WatSan situation in rural area in Macedonia

Natasha Dokovska,
JHR

14 December 2016
WSSP conference in Timisoara, Romania

Supported by:

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Building Partnerships for a ENVIRONMENTAL PROTECTION made in Germany Sustainable Infrastructure

based on a decision of the German Bundestag

Scope

- Review the evidence base on the **situation of small-scale water supplies and sanitation** in the Republic of Macedonia and the **regulatory requirements** and **institutional responsibilities** related to ***public health*** and ***drinking water quality surveillance***, specifically for small-scale systems
- **Specific challenges** related to small-scale water supplies and sanitation, as well as the capacity of the government to address these

Why focusing on small supplies?

- They are **many**
- **Backbone** of water supply in rural areas and small towns:
  - One third of the European population lives in rural areas
  - 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
BiH	51
Bulgaria	26
Croatia	42
Hungary	30
Montenegro	37
Romania	47
Serbia	43
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**

Surveillance in small communities

- **Disease surveillance** in small communities:
  - Largely under-reported
  - Ad-hoc, response-based vs. systematic

- 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

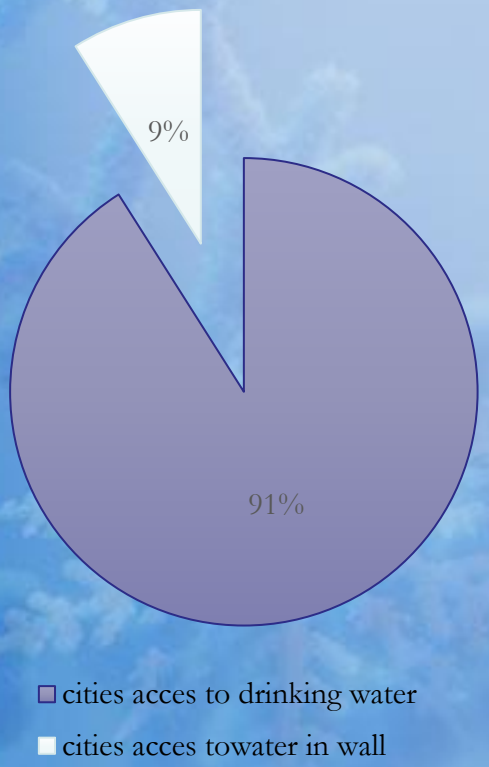
Critical pollution risk issues

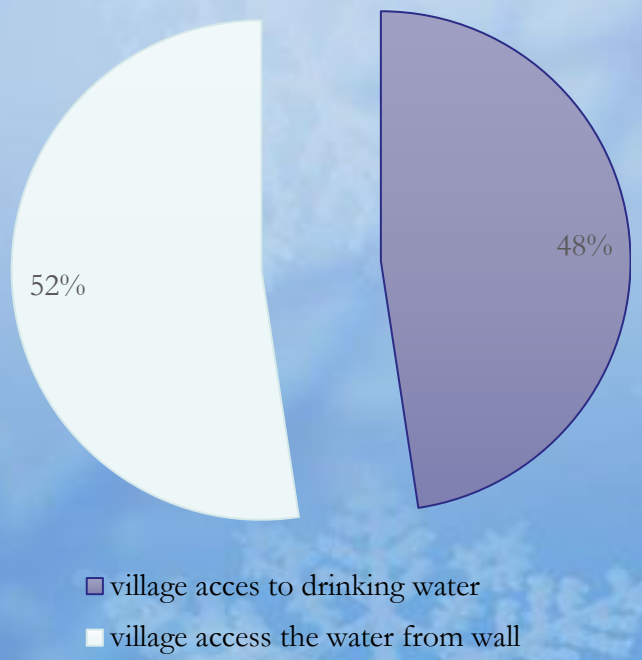
- Inadequate **local sanitation** practices
- Poor **manure** management
- Poor **sanitary protection**
- Aged or disrupted **infrastructures**
- High vulnerability to **heavy rainfall** and **thaw**
- Generally **lower compliance** in smaller systems

Access to safe drinking water

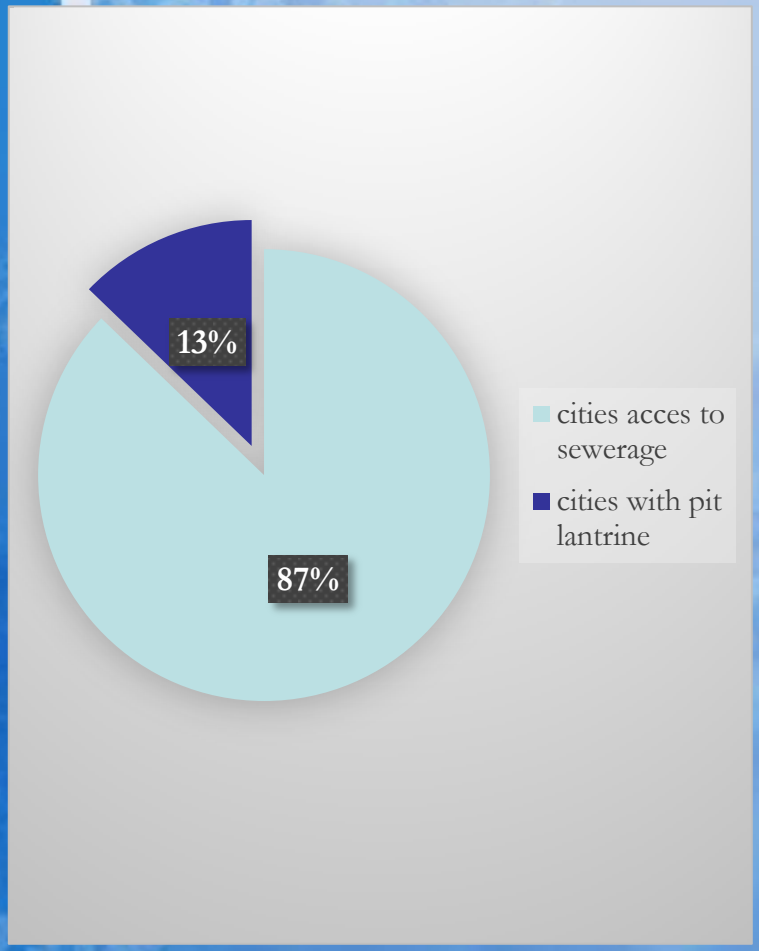
- 1,546,653 inhabitants or **73.49%** of the total population in the Republic of Macedonia (total population being estimated at 2,076,316 inhabitants) are connected to ***urban water supply systems***.
- **Central water supply from own water intakes** is provided for about 455,235 **rural inhabitants** - **22.57%** of total population or about 59.43% of the total rural population (total rural population is estimated at about 765,911 inhabitants).
- About **74,428 rural inhabitants or about 3.58%** of the total inhabitants or 9.71% of the total rural population (rural population is estimated at about 765,911) are supplied by ***local water supply facilities*** (***source of information - IPH Report for 2015***).

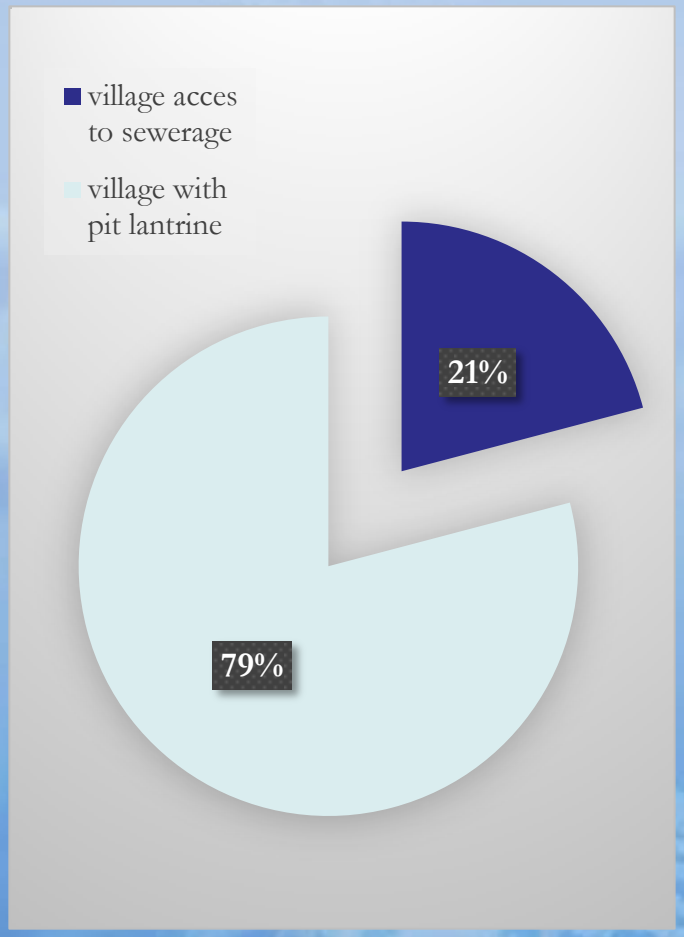
General results :
Macedonians drink safe water and have access to sanitation





General results :
Macedonians drink safe water and have access to sanitation





Sewerage network

- The **sewerage network covers 65%** of the population, however only **12.5%** is served by the ***waste water treatment***.
- The technical status of the infrastructure is in an unsatisfactory condition. The lack of regular maintenance and repair has resulted in a ***sewerage network with numerous breakdowns and leakages***.
- Several of the existing waste water treatment plants (**WWTPs**) are ***not in compliance*** with the effluent parameters as governed by the EC legislation (Urban Wastewater Treatment Directive 91/217/EEC), resulting in ***discharging insufficiently treated wastewater to the recipients***. The cost effectiveness of operations is low and needs to be substantially improved.

Wastewater treatment

- Most urban areas **do not have** any **wastewater treatment facilities**. Sewage water is discharged directly to the recipients without any treatment and it pollutes rivers.
- ***The quality of rivers is insufficient***, due to their permanent pollution by households and industrial wastewater.
- Taking into consideration all the existing treatment plants, in operation or close to commissioning, the ***total rate of the population served by wastewater treatment would be approximately 12.5% of the total population***.

Sewerage network

- With regard to the extent of the **constructed sewerage network and waste water treatment facilities**, the **country lags behind** in comparison with the **water-supply infrastructure**.
- At national level, the **sewerage network** comprises ***1,239.1 km of pipelines***. From the total number of 697,529 dwellings (Census 2002), **65%** are connected to a **public sewerage system**, whereas **21%** of the dwellings have **septic tanks** and another **12% only have a system of uncontrolled waste water discharge**.
- Generally, the existing sewerage systems in major urban areas are designed as a **single system** collecting and conveying both wastewater and precipitation water.
- There are only **12 Municipalities having separate sewerage systems**.

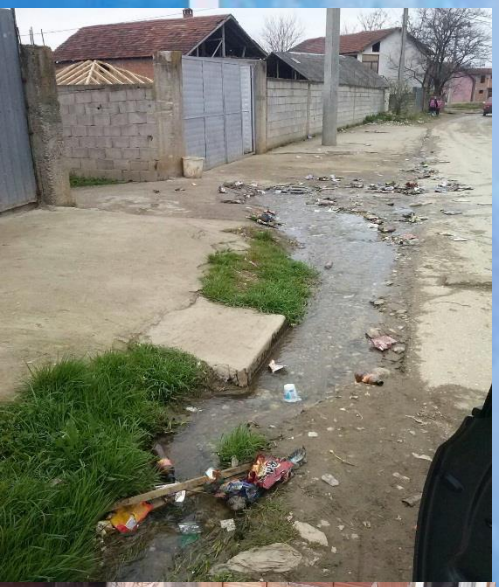
Wastewater treatment

- In some cases, **inappropriate management** led to the **interrupting of the WWTP operation**, due to ***high operation costs and lack of revenues for cost recovery***.

Wastewater treatment

- There are indicatively **65 agglomerations** falling within the scope of the Wastewater treatment directive 91/217/EEC.
- Thereof, **4 agglomerations are above 100,000** PE, **25 agglomerations with PE 15,000 to 100,000**, **7 agglomerations of 10,000 – 15,000 PE and 29 agglomeration of 2,000-10,000 PE**.

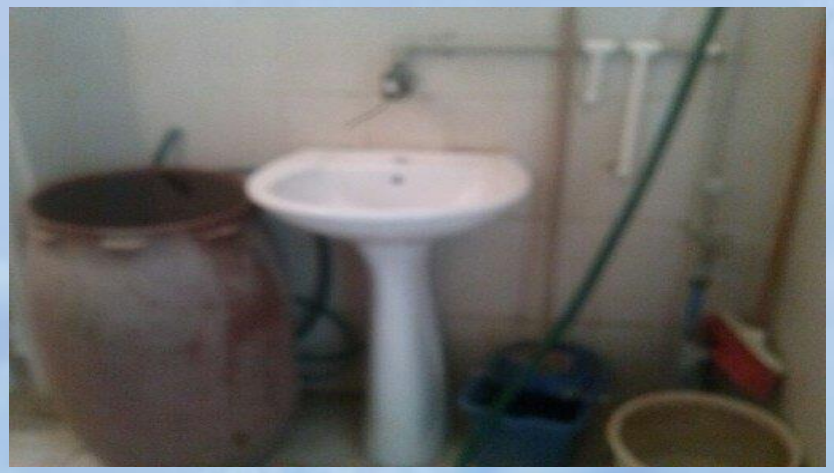
Arachinovo, 11,000 inhabitants



Street overview near to primary school „Gerg Kastrioti Skendebey“ (I to IV class) with waste water

- In Arachinovo there are 3,000 households;
- 3,000 septic tanks, that are not properly constructed;
- In the village there is partially sewerage network;
- There is a canal throughout the village with discharge of waste water from 1,000 households.

v.Orlanci, 150 households with 950 inhabitants



Toilet in PS „Gerg Kastrioti Skendebey“ v.*Orlanci (pipe through the window for fulfilling plastic barrels with water for school and toilet hygiene)*

75 households are connected to the local small-scale sewerage and 75 have septic tanks, improperly constructed. Waste water from households is flowing to the open canal that is passing near to the village to road Skopje-Kumanovo and is discharging to nearby agricultural fields.

v.Grushino, 150 households, 1,050 inhabitants

- **80 households use septic tanks** that are not properly constructed.
- **70 households are connected to local small-scale sewerage** constructed by the villagers.
- **Waste water *is discharging into the creek*** flowing nearby the well „Druni“ which water is used as a DW.
- **Creek's water** later on flow trough the village and are **discharging to nearby agricultural fields** of v.Buchinci.

Thank you