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Small scale water supplies and sanitation: status quo and challenges

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Why focusing on small supplies?

- They are **many**
- **Backbone** of water supply in rural areas and small towns
- Need for **decentralised solutions** for technical, hygiene, and economic reasons
- The challenges faced by small-scale systems are a **recognized policy concern** across the European Region

Country	Rural
Armenia	37%
Azerbaijan	45%
Belarus	23%
Georgia	46%
Kazakhstan	47%
Kyrgyzstan	64%
Republic of Moldova	55%
Russian Federation	26%
Tajikistan	73%
Turkmenistan	50%
Ukraine	30%
Uzbekistan	64%

Source: WHO and UNICEF 2015

Why focusing on small supplies?

- About 264 million people or **one third live in rural areas** (2015)
- About 207 million people or **one quarter are supplied by small systems** (2011)
- About 63 million or **7% of the population** are served by **very small** non-piped water supplies (2011)

What is a “small” water supply”?

- **Size of the supply**:
  - Population served or volume of water supplied
  - Typically categorised by regulations
- **Organisational set-up**:
  - Community managed
  - Publicly or municipality managed
  - Privately owned and operated
- **Technical specification**:
  - Centralised vs. non-centralised

Why are we concerned?

Regulations

- Lack of knowledge and sense of responsibility lead to **limited policy attention**
- **Particularities** of small systems often not sufficiently addressed in national regulation
- **Insufficient regulation**

Insufficient regulation

Status quo:

- 87% have legal and regulatory requirements for **small public supplies**
- 26% have legal requirements for both **small public and individual supplies**
- 44% have **no requirements** for small supplies <50 persons
- 13% have no requirements for **individual small supplies**

Why are we concerned?

Surveillance

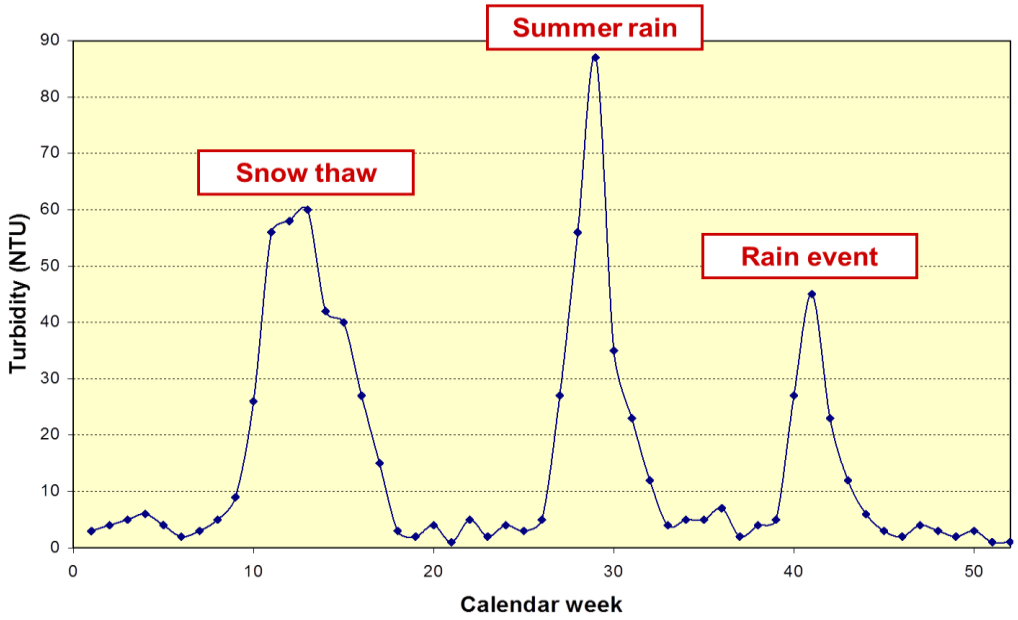
- Limited **disease surveillance** in small communities:
  - Largely under-reported
  - Ad-hoc versus systematic

- Ensuring ongoing **surveillance of water quality** and **reporting** is a challenge
  - *De jure*: regulatory requirements for surveillance of small-scale systems are not established
  - *De facto*: regulatory requirements are in place but not or poorly enforced due to lack of human, lab, financial and/or logistic resources

Lack of surveillance

Irregular testing

- May miss critical events and does not provide valid surveillance findings (seasons)
- Fail to identify shortcomings and inform improvement



Why are we concerned?

Lack of reporting

- **Reporting** on drinking-water quality for small-scale systems:
  - Required for 78%
  - Not obligatory for 22%
- Reporting does not always reach national level:
  data sit at local level
- **Poor overview** picture available in many countries

Why are we concerned?

Limited personnel and financial resources

- Involvement of untrained or undertrained and part-time **staff** leading to inaccurate **perception** of water-related health risks
- Lack of access to **support networks and materials** due to geographical spread and remoteness

- Small systems have **relatively higher costs** for maintenance and operation per consumer
- **Lack of sustainable financial resources** to maintain, repair or upgrade system infrastructure

Why are we concerned?

Risk factors

- Small systems are more prone to anticipated **effects of climate change** (e.g. extreme weather events)

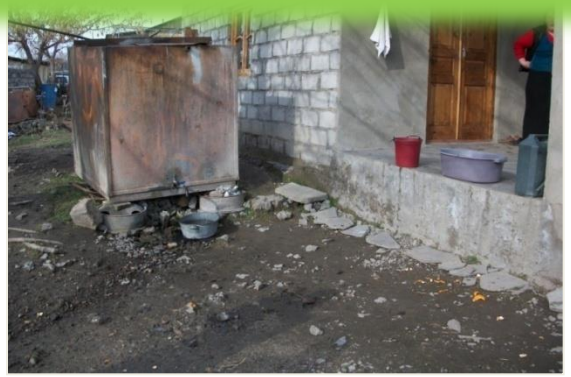
- **Inadequate local practices** often pose a risk to public health

Critical pollution risk factors

- Inadequate **local sanitation** practices

Generally **lower compliance** in smaller systems

- High vulnerability to **heavy rainfall** and **thaw**



Common consequences

- Poor management and operation
- Infrastructure breakdown
- Unsafe and non-sustainable services
- Poor compliance
- Increased health risks

Poor compliance (examples)

- **Small systems in rural Georgia (2011):**
  - Compliance rates at 30-40% for faecal indicators
- **Private supplies in Scotland (2011):**
  - Supplies serving <50 people: 22% non-compliance rate for *E. coli*
  - Supplies serving >500 people: 1% non-compliance rate for *E. coli*
- **Small public supplies in European Union (2008-2010):**
  - Large systems: compliance average 99% in 23 countries
  - Small systems: compliance average 99% in 4 countries

Is it worth to improve?

- Positive **benefit-cost ratio** for reduction of acute diarrhoeal illness:

INVESTMENT:

- Costs of legislation
- Technical interventions

BENEFITS:

- Direct cost of illness (e.g. health care)
- Indirect cost of illness (e.g. loss of work and schooling)

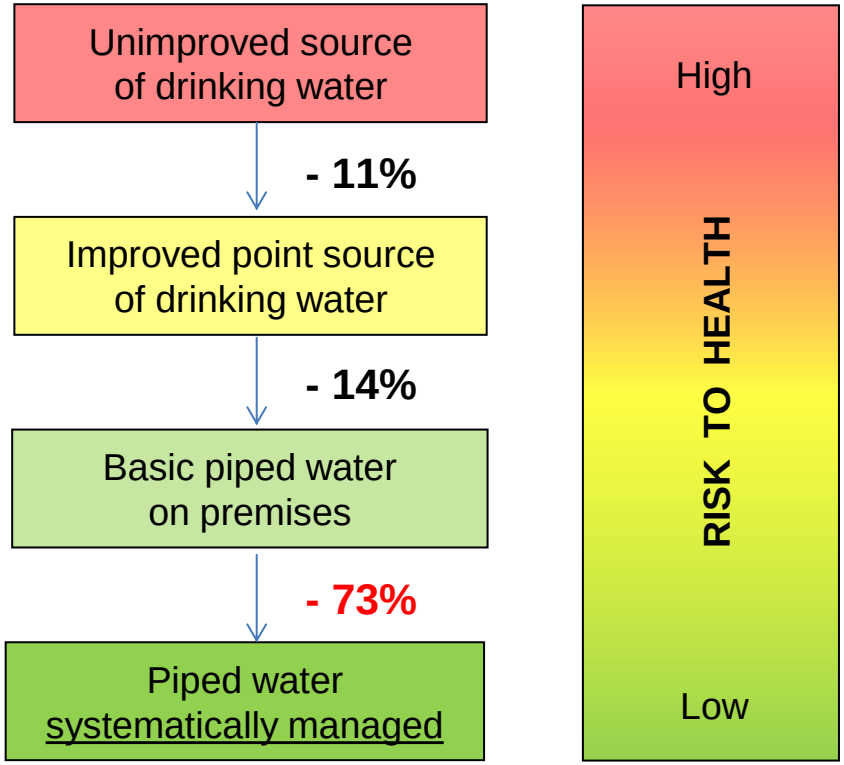
Subregion	**Benefit-cost-ratio** (mean value)
Eur-A	3
Eur-B	21
Eur-C	4

Source: Hunter et al 2012

Health gains from WSPs

Supply transitions and associated reduction in diarrhoea risk

- Evidence on **health gains**
- Evidence from **Iceland**:
  - Significant decrease in diarrhea incidence
  - Population under WSP is 14% less likely to develop clinical cases of diarrhea



Other benefits

- Building **healthy and resilient communities:**
  - Sustainable livelihoods
  - Reduction of poverty
  - Economic development
  - Gender equality

Increased policy recognition in Europe

- **Unites** all countries across region
- Recognised by **European Commission** in the 7th Environmental Action Programme
- **Priority area** for target setting under the Protocol
- **Explicit targets** in various countries

Thank you