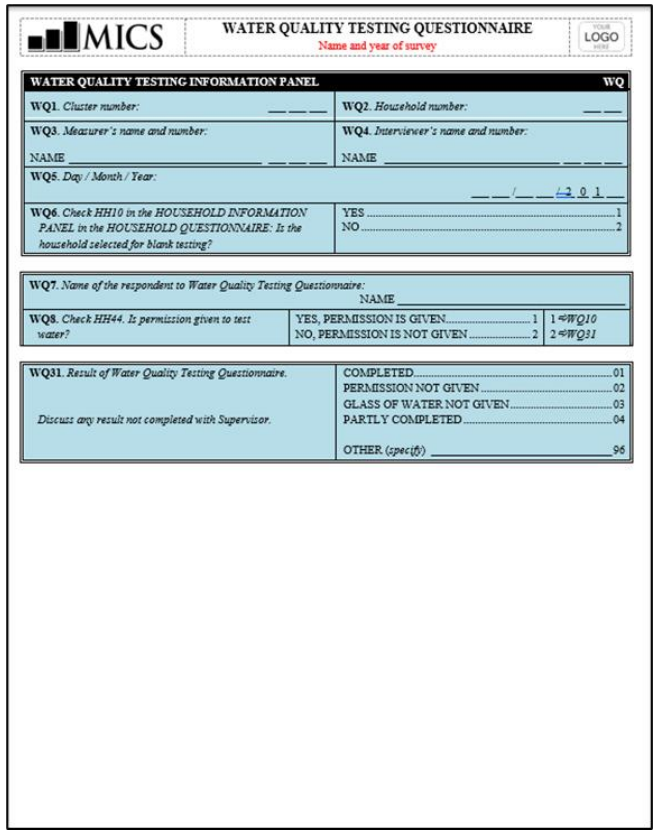
Development of water quality testing module in collaboration with UNICEF supported Multiple Indicator Cluster Surveys

- Household survey programme based on full government ownership since 1995
- Global MICS Team provides technical support for standardization and comparability
- Representative data based on probabilistic samples
- Standard questionnaires customized to country needs
- Standard tools for all survey stages, customized by countries
- Water quality testing in a sub sample of households (5 households per cluster)



https://mics.unicef.org/tools

Water quality testing questionnaire



MICS — WATER QUALITY TESTING QUESTIONNAIRE
Name and year of survey

WATER QUALITY TESTING INFORMATION PANEL — WQ

WQ1. *Cluster number:* ___ ___ ___	WQ2. *Household number:* ___ ___
WQ3. *Measurer's name and number:* NAME _____ ___ ___ ___	WQ4. *Interviewer's name and number:* NAME _____ ___ ___ ___
WQ5. *Day / Month / Year:* ___ ___ / ___ ___ 2 0 1 ___	
WQ6. *Check HH10 in the HOUSEHOLD INFORMATION PANEL in the HOUSEHOLD QUESTIONNAIRE: Is the household selected for blank testing?*	YES ..... 1 NO 2

WQ7. *Name of the respondent to Water Quality Testing Questionnaire:* NAME _____

WQ8. *Check HH44. Is permission given to test water?*	YES, PERMISSION IS GIVEN ..... 1 NO, PERMISSION IS NOT GIVEN 2	1 ⇨ *WQ10* 2 ⇨ *WQ31*

WQ31. *Result of Water Quality Testing Questionnaire.* *Discuss any result not completed with Supervisor.*	COMPLETED ..... 01 PERMISSION NOT GIVEN ..... 02 GLASS OF WATER NOT GIVEN ..... 03 PARTLY COMPLETED ..... 04 OTHER (*specify*) _____ 96

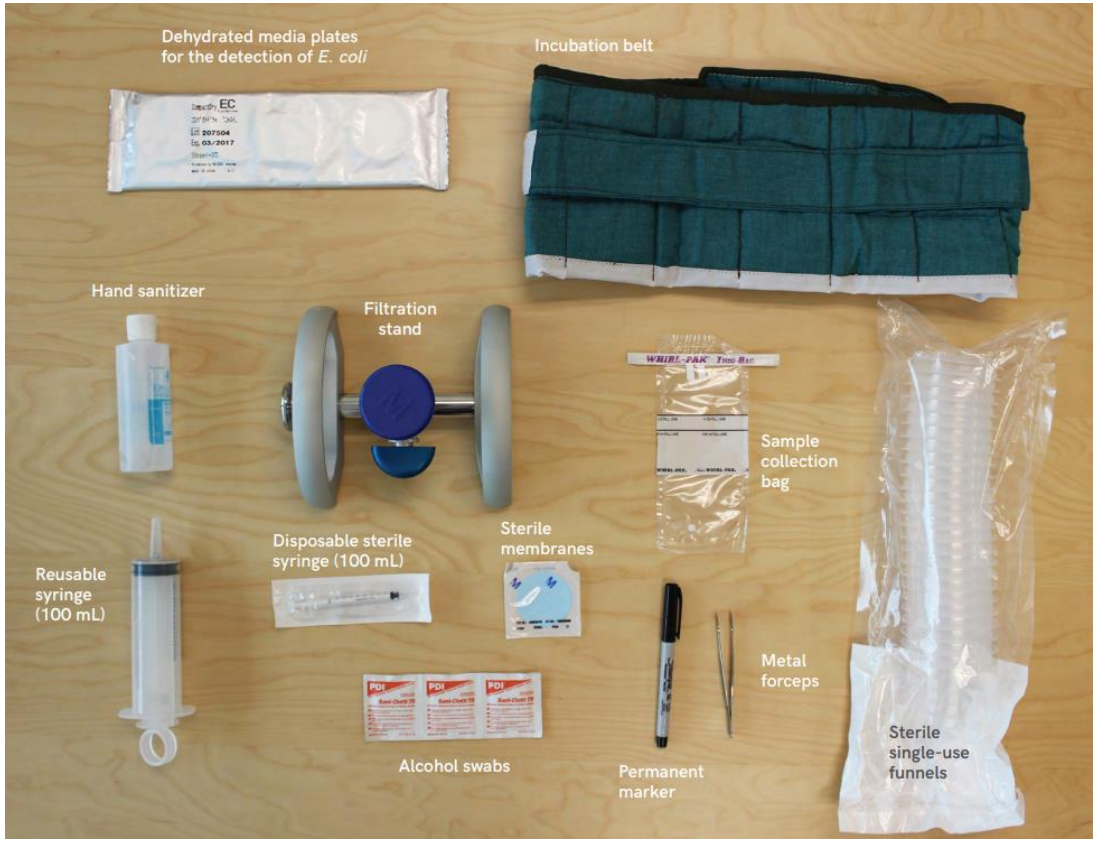
Point of use

- "Could you please provide me with a glass of the water that members of your household usually drink?"

Point of collection

- "Can you please show me the point of collection of the glass of drinking water so that I can take a sample there as well?"

Water quality testing equipment



Key components:

- A laboratory-grade membrane filtration stand + large syringe
- Dehydrated media plates for the detection of *E. coli*
- Disposable sterile funnels in combination with standard paper membranes (45 µm)
- Alcohol wipes to disinfect the filter support and forceps, and a sterile 1 mL syringe

Water quality results recorded after incubation for 24hrs

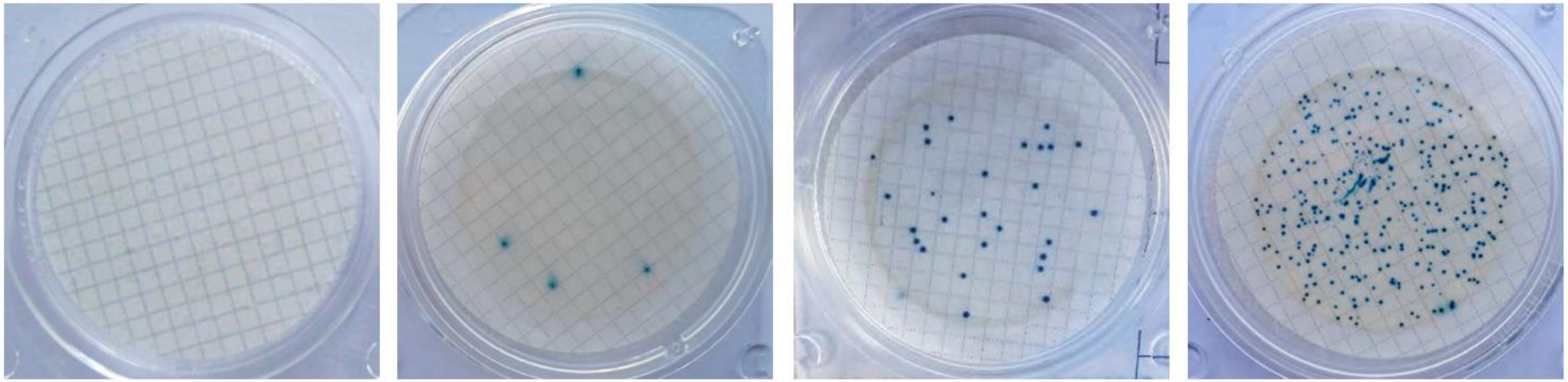
In most countries a « body-belt » is used to incubate the samples.

Other incubation options are available:

- Electric incubators
- Phase-change incubator
- Incubation ‘vests’

WHO risk levels for faecal contamination of drinking water

E. coli per 100 mL of water	WHO risk level
<1	LOW RISK
1-10	MEDIUM RISK
11-100	HIGH RISK
>100	VERY HIGH RISK



Documentation of lessons learned for scaling up water quality testing in household surveys

Water quality testing in household surveys reveals high levels of faecal contamination in many countries

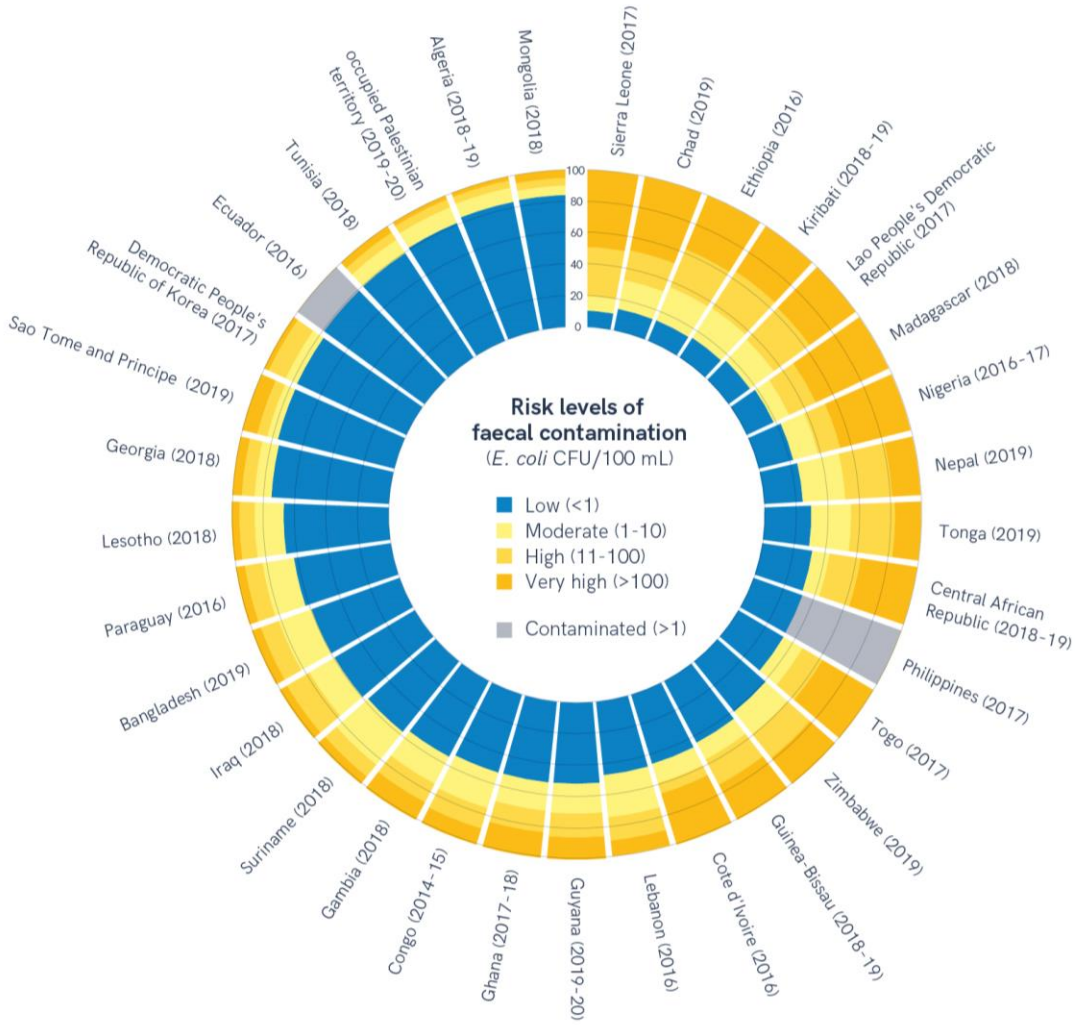


FIGURE 37 Population using drinking water sources by risk of faecal contamination, selected surveys, 2014-2020 (%)

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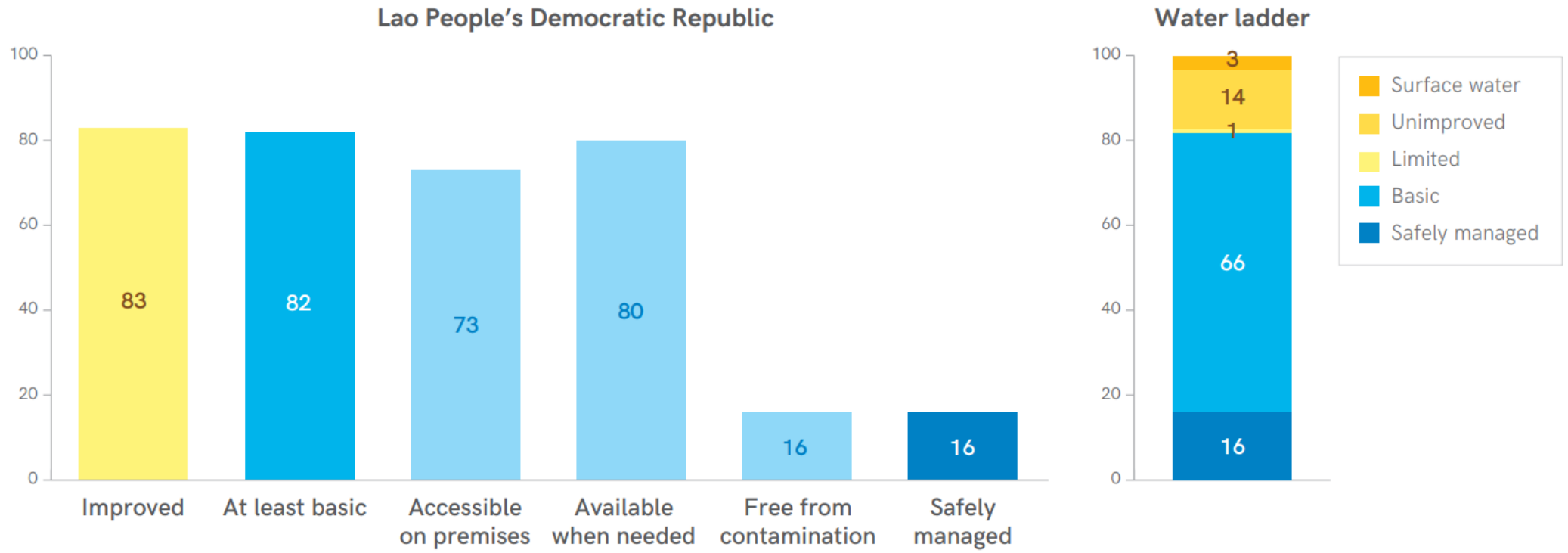
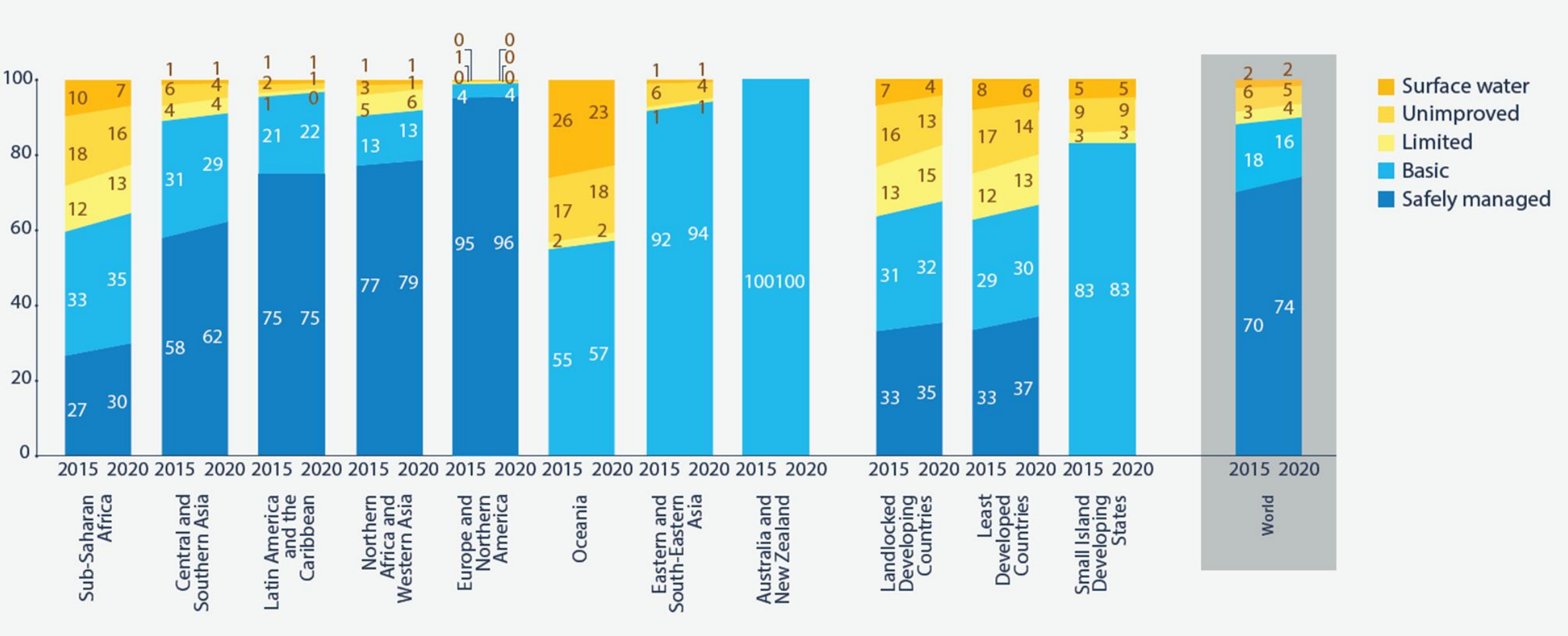
Water quality is often the limiting factor for safely managed drinking water services



Population using drinking water sources meeting SDG criteria for safely managed services, Lao People's Democratic Republic, 2017

Estimates were available for 5 out of 8 SDG regions in 2020



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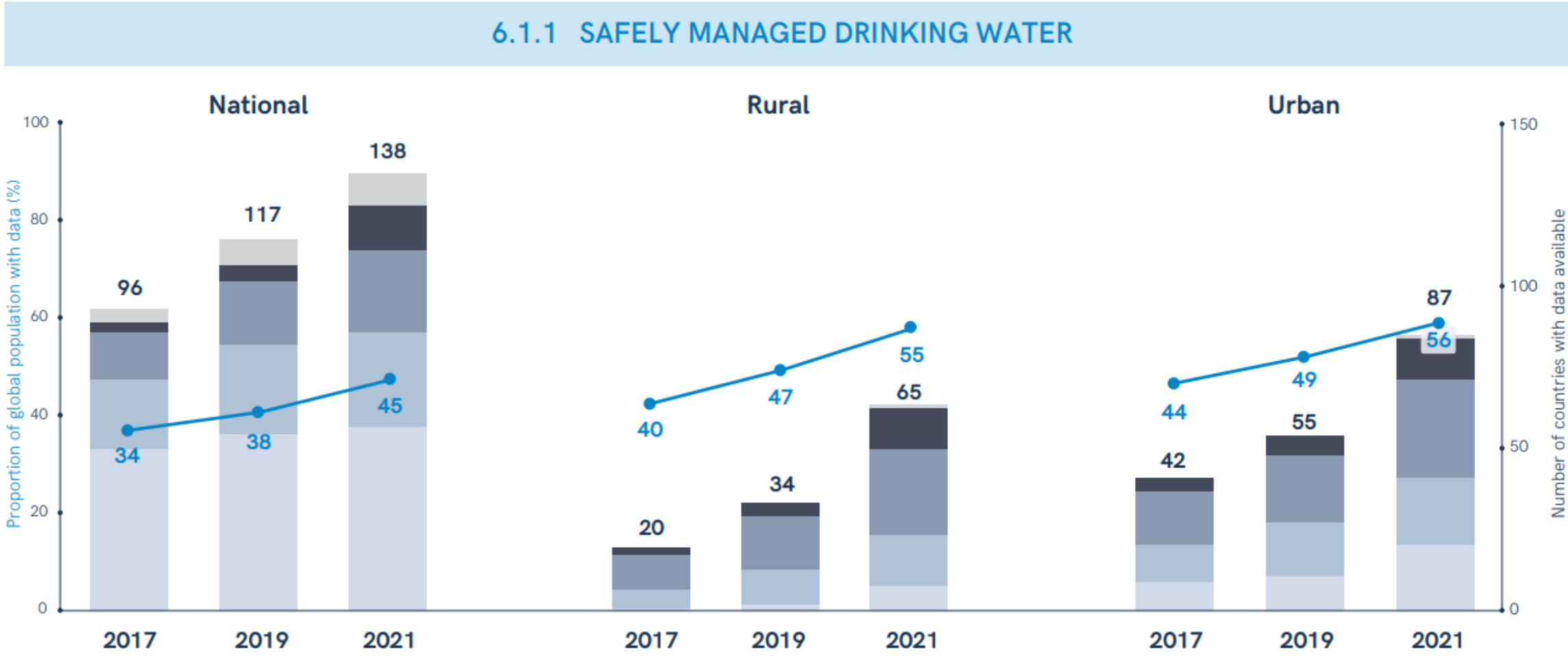
Data availability for 6.1.1 is improving but large gaps still exist



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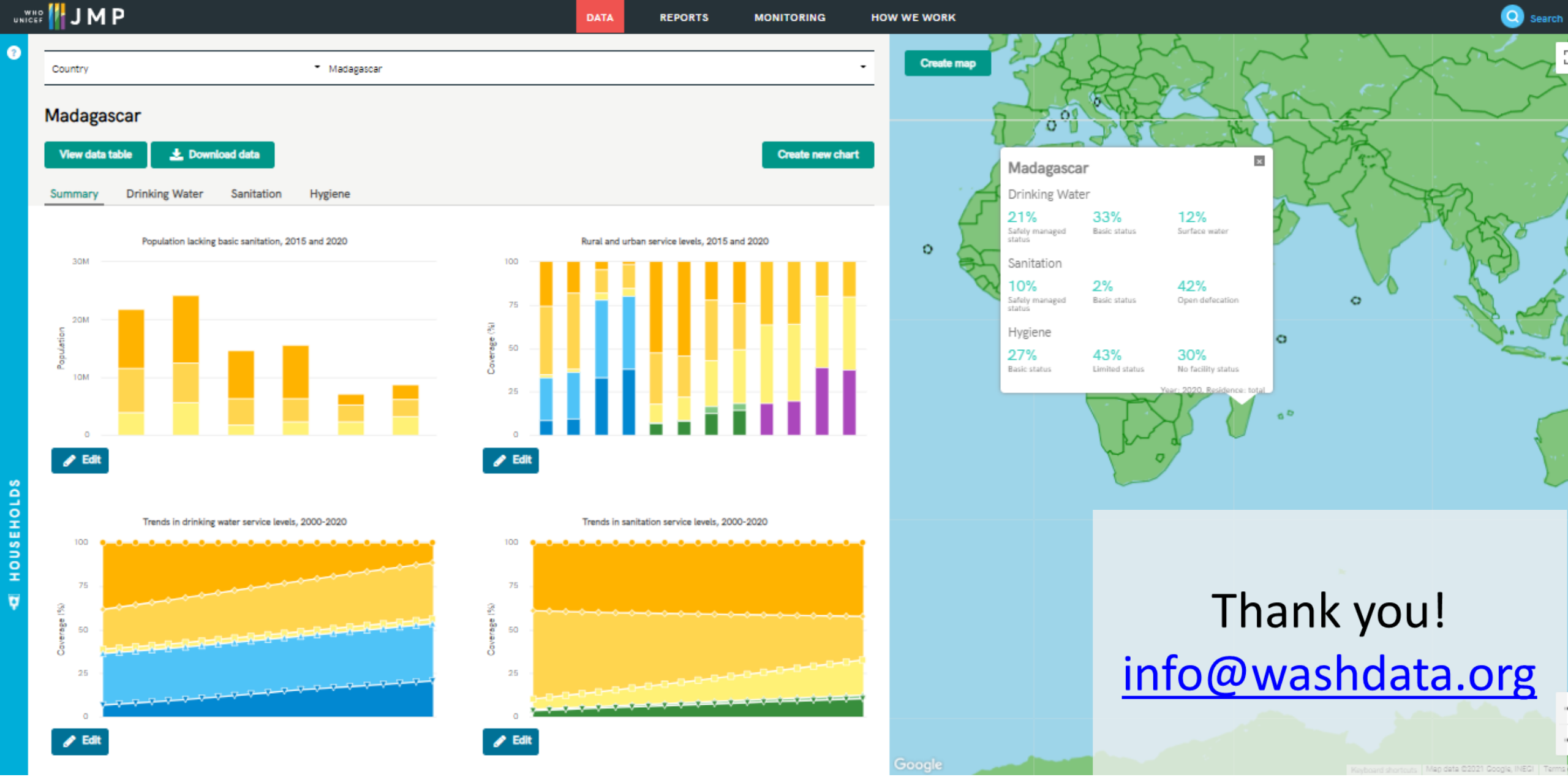
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Sanitation
Hygiene
Population lacking basic sanitation, 2015 and 2020
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30M
20M
10M
0
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Coverage (%)
100
75
50
25
0
Edit
Trends in drinking water service levels, 2000-2020
Coverage (%)
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Trends in sanitation service levels, 2000-2020
Coverage (%)
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Edit
Create map
Madagascar
Drinking Water
21%
Safely managed status
33%
Basic status
12%
Surface water
Sanitation
10%
Safely managed status
2%
Basic status
42%
Open defecation
Hygiene
27%
Basic status
43%
Limited status
30%
No facility status
Year: 2020, Residence: total
Google
Thank you!
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