



Small-scale water supply and sanitation

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**World Health
Organization**

REGIONAL OFFICE FOR
Europe



**Organisation
mondiale de la Santé**

BUREAU RÉGIONAL DE L'
Europe



Weltgesundheitsorganisation

REGIONALBÜRO FÜR
Europa



**Всемирная организация
здравоохранения**

Европейское региональное бюро

Why focusing on small supplies?

- They are **many**
- **Backbone** of water supply in rural areas and small towns:
 - One quarter of the pan-European population is supplied by small systems
- Need for **decentralised solutions** for technical, hygiene, and economic reasons

| Country | Rural |
|------------------------|-------|
| Albania | 46 |
| Bosnia and Herzegovina | 51 |
| Bulgaria | 26 |
| Croatia | 42 |
| Hungary | 30 |
| Montenegro | 37 |
| Romania | 47 |
| Serbia | 43 |
| TFYR Macedonia | 41 |

Source: WHO and UNICEF 2012

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



Common features and challenges

- **Not regulated** or differently regulated
- Limited technical, personal and financial **resources**
- Relatively higher **per unit costs**
- Involvement of untrained and part-time **staff**
- Lack of sense of **responsibility**
- Inaccurate **perception** of water-related health risks
- Lack of access to **support networks**

Critical pollution risk issues

- Inadequate **local sanitation** practices
- Poor **manure** management
- Poor **sanitary protection**
- Aged **infrastructures**
- High vulnerability to **heavy rainfall**



Probability rate of microbiological failure

| | | |
|---|---------------|-----|
| Type of source | Groundwater | 1.0 |
| | Surface water | 2.4 |
| | Spring | 2.3 |
| Treatment | Treatment | 1.0 |
| | No treatment | 1.8 |
| Rain on day prior to sample (mm) | 0 | 1.0 |
| | 1-9 | 1.3 |
| | 10-99 | 1.4 |
| | 100-999 | 1.7 |
| | 1000-9999 | 2.1 |

Source: Hunter et al 2008

Surveillance in small communities

- Generally **lower compliance** in smaller systems
- Limited routine **water quality surveillance**:
 - Coverage of many systems in widespread areas
 - Limited manpower to advise, inspect and control
 - Limited lab capacities in rural areas
 - Poor enforcement
 - One sample per year at best

Is it worth to improve?

- Positive **benefit-cost ratio** for reduction of acute diarrhoeal illness likely to be prevented:
 - Costs of legislation
 - Investment in improvement interventions
 - 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 | 2.5 |
| Eur-B | 21.3 |
| Eur-C | 3.9 |

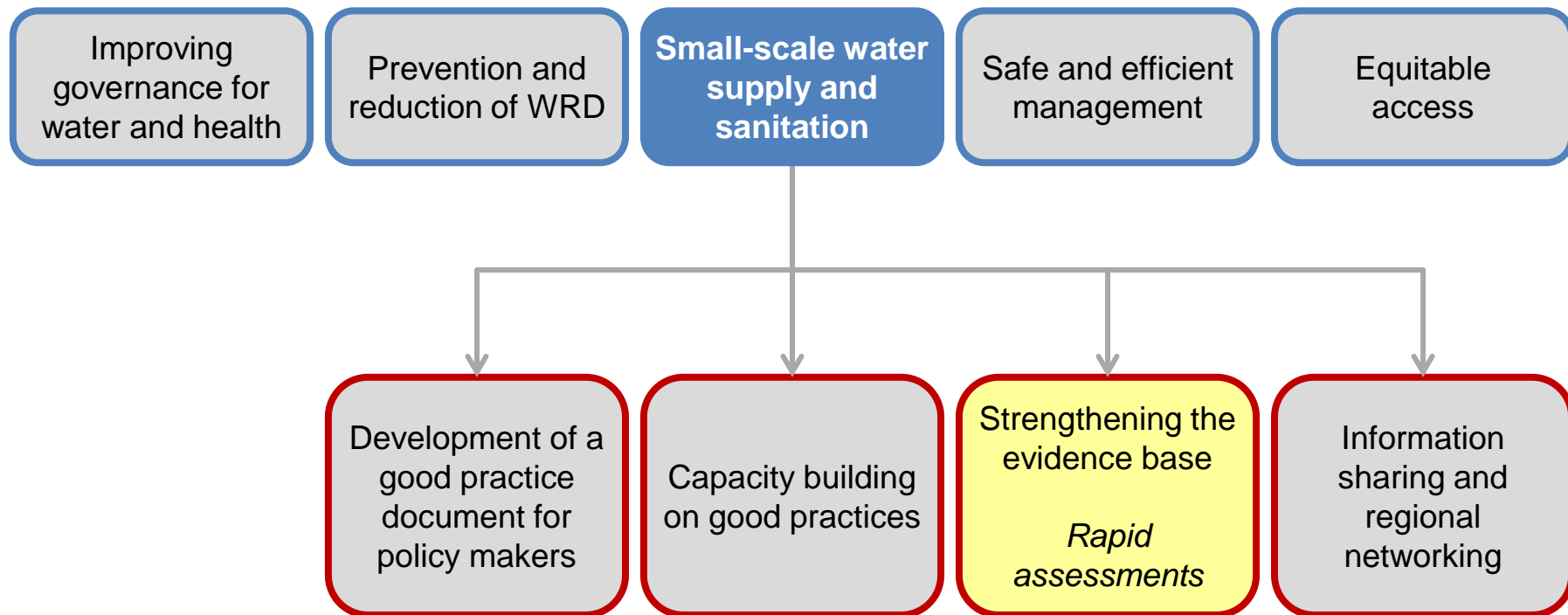
Source: Hunter et al 2012

Increased policy recognition in Europe

- **Unites** all countries across region
- Explicit **programmes** and regulations in various countries
- Recognised by **European Commission** in the 7th Environmental Action Programme:
 - Systematic data collection exercises
- Thematic priority area under the **Protocol on Water and Health**: co-lead by **Serbia** and Germany

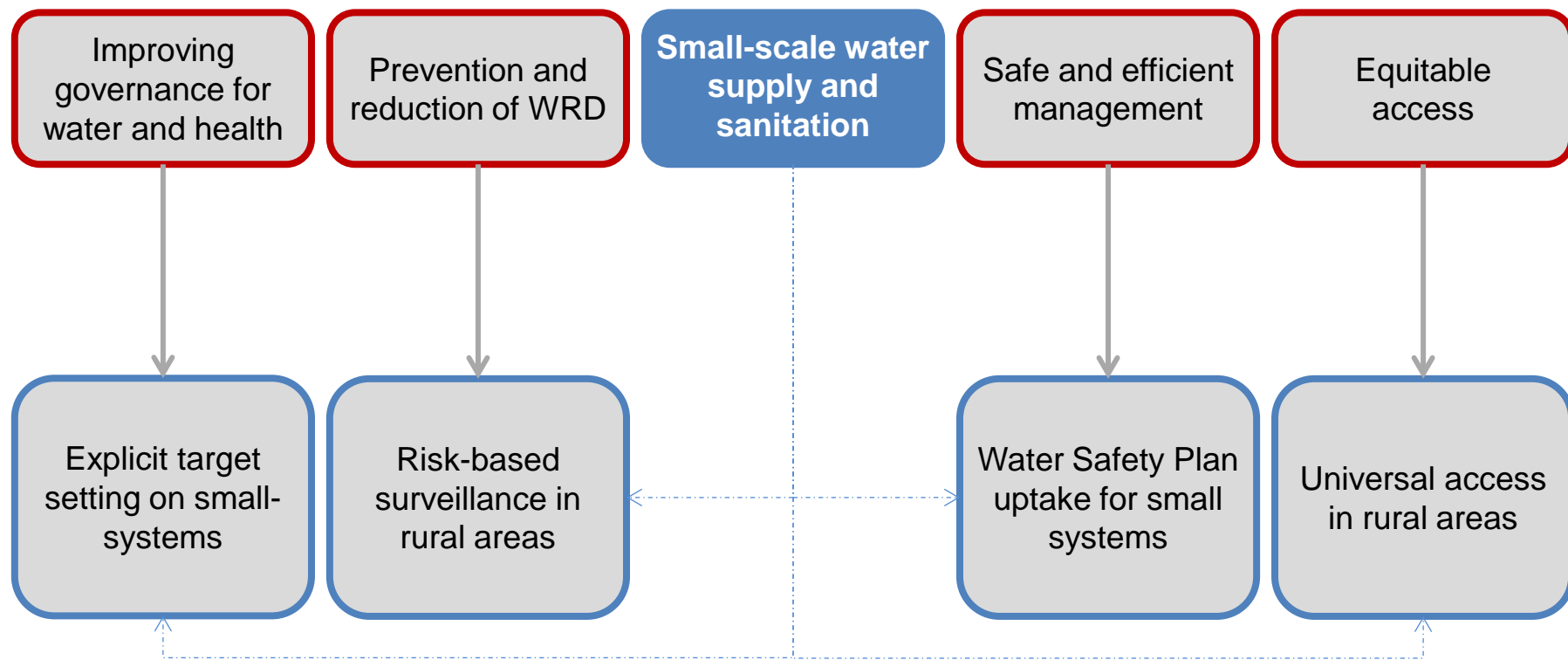
Protocol on Water and Health

The Oslo 2014-2016 programme of work



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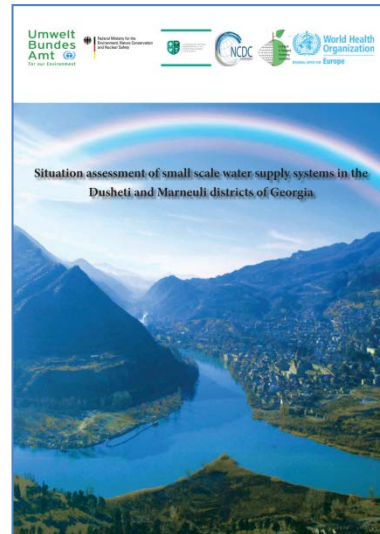


Improving the evidence base

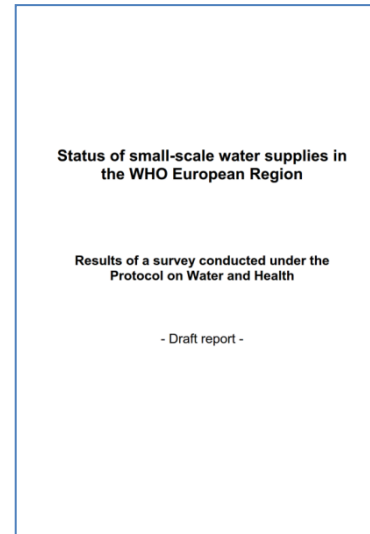
**Non-systematic
initial overview
(2011)**



**In-country rapid
assessment study
(GEO 2013)**



**Systematic
questionnaire survey
(2014)**



**Country consultations
and assessments
(2014-2016)**



Consultation aspects

- Review the evidence base on the situation of small-scale water supplies and sanitation
- Identify knowledge/data gaps that hinder a comprehensive assessment of the situation and potential health risks
- Review of regulatory requirements and institutional responsibilities related surveillance
- Review of specific challenges
- Review of existing and/or planned policies, programs and/or initiatives aiming at improving the situation

Thank you
Хвала



Source: Rod Shaw