

Beyond Utility Reach – How to Close the Urban-Rural Access Gap

A Review of Rural Water and Sanitation Services in Seven Countries of the Danube region

Moldova Country Findings and Regional Lessons

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Status and Future Directions - Chisinau, March 23, 2018



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Water

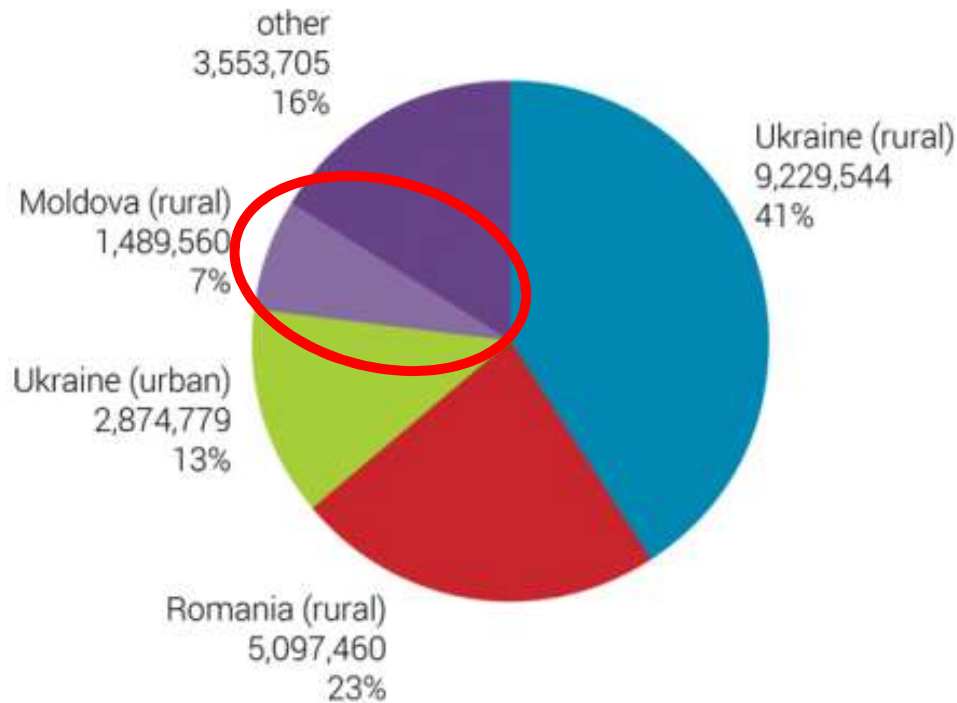
ApaSan

Proiectul Elveției de Apă
și Sanitație în Moldova

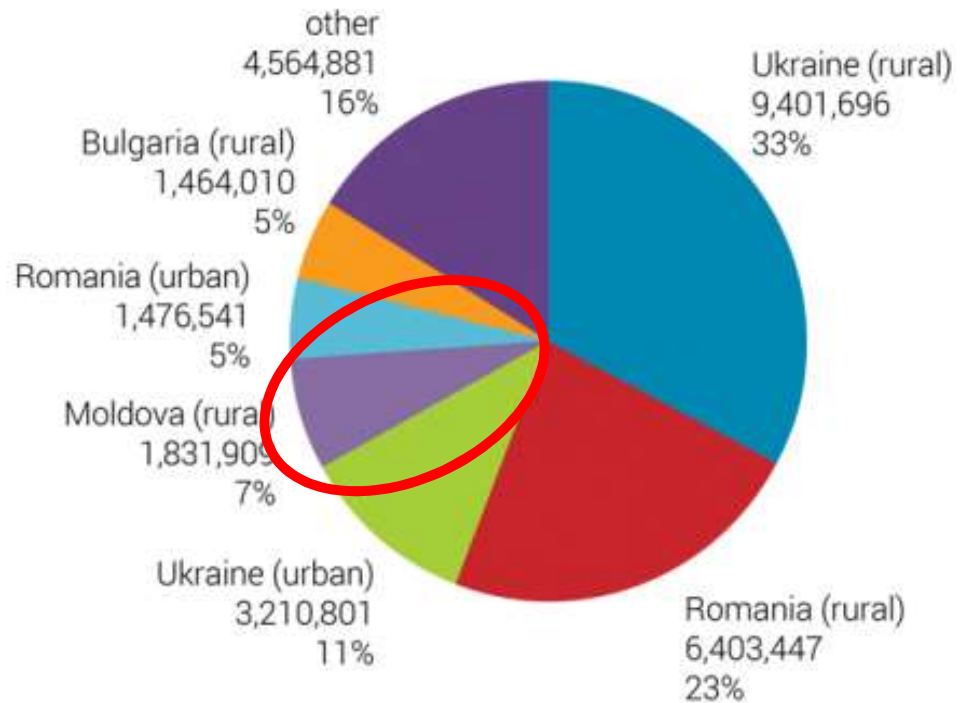
Ukraine, Romania, Moldova are the largest contributors to people without piped water in countries of the Danube Region

Out of all the population in the 16 Danube countries

22.5 million
Without piped water



28 million
Without flush toilets



Given large rural-urban access gaps Regional Review was launched to address knowledge gaps

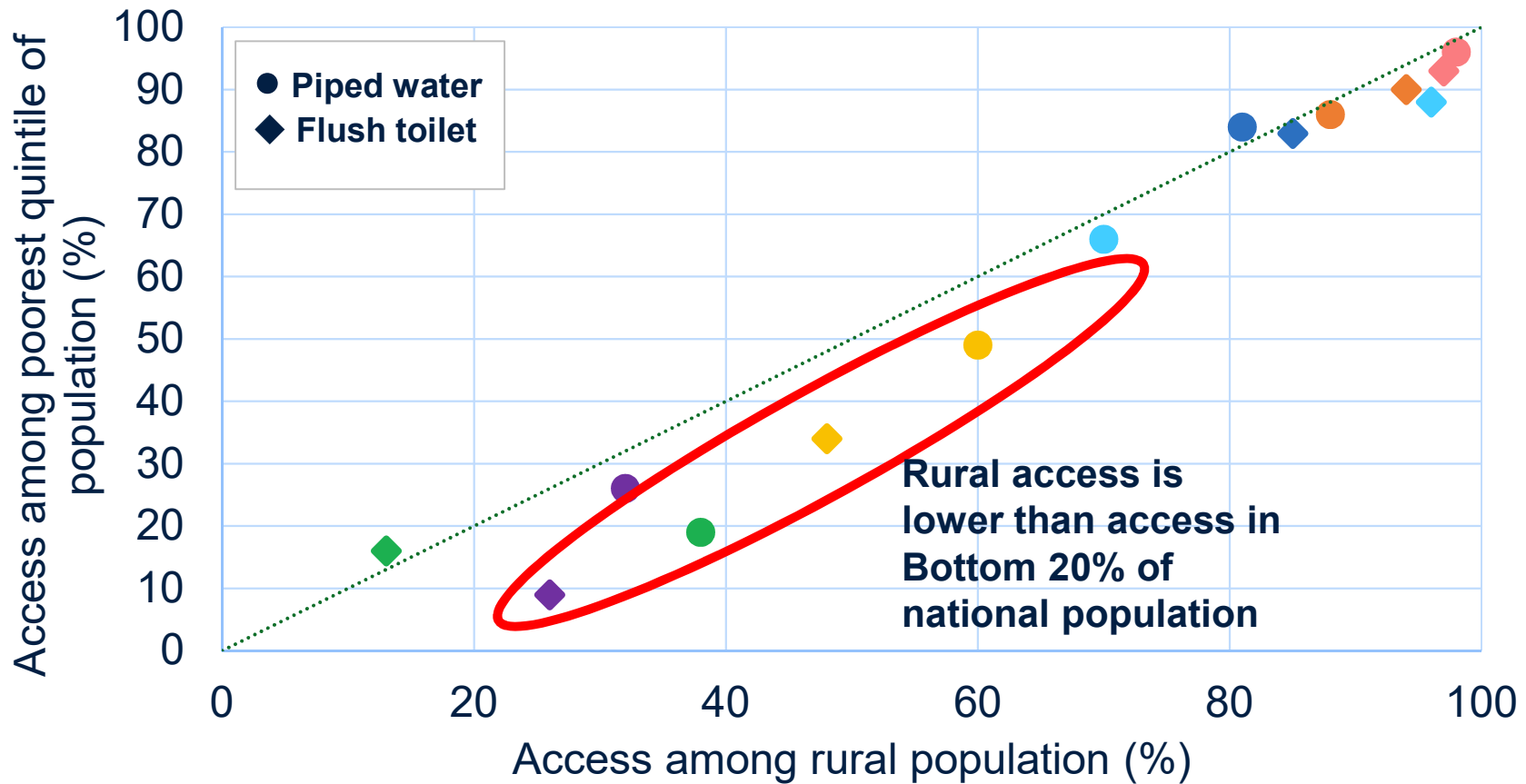
Aims

- Increase **awareness and knowledge** on how rural service provision is organized and to what extent rural populations are reached
- Understand how and to what extent **regionalisation** of utility service provision has been able to reach rural households
- Present **lessons and recommendations** on how to expand and/or improve the provision of services for rural populations.

Seven countries included in the Regional Review on Rural Water and Sanitation Services



Access gaps are mostly explained by rural locality, overlapping with poorest income groups



● Albania ● BiH ● Croatia ● Kosovo ● Moldova ● Romania ● Ukraine

Countries are in different stages of reform and have chosen different pathways to address rural services

Moldova, Romania, Ukraine: large rural access gaps

- Large number of local service providers, although in Romania Regional Utilities serve rural areas to some extent

Croatia: largely closed the rural-urban access gap

- Aggregation of multi-city utilities, although further consolidation stalled

Kosovo: reform addressing urban-rural access gaps

- Regional Water Companies are integrating stand-alone rural systems and expanding services

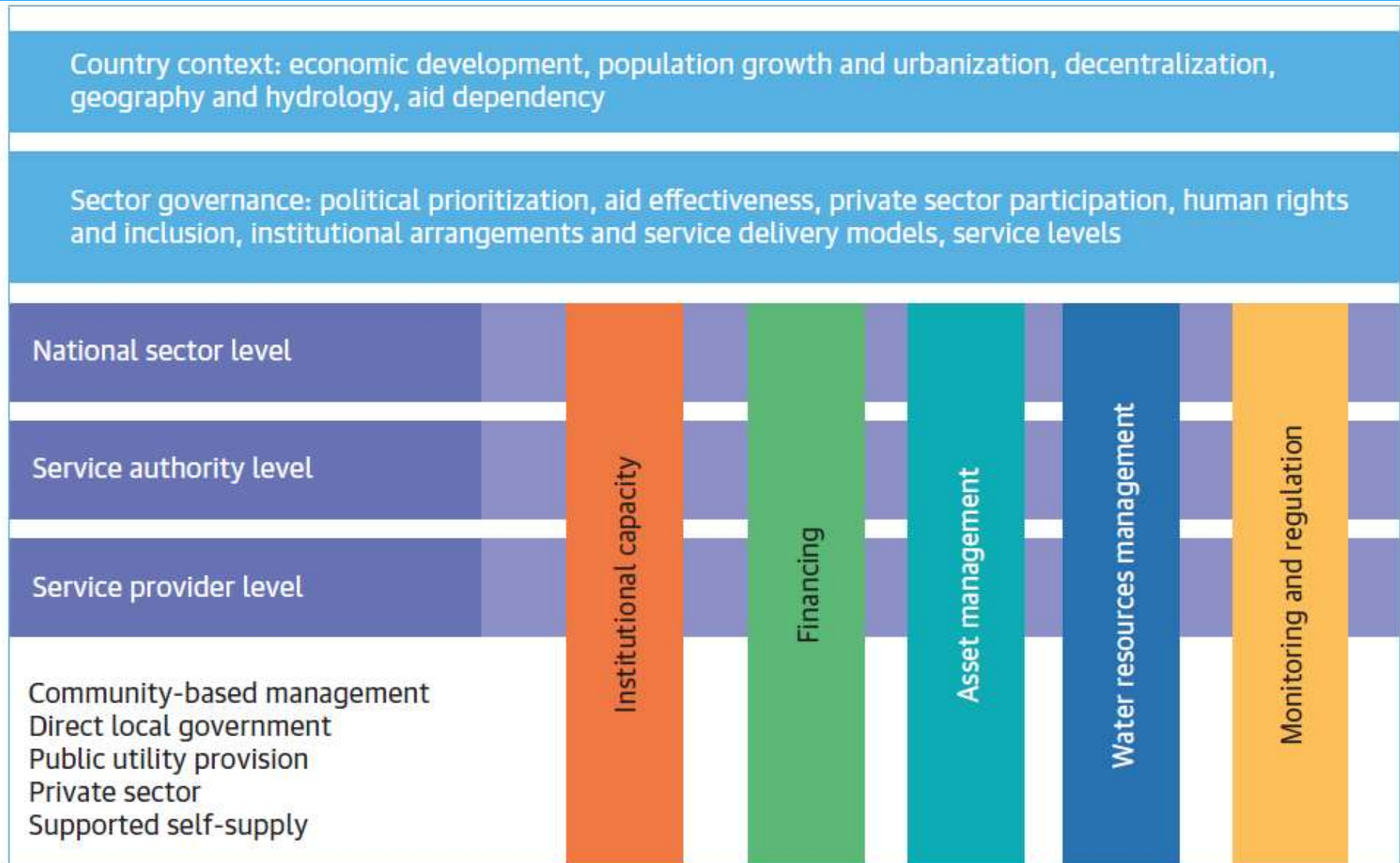
Albania: significant access gap remains and sector in transition

- Territorial reform basis for recent sector reform with municipal utilities expanding to non-served areas and integrating local systems under their management

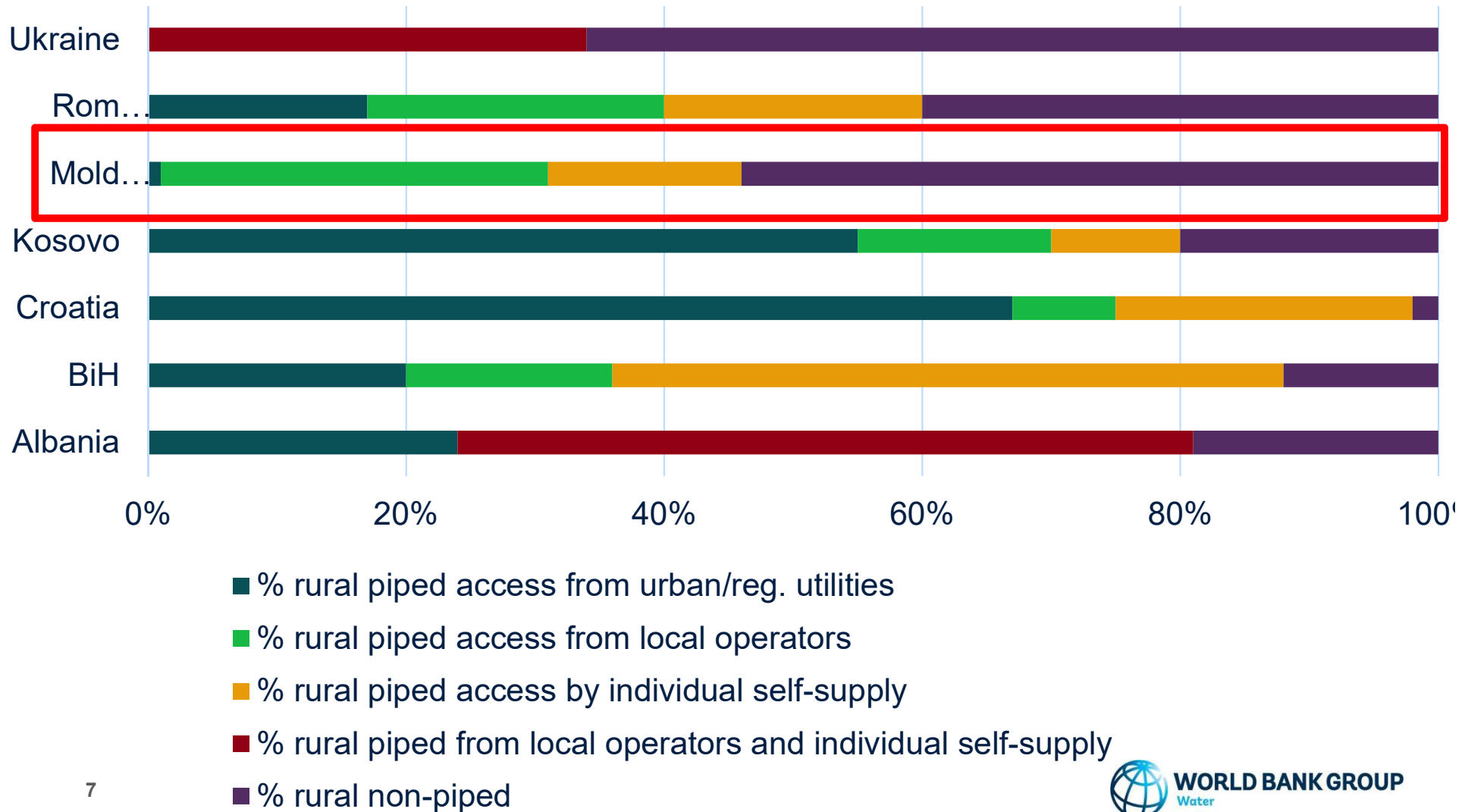
Bosnia and Hercegovina: high piped access with self-investment

- No sector reform and a range of local service providers in addition to municipal utilities

Guiding framework recognizes the importance of enabling environment and multiple institutional levels



Moldova's *rural* water services characterized by low access, reliance on local operators and piped self-supply



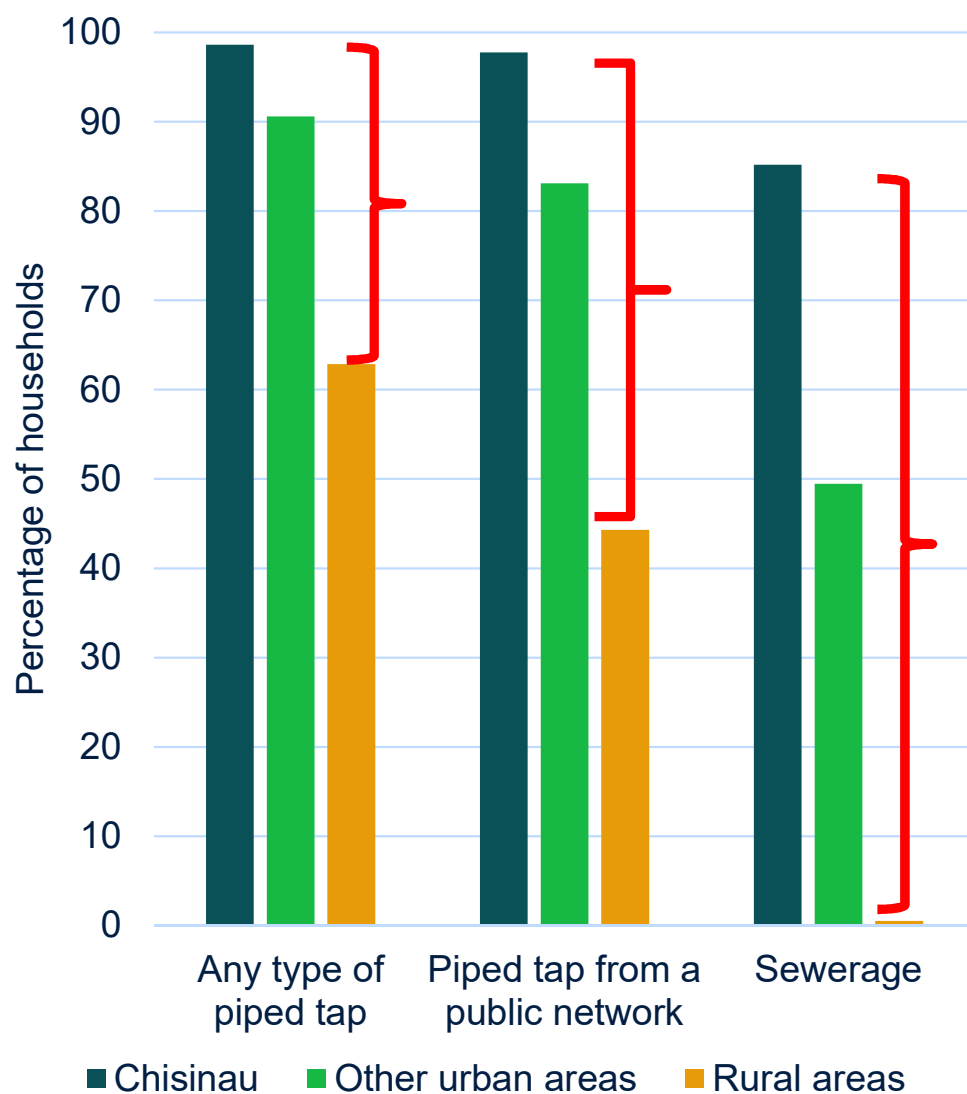
Overview

- Moldova context
- Understanding self supply
- Service levels and customer perception
- Capacities and finance for service provision
- Sanitation - the forgotten agenda
- Key messages, Lessons, recommendation

Moldova Context

- Access and Inequalities
- Rural Management Models

Moldova's water and sanitation sector remains centered on urban areas - resulting in rural access gaps



In 2015, 45% of rural Moldovans had access to a piped connection from a public network, of which 30% in the home, 15% in the yard

High reliance on piped self supply (18%) mostly through wells (15% piped into dwelling, 3% piped into yard)

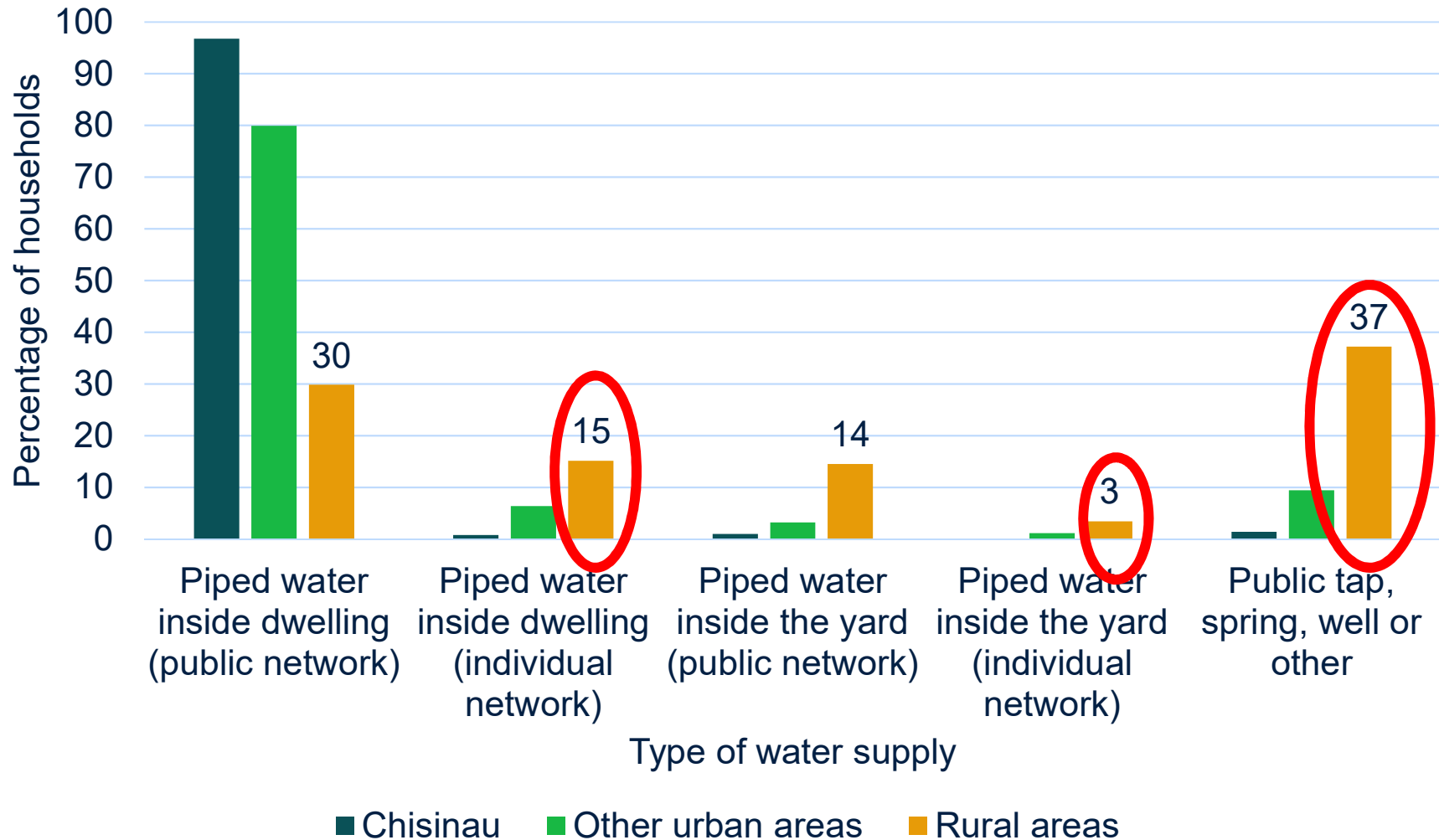
37% non-piped self-supply through fetching from well, public tap, or spring

Rural piped public water access increased with 4% annually (2005-15)

80% of urban households have a flush toilet while in rural areas only 13% have access

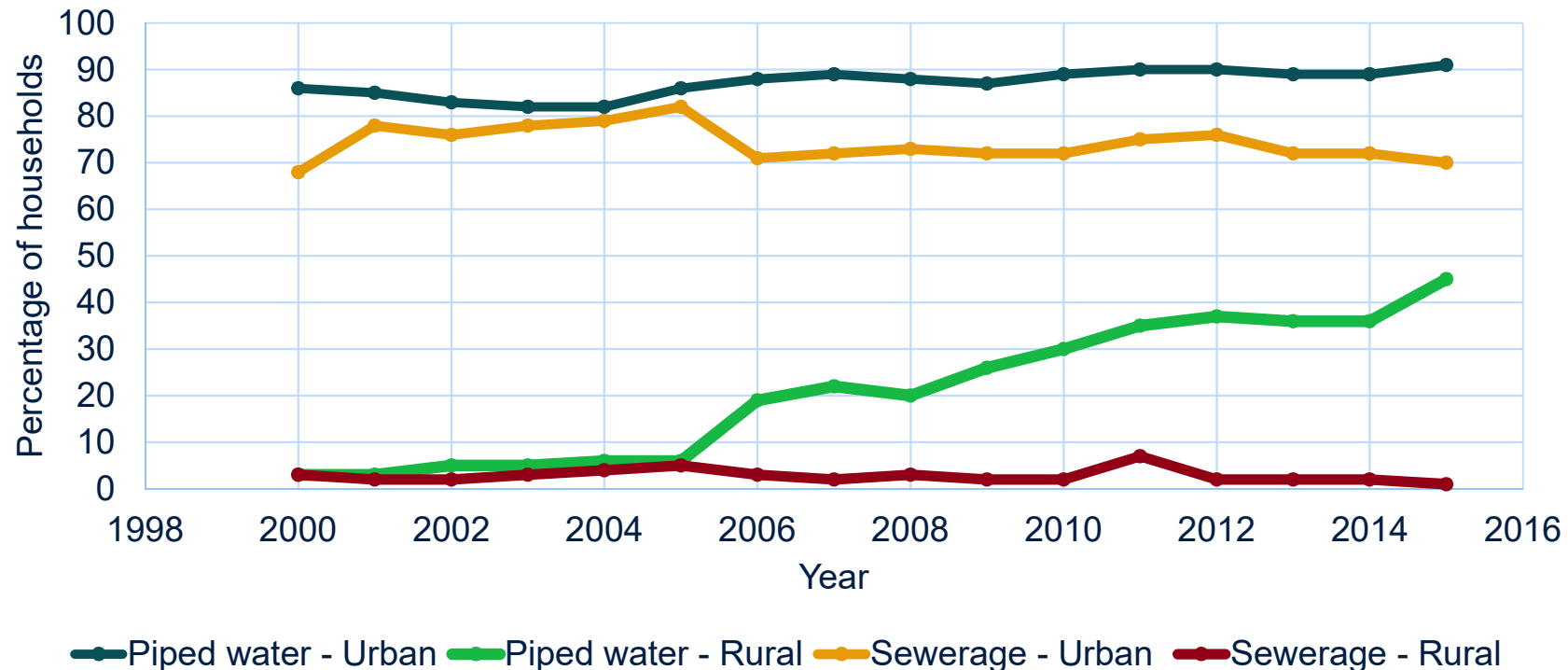
Less than 1% were connected to public sewerage

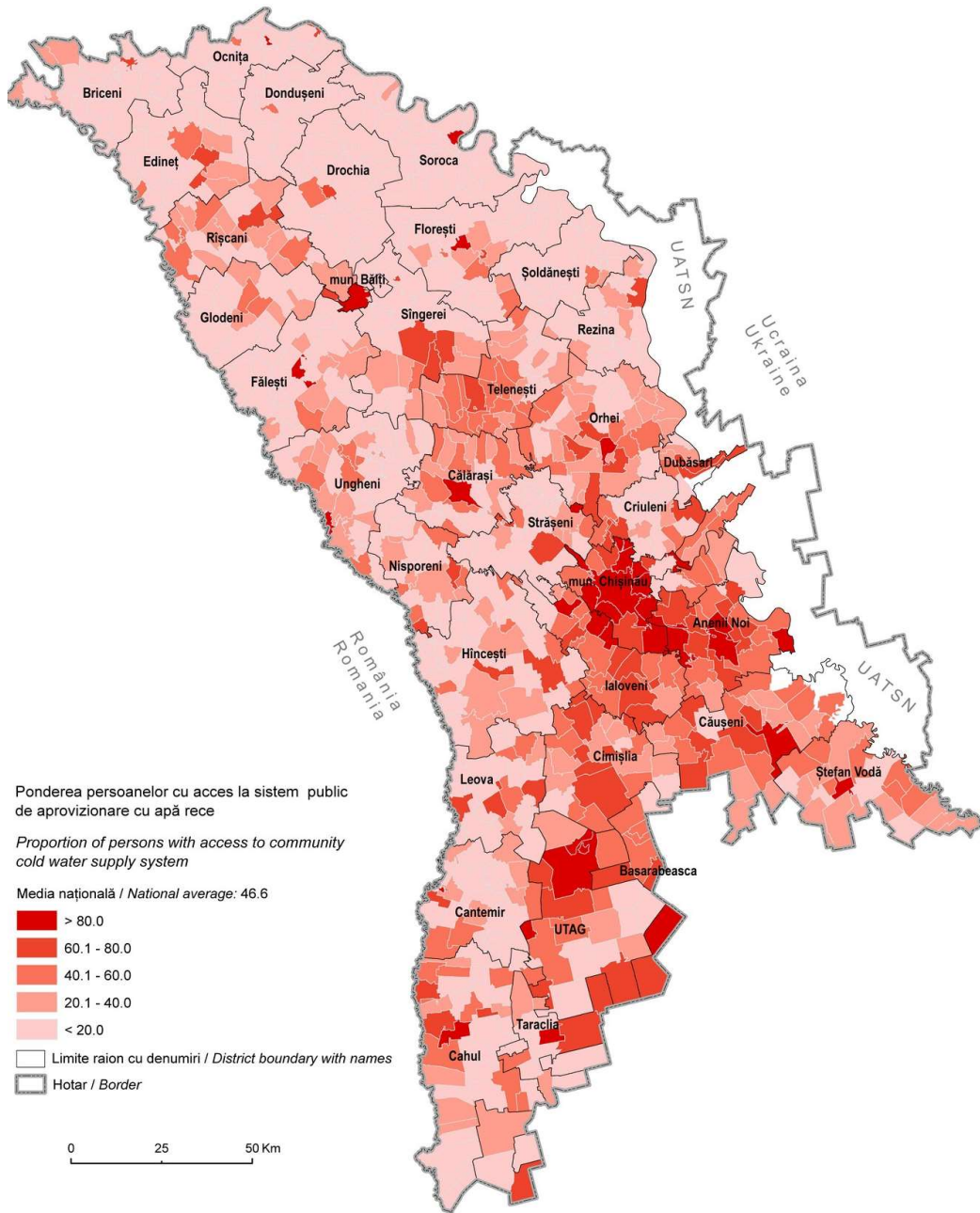
Water access through piped and non-piped individual self supply



Rural access to public piped water steadily increased....but universal access may require solutions beyond networks

- Access to piped water in rural areas began increasing in 2005 and number of functional piped water system in rural areas is over 1,000 in 2016
- 50% of population without access reside in localities < 2,500 people illustrating difficulty to reach smaller settlements





Geographic disparities in piped water access...with North Centre having lower levels of access....

Sursa datelor statistice / Source of statistical data:
Recensământul Populației și Locuințelor 2014, Republica Moldova
2014 Population and Housing Census, Republic of Moldova

Sursa datelor geografice / Source of geographic data: ARFCIALRC
Transnistria și comunele Chitcani, Cremenenciug, Gâsca, Corjova și mun. Tighina nu au fost recenzate

Transnistria and the communes of Chitcani, Cremenenciug, Gâsca, Corjova and Tighina Mun. were not enumerated

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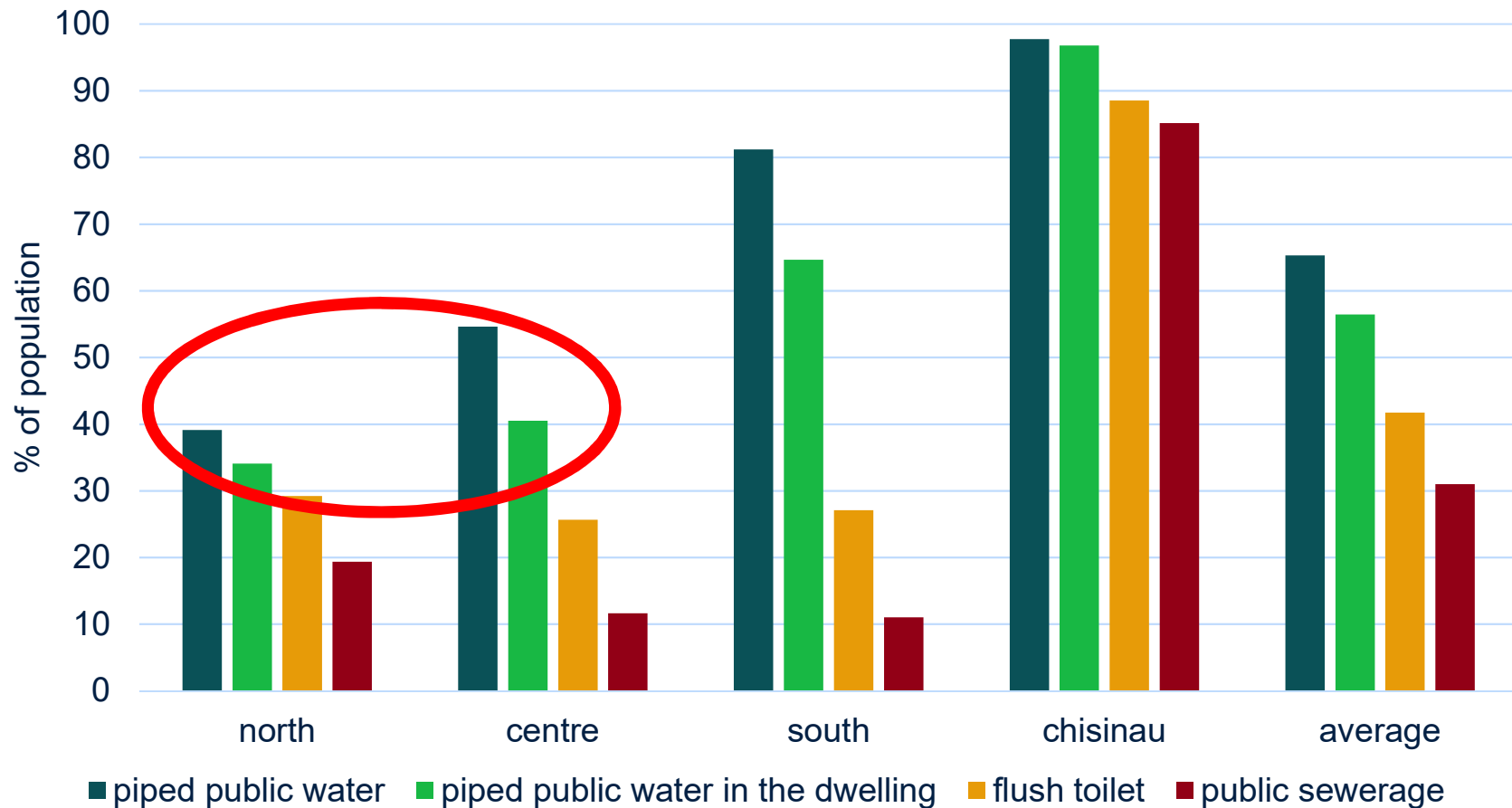
Această hartă a fost elaborată cu suportul Biroului de Cooperare al Elveției în Moldova (SDC) și UNFPA, Fondul ONU pentru Populație în Moldova, și nu prezintă în mod necesar punctul de vedere al SDC, UNFPA, al Organizației Națiunilor Unite, sau oricare din organizațiile sale afiliate

This map was produced with the support of the Swiss Agency for Development and Cooperation (SDC) and UNFPA, United Nations Population Fund in Moldova, and does not necessarily represent the views of SDC, UNFPA, the United Nations or any of its affiliated organizations

Source: BNS (2016)

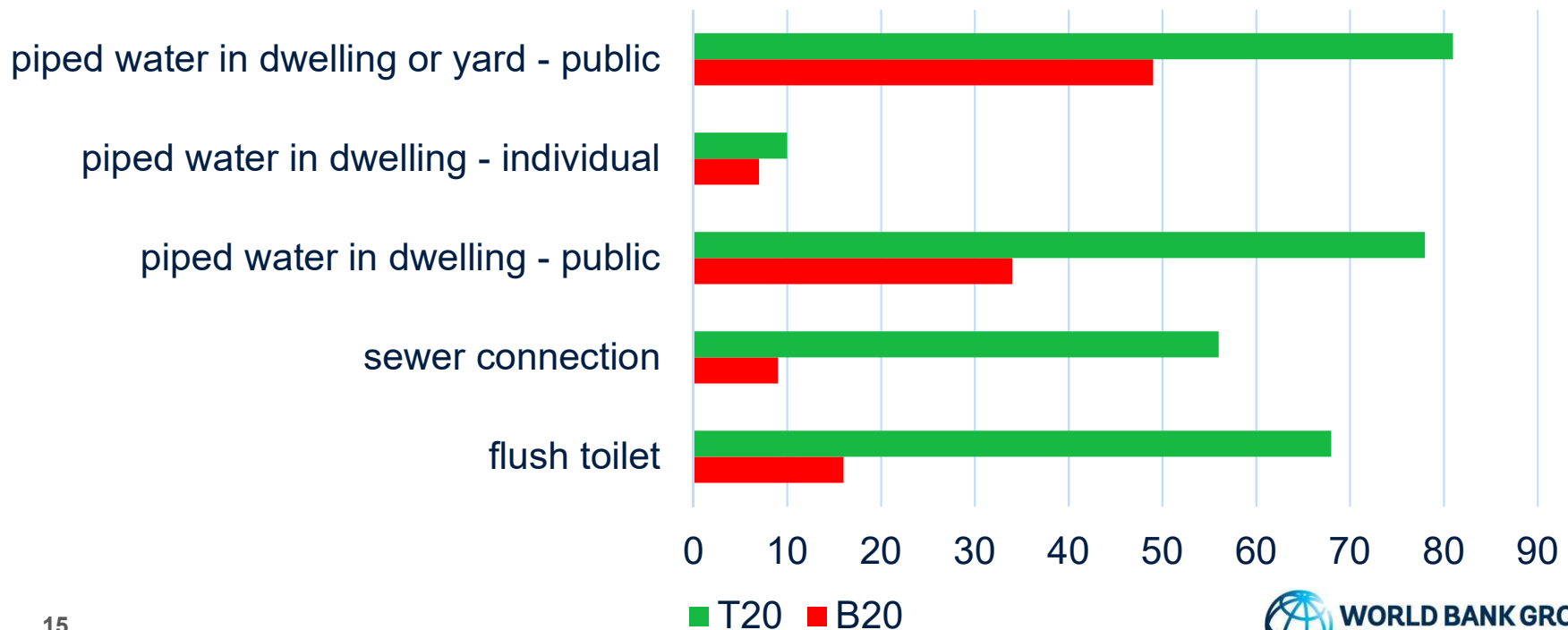


North and Centre show lowest access to public piped water...flush toilet access only high in Chisinau



“Leave no one behind” agenda highly relevant and inequalities most pronounced for sanitation access

- Disparities across income levels correspond with urban-rural disparities
- Access agenda not embedded in EU Drinking Water Directive but SDGs promote universal access
- Sanitation shows largest disparities between richest and poorest



SDGs raise the bar through “safely managed” water supply and sanitation

- WS: accessible on **premises, available, and free of contamination**
- SAN: improved facility, with in-situ disposal or off-site transport, treatment, disposal
- No estimates available for safely managed services in rural areas

Source JMP (2017)

Improved pit latrine

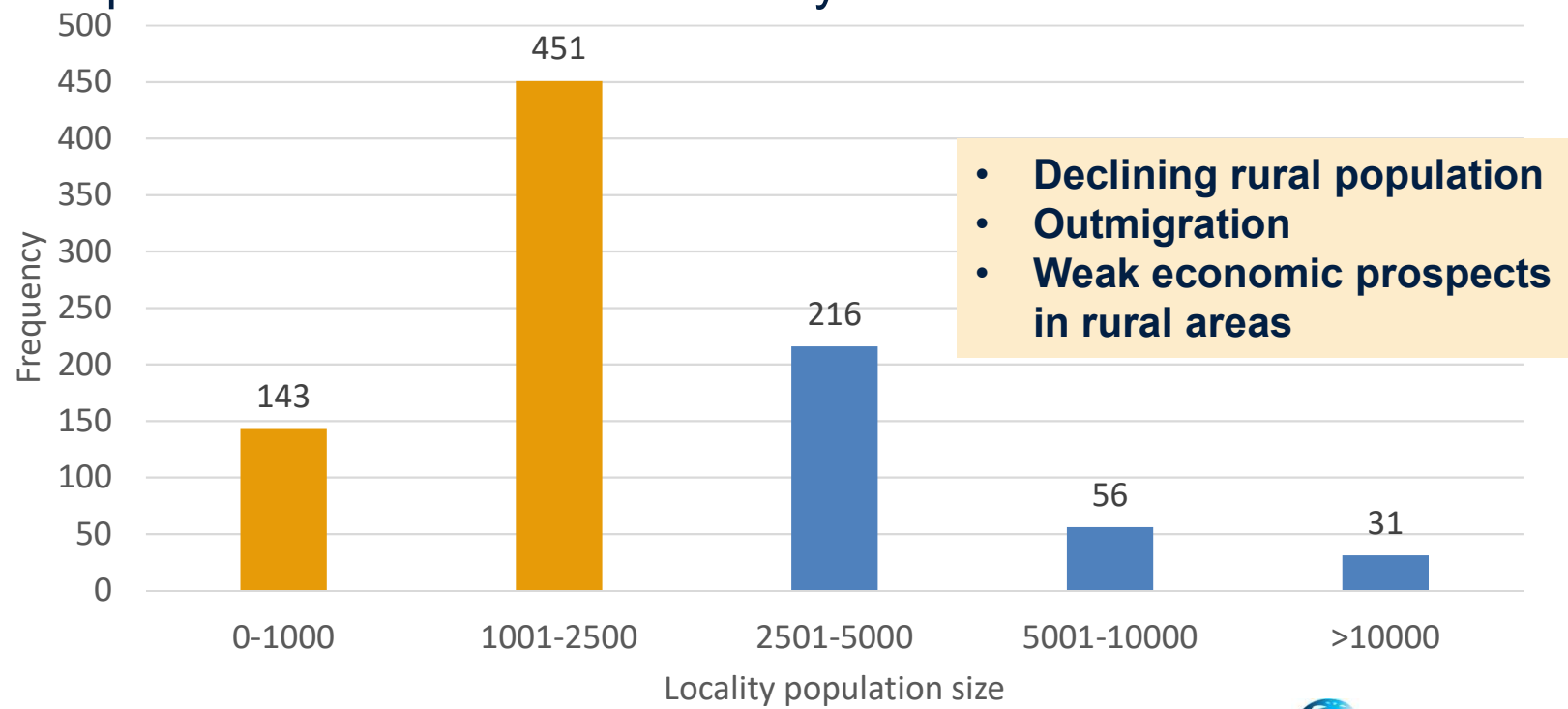


Unimproved pit latrine



Dispersed population and atomization of local governments shaped a very decentralized rural service delivery model

- 896 Local Public Administrations responsible for WSS service delivery in their jurisdiction
 - Median population size is **1,830 people**
- **Service delivery decentralized** and regionalization of service providers has not touched many rural LPAs



National Strategy aims for 65% access to safe drinking water by 2020 and 65% access to sewerage by 2025

Strategy seeks to achieve targets through...

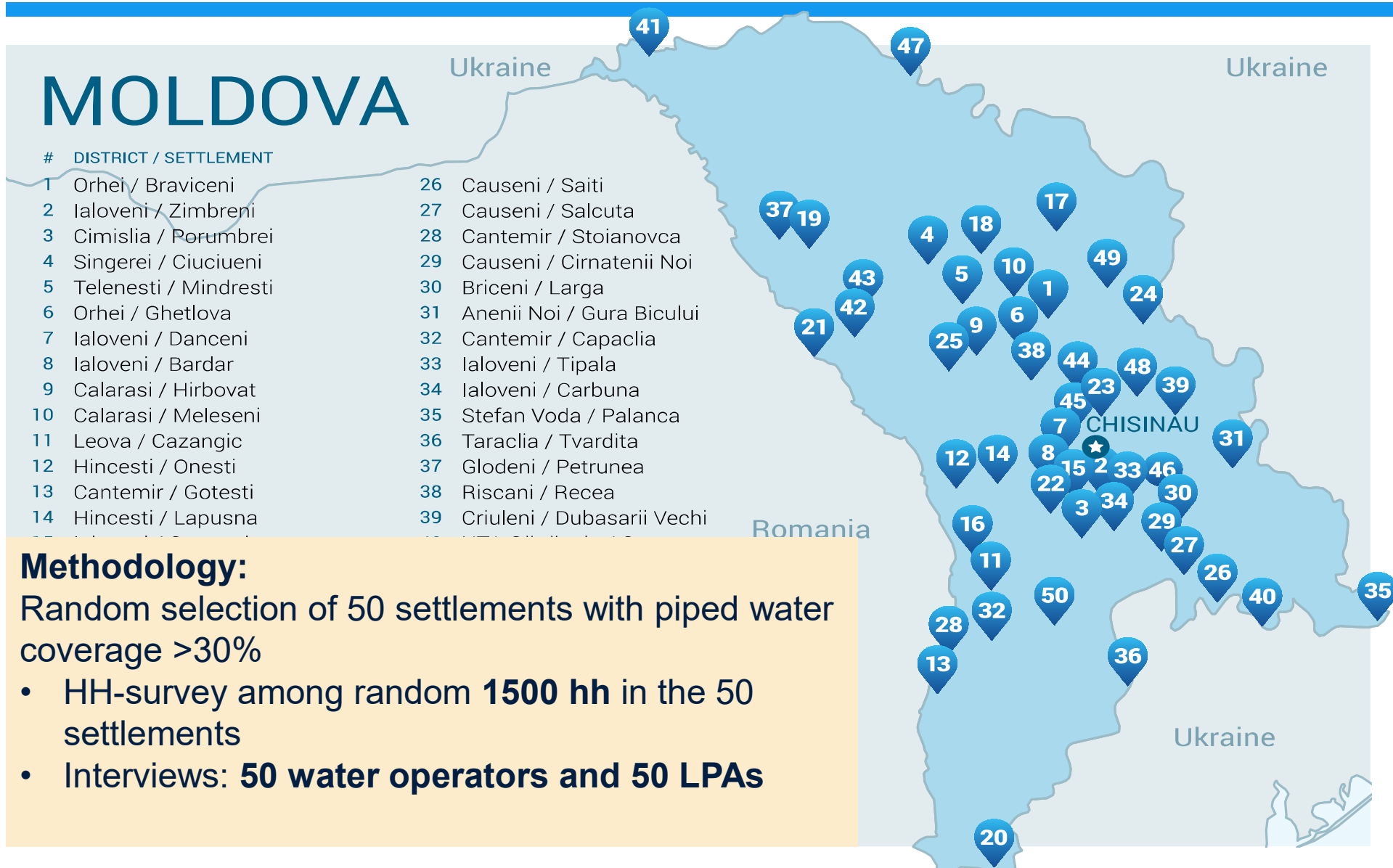
- Decentralization of service delivery
- Clarification and strengthening of regulatory frameworks
- Expansion through regional service providers (JSC)
- Addressing finance gaps and utility performance/efficiency

But...

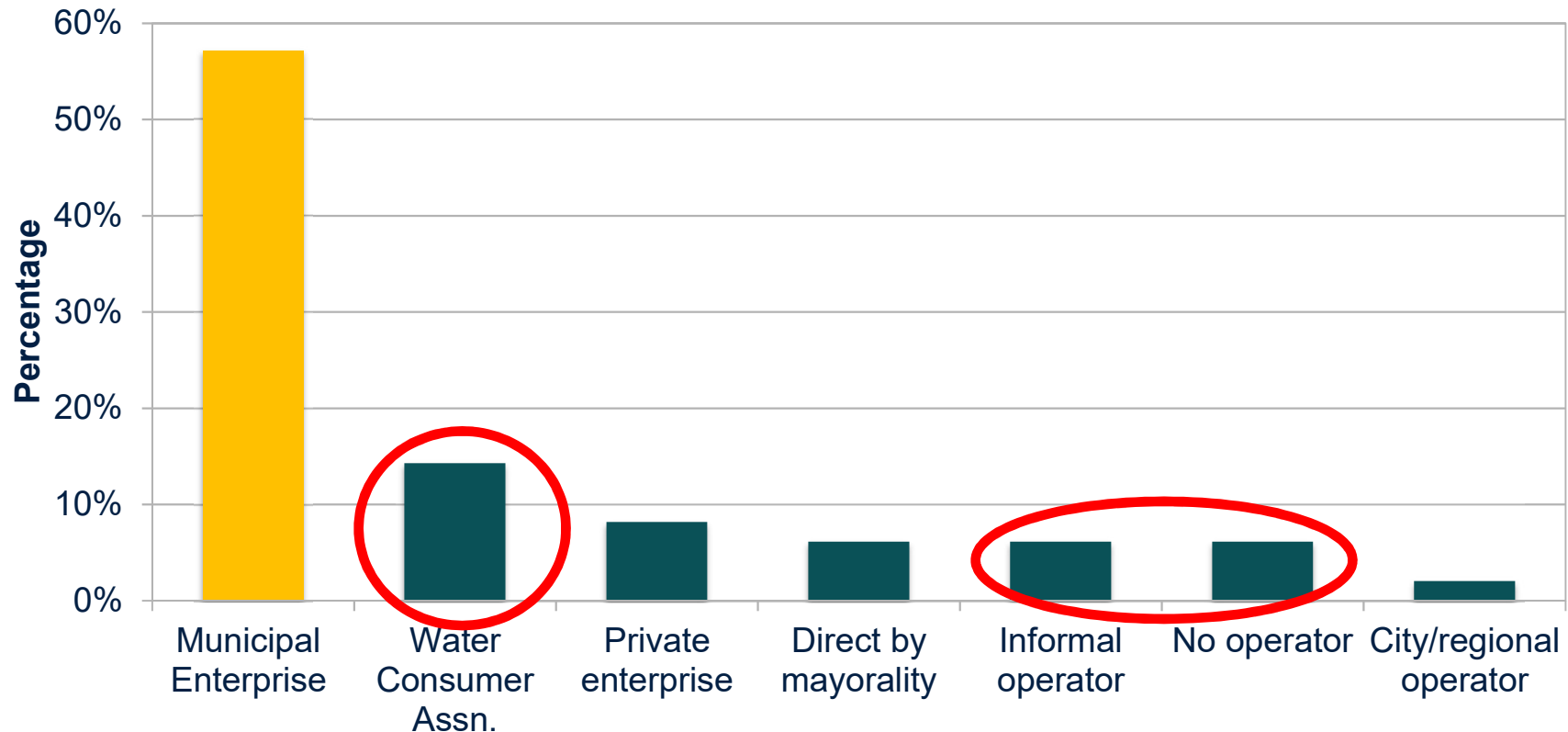
- Focus on urban areas (rayon centers)
- Regionalization advancing slowly
- Finance gaps remain
- Regulation for urban utilities (ANRE)
- Sanitation = sewerage?

Long-term inclusive planning framework and financing strategy for entire territory of Republic is missing

Deep dive analysis of rural water and sanitation situation through primary data collection and desk review



A range of rural management models exists of which several operate outside of the legal framework



- Municipal and private operators to be licensed under Law 303, but *de facto* are not
- Water Consumer Associations not recognized under Law 303
- Chisinau utility, one of 38 licensed utilities, expanded networks in rural areas

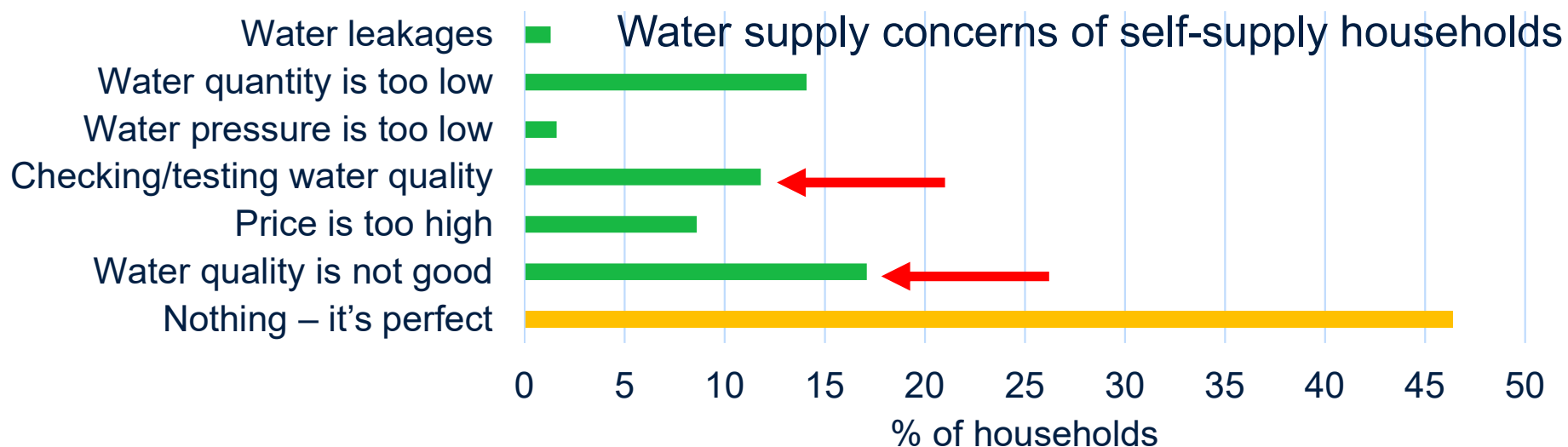
Enabling conditions for rural water services remain weak

planning and legal framework, post-construction support, financing strategy, asset management, water use conflicts, monitoring

| Building Block | Indicator | Albania | BiH | Croatia | Kosovo | Moldova | Romania | Ukraine |
|----------------------------|---|---------|--------|---------|--------|---------|---------|---------|
| Institutional Capacity | Clear allocation and implementation of roles and responsibilities under a broader strategy that addresses rural water service provision | Green | Red | Green | Green | Yellow | Yellow | Yellow |
| | National sector documents provide description of RWS operator management models and their legal form | Green | Red | Yellow | Green | Red | Green | Green |
| Financing | Dedicated funding streams exist for WSS capital investments that prioritize rural areas | Green | Yellow | Green | Green | Red | Yellow | Red |
| | Policy documents prescribe tariff setting rules relevant also for rural water service provision | Green | Red | Green | Green | Red | Green | Red |
| Asset Management | Asset ownership is clearly defined and implemented as per the legal framework and understood by service providers | Yellow | Yellow | Yellow | Yellow | Yellow | Green | Green |
| Water Resources Management | Water abstraction permitting processes are in place and apply it to rural water services | Green | Yellow | Yellow | Yellow | Red | Green | Green |
| | Low prevalence of conflicts related to water use management as reported by municipal authorities | Yellow | Red | Green | Yellow | Yellow | Green | Red |
| Monitoring and Regulation | Existence of a national performance monitoring system for rural water operators | Yellow | Red | Green | Green | Red | Yellow | Red |
| | Water quality standards are defined that govern service provision in rural areas | Green | Green | Green | Green | Green | Green | Green |

Understanding Self Supply

Self-suppliers have low accessibility and water quality concerns are high, requiring measures to support self-supply

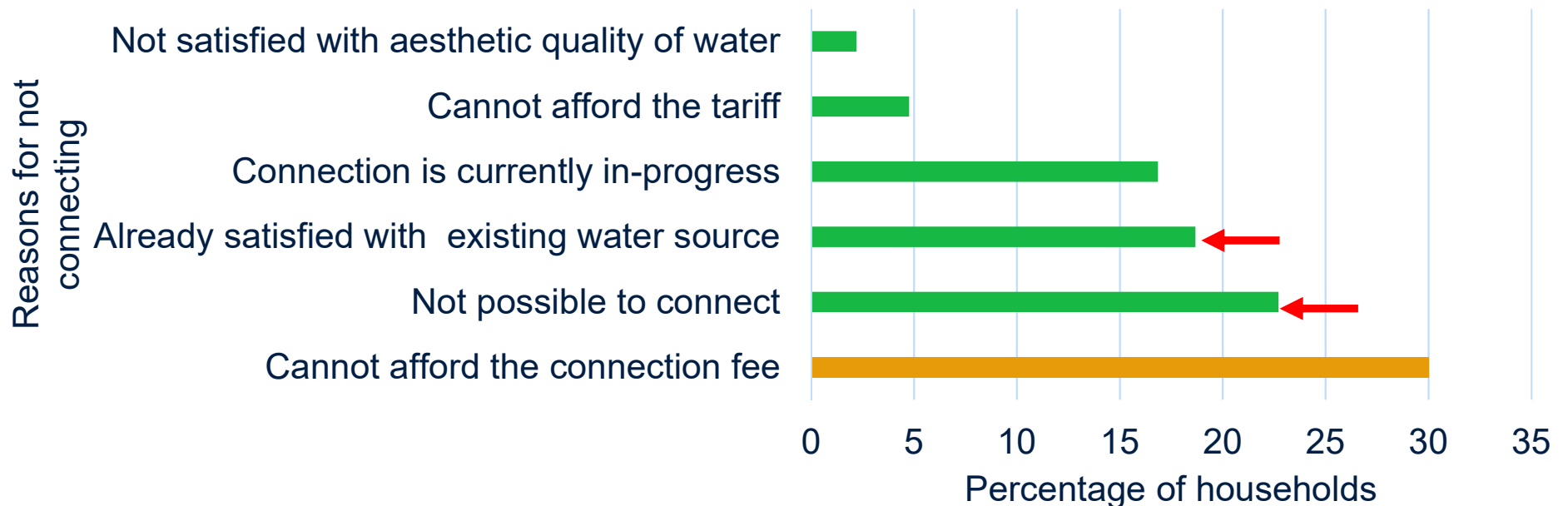


- **Only 31% have in-door plumbing** with pressurized water
- Almost a quarter spent more than 30 minutes fetching
- 30% experienced outages > 1 day a year, **mostly related to source dry-up**
- Only one in four (shallow) well owners tested for water quality in past two years
- **Three quarters directly drink from the source without treatment**

A supported model for self-supply can address accessibility in the home and water quality improvements to mitigate public health risks

Public service connections need to address water quality concerns with accompanying measures to overcome connection barriers

- 30% of households perceive **connection fees/costs as a barrier**;
- **A quarter is out of reach of system boundaries**
- **One in seven is satisfied with self supply**
- **Willingness to pay** for connection was 49 EUR (median), or 20% of monthly household income at the poverty line

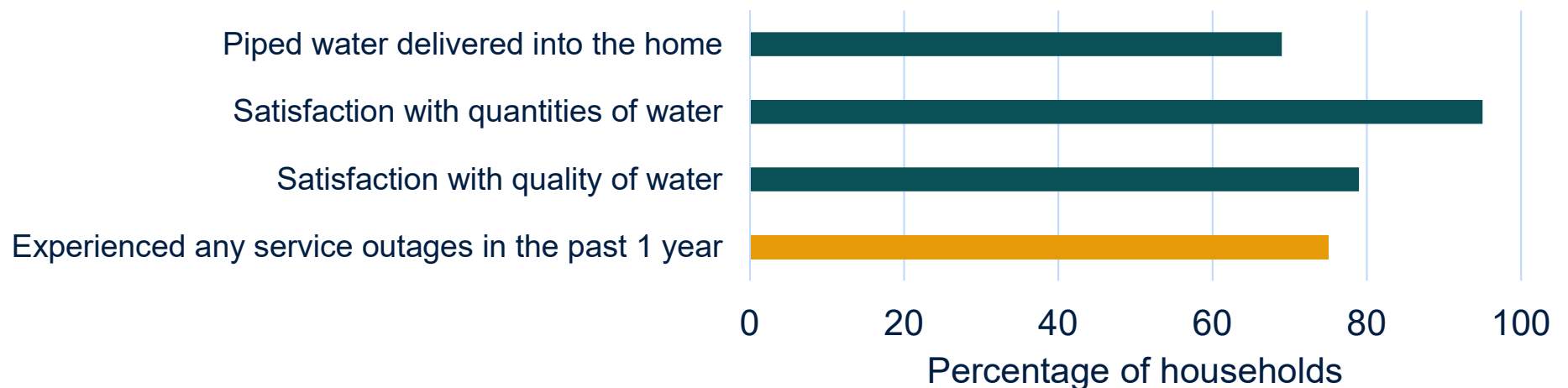


Service levels and perceptions of connected consumers

Service levels are moderate and households mostly satisfied although least with water quality information sharing

- **25% of connected households drink water from wells instead of network** (some operators only deliver “technical water”)
- **Most households experience service outages** – 2 days per year without service (median), mostly **due to system breakdowns**
- Only **75% of connected households have taps into their home**; higher for Chisinau utility
- Consumers **least satisfied with information sharing of operator, especially on water quality**

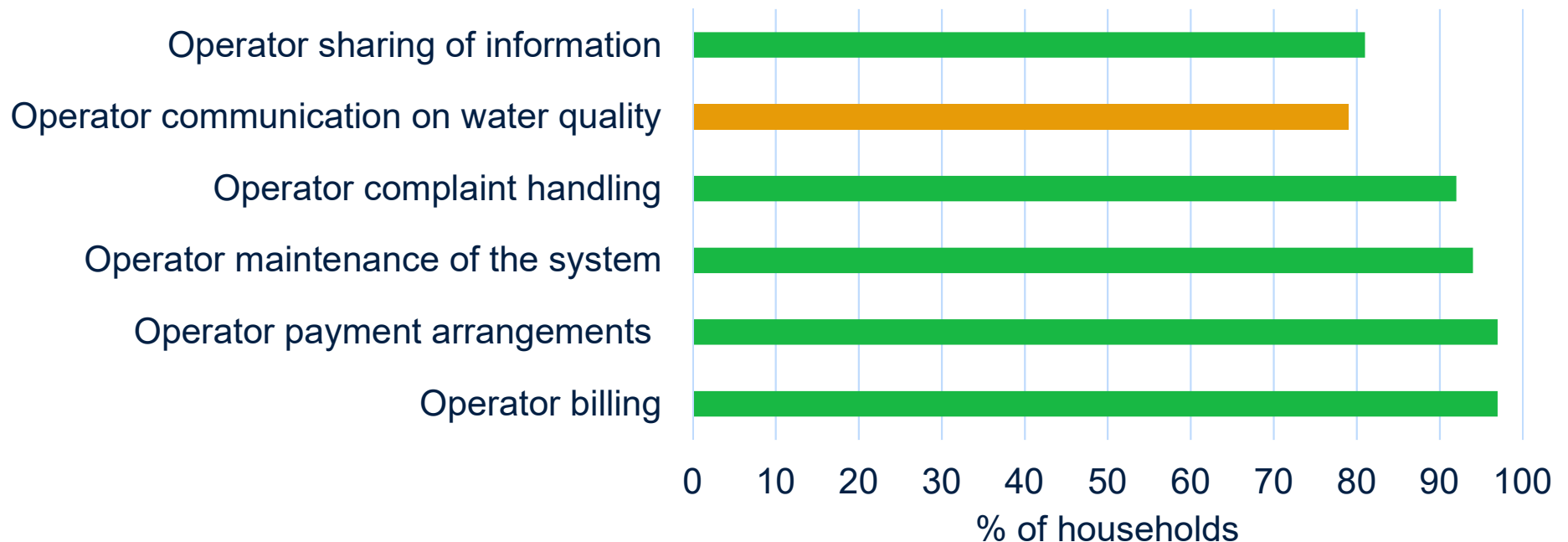
Service levels and satisfaction - Connected HHs



Customer satisfaction generally high with operator services...but requires better communication and information

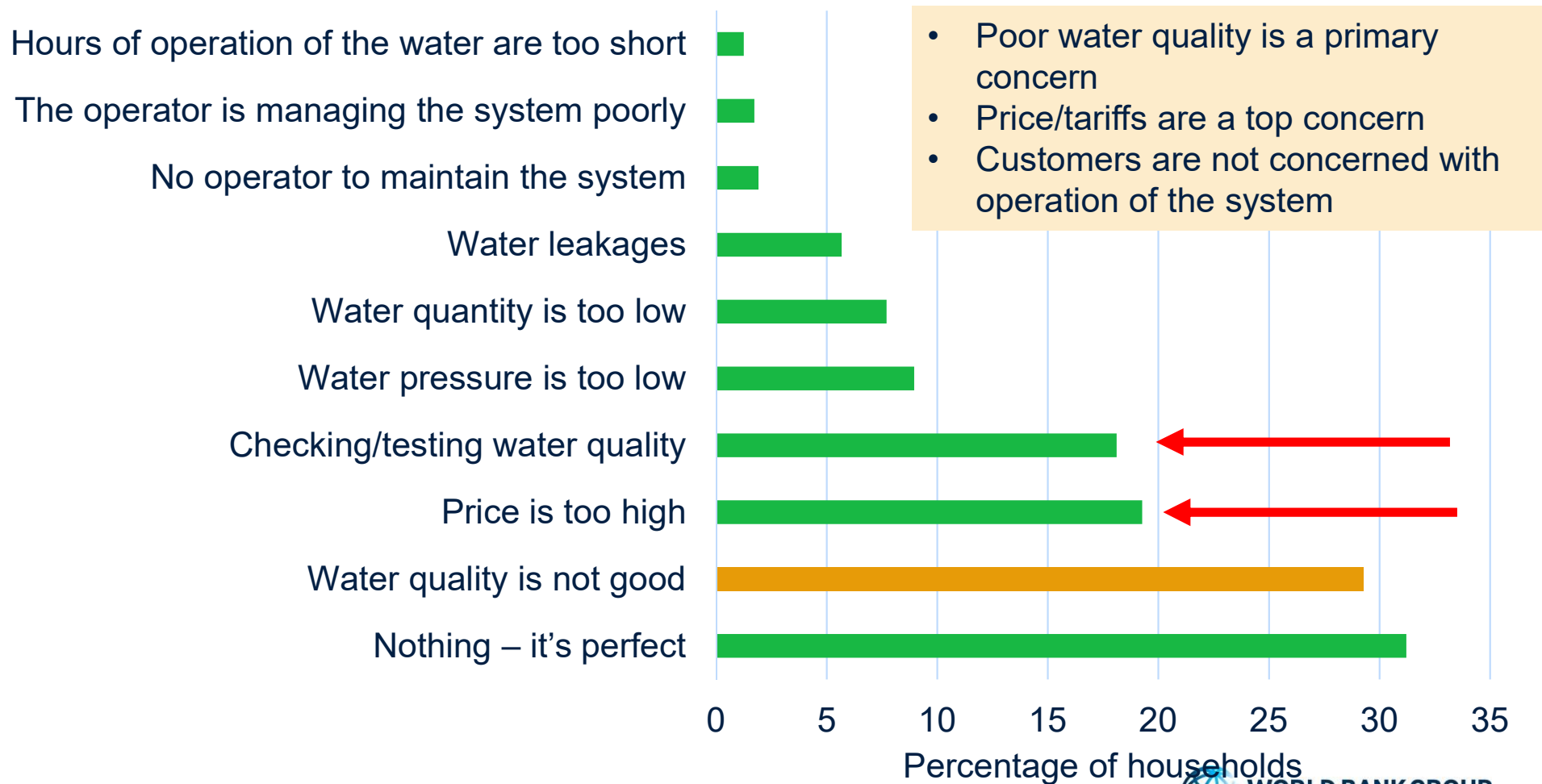
- Customer are highly satisfied with operator services, such as billing, payment, maintenance, and complaint handling
- Communication with rural customers can be improved, **especially on water quality**
- Satisfaction was highest for **community-based operators and Chisinau utility**

Proportion of households at least somewhat satisfied with...



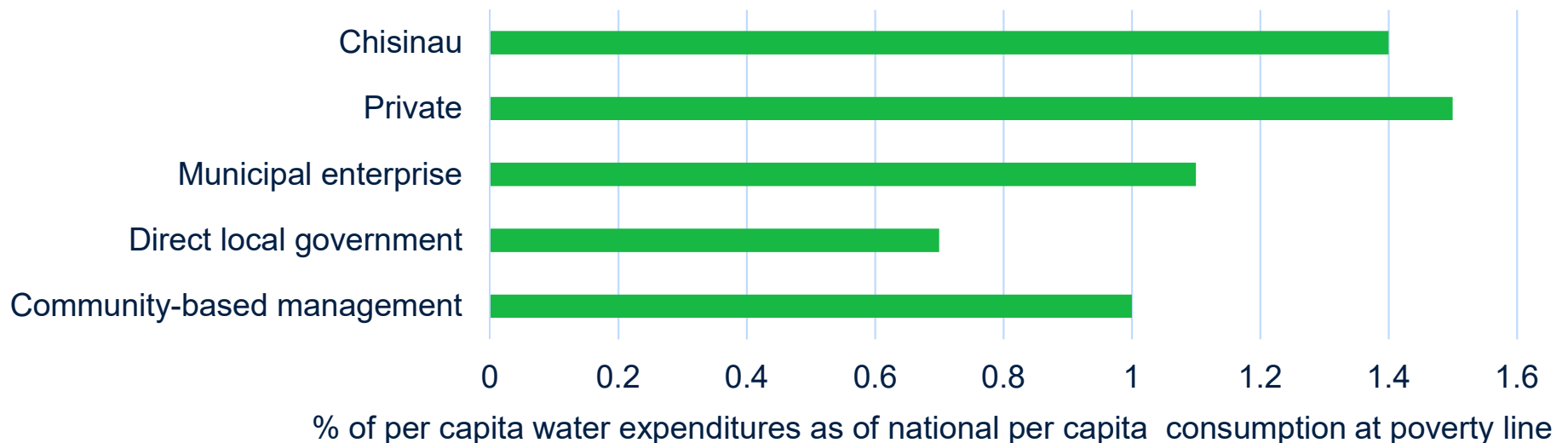
Top concerns among connected households are water quality and affordability of tariffs..

Top concerns among connected households



...but household water expenditures are well below affordability limits for the poor and show room to increase

- 92% of operators charge customers based on volumetric tariff
 - Median tariff was **0.48 EUR/m³**; Median WTP 0.32 EUR/m³ among non-connected
- Two-thirds of operators charge a connection fee to customers
 - Connection fees ranged from 23 to 95 EUR; WTP for connection was 49 EUR
- Monthly water expenses per capita - based on invoices - is 0.78 Euro
 - **Represents 1.1% of monthly per capita consumption at national poverty line**
 - Monthly water consumption per capita is **low** at 1.75 m³



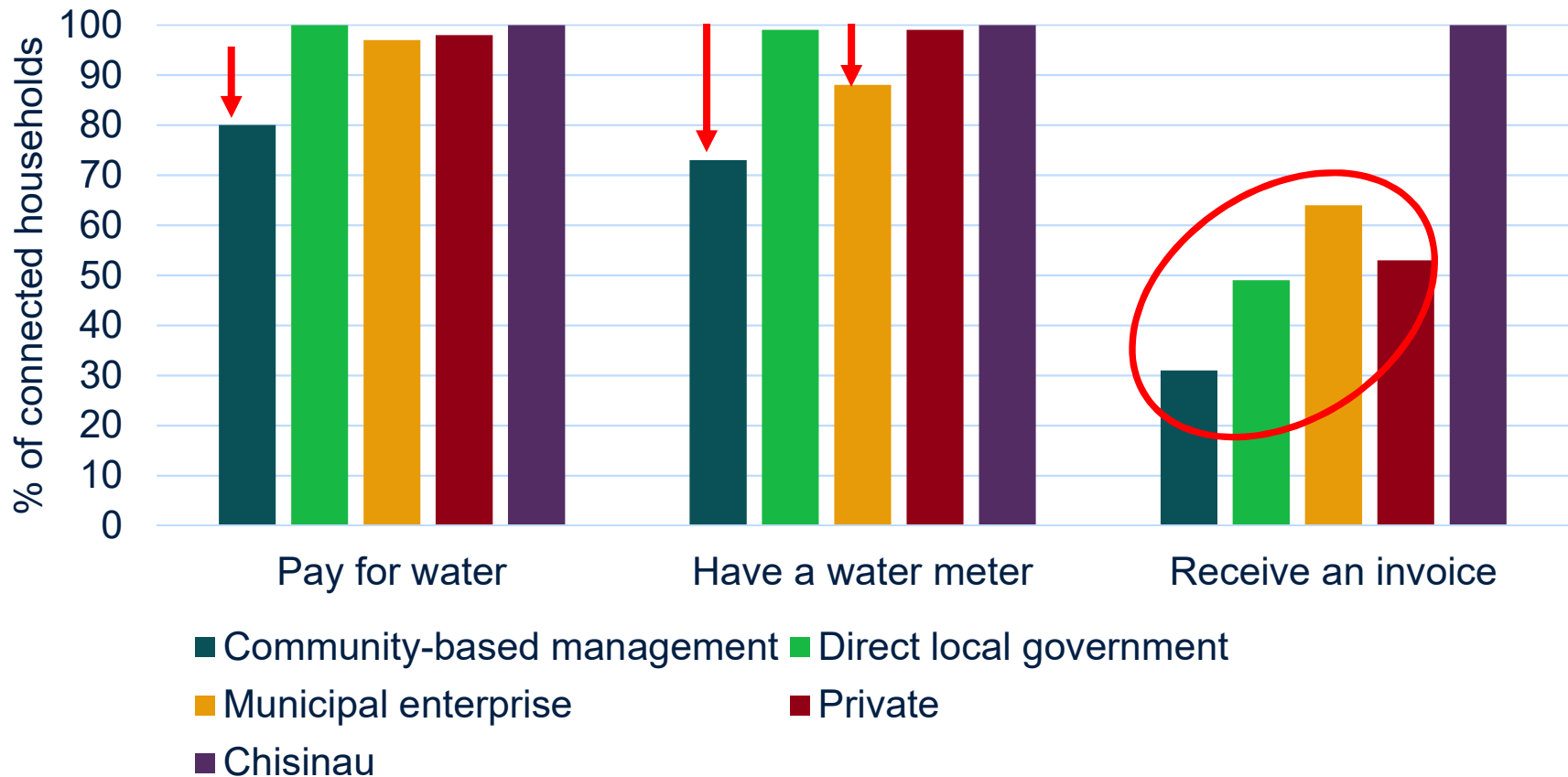
Payment and metering are well established but invoicing is lacking for informal and community based systems

| Household that report to... | percentage |
|--|------------|
| Pay for water | 95% |
| Have a water meter | 89% |
| Receive an invoice | 56% |
| Normally have 24-hr service | 97% |
| Monthly water expenditure per capita (median) ¹ | EUR 0.77 |
| Water consumption per capita (median) ¹ | 58 lpcpd |

¹ Based on recent invoice shown to the interviewer

- Only **80% of households served by a community-managed system** pay for water; for other operators this is 100%
- Water **metering is only 70% for community managed systems**
- Formal invoicing is 100% for Chisinau utility in rural areas, but **30-60% for community operators, municipal enterprises and mayoralty**

Community-based operators have the weakest payment and metering...invoicing low among local operators



Capacities and financing for service provision

Except for Chisinau, all local operator models demonstrate weak business practices...and uneven performance

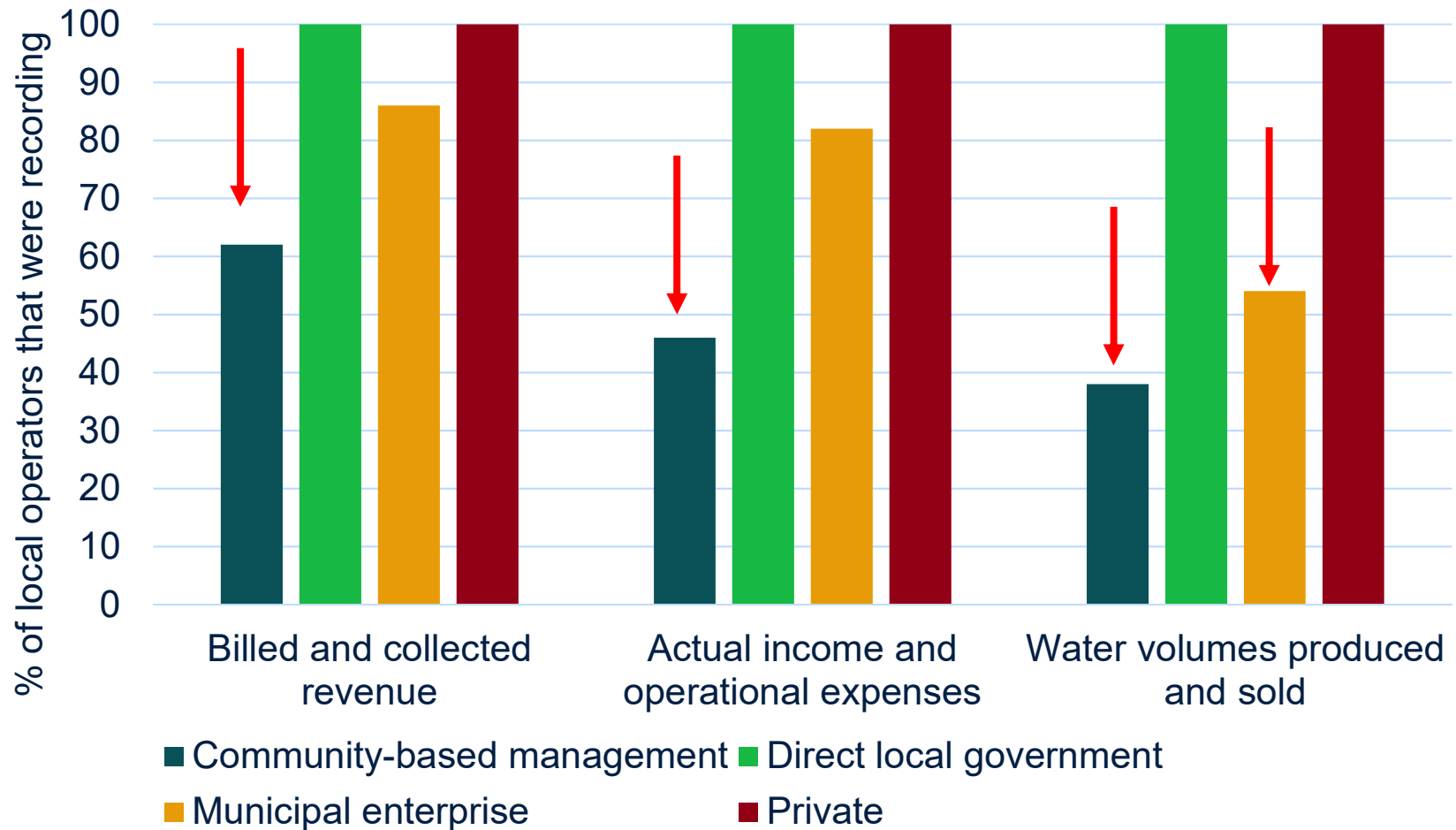
| Operators in the sample that... | Operators (n=50) |
|--|------------------|
| Have (a) water extraction permit(s) | 33% |
| Can demonstrate asset inventory | 34% |
| Regularly report to municipalities | 78% |
| Record volumes water produced vs. sold | 23% |
| Have NRW <25% | 92% |
| Record operational expenses and revenues | 74% |
| Have OCR >100% | 43% |
| Record amount billed and collected | 73% |
| Of which collection ratio >90% | 75% |

Overall, extractions are not well regulated, formal asset management is rare



Note: based on interviews with operator managers/representatives announced in advance; influenced by respondent bias

Community-based management operators are showing weakest ability to monitor key performance data

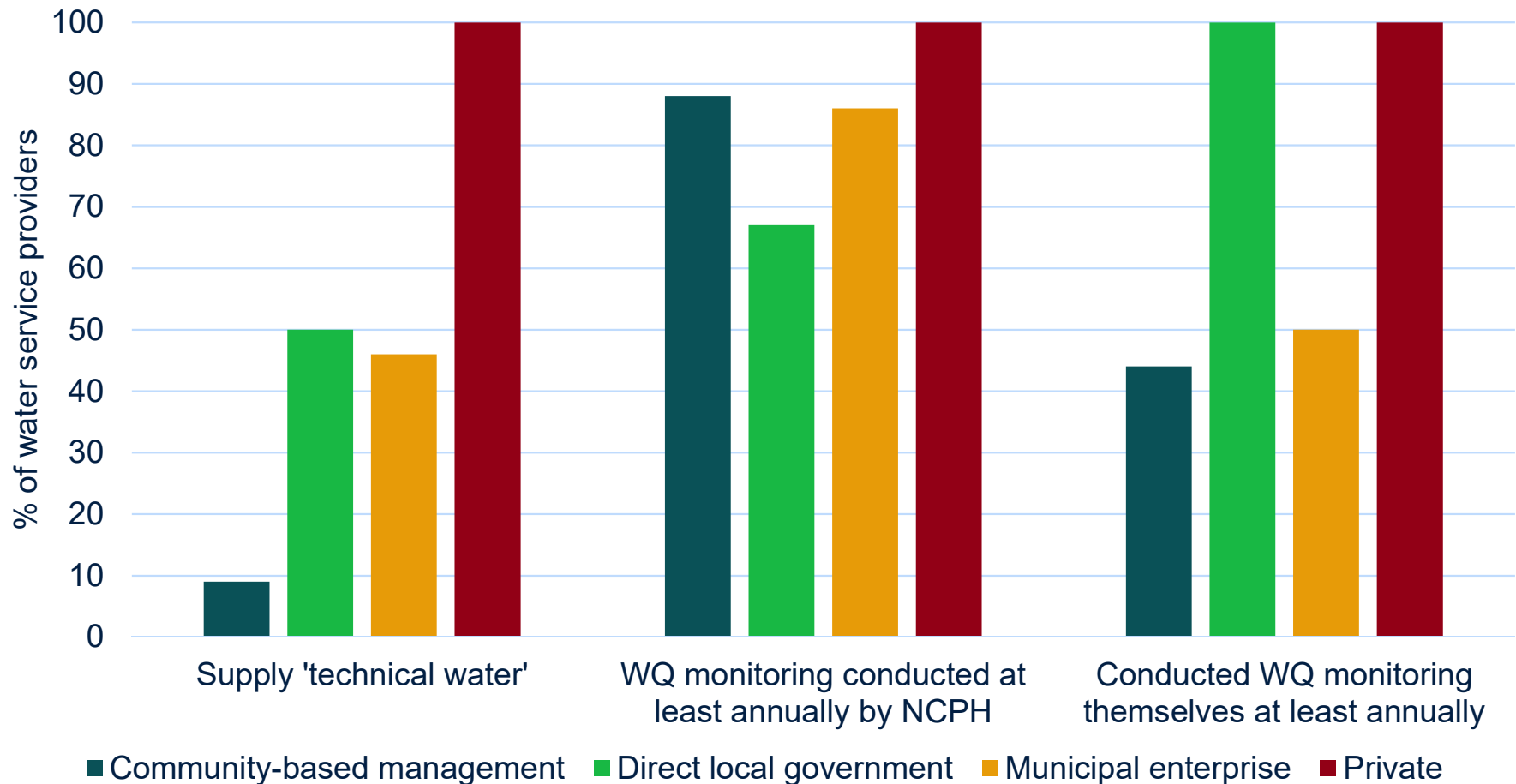


Valid customer concerns... there is a need to enhance water quality through treatment, alternative sources, surveillance & monitoring and transparent communication

| Parameter | Percentage of operators |
|--|-------------------------|
| Providing “technical water” (Apa Technica) | 32% |
| WQ monitoring at least annually by National Centre for Public Health | 86% |
| WQ monitoring at least annually conducted/organized by operator | 54% |

- **Disinfection/chlorination is rarely practiced** for rural stand-alone systems, only for Chisinau utility
- **WQ testing widely performed by Public Health Institute**, but less commonly by operators themselves; frequency of WQ testing is low, only not for Chisinau
- Only **62% of operators could show a water quality test report**; and 30% was not in compliance on e-coli; 50% ammonia and 10% nitrate
- National WQ data not publicly available; only **40% tests by PHI for local systems not in compliance with standards** (2015)
- Government issued a regulation for water quality and sanitary zones for small systems issued end of 2016

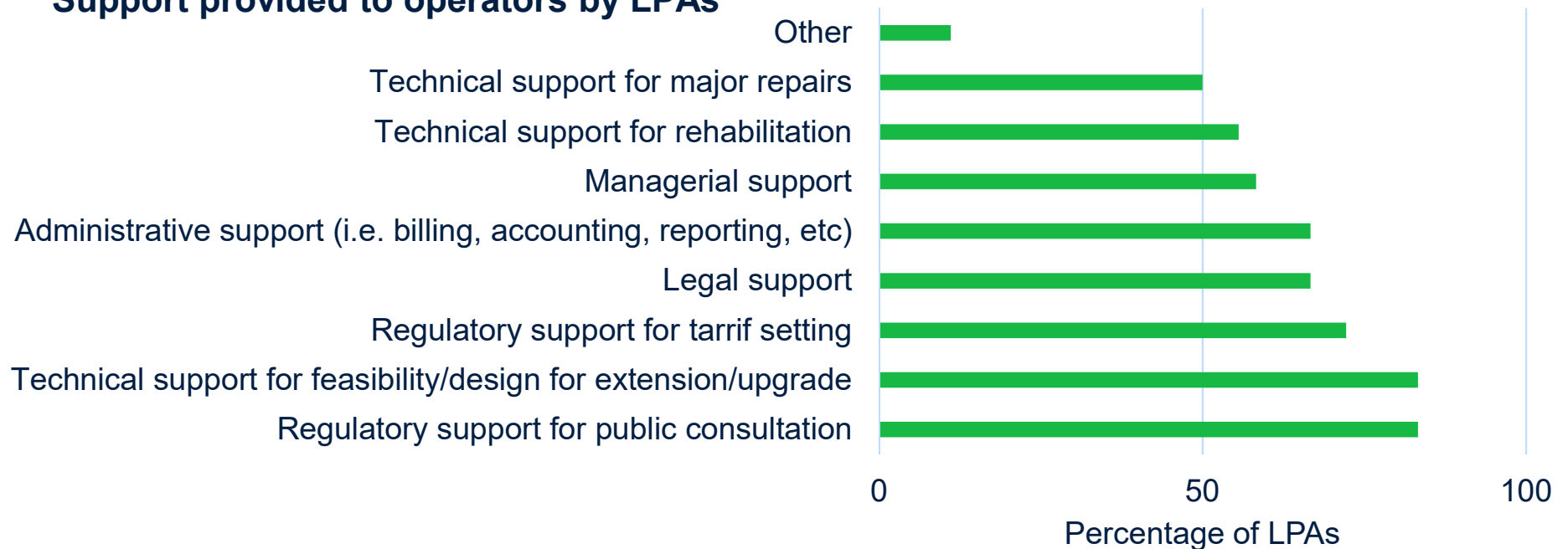
Surveillance by Public Health branches is fairly widespread, but internal monitoring capacity of operators is weak



Operators are poorly supported to improve service levels and have serious HR constraints

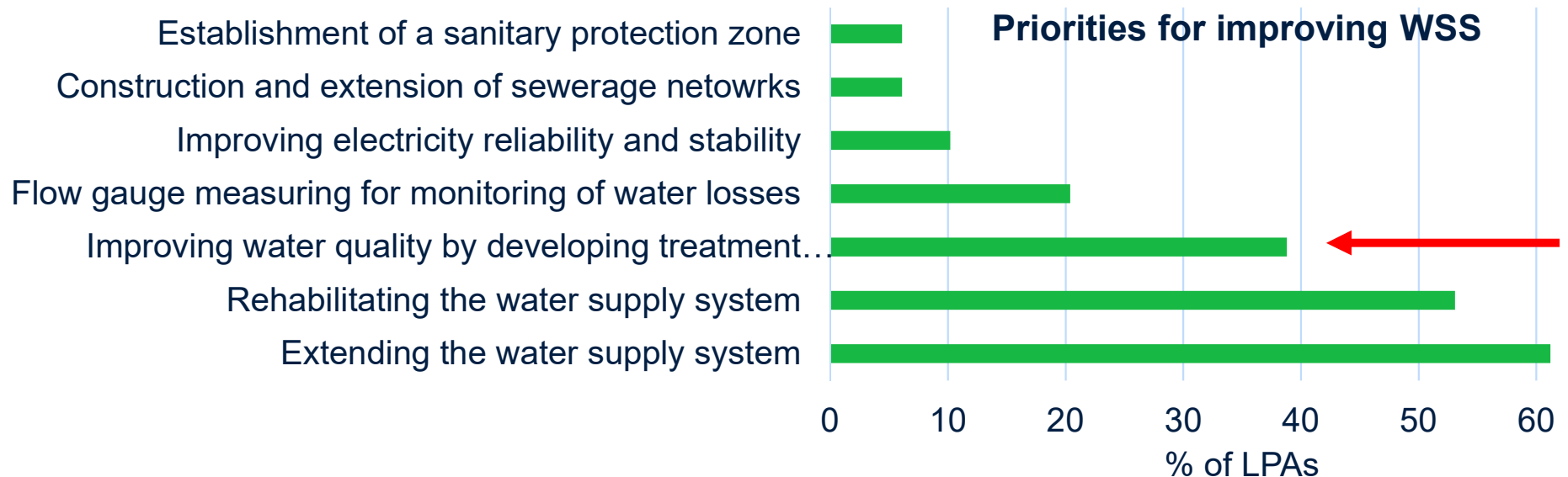
- Only **42%** of operators have a service contract/agreement with local government
- Only **53%** of operators received support from local governments in the past two year
- Only **32%** of operators participated in a training over past two years
- **Key challenges** are lack of funds, ability to find and pay for qualified staff, aging infra

Support provided to operators by LPAs

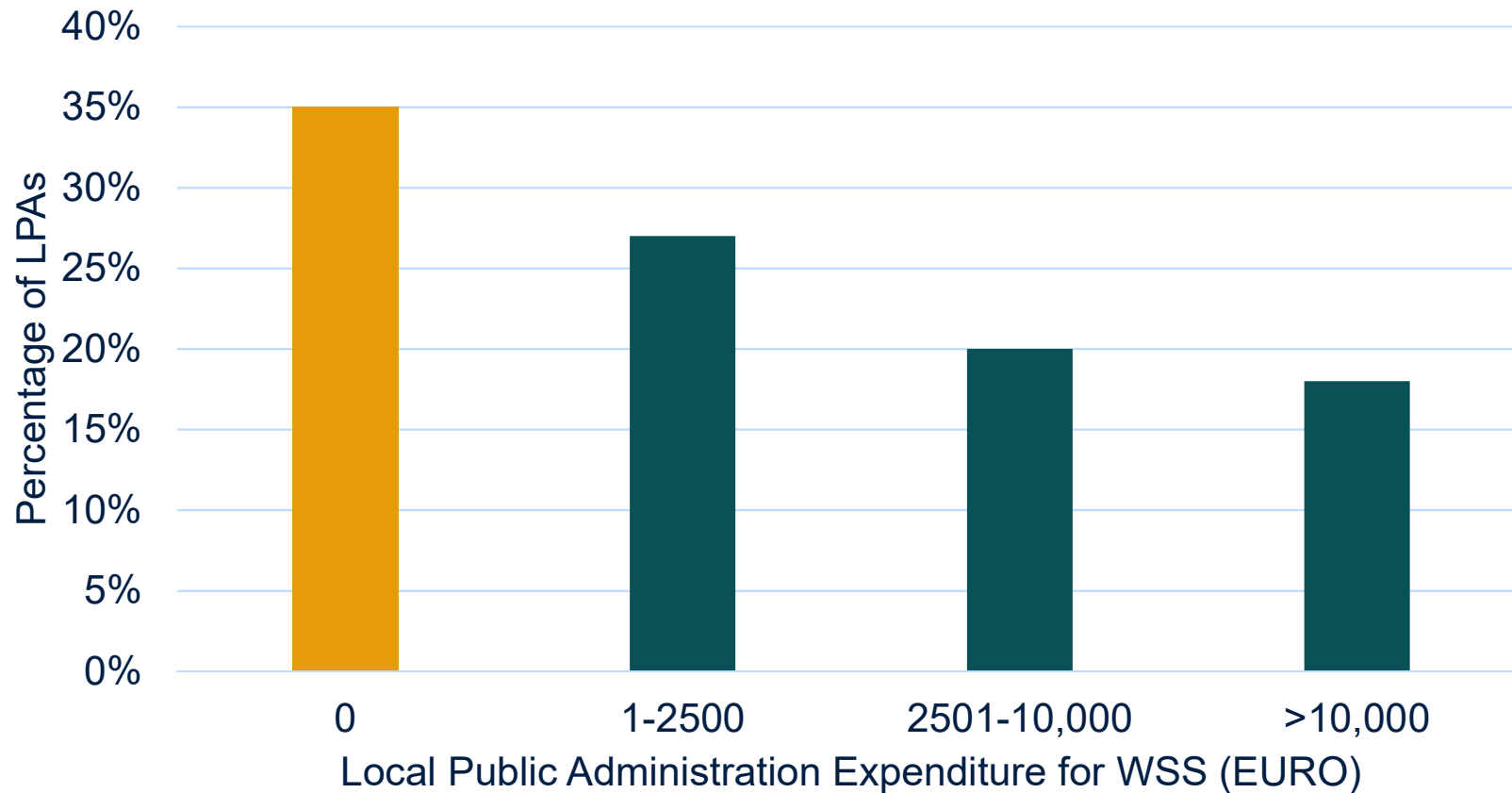


Local governments are hardly supported in their WSS mandate and lack funding to improve services

- Over 80% indicated that water supply measures are in the **medium term development plan**
- Only **57% received support to implement their mandate** (legal, regulator, technical), mostly from donors and rayons, and occasionally from MoEnv/CALM
- Only **35% have staff** assigned for WSS services
- **65% allocate funds for WSS**; and 82% states lack of funds is a key barrier
- Top priorities: expansion, rehabilitation and **improving water quality**



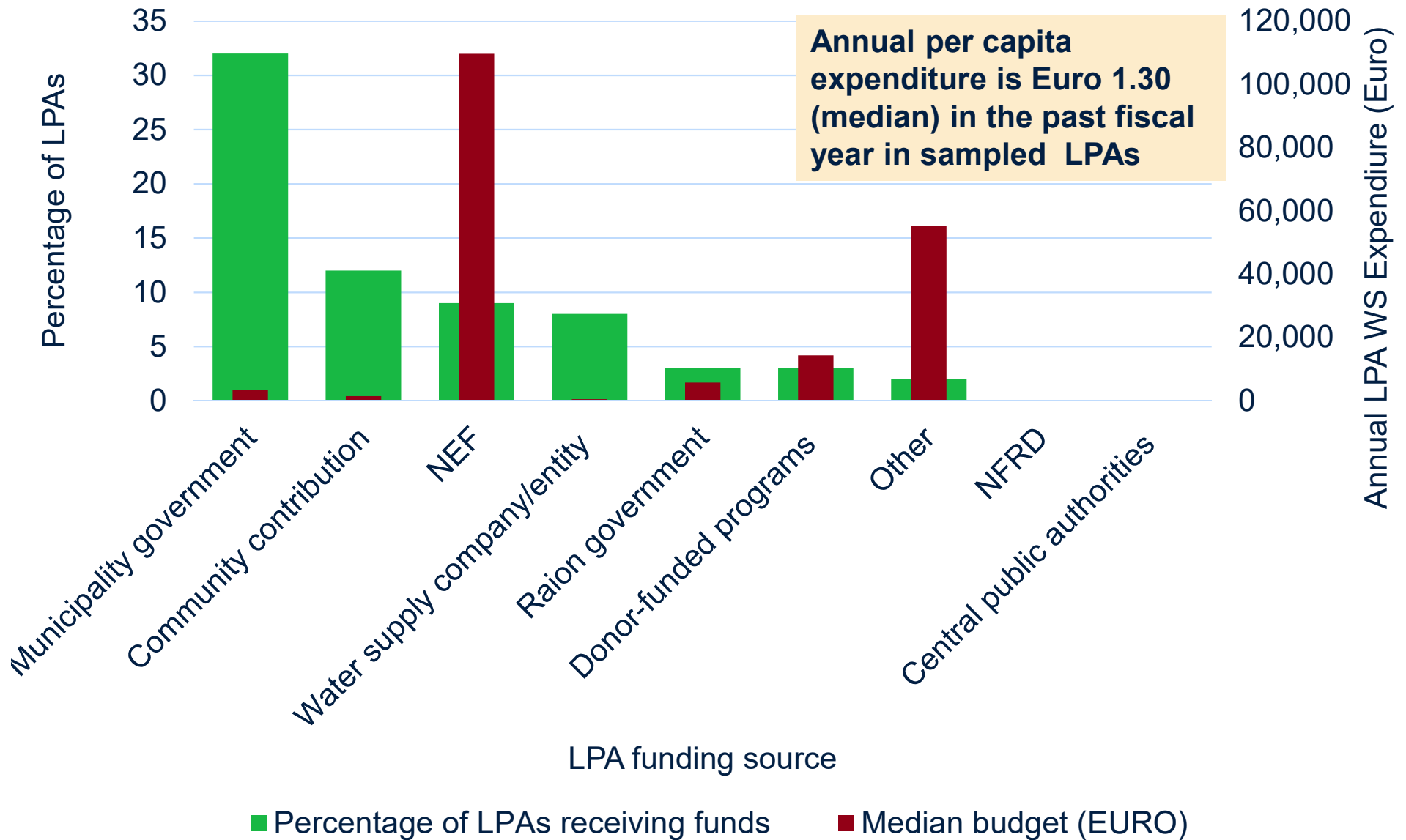
Local governments are hardly supported in their WSS mandate and lack funding to improve services



Two thirds allocate funds to WSS expenditures

A third of LPAs could estimate OPEX and CAPEX breakdown, and those spend 80% of OPEX subsidies

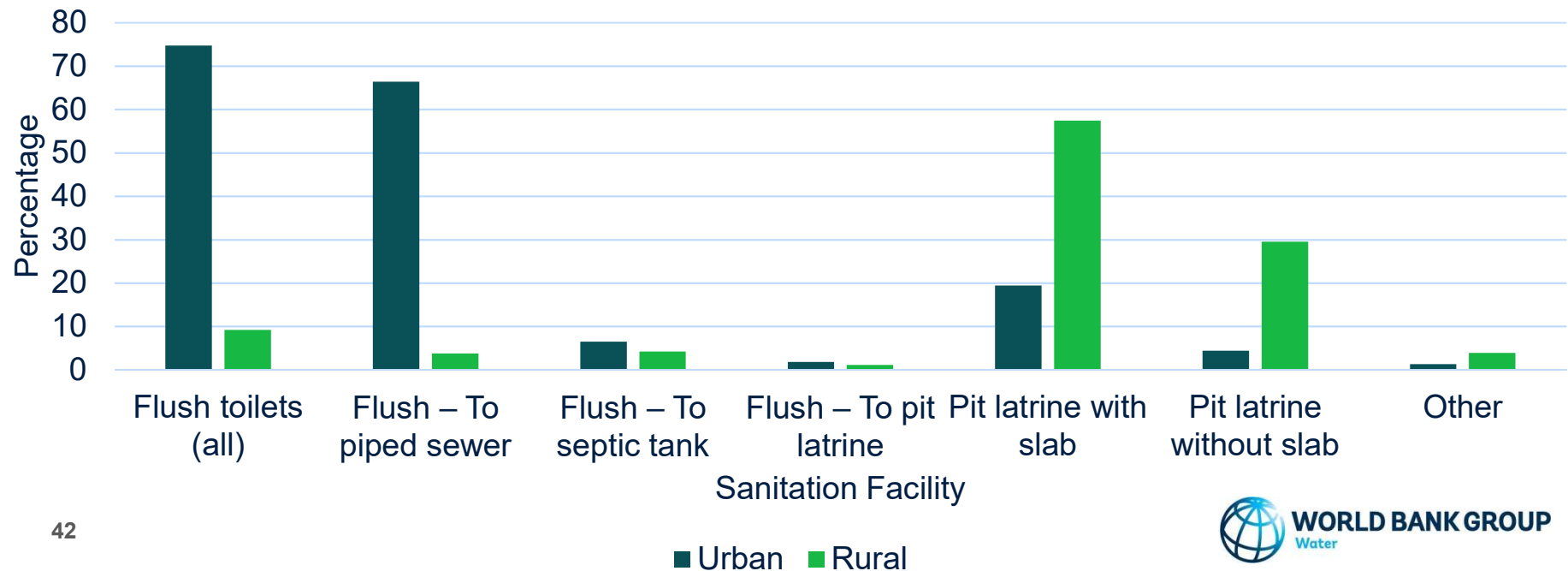
Common sources of funds are own municipal budget and community while national and donor funds only reach a few



Sanitation

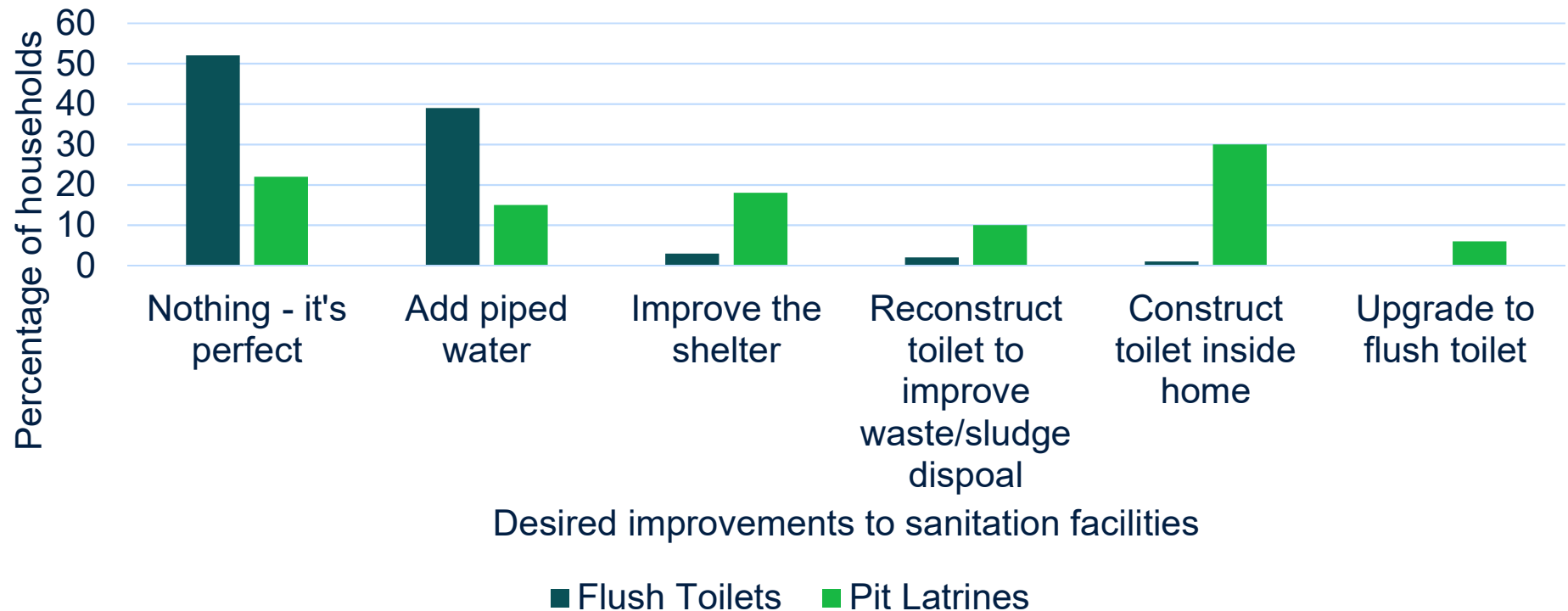
Rural access to flush toilets is very low due to low affordability ...but there is demand for upgrades to in-door flush toilets

- Estimates for rural flush toilet usages indicate **slow increase** from 9% in 2012 and 13% in 2015 (MICS, 2012), HBS (2015); sewer non-existent
- 65% of pit latrine users reportedly **cannot afford a flush toilet**, while WTP is Euro 98 (median), indicating **latent demand**
- **80% of pit latrine users is dissatisfied**, mostly comfort, privacy, smell
- Flush toilet users mostly have their **toilet indoors** (80%)



Satisfaction with latrines generally low – but higher among flush toilet users

- Flush toilet users were much more likely to be satisfied
 - Prefer piped water connection to their toilet
- Few pit latrine users were fully satisfied
 - Prefer water-borne toilet inside the home



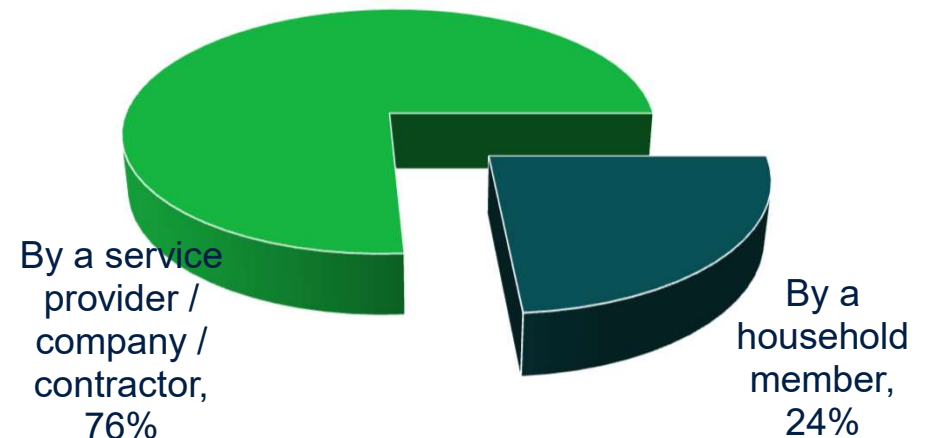
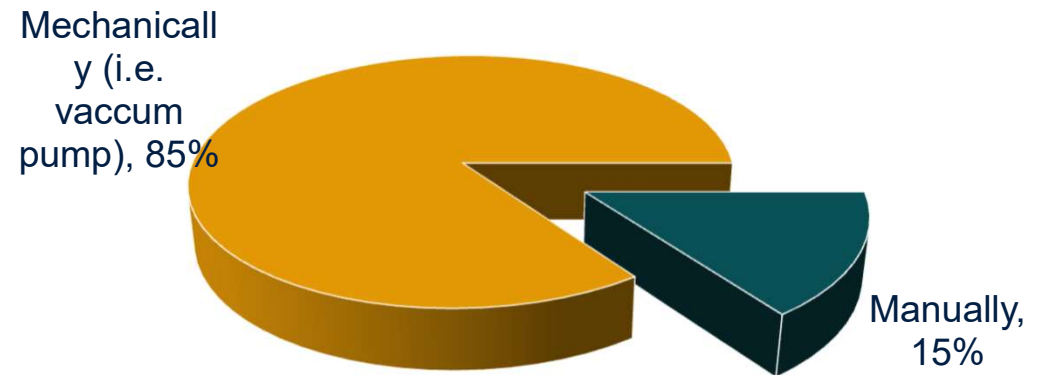
On-site fecal sludge management is common but unregulated

Emptying mostly done mechanically by informal service provider

- Pits/tanks are on average seven years old
- Among those that are emptied...
 - Most emptied mechanically
 - ...and by a service provider
- **Payment for emptying median of Euro 20**
- LPAs have **low awareness** on any regulations pertaining to on-site sanitation and do not supervise construction

No programs to incentivize modernization of rural sanitation and sanitation understood as sewerage

Pit emptying methods



Key messages, regional lessons and policy recommendations

Three key messages to close urban-rural gap

- 1. Achievement of SDGs in Moldova requires multiple service delivery models for rural areas operating in parallel:***
 - Regional/urban service providers expanding to neighboring LPAs
 - Supporting local operator models in rural LPAs
 - Improving self-supply for dispersed populations
- 2. Developing enabling environment, policies, legislative framework, financing and support measures for all delivery models***
- 3. Sanitation solutions for rural areas need to go beyond sewerage, anchored in local reality and require local government engagement***

Lessons from Regionalization Path

Positive outcomes in Kosovo and Croatia point to processes that have

- deliberate **equity objective** and a clear **mandate**
- dedicated measures to **support integration of rural systems**
- targeted **investments** and **technical assistance** to local governments and service providers **handle complexity**

In the face of high inequalities and aggregations with large numbers of local governments, lessons from Romania point to importance of:

- Strong **financial incentives/subsidies** to prioritise equity with dedicated slices of national **investments directed to rural areas**
- **Accountability mechanisms** with **time-bound** targets for closing the urban-rural gap
- Mechanisms for an **inclusive governance model**, to represent the interest of economically weaker local governments

See also the Aggregation Tool Kit World Bank

<http://www.worldbank.org/en/topic/water/publication/water-aggregation-toolkit>

Lessons from the Regionalization path (II)

- **Challenges** for regional service providers associated with integrating rural areas:
 - guaranteeing service levels
 - increasing customer satisfaction
 - internal management processes
 - transition processes with incumbent operators
 - asset inventories and transfers
- **Evidence from all countries** showed the need for:
 - Increase **customer support and outreach** in rural areas to improve business practices, customer satisfaction and collection rate
 - addressing customer concerns specifically on **water quality information** to encourage the benefits of a service connection.
 - Customizing **information systems of utilities** to understand and address poor system performance and plan investments
- **Alternative options** to mergers and delegations to support rural service expansion may also be considered:
 - for example technical assistance contracts between large utilities and local service providers for complex functions (SISAR in Brazil)

Lessons from Local Operator Models (I)

- ***Improving legislation, monitoring and financing***
 - **Bring local models under legal framework** and support licensing regime with minimum standards/audits (e.g. Austria)
 - Asset inventories linked to **national performance monitoring systems** (e.g. SIASAR in Latin America)
 - **Target investment** programs for **local governments** with implementation **support by (rural water) agency**

- ***Improving service levels to drive customer satisfaction***
 - Investments in **treatment** and technical support
 - **Water safety planning** and monitoring

Lessons for Supported Self-Supply

- **Develop supported self-supply program as an alternative pathway to achieve public policy goals**
 - Communication and information **campaigns**
 - **Mobile water quality testing** programs
 - **Targeted grant schemes** for improvements in **quality and accessibility**
 - **Inventories and risks assessment** by local government with support of drinking water quality regulator



Drinking Water Quality Regulator
for Scotland



Seven Recommendations for Moldova (I)

1. Articulate long-term sector needs and prepare **WSS planning framework underpinned by sound financing strategy**
2. Use this to mobilize increased **sector funding** and develop a coherent **financing window** with dedicated “slice” for rural areas
3. **Implement phased regionalization plan with incentives for collaboration and equity goals** for delineated service boundaries
4. Improve legal **framework** for **local operators**, set-up a simple **licensing** system with tailored **regulatory instruments** and **monitoring system**

Recommendations for Moldova (II)

5. **Assign, institutionalize and resource support functions for local operators** to increase performance and sustainability (administrative, institutional, technical support)

6. **Pilot and evaluate a “self-supply support program”** in high risk dispersed areas

7. Develop a **comprehensive rural & small town sanitation strategy** including
 - decentralized wastewater/low-cost solutions,
 - on-site solutions and fecal sludge management
 - incentives and communication campaigns
 - regulations across the service chain
 - local implementation capacity building

Discussion and Feedback

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