

Risk-based approaches

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Protocol on Water and Health**

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Safe, safe, safe



6.1

Achieve universal and equitable access to **safe (...) drinking-water** for all

6.3

(...) substantially increasing recycling and **safe reuse** (...)

Proportion of **wastewater safely treated**



Monitoring service ladders

SDG

SAFELY MANAGED

Access to basic service located on premises available when needed
Free from microbial and priority chemical contamination

BASIC

Access to improved water source
Within 30 min. round trip collection time

LIMITED

Access to improved water source
More than 30 min. round trip collection time

UNIMPROVED

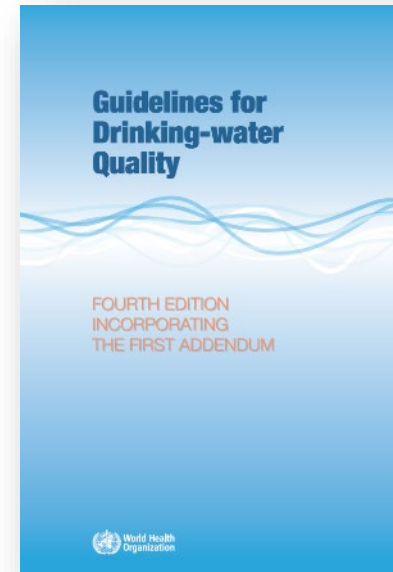
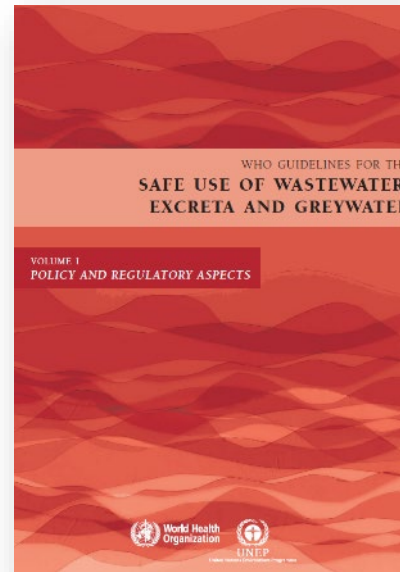
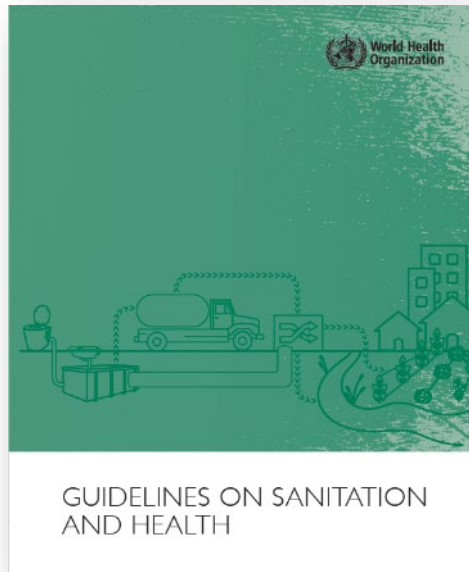
Access to unimproved water source that
does not protect against contamination

NO SERVICE

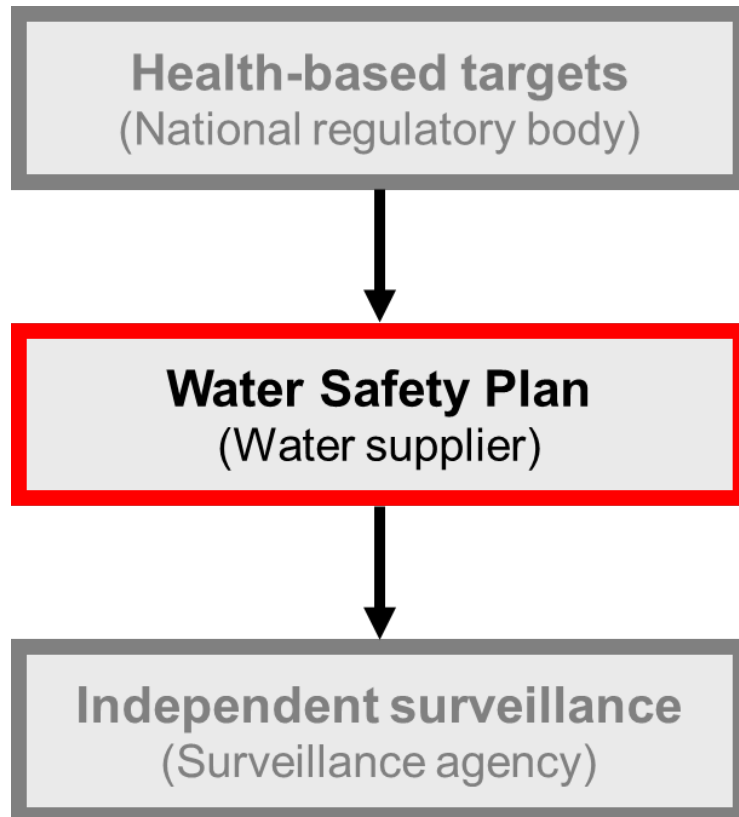
Direct use of surface water



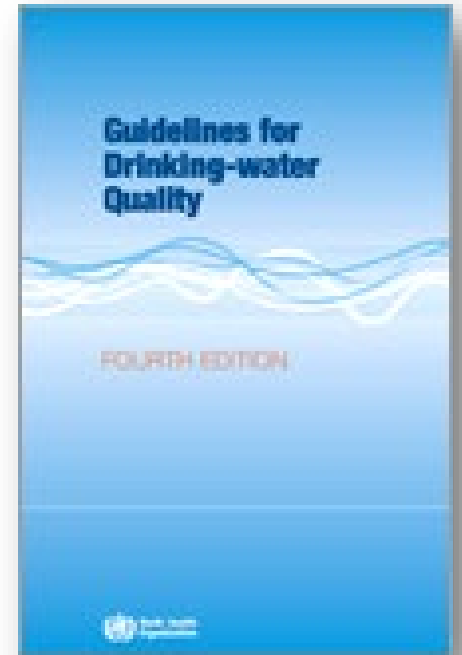
WHO guidelines use risk-based framework



Framework for safe drinking-water



“The **most effective means** of consistently ensuring the safety of a drinking-water supply is through the use of a **comprehensive risk assessment and risk management approach** that encompasses all steps in water supply from **catchment to consumer**. In these Guidelines, such approaches are called **water safety plans**.”



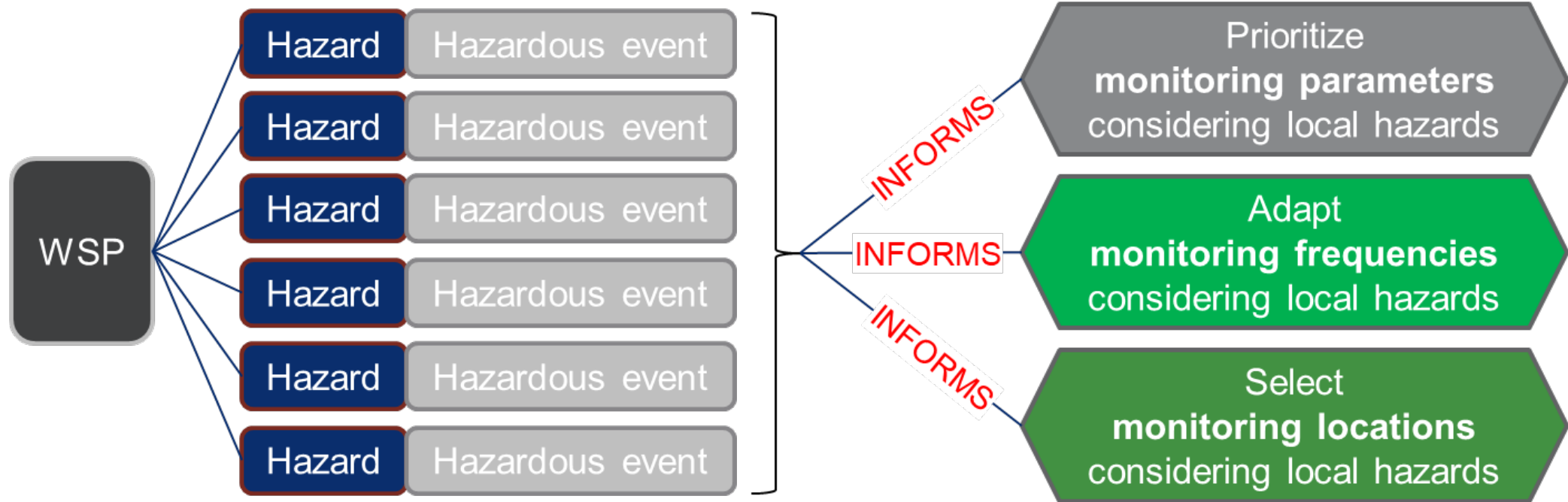
Prioritize risks to public health

RISK MATRIX		Severity				
		Insignificant (Score: 1)	Minor (Score: 2)	Moderate (Score: 4)	Major (Score: 8)	Catastrophic (Score: 16)
Likelihood	Almost certain (Score: 5)	5	10	20	40	80
	Likely (Score: 4)	4	8	16	32	64
	Foreseeable (Score: 3)	3	6	12	24	48
	Unlikely (Score: 2)	2	4	8	16	32
	Most unlikely (Score: 1)	1	2	4	8	16

Support prioritization:

- What is a risk to public health?
- Does something require management attention?
- What improvements are important?
- Where to focus monitoring?

From WSP to risk-based surveillance

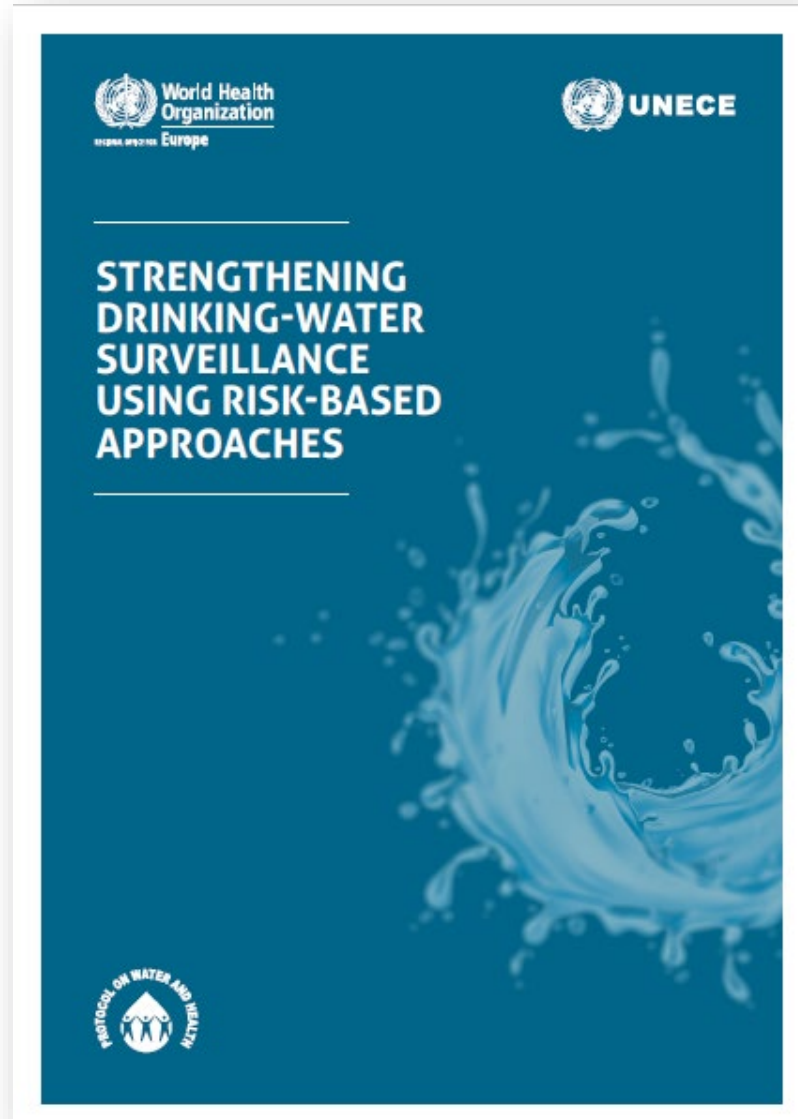


WSP RISK ASSESSMENT

RISK-BASED SURVEILLANCE



From WSP to surveillance



Overview of the key messages

Key message 1: **Surveillance is a core public health function**

Drinking-water surveillance is a fundamental activity for the continuing protection of public health through the delivery of safe drinking-water.

Key message 2: **Risk-based surveillance is a governmental responsibility**

It is a responsibility of the government to establish legal and regulatory requirements for implementation of risk-based drinking-water surveillance that adequately protects public health.

Key message 3: **Risk-based surveillance points at what needs to be looked at**

Risk-based drinking-water surveillance identifies the hazards that pose the greatest risks to the population and supports the development of appropriate and efficient monitoring programmes for individual supplies.

Key message 4: **Microbiological drinking-water quality is a key focus of risk-based surveillance**

Identifying microbiological hazards and risks before they affect public health is an essential part of risk-based surveillance.

Key message 5: **Only monitor what is necessary**

Monitoring of chemicals needs to be selective. Risk-based drinking-water surveillance directs water-quality monitoring towards the most important, relevant parameters for system performance and public health protection.

Key message 6: **Risk-based surveillance aids forward-thinking and anticipation of change**

Hazards and risks change over time. Surveillance agencies have an important supporting role in predicting, identifying and tracking long-term changes and associated risks for drinking-water supply.