



EMERGING TRENDS IN RURAL WATER MANAGEMENT

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ABOUT USAID/REAL-WATER

USAID Rural Evidence and Learning for Water (REAL-Water) is a five-year partnership that develops and evaluates strategies for expanding access to safe, equitable, and sustainable rural water services. REAL-Water supports policymakers, development partners, and service providers to make strategic decisions and implement best practices for water management through implementation research. It also ensures coordination with USAID programs contributing to the water, sanitation, and hygiene (WASH) and water resources management (WRM) knowledge base, in alignment with the USAID Water for the World Implementation Research Agenda. For further information about this and other aspects of the project, as well as to access our knowledge products, please visit globalwaters.org/real-water.

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ACRONYMS

| | |
|------------|---|
| CBM | Community-Based Management |
| CBM+ | Supported Community-Based Management |
| CBO | Community-Based Organization |
| CREE | <i>Commission de Regulation de l'Electricite et de l'Eau (Mali)</i> |
| CWSA | Community Water and Sanitation Agency |
| FHTC | Functional Household Tap Connection |
| O&M | Operations and Maintenance |
| OFOR | <i>Office des Forages Ruraux (Senegal)</i> |
| PPP | Public-Private Partnership |
| NAWASCO | National Water Supply and Sanitation Council (Zambia) |
| NGO | Nongovernmental Organization |
| REAL-Water | The Rural Evidence and Learning for Water program |
| RUWASA | Rural Water and Sanitation Agency (Tanzania) |
| SDG | Sustainable Development Goal |
| SUNASS | <i>Superintendencia Nacional de Servicios de Saneamiento (Peru)</i> |
| USAID | United States Agency for International Development |
| WASH | Water, Sanitation, and Hygiene |
| WASREB | Water and Sanitation Regulatory Board (Kenya) |
| WSMT | Water Service Management Team |

EXECUTIVE SUMMARY

This report synthesizes a desk review of emerging trends in rural water services delivery, with a focus on 12 countries (Ghana, India, Kenya, Mali, Mozambique, Peru, Rwanda, Senegal, Tanzania, the Philippines, Uganda, and Zambia), drawn from the United States Agency for International Development's (USAID) 2021 list of high priority, priority, and strategically aligned countries. It also maps water service delivery across an array of categories (including institutional and legal arrangements, regulation, monitoring, technical capacities, and financial capacities) and reports on an E-survey conducted among 400 respondents in the rural water supply sector.

Broad trends. With shifting demographics, rapid urbanization and changing lifestyles, rural dwellers' expectations for water supply service levels have risen. These expectations have translated into elevated sector ambitions and an overall expansion and improvement of rural water services globally. The trajectory of rural water service provision in low-income countries can be summarized in three key phases: an initial centrally driven and hardware-focused phase prior to the 1980s; the decentralization of service provision to local government and the transfer of responsibility for day-to-day management to communities in the 1990s; and the recentralization of services since the 2000s. Each phase has been motivated by the shortcomings of the previous phase (i.e., limited coverage extension, insufficient cost recovery leading to inadequate maintenance and poor functionality) and more recently, the ambitions to achieve universal and sustainable services.

Growing efforts to strengthen regulation. Recently, several countries have taken steps to broaden the responsibilities of existing regulatory mandates to rural water supply (e.g., *Superintendencia Nacional de Servicios de Saneamiento* [SUNASS] in Peru, *Commission de Regulation de l'Electricite et de l'Eau* [CREE] in Mali, Water and Sanitation Regulatory Board [WASREB] in Kenya, and National Water Supply and Sanitation Council [NAWASCO] in Zambia). Others have established dedicated institutions to regulate the rural water sub-sector (e.g., *l'Office des Forages Ruraux* [OFOR] in Senegal and Rural Water and Sanitation Agency [RUWASA] in Tanzania). Other countries, such as Ghana and the Philippines, are in the process of expanding the urban water sector regulator's mandate to rural areas or formalizing a central agency's regulatory role for rural areas. Given that community-managed schemes are not effectively regulated in many settings, these efforts are particularly important.

Expanded private sector participation and increasing government involvement to professionalize service delivery. Community-based management (CBM) remains the dominant management arrangement and usually involves the formation of a committee that receives limited training, some spare parts, and then a handover of infrastructure for operation and maintenance (O&M). "Supported" CBM (CBM+) includes help from government service authorities, services procured from area mechanics or skilled artisans when needed, and formal contracts with (usually small) commercial operators. Though precise estimates are lacking, our key informant interviews indicate that CBM and CBM+ arrangements account for more than 80% of rural schemes in Uganda, 85% in Peru, and more than 95% in Mali; indeed, CBM+ is the most common management arrangement in 10 of the 12 focal countries we examined. Performance monitoring of CBM and CBM+ arrangements is rare, but a recognition of their limitations by government agencies and their development partners has led to signs of both expanded public sector roles (e.g., regulation) and delegation of operation and/or maintenance functions to private providers, with varying degrees of formal contracting and risk transfer. In some

countries, private sector participation in rural water supply has been formalized at regional and even national scales, via extended contracts issued through competitive tenders.

Performance uncertainty. Attempts to professionalize rural water service delivery correspond to a recognition that rural communities managing their own water supply schemes face challenges in providing reliable services. While most countries we studied have performance reporting requirements in place, oversight authorities generally lack capacity to monitor effectively, and as a result, data on performance are limited. The partial and fragmented nature of these data in the public domain mean that we cannot assess the performance of most management arrangements reliably across the 12 focus countries for this report.

Implications. Rural water service management has also followed a pattern in most countries from a single policy offering of CBM to a more pluralist set of arrangements which can be identified as:

- A few countries largely maintaining supported CBM as a policy vision, systematizing the support provided;
- A few countries initiating a deliberate and radical shift to a singular management arrangement, characterized by a wholesale change, a clear policy vision and the consolidation of services; and
- A majority of countries being at different stages on this spectrum with a mix of arrangements: opting for a combination of arrangements for different rural contexts but adopting these alternatives more or less deliberately, radically, and swiftly.

As this transition occurs, important gaps remain to assess the performance of most management arrangements across the 12 countries.

I. INTRODUCTION

I.1 BACKGROUND TO REAL-WATER PROGRAM

The Rural Evidence and Learning for Water program (REAL-Water) is a five-year (2021-2026) cooperative agreement between the United States Agency for International Development (USAID) and The Aquaya institute (Aquaya).¹ REAL-Water seeks to expand the evidence base for rural water supply and in doing so, contribute to expanding access to safe, equitable, and sustainable rural water across the developing world.

I.2 BACKGROUND ON THIS REPORT

In this report, we provide a summary of the key trends in rural water service delivery at the global level and how they have manifested across 12 countries selected in consultation with USAID (Ghana, India, Kenya, Mali, Mozambique, Peru, Rwanda, Senegal, Tanzania, the Philippines, Uganda, and Zambia). These countries—drawn from USAID’s 2021 list of high priority, priority, and strategically aligned countries for water, sanitation, and hygiene (WASH) assistance—represent a diversity of regions, developmental contexts (income, population, levels of fragility and vulnerability and readiness for climate change), as well as water sector contexts (in terms of rural water coverage and coverage of piped water supply services). Figure 1 presents the position of these countries with respect to coverage and wealth in 2020, along with all other high priority, priority, and strategically aligned countries.

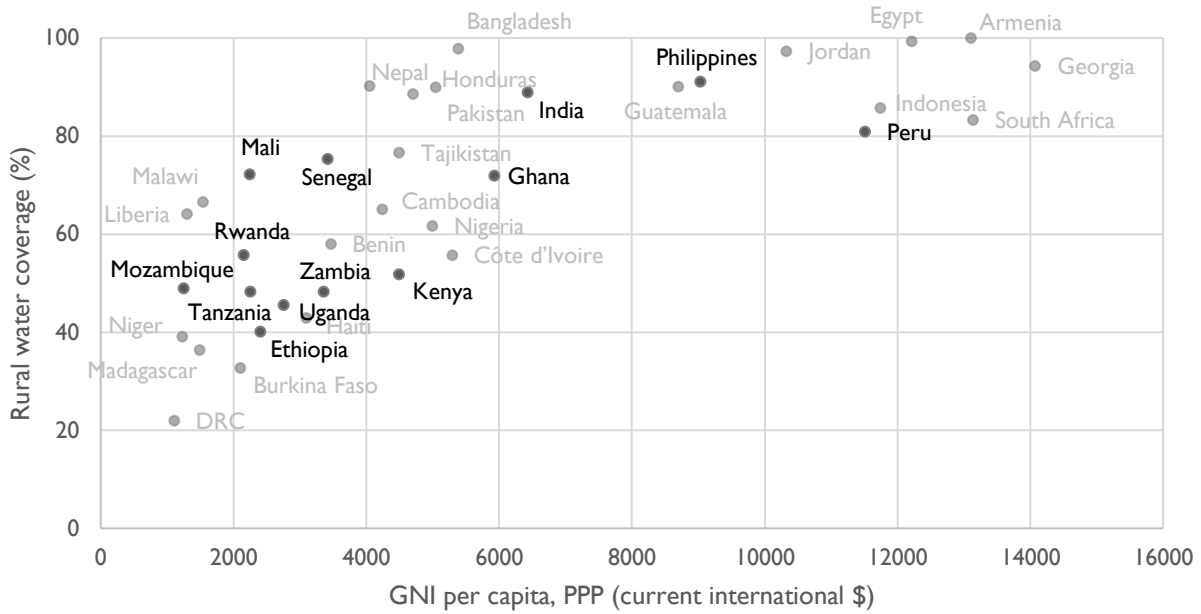
The report constitutes a synthesis of the following activities conducted in the first year of REAL-Water:

- A desk study carried out to characterize the historical evolution of rural water supply and approaches to management in low, middle-income and high-income countries and to identify the evidence linking management arrangements and performance;
- A landscape exercise conducted for the 12 countries listed above to map management arrangements currently recognized in sector policy, ongoing sector developments, and available performance data; and
- An E-survey among 400 respondents to complement and validate the list of factors for research testing.

The 12-country landscape exercise, conducted together with other REAL-Water consortium partners, involved document reviews and key informant interviews to populate a comprehensive Excel-based “Analytical Framework.” We used over 100 parameters for each country, in categories spanning context, infrastructure, history, institutional and legal arrangements, technical capacity, financial capacity, monitoring, and regulation (among other categories).

¹ The other consortium members are Aguaconsult, United Kingdom; Ashoka Trust for Research in Ecology and the Environment (ATREE, India), Kwame Nkrumah University of Science and Technology (KNUST, Ghana); Skat Foundation’s Rural Water Supply Network (RWSN, Switzerland); Safe Water Network (USA); and Water Mission (USA).

Figure 1: Rural water “at least basic” coverage as a function of per capita gross national income, from (WHO/UNICEF 2021) and World Bank Open Data 2021



We highlight our 12 focal countries in black. All countries depicted are USAID high priority, priority, and strategically aligned countries for WASH assistance.

2. CHANGING RURAL WATER SERVICES

2.1 CHANGING RURAL DEMOGRAPHICS, IMPROVING RURAL WATER SERVICES

With shifting demographics, rapid urbanization, and changing lifestyles, rural dwellers’ expectations for levels of water supply services have risen (Smits and Lockwood 2015; Moriarty et al. 2013; World Bank Group 2017). Globally, this has translated into elevated sector ambitions and an overall expansion and improvement of rural water services (Carter 2021). However, in aggregate, only 60% of the rural population globally have access to safely managed services, as compared to 86% of the urban population (WHO/UNICEF 2021).

2.2 GROWING SECTOR AMBITIONS

Evidence suggests countries are taking important steps to expand and improve rural water supply services and setting more ambitious goals in alignment with the Sustainable Development Goals (SDGs). Among the 12 countries we investigated, India, Peru, Senegal, the Philippines, and Uganda have set targets for water services that go beyond basic service levels (i.e., water from an improved source with a collection time not exceeding 30 minutes for a round trip, including queuing, and at least one but not all of the following: i) water is accessible on premises, ii) water is available when needed, or iii) water supplied is free from contamination) or safely managed services (i.e., drinking water from an improved source that is accessible on premises, available when needed and free from fecal and priority chemical contamination) (WHO/UNICEF 2021). India and Senegal have in turn increased the target in rural water services generally to piped water facilities, as indicated in Table I.

Table I: Ambitious targets and service change over the last 20 years

| COUNTRY | TARGET | RECORDED SERVICE EXPANSION AND IMPROVEMENTS |
|---------|--|---|
| India | Universal access to drinking water through individual household tap connections to all rural households by 2024 ² | Increase in functional rural household tap connections (FHTC) from 17% in 2018 (Census of India 2013) to 48% in March 2022 (Jal Jeevan Samvad 2022) |
| Peru | Most (97%) of the population with access to piped water supply through public or household connections by 2026 (Ministerio de Vivienda, Construccion y Saneamiento 2022) | Increase in rural piped water services from 69% in 2000 to 90% in 2020 (WHO/UNICEF 2021) |
| Senegal | Universal access to water supply: (i) basic access by 2025 and ii) safe access by 2030 ³ | Increase in rural piped water services from 32% in 2000 to 65% in 2020 (WHO/UNICEF 2021) |
| Uganda | Achieve universal and equitable access to safe and affordable drinking water for all in 2040 by paying special attention to the needs of women and girls and those in vulnerable situations (National Planning Authority of Uganda 2007) | Increase in rural piped water services from 11% in 2000 to 23% in 2020 (WHO/UNICEF 2021) |

² Jal Jeevan Mission

³ [Plan Senegal Emergent, République du Senegal \(2014\)](#)

3. RECENT AND ONGOING SECTOR REFORM PROCESSES

3.1 FROM CENTRALIZATION TO DECENTRALIZATION AND BACK

Over the last 40 years, there has been a common trajectory in rural water services provision with three typical phases: i) an initial centrally driven phase prior to the 1990s, followed by ii) the decentralization of service provision from the late 1990s, and since the 2000s, iii) the recentralization of services.

Prior to the 1990s, rural water service provision was largely centralized and characterized by government-led, top-down and technology-focused approaches. The recognition of inadequate service expansion, cost-recovery, and infrastructure maintenance led many countries to initiate major water sector reform processes in the 1990s. With widespread acceptance that governments had failed to significantly maintain and expand rural water services, these reforms focused on broader structural adjustment processes, reductions in government spending, and large-scale decentralization of service provision responsibilities from central to local governments. They also saw a transfer of water supply management functions to communities intended to increase local ownership and participation, and ultimately, cost-recovery (Arlosoroff et al. 1984; Briscoe and Ferranti 1988; Katz and Sara 1997; van Koppen et al. 2005).

A more recent trend, pursued by countries of different economic statuses since the 2000s, has been to recentralize service provision through the consolidation of services to, optimally, achieve economies of scale, increase the revenue base, reduce overhead costs, and increase the attractiveness of rural water supply to public and private sector investment. Examples include Zambia's establishment of provincial commercial utilities and later, Senegal's clustering of rural populations into larger service areas for public-private partnership lease contracts.

“Consolidation” and “aggregation” generally refer to the creation of new dedicated rural operators, either by expanding the umbrella of management to incorporate physically separate schemes or by enlarging existing urban utilities through the extension of piped networks into contiguous rural areas (Pilgrim et al. 2007; Adank, van Lieshout, and Ward 2021)). These processes have been observed in other countries, at district (e.g., Rwanda, Uganda) or provincial levels (e.g., Zambia) and either via public utility provision (e.g., Ghana, Zambia and Uganda) or private sector provision (e.g., Senegal, Rwanda, and Uganda). For more detail on the consolidation trend, see the REAL-Water research brief, [*Is Consolidation the Answer to Improving Rural Water Services in Low-Income Countries? Lessons from OECD Country Experience.*](#)

3.2 STRENGTHENING REGULATION

There have been continuing efforts to fill the legal and regulatory vacuum typical of the fragmented rural water sector (Tremolet 2013; Gerlach 2019; ESAWAS 2022). This is reflected in the 12 countries we investigated for this report, where the most common community-based arrangements are either not formally included within the mandate of a regulatory authority or not subject to regulatory enforcement due to resource and capacity constraints. Achieving the balance between multiple regulatory functions (tariff regulation, consumer protection, ensuring service quality, and ensuring competition) has been increasingly recognized as a challenge in recent years.

Recently, several countries have taken steps to broaden the responsibilities of existing regulatory mandates to rural water supply (e.g., *Superintendencia Nacional de Servicios de Saneamiento* [SUNASS] in Peru [see Box 1], the Commission de Regulation de l'Electricite et de l'Eau [CREE] in Mali, the Water and Sanitation Regulatory Board [WASREB] in Kenya, and the National Water Supply and Sanitation Council [NAWASCO] in Zambia); or to establish dedicated institutions in charge of regulating the rural water sub-sector (e.g., *l'Office des Forages Ruraux* [OFOR] in Senegal and the Rural Water and Sanitation Agency [RUWASA] in Tanzania). Other countries, such as Ghana and the Philippines, are expanding the urban water sector regulator's mandate to rural areas or formalizing a central agency's regulatory role for rural areas.

Box 1: Expanding regulation to water services in Peru.

In Peru, the 1962 [General Law for Rural Sanitation](#) recognized community-based organizations (CBOs) as the standard arrangement for managing rural water services, with the municipality providing technical assistance and service quality regulation. To overcome the many limitations of CBOs in expanding and maintaining services, the Government of Peru strengthened municipal technical units to provide technical support (e.g., monitoring, major repairs and rehabilitation) and assigned SUNAAS the responsibility of regulating water supply services in rural areas.

SUNASS has developed a different regulatory framework for CBOs that supports their progressive standardization and benchmarking and has implemented an [information system](#) for rural service providers. These efforts to expand regulation have gone hand-in-hand with increasing the funding envelope for rural water and improving the technical support made available by municipal government authorities to the water committees (*Juntas Admisitradores de Servicios de Saneamiento* through dedicated support departments (*Áreas Técnicas Municipales*).

4. DIVERSIFYING APPROACHES TO RURAL WATER MANAGEMENT

We mapped the management arrangements in place for rural water service in the 12 study countries using a framework that builds upon USAID’s typology (USAID 2020) but differs in two respects: it excludes self-supply as an individual and household-level approach to infrastructure construction and maintenance, and it makes sub-variations more explicit to enable more distinct assessments of their performance. Figure 2 provides an overview of the management arrangements for the 12 study countries, highlighting the diversity of arrangements that coexist in these countries, which we elaborate in subsequent sections.

Figure 2: Overview of management arrangements in 12 study countries

| Supported Community-Based Management | | | Private Service Providers | | | Public Service Provision | |
|--|---|--|---|---|---|--|---|
| CBM 1: Water committee management with external support from the service authority and local mechanic | CBM 2: Water committee management with the formal delegation of some technical functions to private operators | CBM 3: Grouping of water committees into associations or federations to support water supply facility management | PRIVATE1: Privately owned and operated schemes (invest, build, operate) | PRIVATE2: Private operators delegated operations and management functions by local government | PRIVATE 3: Private companies delegated operations and management responsibilities by specialised asset holding entity | PUBLIC 1: Local government unit or department directly managed water supply infrastructure | PUBLIC 2: National or sub-national utility directly manages water supply infrastructure |
| Ghana (WSMTs) Kenya (SSPs) Mali (AUEPs) Mozambique (Water Committees) Peru (CBOs) Senegal (ASUFORs) Tanzania (CBWSOs) The Philippines (RWSAs) Uganda (CBMS+) Zambia (V-WASHE) | Ghana (WSMTs) Tanzania (CBWSOs) Uganda (CBMS+) | No such arrangement was identified among our 12 case study countries, even as it is found elsewhere. | Ghana | Kenya Mali Mozambique; | Mozambique Senegal | India (SVS and MVS) Peru (Direct Municipal Provision) The Philippines (LGUs) | Ghana (CWSA) Kenya (WSPs) Tanzania (RUWASA) The Philippines (Water Districts) Uganda (UAs; NWSO); Zambia (CUs) |

4.1 COMMUNITY-BASED MANAGEMENT REMAINS THE PREDOMINANT ARRANGEMENT

Community-Based Management (CBM) refers to communities taking on the burden of maintenance themselves, with either no or limited support from external agencies or local government. Traditionally, there is external support (either from government or donors) for initial capital expenditure, with community participation in the planning and design of infrastructure. Evidence has shown that the traditional CBM model has struggled to ensure that rural water supply infrastructure is adequately maintained, with most communities waiting until infrastructure breaks before attempting any maintenance due to a lack of resources or expertise among volunteer committee members. This results in long periods without water services, higher costs, and ultimately a lack of reliable, sustainable services for rural populations. In response to these challenges, most development partners are now promoting what is termed ‘supported community based management,’ which has the potential to dramatically improve functionality rates for rural water services and which relates to the provision of both preventative and corrective maintenance services either through associations, private sector or government support. (USAID 2020).

CBM was originally introduced for ideological reasons, which have been interpreted in intervening years as the combination of both a positive vision of greater community participation as well as the abdication by government of responsibility for the rural population for political and economic reasons (Katz and Sara 1997; Schouten and Moriarty 2002; P. Harvey and Reed 2004; Cleaver and Toner 2006; Lockwood and Smits 2011; World Bank Group 2017a; Thapa, Farid, and Prevost 2021). CBM remains the predominant model in most low- and middle-income countries despite limitations that have been documented for many years, are well-articulated in the literature, and are recognized in the 12 study countries.

According to estimates by key informants interviewed, the proportions of the rural population under the supported CBM arrangement range from 80% in Uganda (CBM Systems or “CBMS+”⁴), to 85% in Peru (CBOs) to 96% in Mali (water users’ associations). We note, however, a paucity of consistent data on supported CBM that reflects the limited formalization and lack of registration of community management entities as well as the limited monitoring that is typical in the sector. In the Philippines, for example, only 3% of the rural waterworks and sanitation associations are registered with the appropriate authority. In Kenya, small-scale service providers are only now being mapped by the Water and Sanitation Regulatory Board as part of an effort to establish the extent of their operations.

The common contours of basic CBM arrangements are as follows: a committee is formed (often on a voluntary basis) and receives limited training, some spare parts, and then a handover of infrastructure for operation and maintenance (O&M), with very little ongoing support or performance monitoring. We also note the following characteristics:

- In most cases, the asset owner is the local government, although in Senegal and Mozambique, national asset holding entities dedicated to this function have been established.
- Although unsupported CBM is largely characterized by voluntarism, we note exceptions in Ghana where water and sanitation management teams (WSMTs) hire staff to operate and maintain services in-house, and in India where a “waterman” is recruited by the *Gram Panchayat* (village council) to carry out O&M.
- Although communities have historically managed point water sources, CBM is also in place for the management of piped water facilities in Ghana, Uganda, Peru, the Philippines, Mozambique, Zambia.
- The requirement for CBM entities to legally register and assume the responsibility to manage water supply facilities formally varies across countries. In Peru and the Philippines, communities are not required to be legally registered and contracted; in Mali, water users’ associations sign delegated agreements with municipalities that include service specifications.

To address the performance limitations of CBM, several countries are testing or scaling up approaches to provide systematic and formalized training and long-term support to CBM (Baumann 2006; Moriarty et al. 2013; Chowns 2015; Lockwood and Le Gouais 2015; A. Harvey 2021; Cord et al. 2022; Foster et al. 2022). We identified two broad channels for strengthening CBM in the 12 countries we investigated:

⁴ “CBM +” and “supported CBM” are used interchangeably in the sector. Examples of external support in CBM arrangements include help from government service authorities, services procured from area mechanics or skilled artisans when needed, and formal contracts with (usually small) commercial operators, among others. See Lockwood and Le Gouais (2015)

- Technical, monitoring, and regulatory support through national or local government, where efforts largely focus on bringing CBM under the mandate of the regulator to improve CBM performance: this is the case in Peru, Tanzania, and Kenya.
- Outsourcing of operation and/or maintenance functions to private providers, with varying degrees of formal contracting and risk transfer: this is the case in Zambia, where communities outsource preventive maintenance and repairs to area pump minders; in Ghana, where WSMs formally delegate O&M functions to private providers; and in Uganda, where the District Water Authority formally outsources O&M functions to an area service provider that operates under a contract management arrangement covering a wider service area.

Supported CBM is the most common management arrangement in 10 of the 12 study countries (Ghana, Kenya, Mali, Mozambique, Peru, Senegal, Tanzania, the Philippines, Uganda, and Zambia). Other formal arrangements were adopted for rural water services only in India and Rwanda.

4.2 THE ADOPTION OF ALTERNATIVE MANAGEMENT ARRANGEMENTS FOR RURAL WATER SUPPLY

Recognizing the limitations of CBM, governments have introduced alternative management arrangements in a trend that has been accelerating since the early 2000s. This transition is referred to as “professionalization” in the literature, but the concept is not well defined and relates to different processes at different levels (World Bank 2013; Lockwood and Le Gouais 2015; Brault et al. 2015). We found evidence of professionalization efforts in all 12 of our study countries, with either the introduction of public utility service provision (expanding services into rural areas) (World Bank Group 2017a; Franceys 2019; Adank, van Lieshout, and Ward 2021) or the involvement of private providers working under different arrangements. These efforts share the objective of improving service delivery. We expand on these findings of professionalization below.

4.2.1 PRIVATE SECTOR PROVISION

We found private sector provision to represent an important arrangement in Mali, Mozambique, Rwanda, and Senegal, with legally registered providers signing a delegated performance contract with the asset owner (either the local government, or the national asset holding entity in Mozambique and Senegal). These contracts stipulate responsibilities for operation and minor maintenance of piped water facilities. We note a number of specific private sector provision characteristics:

- There are different visions of the role of private sector participation. In Rwanda and Senegal, private sector participation is the intended management arrangement for rural water services and has been rolled out over the last decades following clear government-led plans. In the case of Rwanda, this has resulted in the inclusion of an entire rural population in a private sector provision area (even as communities continue to play varying roles in service provision). In Mozambique, the government’s expressed preference for private sector participation is only for piped water facilities in district capitals, small towns, and rural growth centers between 2,000 and 10,000 people.
- We identified private providers operating on different scales: small-scale private providers that deliver and retail treated, safe water to local communities (Mozambique, Mali) as well as larger-scale public private partnership (PPP) arrangements with long-term contracts issued by government or asset holding entities based on open tenders, to operate and maintain rural water services across defined service areas (Senegal and Rwanda).

Table 2 presents the uneven information related to the exact number of private providers, as well as the characteristics of the service provision areas (in terms of population served and technologies employed).

Table 2: Overview of private sector provision in Mali, Mozambique, Rwanda, Senegal, and Tanzania

| COUNTRY | KEY LEGAL AND POLICY FRAMEWORK | RURAL POPULATION COVERED UNDER THIS ARRANGEMENT | AVERAGE SERVICE PROVISION SIZE (IN KM ²) | AVERAGE POPULATION SERVED BY ONE PRIVATE PROVIDER | NUMBER OF PROVIDERS |
|------------|---|---|---|---|---------------------|
| Mali | Water Act, 2002 ⁵ | 3.2% | Unknown | Unknown | Unknown |
| Mozambique | National Water Policy (2007) ⁶ | Unknown | Unknown | Unknown | Unknown |
| Tanzania | Water Act, 2019 ⁷ | Unknown | Unknown | Unknown | Unknown |
| Rwanda | National Water Supply Policy and Implementation Strategy (2016) ⁸ PPP law (Law N° 14/2016) ⁹ | 100% (RURA 2021) | 467 km ² (half the average size of a district) | 43,000 (ranging between 5,000 and 267,000 people) (Aquanet/AquaRwanda 2017) | 58 (RURA 2021) |
| Senegal | SPEPA (Water and Sanitation) Law n°2008-59 ¹⁰ | Over 7 million | 23,531 km ² | 1,856,814 (average service area population) ¹¹ | 4 |

4.2.2 PUBLIC SECTOR PROVISION

We identified public sector participation as an important arrangement in Ghana, India, Kenya, Mozambique, Tanzania, and the Philippines with two main variants (municipal vs. national/subnational).

Some countries have adopted municipal service provision, whereby a local government unit or department manages water supply infrastructure directly. This is the case in India, Peru, and the Philippines. While direct municipal provision has been in place in the Philippines and India for several decades, the arrangement has been introduced only recently (in 2016) in Peru in an effort to increase service provision area and service efficiency in rural areas with low population density and size.

Municipal service provision is characterized by low levels of independent regulation. In the Philippines, only 1% of local government units are formally regulated by the National Water Resources Board while in Peru, the regulatory instruments to be applied to this new arrangement are currently under development.

⁵ [Water Act 2002](#)

⁶ [National Water Policy 2007](#)

⁷ [Water Act 2019](#)

⁸ [National Water Supply Policy and Implementation Strategy 2016](#)

⁹ [Law No.14-2016 of February 5th, 2016, Governing Public Private Partnerships](#)

¹⁰ [Law SPEPA Senegal 2008](#)

¹¹ The Government of Senegal has divided rural areas into eight sub-national service areas (“périmètres”). The intention is for a private provider under a PPP (lease contract with the asset holding entity) to manage rural water services in each of these service areas.

In the municipal service arrangement, the service provider may handle O&M itself or may outsource it. In India, for example, local government (the *Gram Panchayat*) is the primary entity responsible for asset maintenance, spare part procurement, tariff setting, and hiring of a paid waterman for carrying out O&M activities. Peruvian municipalities carry out the O&M activities in-house. In the Philippines, local governments may conduct O&M themselves or outsource them to external actors.

Countries in which a national or sub-national utility manages water supply infrastructure directly include Ghana, Tanzania, the Philippines, Uganda, and Zambia. Utility provision has been introduced in these countries to consolidate services into larger service areas (Adank, van Lieshout, and Ward 2021):

- Via a single town, regional utility, or national utility expanding into rural areas through the expansion of the physical water supply facilities and management responsibilities. This is the case in Kenya (via urban water supply and sanitation service providers),¹² and in the Philippines (via water districts).¹³
- Via a dedicated rural utility established to assume the management of existing piped water facilities previously managed by other service providers (usually the community). This is the case in Ghana (via the Community Water and Sanitation Agency [CWSA]),¹⁴ Uganda (via its Umbrella Authorities [UAs]),¹⁵ and Tanzania (via the Rural Water and Sanitation Agency [RUWASA]).
- Via hybrid approaches like in Zambia, where the National Water Supply and Sanitation Council (NWASCO) amended the license for commercial utilities to cover water supply for both rural and urban areas, allowing them to extend their water facilities to rural areas and/or take over the management of existing piped water facilities.¹⁶
- The rationale behind this consolidation trend is to achieve economies of scale, increase the revenue base, reduce overhead costs, and pool the risk of infrastructure failure as well as making rural water supply more attractive for both public and alternative investments (World Bank WSP and AFDB 2013; Tkachenko and Mansour 2021).

4.3 THE PATHWAY TO IMPROVING MANAGEMENT OF RURAL WATER SERVICES

While CBM remains the predominant arrangement for delivering rural water services in many countries, multiple initiatives are focusing on moving away from basic CBM toward more formalized and regulated alternatives delivering higher levels of service (and ultimately piped supply on premises). It is equally the case that CBM—and the reliance on communities for some aspects of the organization and delivery of their water services—will not disappear overnight. This transition to a diverse set of management

¹² Water service providers are utilities generally operating in the main county headquarters and other small cities, towns, and rural areas, currently serving 26.2 million people (WASREB 2022). They are categorized as small, medium, large or very large utilities based on the total number of water and sewer connections.

¹³ The 685 water districts are government-controlled corporations registered and regulated by local water utilities associations.

¹⁴ Over 170 small towns' water systems previously under CBM are now under CWSA management, serving population of 1.2 million (7.5 % of the population) (CWSA Strategic Investment Plan [2021-2024]).

¹⁵ As of 2020 all six regional UAs operated in 776 gazetted small town piped water systems in 2020, but are only managing 498, with the district managing the remainder and serves 2.5 million people (ESAWAS 2022)

¹⁶ Direct management of piped water supply facilities by commercial utilities is only applied on a limited basis, with commercial utilities serving 91 towns or centers in 2020 (NWASCO 2021).

alternatives accounts for a range of rural consumers and markets, including highly dispersed communities (World Bank Group 2017b) and takes different forms across study countries.

On one side of the spectrum, a small number of countries is maintaining CBM as a policy vision but attempting to support it systematically (with Peru as an example). Uganda also illustrates this trend, through its recently released O&M framework for rural water and the CBMS+ model with area service providers arranging maintenance services to community-managed water facilities.

On the other end of the spectrum, some countries have initiated a deliberate and radical shift to a singular management arrangement. These countries have introduced structured wholesale change, underpinned by a clear political vision and policy formulation that is also associated with a consolidation of services. Senegal and Rwanda are illustrations of this trend, with both pursuing PPP arrangements as the single approach to rural service provision. Zambia also falls in this group, through the expansion of utilities, even as consolidation processes are still ongoing.

The majority of the countries is located between these extremes:

- A number of countries have adopted a combination of arrangements for different rural contexts, and/or have adopted alternative arrangements more or less deliberately and radically. These countries are still heavily reliant on CBM and still designing mechanisms for providing structured support (Ghana, the Philippines and Mali illustrate this group).
- A number of countries are further ahead in terms of generalizing alternative arrangements and/or consolidating services progressively (Mozambique and Tanzania are illustrations).

5. EVIDENCE OF PERFORMANCE

5.1 LIMITED DATA ON MANAGEMENT PERFORMANCE

As rural water supply management undergoes a transition away from unsupported CBM across low-and middle-income countries, gaps remain in our understanding of how these different management arrangements influence the performance of rural water supply facilities. Performance monitoring should always occur, but we could not locate performance monitoring across management arrangements.

In most countries, although CBM entities are required to submit performance data to oversight authorities, such authorities generally lack capacity and resources to monitor service providers effectively, follow up on performance-related issues, and aggregate or share data back to external audiences. Service delivery by public utilities and privately managed water services tend to be more frequently monitored than CBM arrangements, but even for those providers, performance data are rarely systematic, aggregated in sector performance reports, and shared publicly (see Table 3).

This trend is in line with that offered in ESAWAS (2022), which noted that performance data is largely only available for more formal (and larger) service providers, which share data with national regulatory authorities (such as WASREB in Kenya and NWASCO in Zambia). These national authorities compile these data into annual reports that are widely disseminated. In addition to these sector monitoring and performance reporting processes, other sources of performance data are available and in principle, can be accessed, and include:

- Service provider performance data. Some service providers, such as the externally supported non-profit “Safe Water Enterprises” and selected nongovernmental organizations (NGOs) that invest in and continue to support water facilities (e.g., Water Mission in Kenya, Tanzania, Uganda, and Peru) have much better and more detailed data than is commonly available in the sector, but they represent a very small proportion of water supply facilities in any given country.
- Performance evaluations currently conducted by sector stakeholders. This is the case in Rwanda under the USAID-funded *Isoko Ubuzima* project as well as in Senegal, where the Ministry of Water recently commissioned an evaluation of the sector reform.¹⁷

As a result of these partial and fragmented data, and lack of readily available data in the public domain, we cannot reliably assess the performance of most management arrangements across the 12 focus countries.

¹⁷ *Évaluation de la Réforme de l’Hydraulique rurale au Sénégal*, July 2021 (cannot be shared)

Table 3: Overview of aggregated performance data availability in the 12 countries

| COUNTRY | ARE PERFORMANCE DATA MONITORED, REPORTED, AND AGGREGATED AT SCALE? | | | ARE PERFORMANCE DATA PUBLICLY AVAILABLE? |
|-----------------|--|------------------|--------------------------|--|
| | SUPPORTED CBM | PUBLIC PROVISION | PRIVATE SECTOR PROVISION | |
| Ghana | ✗ | ✓ | ✓ ¹⁸ | Only for public utility-managed water facilities (CWSA's annual reports). |
| India | NA | ✓ | NA | Data availability per State (e.g., Uttar Pradesh State) |
| Kenya | ✗ | ✓ | Partially | Only for licensed service providers (WASREB's annual reports). |
| Mali | Partially | NA | Partially | ✗ |
| Mozambique | ✗ | ✗ | ✓ | Only for utilities (AURA's benchmarking annual reports). |
| Peru | Partially | ✗ | NA | Only for a small proportion of CBOs (SUNASS' annual performance) |
| Rwanda | NA | NA | ✓ | Only for urban utilities (Rural Utilities Regulatory Authority's [RURA] annual report). |
| Senegal | ✗ | NA | ✓ | Only in sector reviews |
| Tanzania | Partially | ✓ | ✓ | Only for utilities (non-functional link) |
| The Philippines | Partially | Partially | NA | Yes, for licensed service providers (Listahang Tubig) |
| Uganda | ✗ | Partially | ✗ | Yes for UAs and NWSC (sector performance reports). |
| Zambia | ✗ | ✓ | NA | Yes, for commercial utilities (annual sector performance reports). |

¹⁸ Safe Water Network performance data

6.0 CONCLUSIONS

The 12-country landscape review carried out during the inception phase of the REAL-Water Program has largely confirmed the following broad trends:

CHANGING RURAL SETTINGS, RISING EXPECTATIONS, AND IMPROVED SERVICES. With changing demographics, rapid urbanization, economic growth, changing lifestyles and higher global ambitions, rural dwellers now expect higher levels of service. This has translated into higher sector ambitions and a broad trend of service extension and improvement. However, not all countries have progressed at the same speed and rural populations continue to have inferior drinking water services than urban populations.

PAST AND ONGOING WATER SECTOR REFORMS. Countries have tackled the challenge of extending and improving rural water services, broadly following three phases: i) an initial centrally driven and technology-focused phase prior to the 1980s; ii) the decentralization of service provision to local government and the transfer of responsibility for day-to-day management to communities in the 1990s, and iii) the recentralization of services since the 2000s. Each phase has been driven by different prerogatives that combined addressing limitations of the previous phase and increasing service sustainability. Sector reforms have also been characterized by the ongoing but less prioritized quest for increased rural water service regulation, which remains a challenge in many countries.

IMPLICATIONS FOR RURAL WATER SERVICE MANAGEMENT. Rural water service management has also followed a pattern in most countries from a single policy offering of CBM to a more pluralist set of arrangements (i.e., supported CBM, public provision, and private provision). To a large extent, a pattern in the evolution of management arrangements can be identified as:

- A few countries largely maintaining supported CBM as a policy vision, systematizing the support provided;
- A small number of countries initiating a deliberate and radical shift to a singular management arrangement, characterized by a wholesale change, a clear policy vision and the consolidation of services; and
- A majority of countries being at different stages on this spectrum with a mix of arrangements: opting for a combination of arrangements for different rural contexts but adopting these alternatives more or less deliberately, radically and swiftly.

As this transition occurs, important gaps remain to assess the performance of most management arrangements across the 12 countries.

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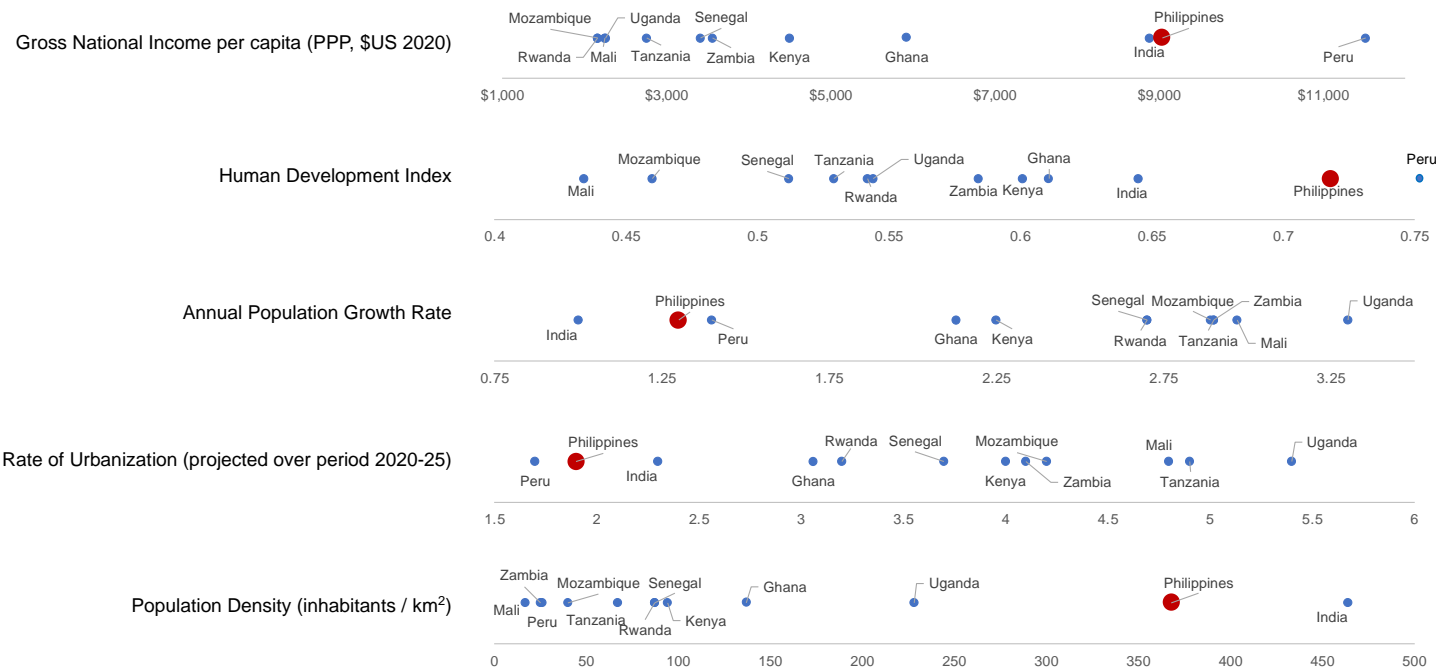
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ANNEX I: COUNTRY ANNEXES

THE PHILIPPINES

PHILIPPINES – DEVELOPMENT OVERVIEW



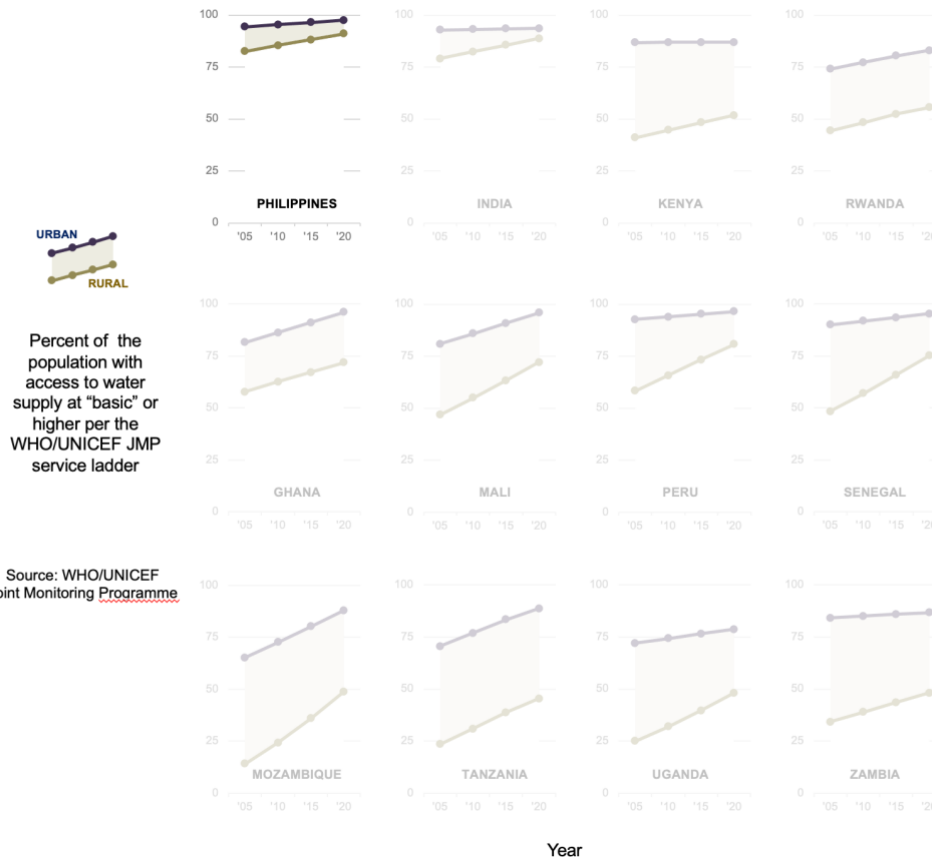
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Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)

Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

PHILIPPINES – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



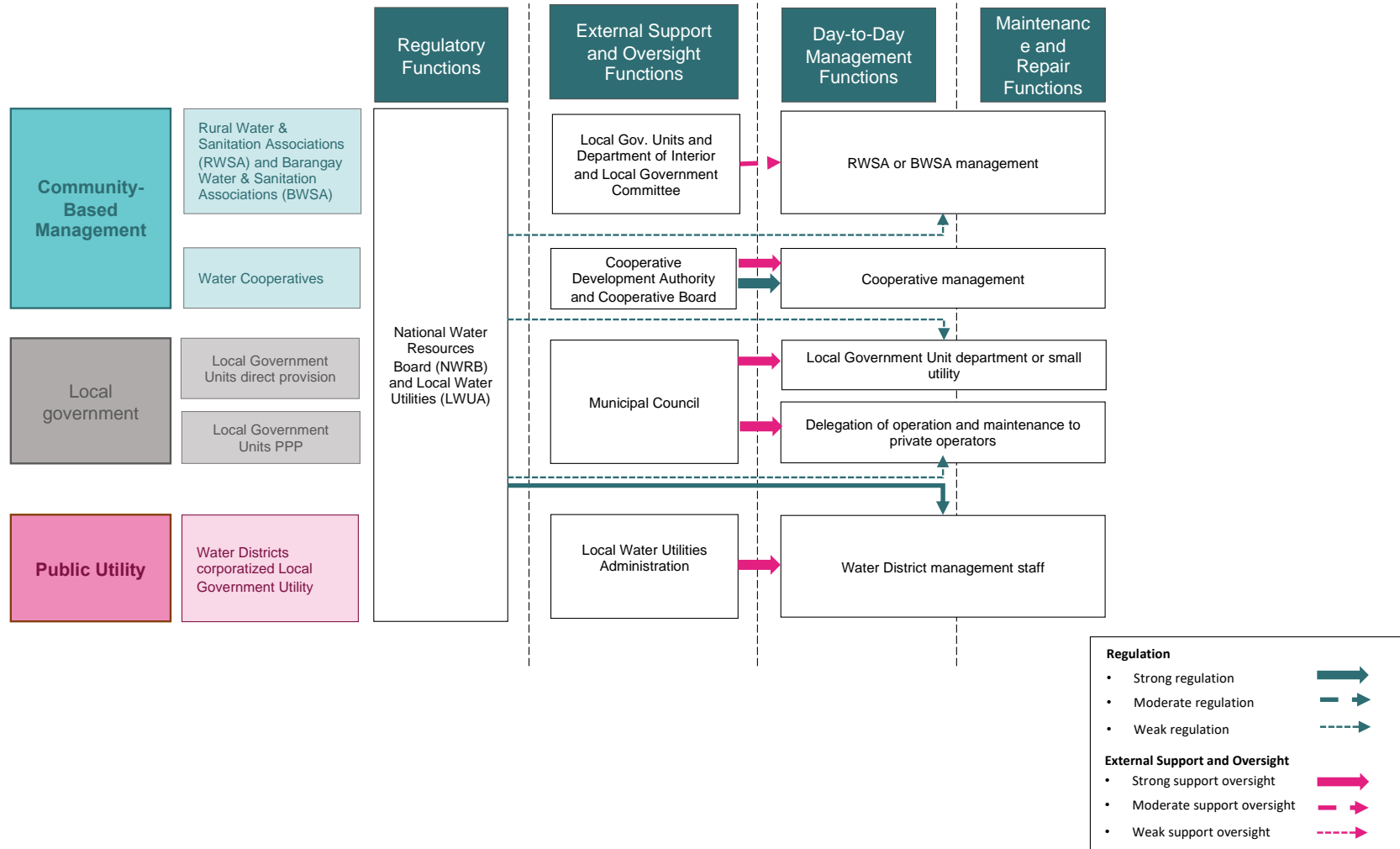
The Government of the Philippines defines three levels of water supply service: **Level 1** (stand-alone point sources – typically hand pumps at wells, but also including water treatment and vending stations), **Level 2** (piped systems with shared taps for a small number of consumers, typically at boreholes and springs), and **Level 3** (piped connections with on-premises service at > 100 liters/capita/day.)

Management arrangements in the rural Philippines are comprised mainly of **local government** systems (with most being local government-run utilities, evenly split among service levels, and a much smaller number of “**Water Districts**,” – quasi-public corporations formed by local government units (LGUs) under the Provincial Water Utilities Act, serving primarily urban areas and small towns, but also extending to some rural settings), and **community-based organizations** (consisting of *Barangay* Water and Sanitation Associations (BWSAs) at the village level and Rural Water and Sanitation Associations (RWSAs) at the smaller hamlet level, as well as a much smaller number of **cooperatives**). For Level 3 systems, there are also **private operators**.

The oversight and regulation of rural water service delivery in the Philippines is currently quite fragmented. Water Districts (which supply mostly larger population centers) are registered with the **Local Water Utilities Association (LWUA)**. LWUA and the **National Water Resources Board (NWRB)** share statutory responsibility for the supervision of the RWSAs and BWSAs, but in practice, only a very small fraction (under 5%) of these systems are registered. Similarly, only on the order of 1% of local government unity-managed systems are regulated. The LWUA’s supervisory responsibilities occur in the context of its main function, which is financial support (via loans). Cooperatives are regulated by a dedicated institution called the Cooperative Development Authority. Private operators are regulated by the NWRB.

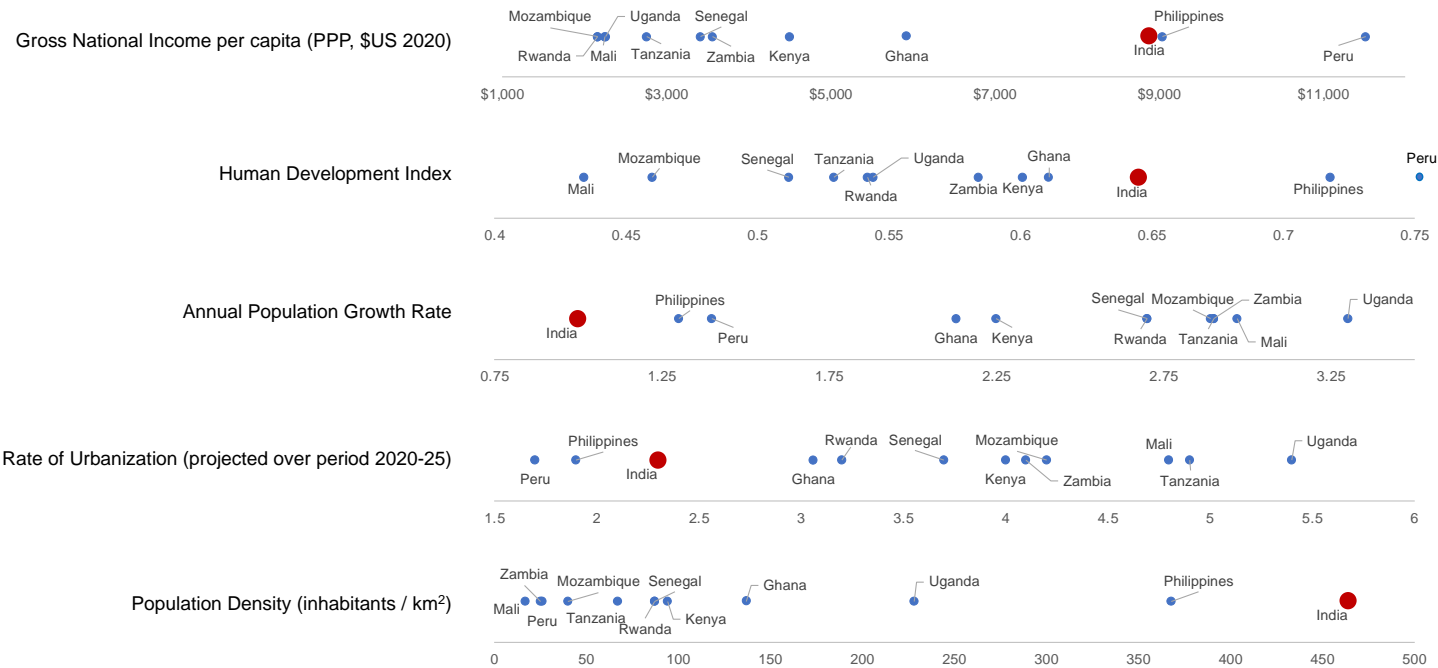
According to year 2023 *Listahang Tubig* Water Registry data (a database maintained by the National Water Resources Board), there are over 15,000 Level 1 systems, but over half are “unnamed” suppliers that are not registered with any government agency. BWSA and RWSA systems represent half of the Level 2 systems, and another 27% are LGU-run. For Level 3 systems, BWSAs and RWSAs comprise about a third of the systems, with a larger number of Water Districts represented. **Private operators** are more common at Level 3, making up over 20% of the total.

PHILIPPINES – INSTITUTIONS AND THEIR FUNCTIONS



INDIA

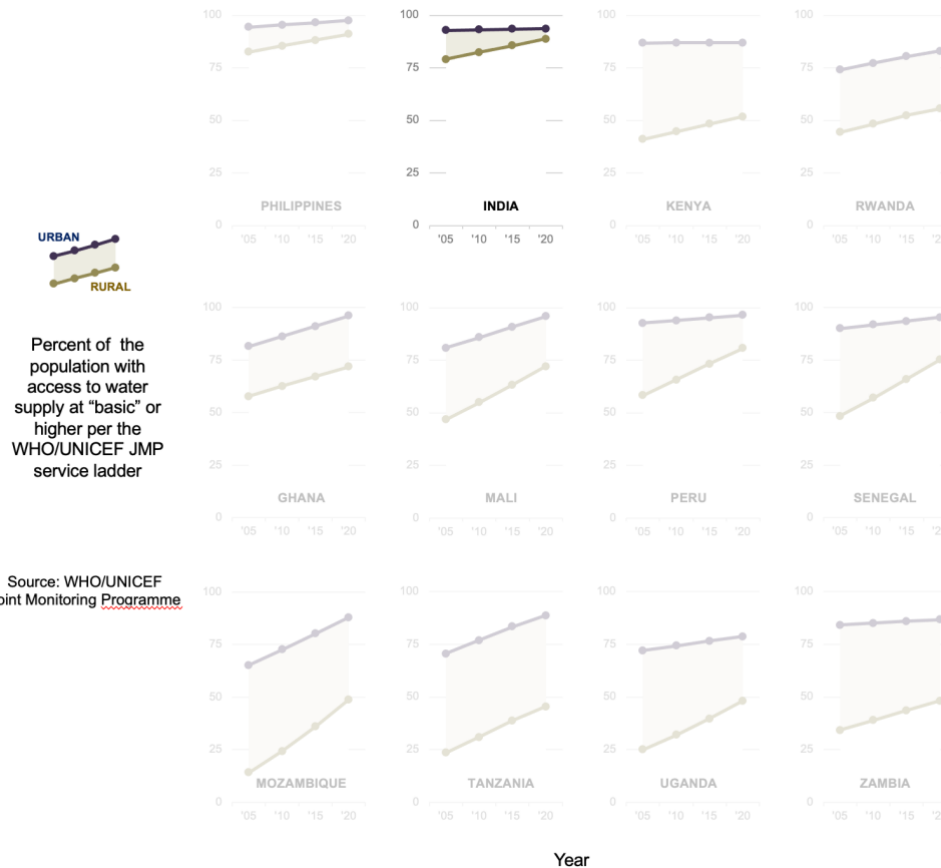
INDIA – DEVELOPMENT OVERVIEW



Data sources:

GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)
 Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)
 Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

INDIA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



Water is constitutionally a state subject in India. State governments have been active in implementing rural water supply schemes since the country's independence, drawing in part upon national funding programs (e.g. the Rajiv Gandhi National Drinking Water Mission, *Barat Nirman*, and the National Rural Drinking Water Supply Programme). While there are some common patterns, the responsible institutions vary across states and their sub-state *Panchayati Raj* levels.

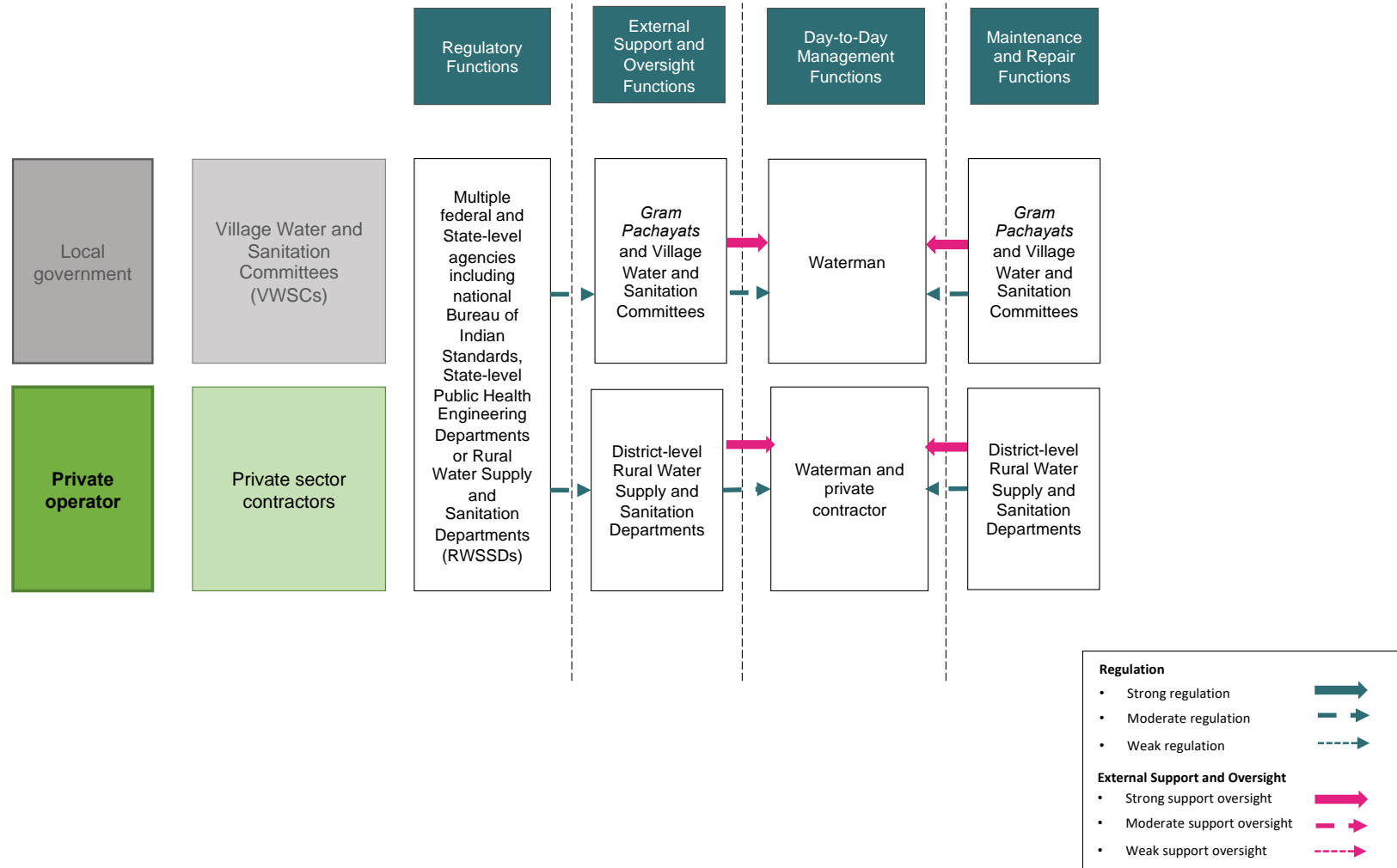
In 2019, the Indian government (via its **Ministry of Jal Shakti**), in partnership with states, initiated the **Jal Jeevan Mission (JJM) – Har Ghar Jal** – to provide functional household tap connections to all rural households by 2024. The Jal Jeevan Mission represents the single most ambitious rural water supply program ever attempted.

The JJM encompasses a broad range of water investments, policies, and regulations. The national **Bureau of Indian Standards** regulates water quality, and responsibility for meeting these standards lie with state-level **Public Health Engineering Departments** or **Rural Water Supply and Sanitation Departments**. Water quality is monitored by the local *Gram Panchayat* **Village Water and Sanitation Committees (VWSCs)** who deliver water supply services, through a network of laboratories and field-testing teams).

There are two primary institutional arrangements for rural water supply: **single-village schemes**, typically planned and installed by state-level **Rural Water Supply and Sanitation Departments (RWSSDs)** and managed by local (*Gram Panchayat*) Village Water and Sanitation Committees, and **multi-village schemes**, routinely planned and constructed by **private sector contractors** (who may also manage bulk supplies).

For single-village schemes, operation and maintenance (O&M) activities are carried out by a paid "waterman" hired by the *Gram Panchayat*. Together with the community structure in place (VWSC or RWSSD), *Gram Panchayats* maintain an asset registry, procure spare parts, set tariffs depending on the location, and provide subsidies for capital maintenance. For multi-village schemes, O&M of bulk water supply is generally contracted with private operators for a five-year period, while distribution is maintained by village watermen. Though they may enable efficiency gains, both inter-village and inter-sectoral conflicts may occur in these arrangements.

INDIA – INSTITUTIONS AND THEIR FUNCTIONS



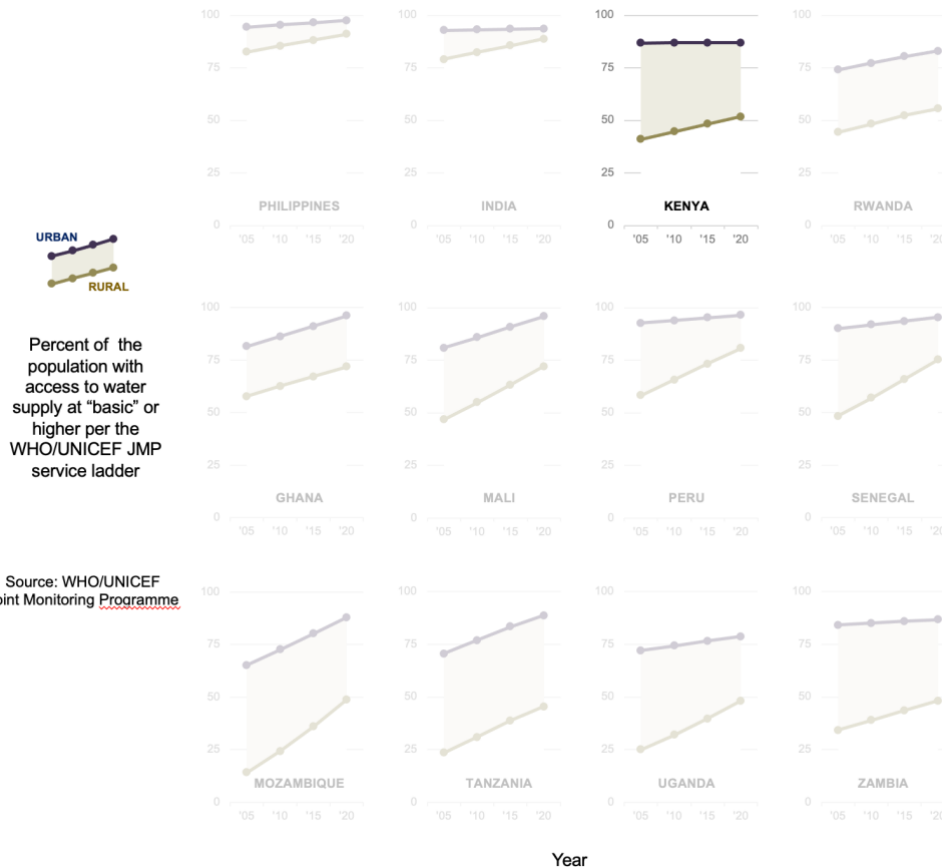
KENYA – DEVELOPMENT OVERVIEW



Data sources:

GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)
 Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)
 Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

KENYA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



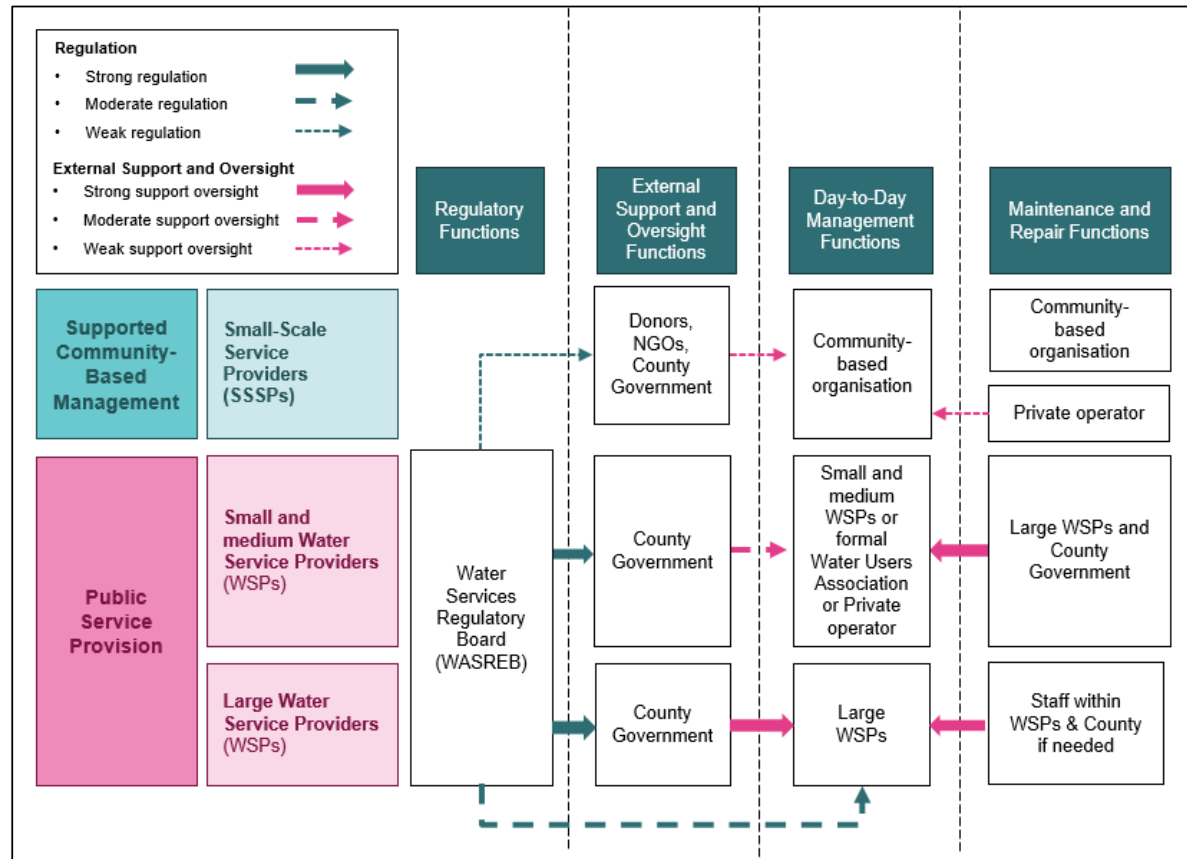
The Kenyan water sector is governed by the Water Act of 2002, whose purpose was to enhance efficiency and minimize duplication of roles and responsibilities among public sector institutions. It assigns regulatory responsibilities to the **Water Services Regulatory Board (WASREB)**.

There are two main management arrangements for rural water service delivery in Kenya: licensed **Water Service Providers (WSPs)** and unlicensed **Small-Scale Service Providers (SSSPs)**. All but the three of the 88 licensed WSPs are public utilities, and they mostly operate in "commercially viable areas" under the supervision of Kenyan county governments as the asset owners. WSPs can either carry out all operation and maintenance functions in-house or else delegate functions to a formal Water Users Association or private operator. WSPs are governed by binding Minimum Service Level Agreements and other sector benchmarks, committing themselves to progressively improve service delivery over the license validity period.

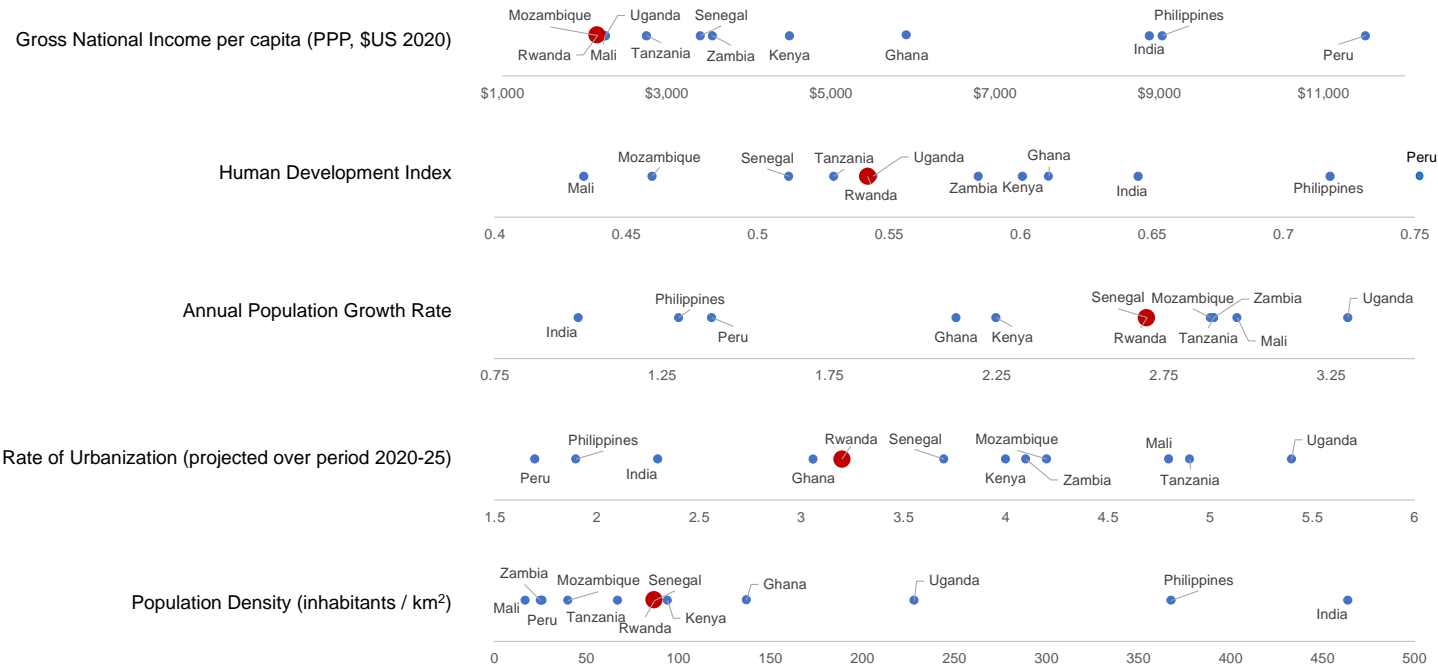
In rural areas not considered commercially viable, SSSPs (consisting largely of community groups operating on a largely voluntary and unregulated basis both for water points and piped water schemes) provide service. There are many thousands of such providers, but as they are not yet registered and licensed and WASREB is currently documenting them, and their precise number remains unknown. These unlicensed SSSPs have been the dominant arrangement in rural Kenya. SSSPs are heterogenous, and may involve the delegation of specific maintenance functions to an external private operator (largely operating without oversight).

In commercially viable areas where SSSPs are operating within the service areas of an existing and regulated WSP, WASREB specifies four options: i) the WSP can absorb the water supply system as part of its service provision area; ii) the WSP can formally delegate some operation and maintenance functions to the SSSPs, iii) the WSP can contract a private operator under a Public-Private Partnership or management contract; or iv) the WSP can relegate part of its license area to an SSSP that applies to be a licensed WSP. In cases where existing SSSPs are operating outside of an existing and regulated WSP, two options are possible: i) county government can choose to form a new and regulated rural WSP or ii) county governments can formally contract a private individual or a public-based organization to operate and maintain water services.

KENYA – INSTITUTIONS AND THEIR FUNCTIONS

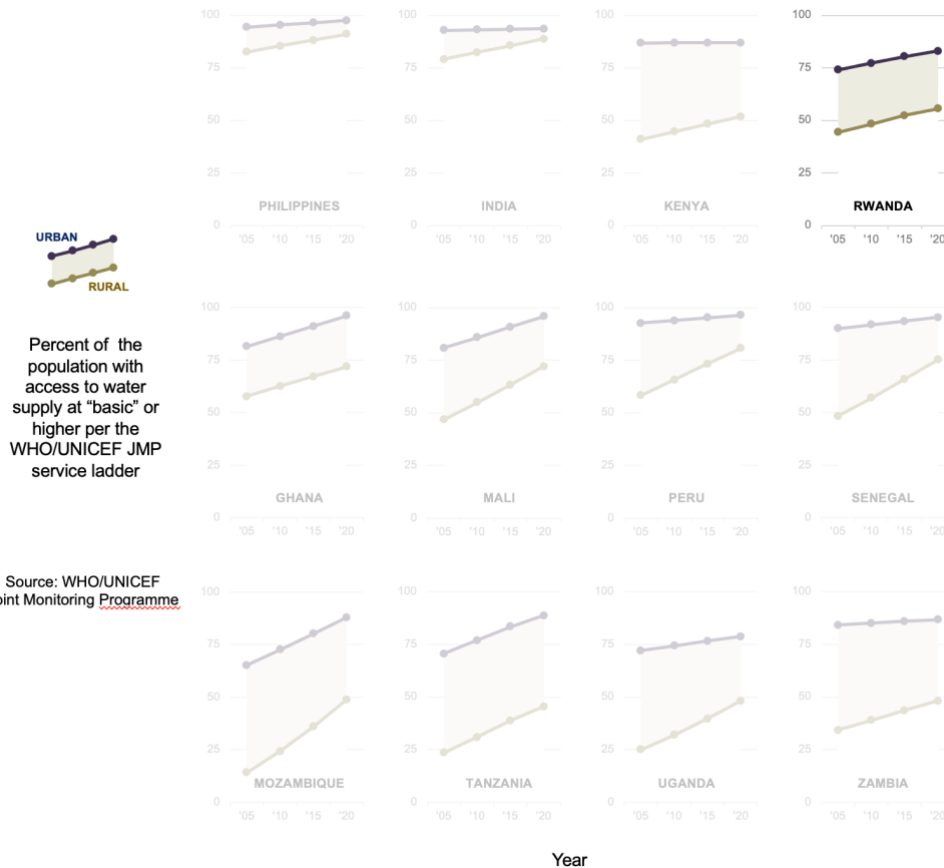


RWANDA – DEVELOPMENT OVERVIEW



Data sources:
 GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)
 Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)
 Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

RWANDA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS

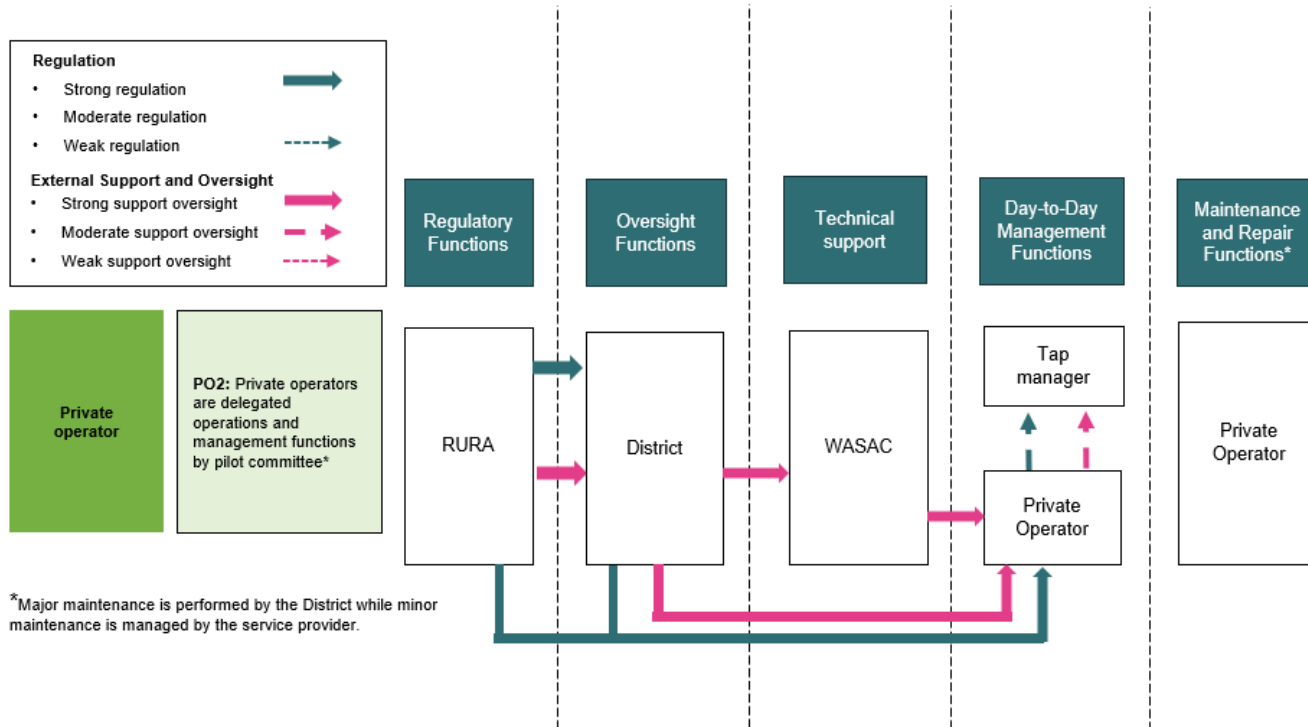


In 2014, the Government of Rwanda established the **Water and Sanitation Corporation (WASAC)**, a national utility. The **WASAC Directorate of Rural Water and Sanitation Services (WASAC RWSS)** was assigned responsibility to support districts in their implementation of infrastructures as well as to ensure their sustainability by providing technical support.

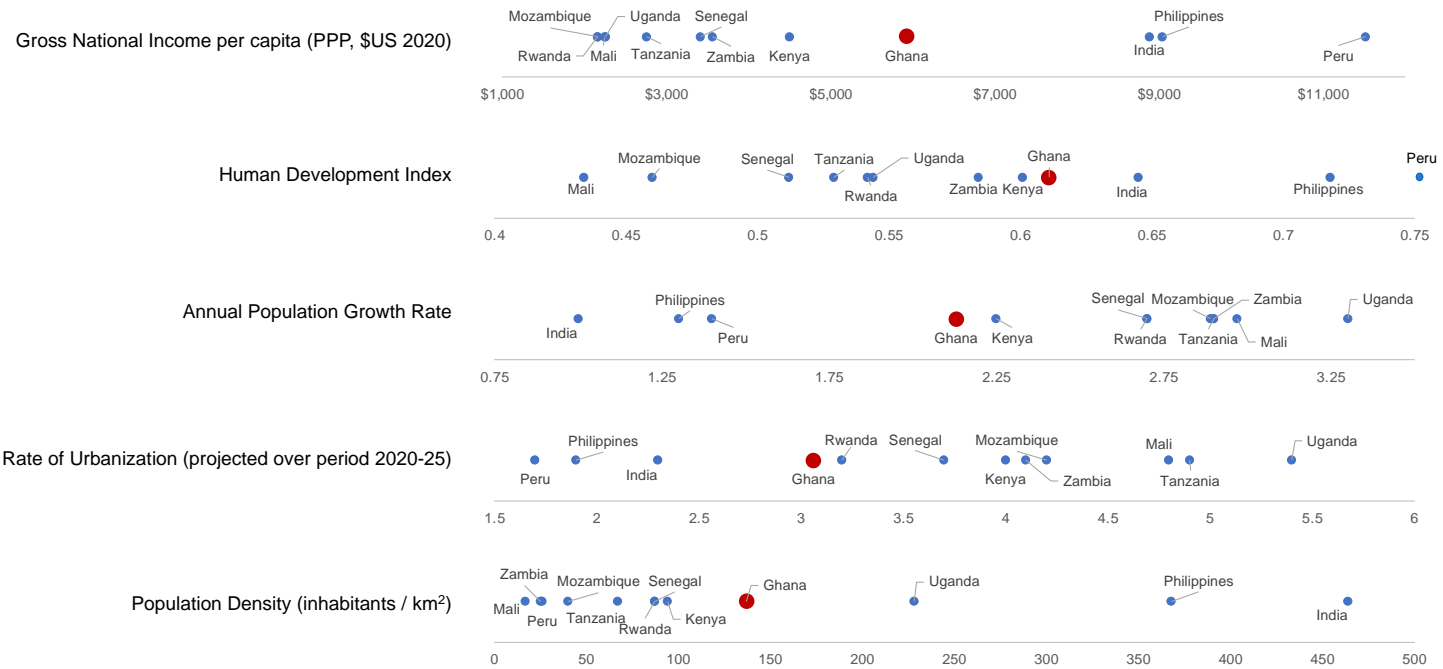
The **Rwanda Utilities Regulatory Agency (RURA)** is an independent agency regulating the water sector and licensing private operators, as well as the national water utility WASAC.

All rural water supply services are currently managed by **58 private operators** that must obtain licenses from RURA to operate in allocated areas. Once licensed, these operators can operate under 5-year *affermage* (lease) contracts signed with district governments. Private operators are responsible for day-to-day operation and maintenance functions, preventive maintenance, tariff collection and financial management of water schemes, while the districts retain asset ownership and responsibility for infrastructure extensions and major repairs.

RWANDA – INSTITUTIONS AND THEIR FUNCTIONS



GHANA – DEVELOPMENT OVERVIEW



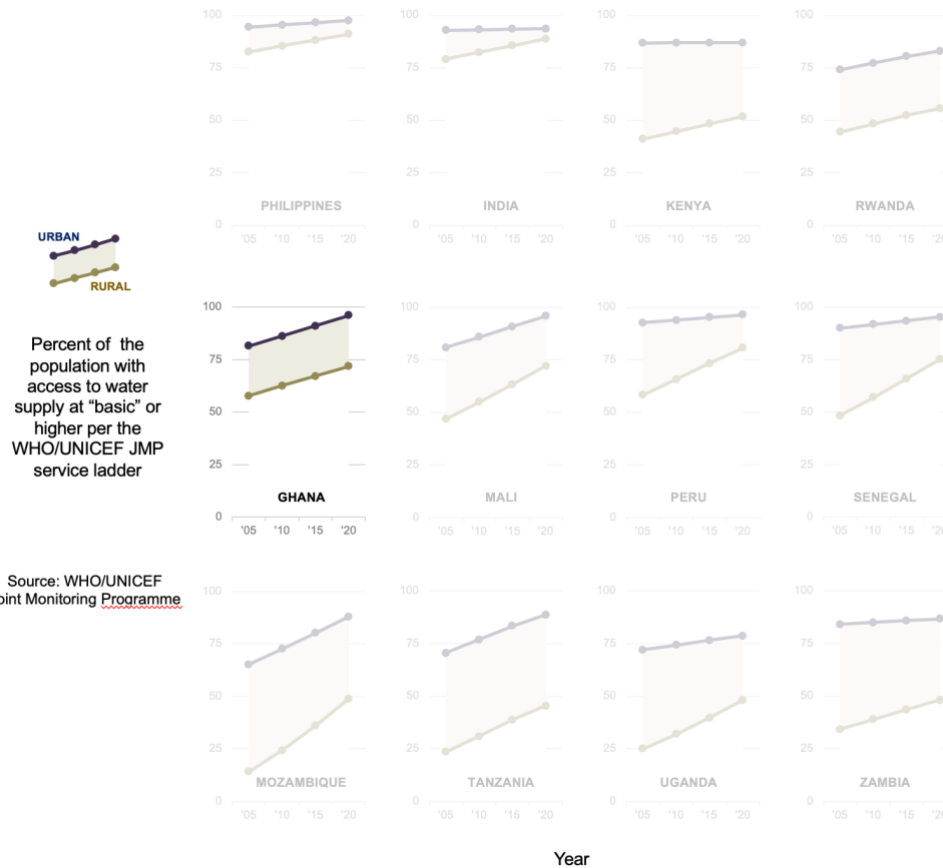
Data sources:

GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)

Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)

Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

GHANA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



Policy reforms in Ghana initiated in 2017 introduced key changes in the rural water sector, including restructuring the **Community Water and Sanitation Agency (CWSA)** from a regulatory and oversight institution into a public water utility company. Previously focused on development of standards, guidelines, and strategies in support of local governments, the CWSA is now assuming operational responsibilities for rural water piped schemes, with roughly 170 out of 500 systems now under its management as of 2023. Under this arrangement, CWSA conducts major maintenance, repairs and rehabilitation, but assets are owned by the Government of Ghana.

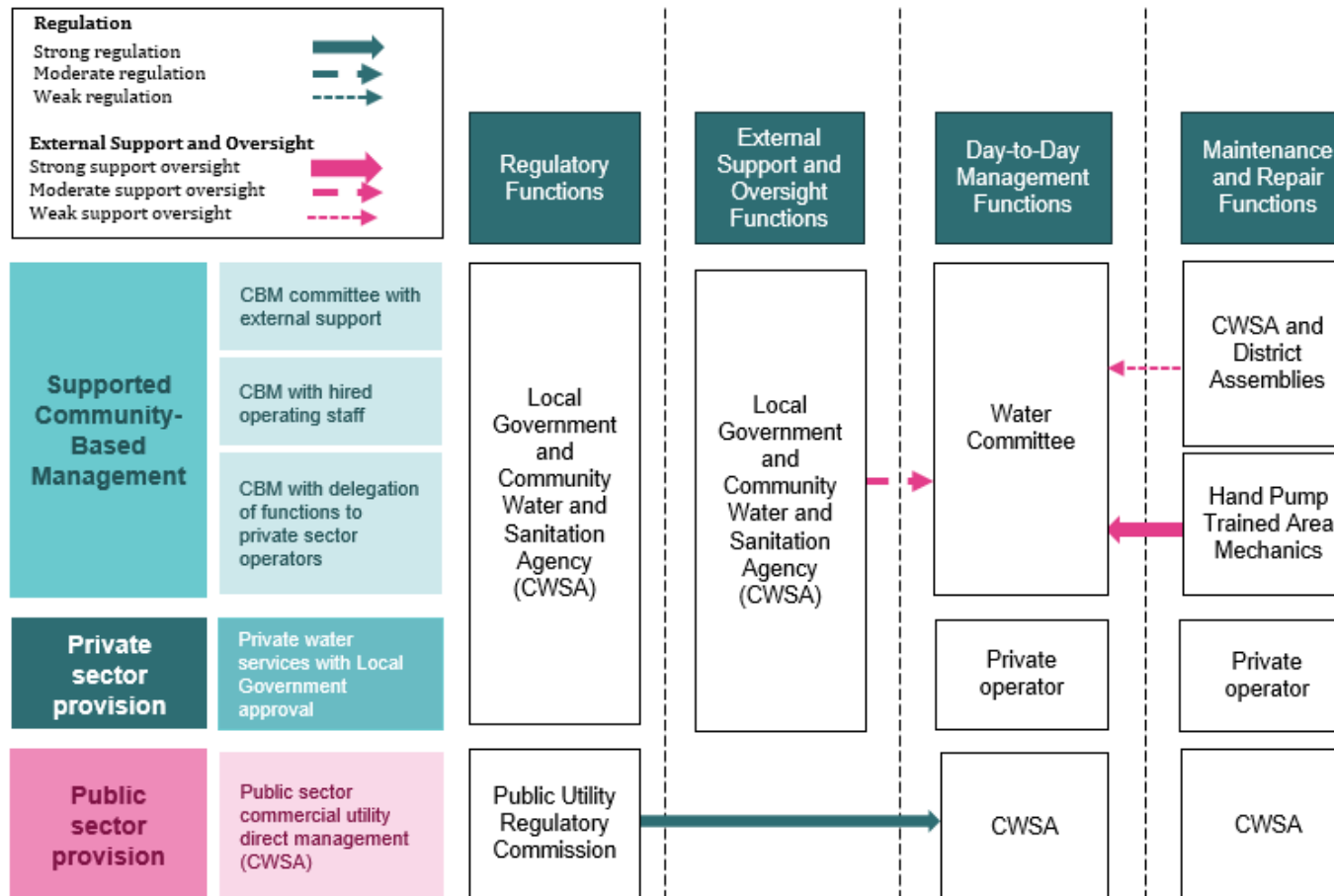
The same reforms that have transformed CWSA also sought to increase the role of the private sector in operations, maintenance and management of small towns water systems.

Regulatory functions are shifting to the **Ministry of Sanitation and Water Resources** until an independent regulatory body is established for rural settings or alternatively, functions are transferred to the existing **Public Utility Regulation Commission (PURC)**, which is currently only responsible for regulating **Ghana Water Company Ltd (GWCL)**, the urban service provider.

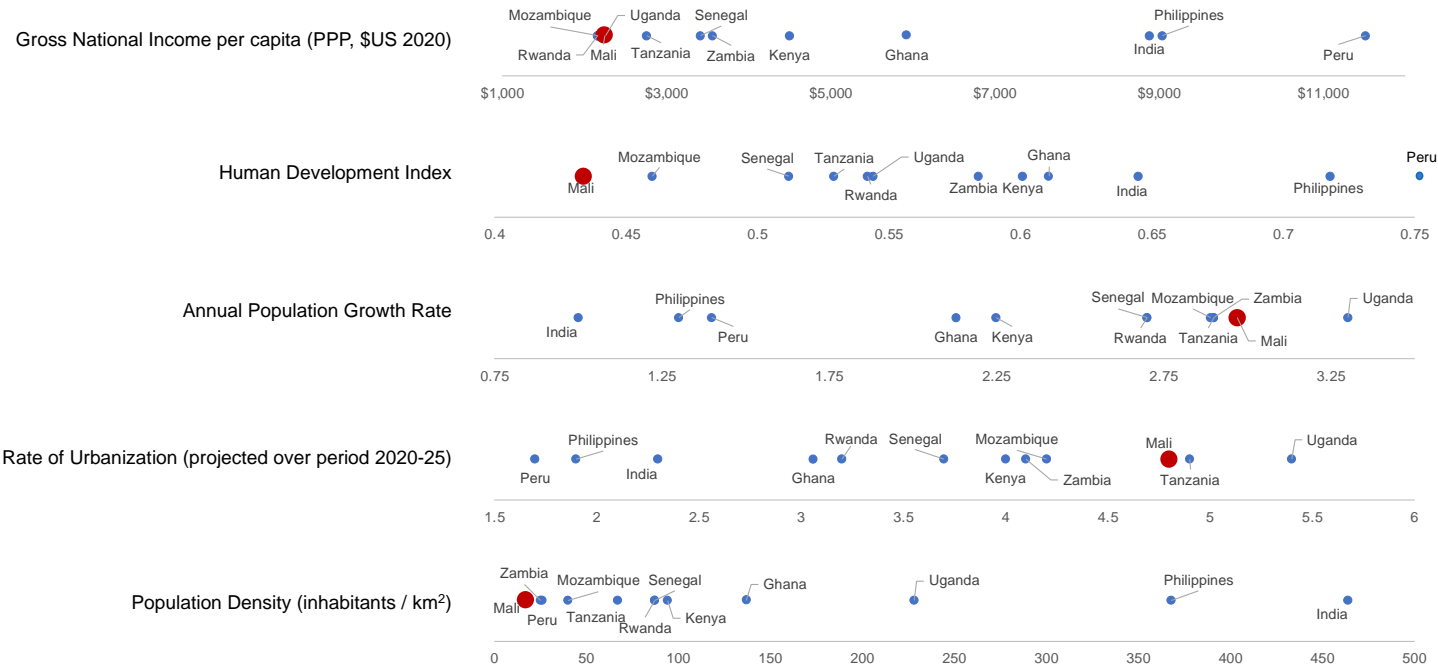
Water and Sanitation Management Teams (WSMTs) are the main management model in rural areas. WSMTs operate and maintain both point sources (typically manual or mechanized boreholes) and piped systems either by hiring staff in house, direct management on a voluntary basis, or formal delegation of functions to contracted private operators, generally for complex small-town piped schemes (comprising only a very small fraction of rural systems). Some **non-governmental organizations** manage piped water systems under Build-Operate-Transfer (BOT) contracts or management contracts. The most common form of the BOT arrangement has the NGO building the water infrastructure with its own funds, assuming interim responsibility for operation, maintenance, and major rehabilitation before transferring management responsibility to local government authorities (**District Assemblies**). NGO involvement can also occur via operation of facilities, without roles in investment or construction.

For all management arrangements, district assemblies are mandated to facilitate, coordinate, and oversee service delivery in accordance with CWSA's guidance.

GHANA – INSTITUTIONS AND THEIR FUNCTIONS



MALI – DEVELOPMENT OVERVIEW



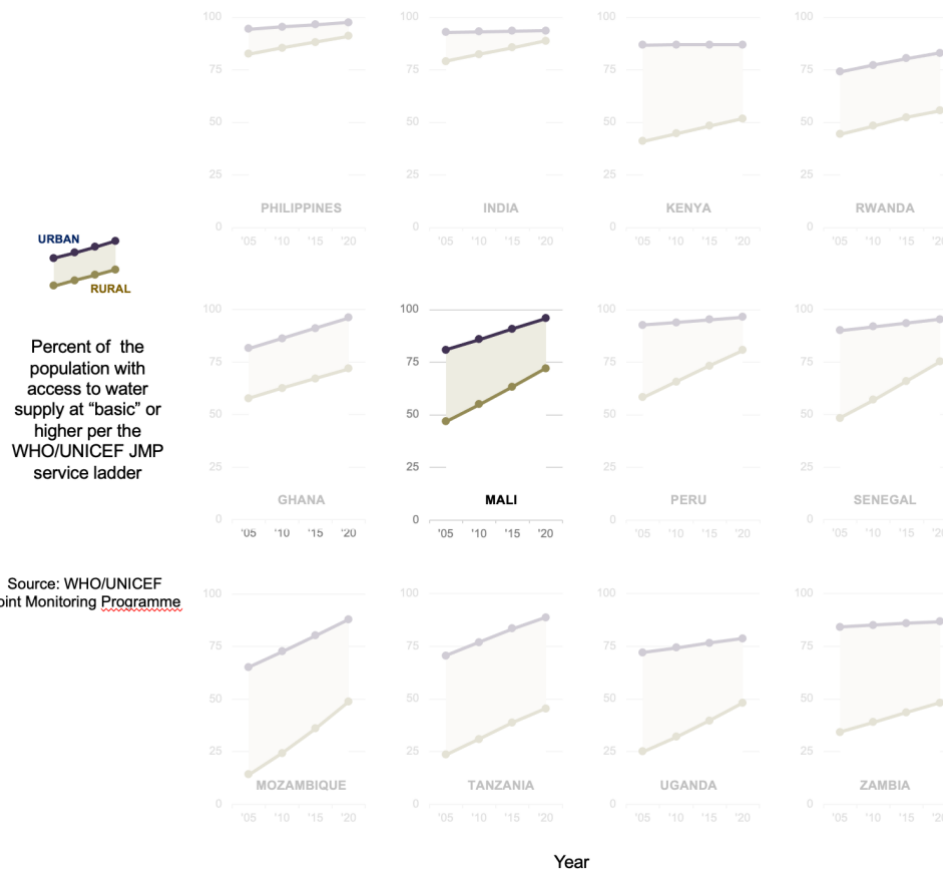
Data sources:

GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)

Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)

Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

MALI – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



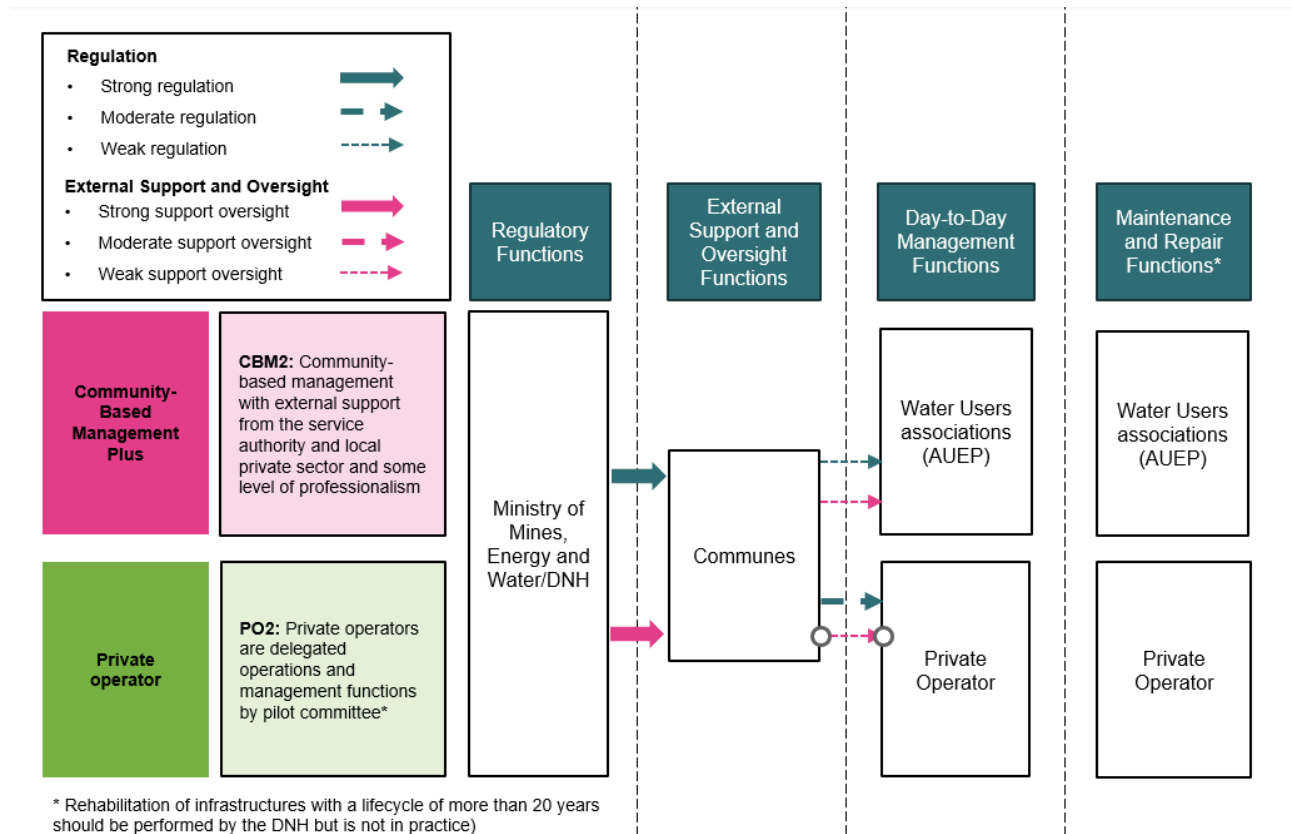
In the 1990s, the Government of Mali transferred service authority functions to local (commune) authorities through the adoption of the Territorial Collectivity Act (Code des collectivités territoriales, law N°95-034 of 27 January 1995). This law established communes as the central actors in the public service delivery and management.

Decree N°02-315/P-RM of 4 June 2000 defined water supply responsibilities at state and local levels: the state establishes norms in the sub-sector, engages in national level planning, defines policies, and supports communes, which in turn become the rural asset owners in charge of local-level planning, expansion, operations and monitoring.

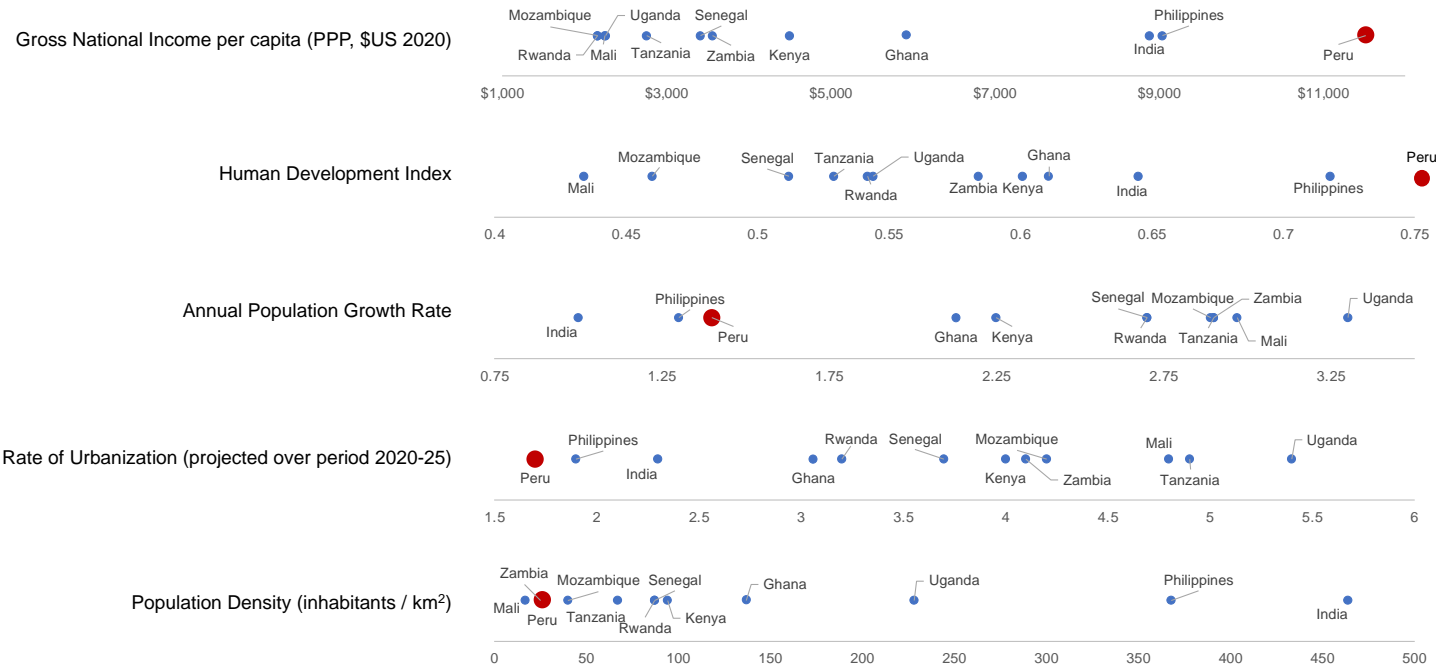
Finally, the Water Act of 2002 clarified that all communities with under 10,000 inhabitants must delegate operations and maintenance functions to either water users' associations (**Associations d'Usagers de l'Eau potable- AUEPs**) or else to **private operators**. (97% of the systems are run by AUEPs.) Local authorities are allowed to deliver services directly in exceptional circumstances, as a temporary measure, if a tender process is active and with the approval of the **Ministry of Mines, Energy and Water (Ministre des Mines, de l'Energie, et de l'Eau - MMEE)**, which maintains overall regulatory responsibilities for all service provision in the sector in Mali.

A notable private sector alternative to AUEP responsibilities for rural water service provision is the *affermage* contract with a firm called UDUMA, in a public-private partnership supported in part by the Dutch government. UDUMA supplies water services to on the order of 100,000 inhabitants in Sikasso region (whose overall population was over 2.5 million in the 2009 census).

MALI – INSTITUTIONS AND THEIR FUNCTIONS



PERU – DEVELOPMENT OVERVIEW



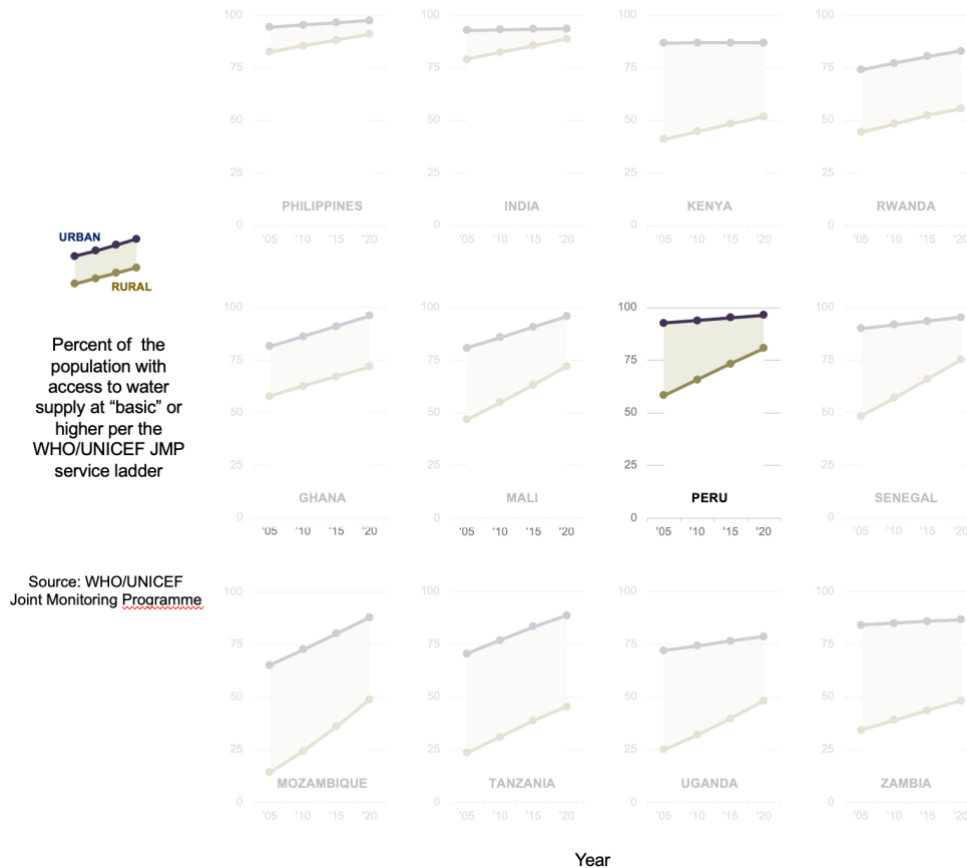
Data sources:

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PERU – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS

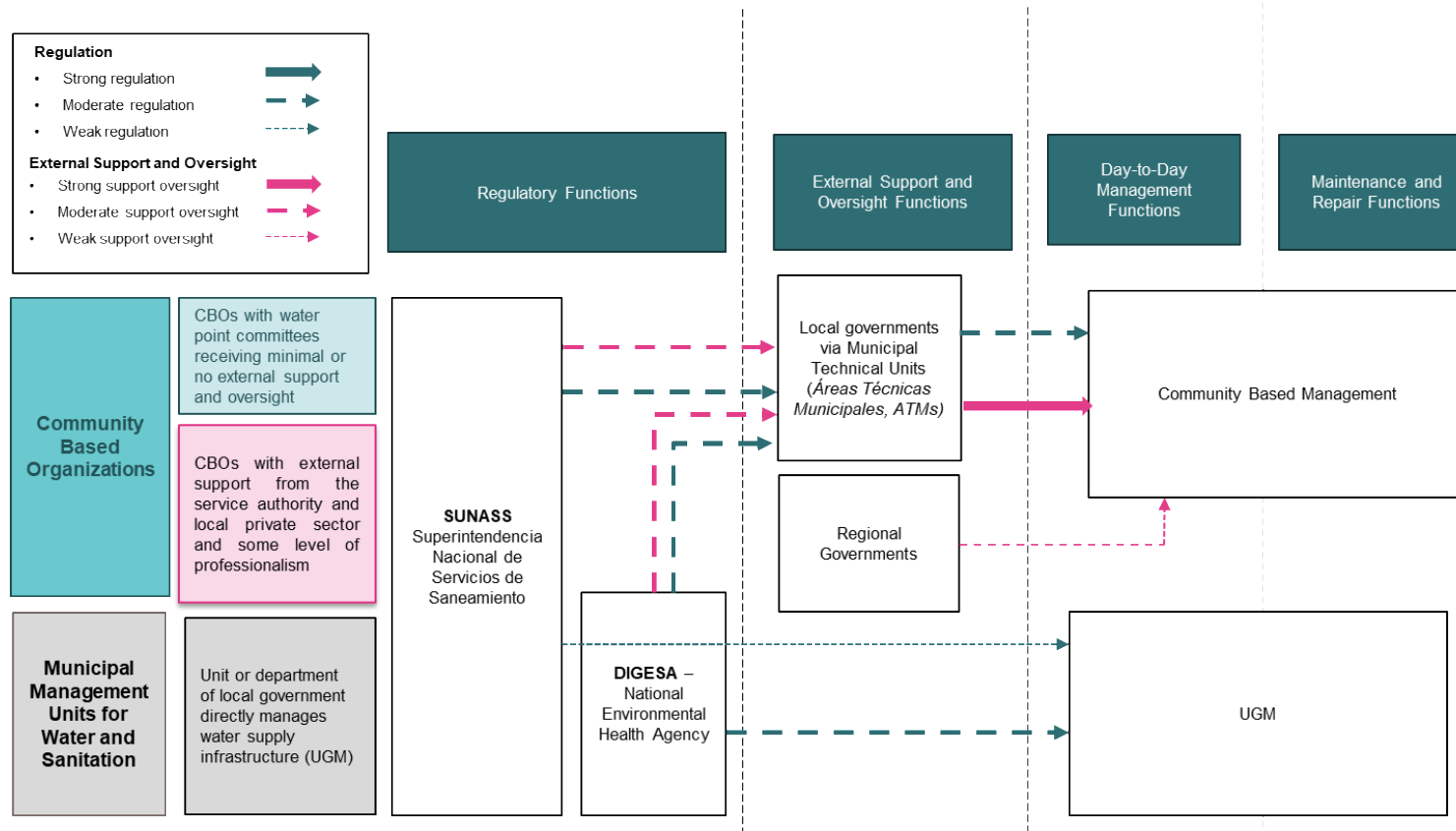


SUNASS (Superintendencia Nacional de Servicios de Saneamiento) was created in 1992 to regulate water supply and sanitation systems, and it delegated responsibility for regulation and oversight of rural water services delivery to local authorities. It was then, that **Municipal Technical Areas (Áreas Técnicas Municipales, ATMs)** were established as the municipal units providing technical assistance to local communities and overseeing service provision.

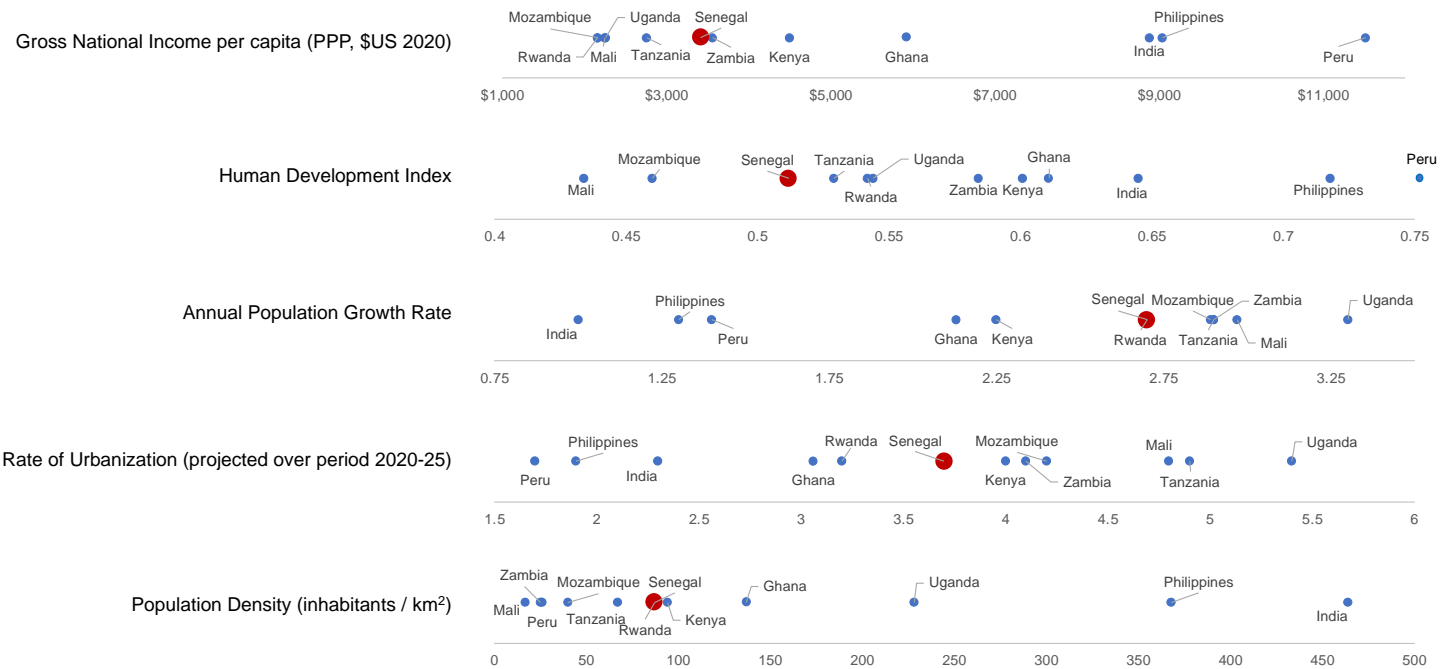
In 2005, the **National Program for Rural Sanitation (Programa Nacional de Saneamiento Rural, PRONASAR)** was introduced, which required **community-based organizations (CBOs)** required to identify their needs and apply for funds through local authorities. Local community participation was the foundation of rural water supply management systems via local-led needs assessment and scheme implementation, but the program did not include provisions for addressing a lack of technical capacity among local government authorities to provide technical assistance to CBOs. But in 2016, a national decree returned to SUNASS responsibility for regulating rural service provision. This decree also created a new district-level management arrangement, called Municipal Management Units (**Unidades de Gestión Municipal - UGMs**), for direct public service delivery.

As of 2019, SUNASS reports that in 127 (14%) of the 886 rural schemes in Peru, services were delivered directly via district-level UGMs, with remaining systems (the vast majority) controlled by CBOs. CBOs are more closely regulated than UGMs.

PERU – INSTITUTIONS AND THEIR FUNCTIONS



SENEGAL – DEVELOPMENT OVERVIEW



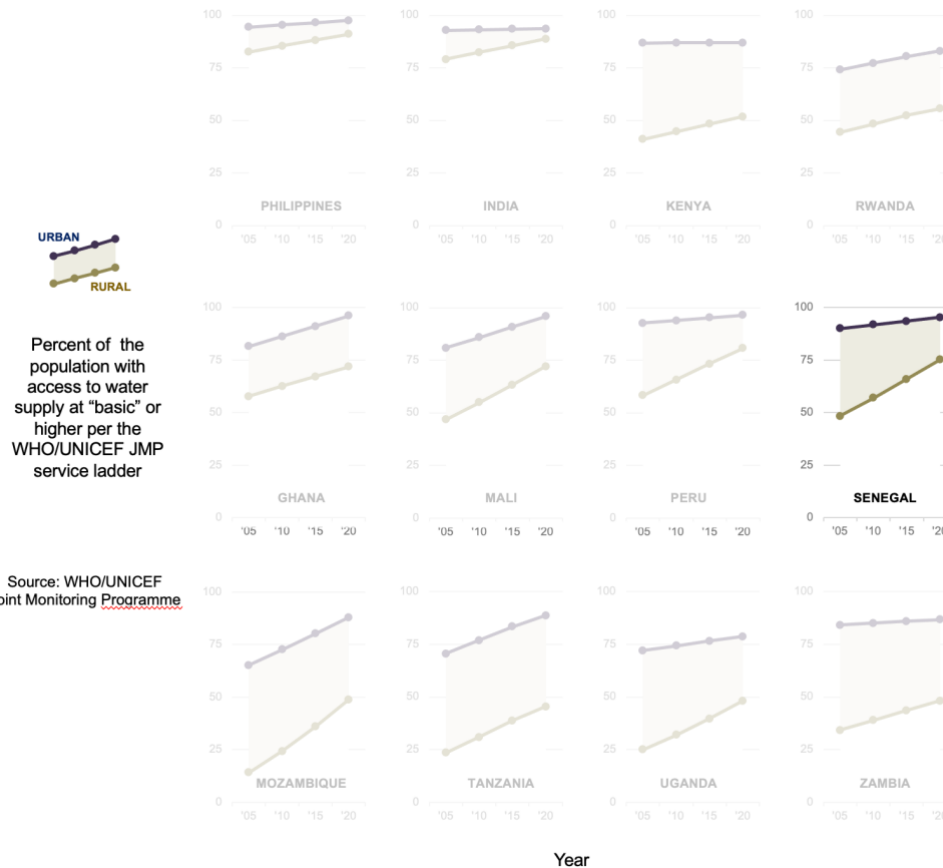
Data sources:

GNI per capita, Population Growth Rate, Population Density: [World Bank Open Data](#)

Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)

Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

SENEGAL – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



The rural water sector is currently in a period of regulatory and policy transition. Over the last ten years, the country has made significant efforts to push for private sector engagement in rural water supply and reduce an access gap between urban and rural areas.

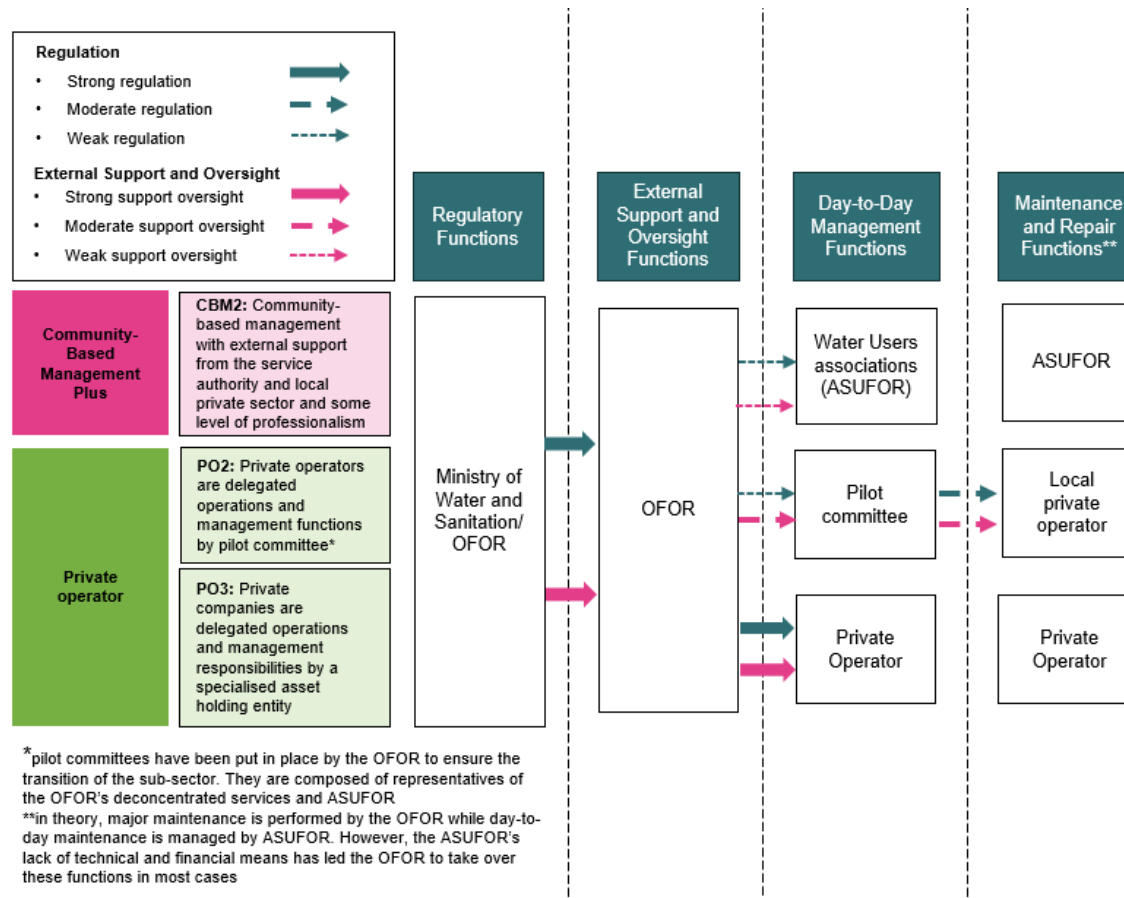
There are three management models for rural water service delivery in Senegal: water users' associations (**Associations d'Usagers de Forage - ASUFORs**), **delegated private operators** (under extended 10-year regional lease contracts), and a **transitory model** (whereby local private operators are contracted for an interim one-year contract, which is to be followed by the extended 10-year contract with a delegated private operator).

In 2014, the Government of Senegal, created the Office of Rural Borehole Management (**Office des Forages Ruraux - OFOR**), a national asset holding company that assumed responsibilities previously held by the national Directorate of Operations and Maintenance (Direction de l'Exploitation et de la Maintenance – DEM). OFOR owns rural assets and is responsible for the overall regulation and monitoring of operations, infrastructure renewal and expansion, and the roll-out of private-sector participation through the aforementioned regional lease (*affermage*) contracts established for eight service provision areas (known as **Délégations de service public – DSPs**).

Though the eight DSPs were to have been put in place by 2017, only five public service delegation contracts are in effect (for Kaolack-Kaffine, Louga-St. Louis-Matam, Notto Diosmone Palmarin / Gorom Lampsar (NDP/GL), Tambacounda-Kedougou, and Thies-Djourbel).

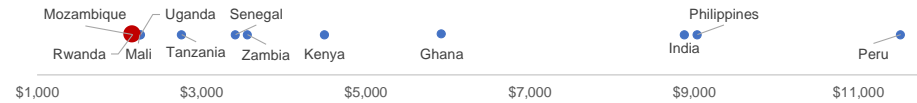
The resistance of ASUFORs to delegation of service to private operators in some regions has slowed down the reforms that should have been achieved by 2017. To address this challenge, the OFOR has put in place a transitory management arrangement in which local private operators are contracted for one year, before transitioning to delegated contracts with larger private operators.

SENEGAL – INSTITUTIONS AND THEIR FUNCTIONS

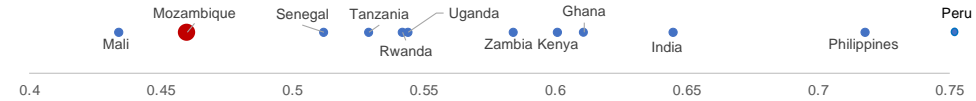


MOZAMBIQUE – DEVELOPMENT OVERVIEW

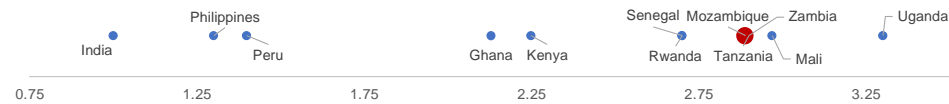
Gross National Income per capita (PPP, \$US 2020)



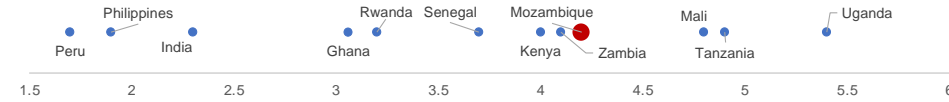
Human Development Index



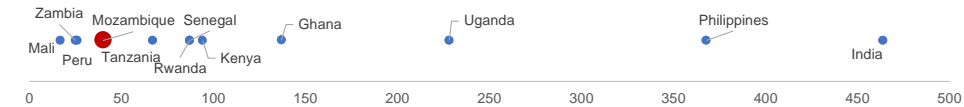
Annual Population Growth Rate



Rate of Urbanization (projected over period 2020-25)



Population Density (inhabitants / km²)



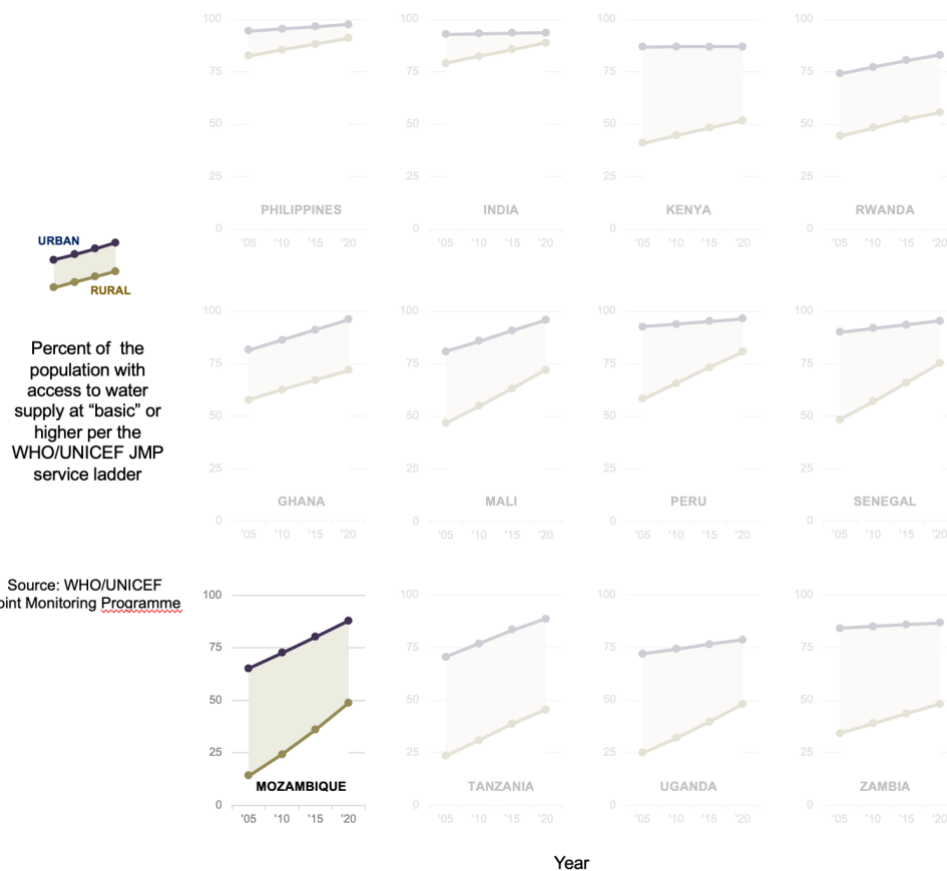
Data sources:

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Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

MOZAMBIQUE – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



The National Program for Rural Water Supply and Sanitation (**Programa Nacional de Água e Saneamento Rural – PRONASAR**) is the overarching policy framework established by the government of Mozambique in 2010 to coordinate and guide efforts to expand rural water supply and sanitation. It sets out the country's strategy and goals in this area, as well as guidelines for how these should be achieved.

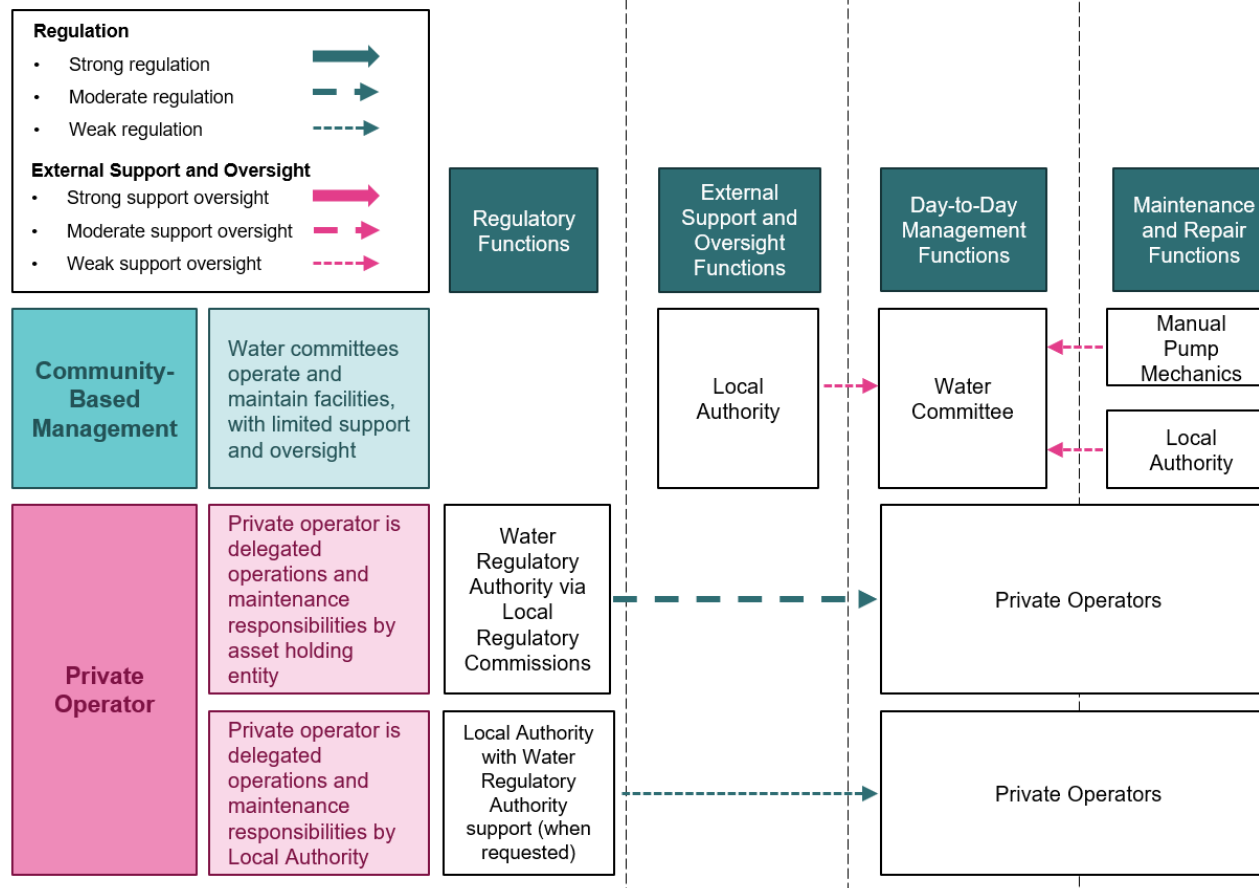
A public institution that plays a key role in implementing this policy framework on the ground is the Water Supply and Sanitation Infrastructure Administration (**Administração de Infra-Estruturas de Água e Saneamento – AIAS**). AIAS is the asset holder, and is responsible for supporting the establishment, operation, and maintenance of water and sanitation infrastructure in small urban centers and rural areas.

Community-based management through water committees (**Comités de Água e Saneamento – CAS**) is the most common management arrangement for point water sources and some piped water supply facilities. CASs perform day-to-day O&M functions, while local authorities are tasked with service authority functions, including the of finance repairs beyond the capacity of community contributions. In many areas, manual pump mechanics assist water committees with maintenance and relatively minor repairs.

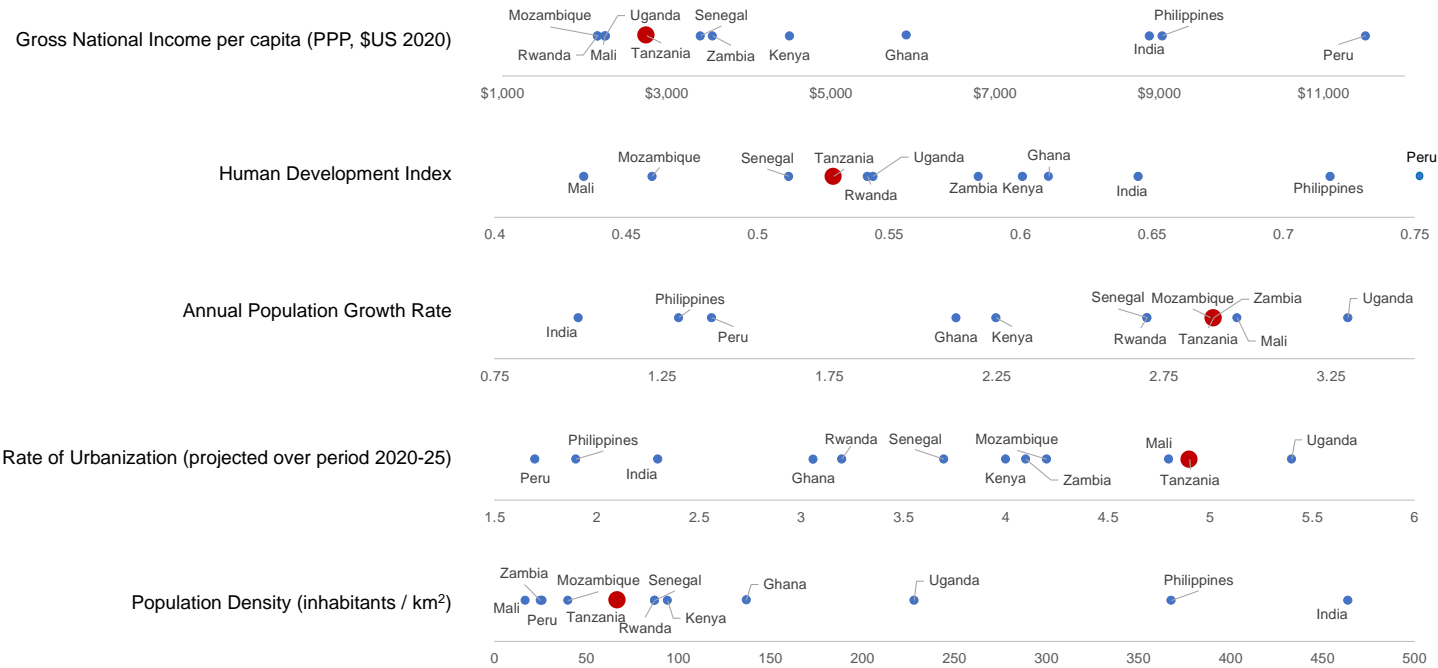
Significant efforts in Mozambique currently focus on expanding the delegated management of services by **private operators** through AIAS from 51 to 131 towns (in an effort to cover 18% of the population by 2030). There are also efforts to formalize and strengthen the delegation of management of services by local authorities themselves (rather than AIAS) to private operators.

AIAS delegates a substantive set of service provider responsibilities to private operators, including day-to-day O&M, revenue collection, repairs, water quality testing, and scheme expansions. The **Water Regulatory Council (Conselho de Regulação do Abastecimento de Água, CRA)** regulates both CASs and services delegated by AIAS through local regulatory commissions. Delegation of O&M functions to private operators by local authorities is used for smaller piped water supply systems typically serving small-towns, rural growth centres and other rural settlements of between around 2,000-100,000 people. Roles and responsibilities are comparable to the responsibilities delegated by AIAS, but with local authorities leading the delegation of functions to private operators and CRA playing a much more limited role.

MOZAMBIQUE – INSTITUTIONS AND THEIR FUNCTIONS

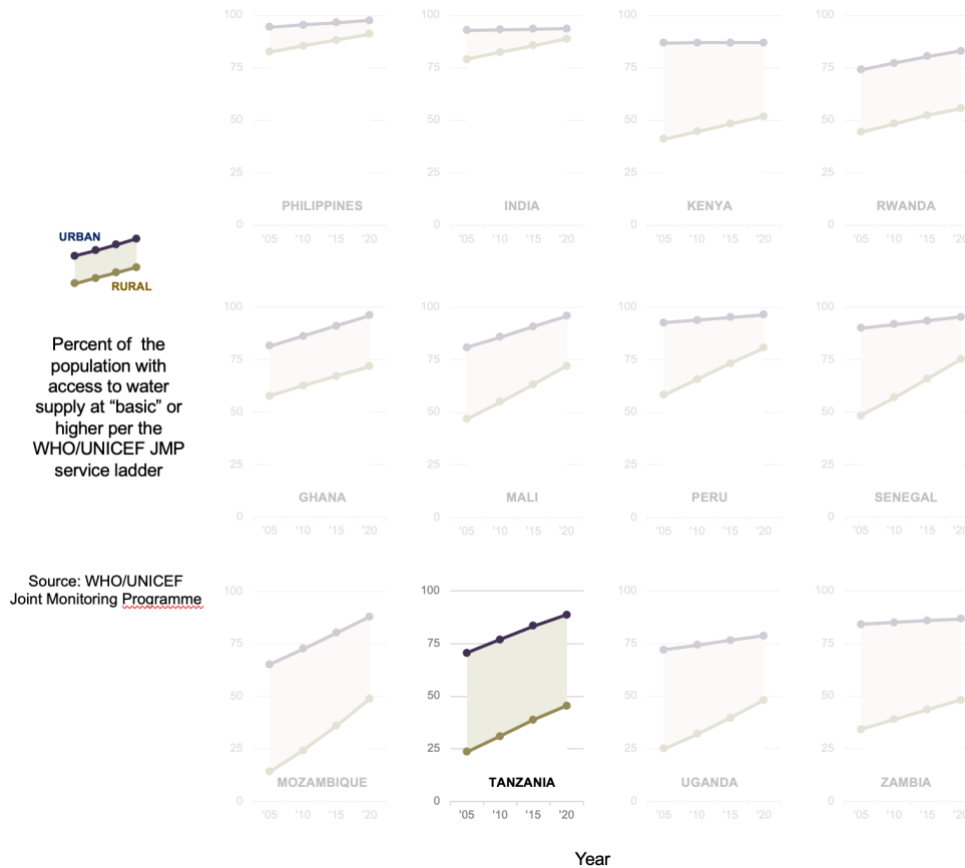


TANZANIA – DEVELOPMENT OVERVIEW



Data sources:
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 Human Development Index: [UNDP, Human Development Report \(2021/2022\)](#)
 Rate of Urbanization: United Nations, 2018, [World Urbanization Prospects](#)

TANZANIA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS

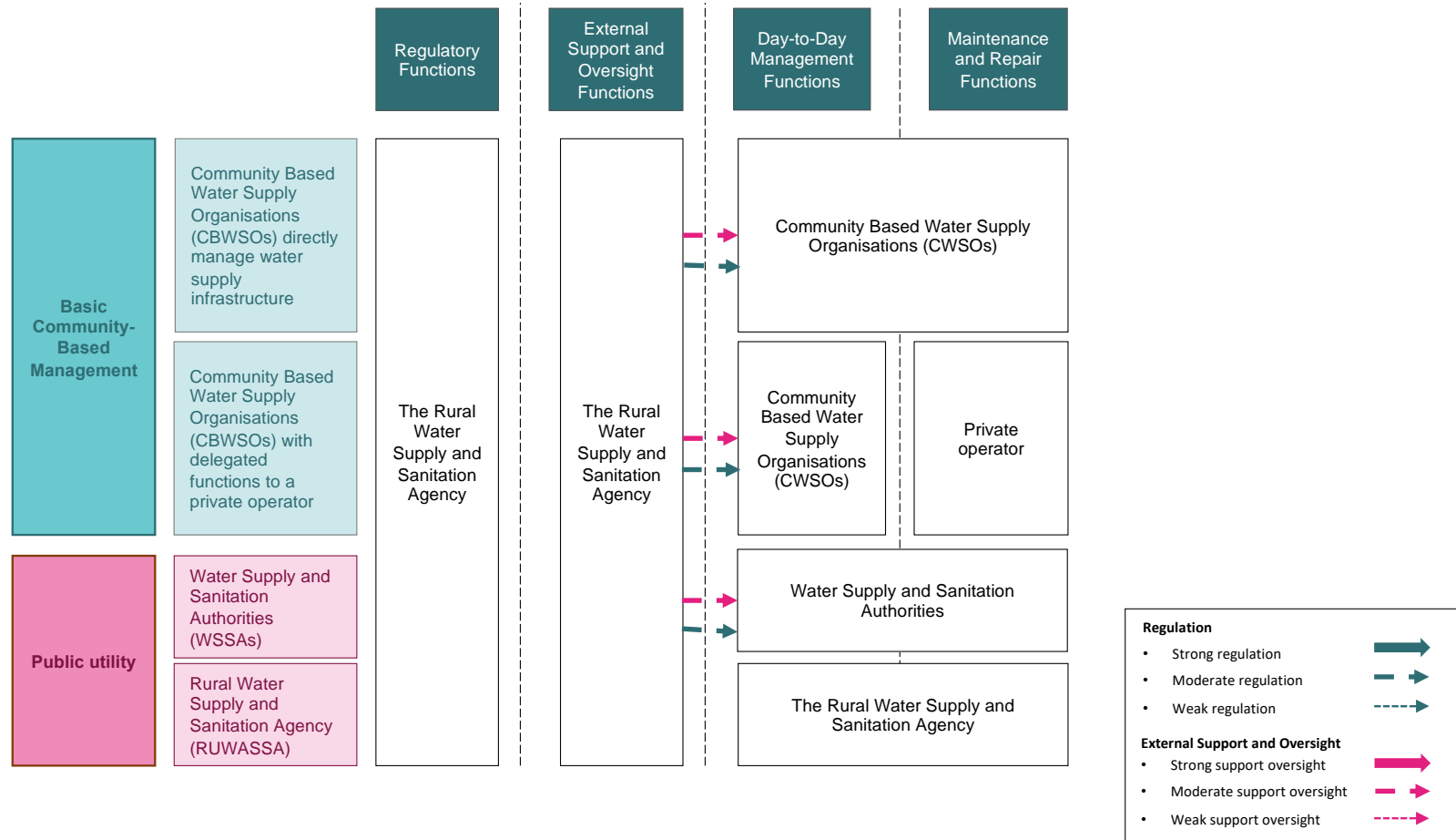


Following the 2019 enactment of the Water and Sanitation Act No. 5, Tanzania has undergone a major water sector reform aimed at improving the effectiveness and sustainability of water supply and sanitation services for both urban and rural areas. This includes the establishment of a new agency—the **Rural Water Supply and Sanitation Agency – RUWASA**—to be directly responsible for the development of water infrastructure in rural areas as well as the supervision of their operations and maintenance, regulation, and other policy development.

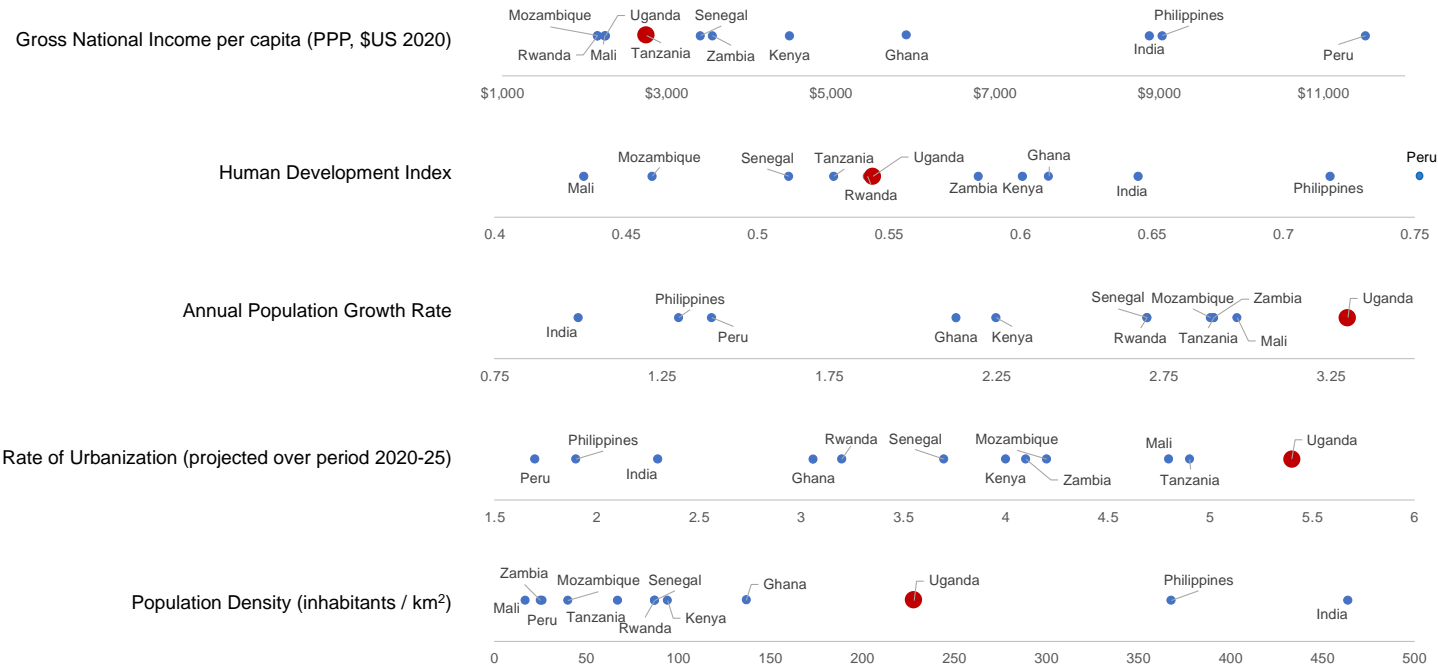
Management arrangements for rural water supply are still in the process of being operationalized, because of the new Water and Sanitation Act of 2019. According to the Act, RUWASA is responsible for service provision of 129 rural districts and 61 towns in district headquarters and **Local Government Authorities (LGAs)** across the 25 regions in Tanzania. Service provision in the rural parts of these districts and towns is largely the responsibility of **Community Based Water Supply Organizations (CBWSOs)** serving ~85% of rural residents. Under this arrangement, CBWSOs own and operate water services either directly, or via the delegation of operation and maintenance functions to a **private operator**, or else by forming an association to improve financial viability. CBWSOs are technically and financially supported by RUWASA (for O&M and repairs) which also provides regulation.

RUWASA also provides services directly in 39 towns designated by the Minister for Water. RUWASA also delivers services in partnerships with **Water Supply and Sanitation Authorities (WSSAs)**, which are regulated utilities primarily (but not exclusively) serving larger populations centers. 25 of the 93 Tanzanian WSSAs are supervised by RUWASA. For instance, a WSSA could potentially serve outlying rural areas that are close to the urban areas it covers, especially if those rural areas are connected to the same water supply system. (Conversely, a CBWSO or similar entity could operate in a semi-urban or peri-urban area if that area is not adequately served by a WSSA)..

TANZANIA – INSTITUTIONS AND THEIR FUNCTIONS



UGANDA – DEVELOPMENT OVERVIEW



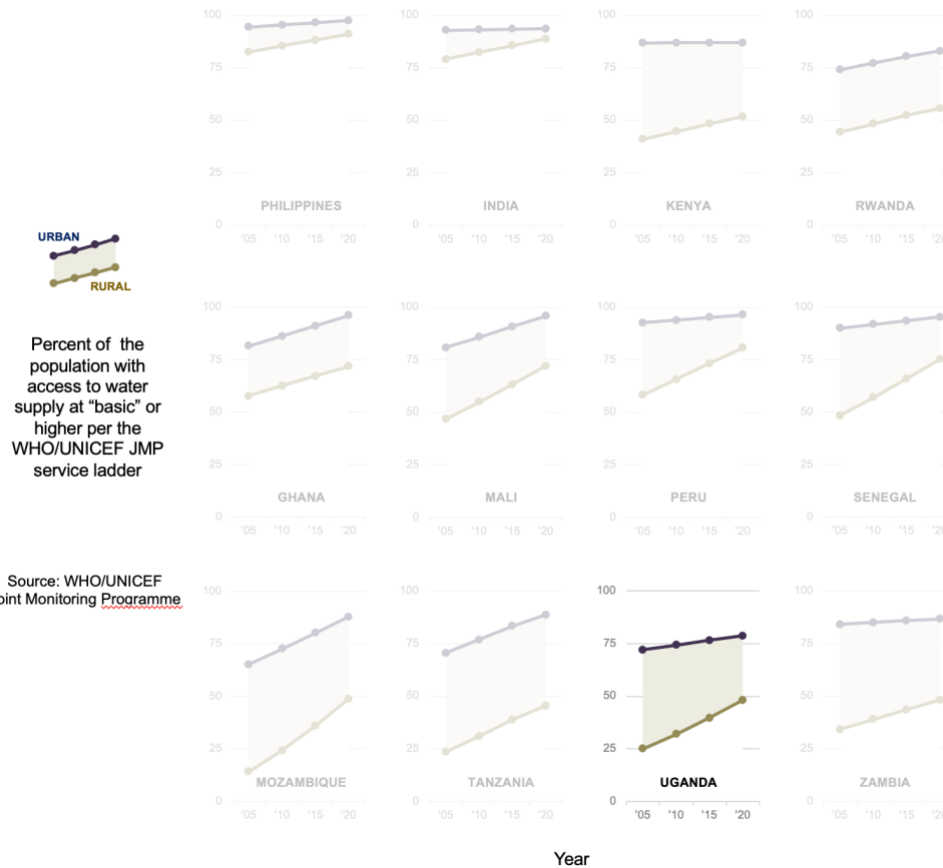
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UGANDA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



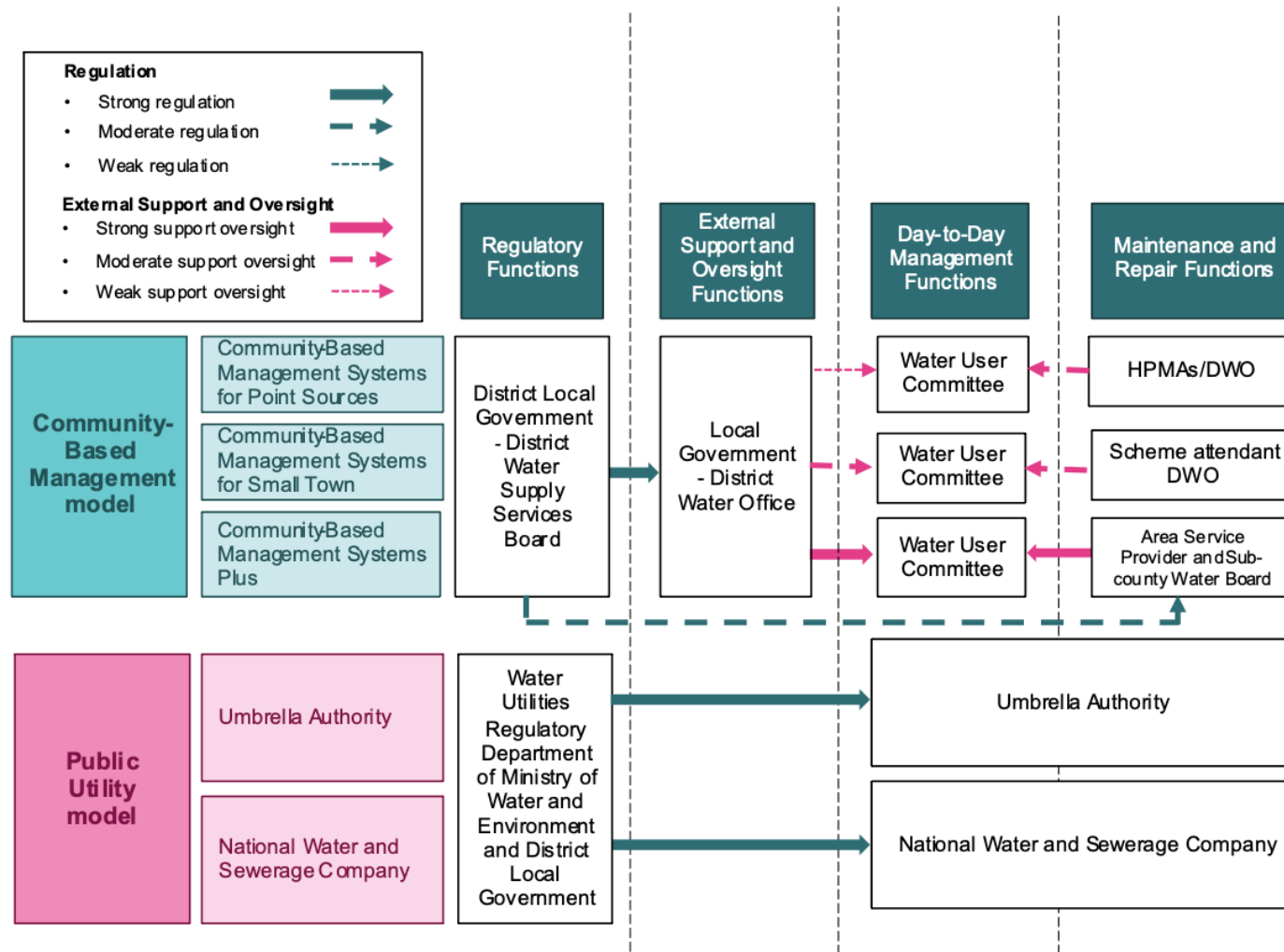
Historically in Uganda, Community Based Management Systems (CBMS) has been the dominant model for rural water supply, relying on voluntary **Water User Committees (WUCs)**.

Recognizing the need for effective operation and maintenance of rural systems and to overcome CBMS challenges related to voluntarism and poor functionality, a new National Framework for Operation and Maintenance of Rural Water Infrastructure was launched in 2020. The Framework employs an approach referred to as **CBMS+**, which introduces a more consolidated approach to O&M, with **Area Service Providers** delivering maintenance services to existing community-managed schemes. In parallel, efforts have also focused on expanding Uganda's urban utility model into rural areas through both its **National Water and Sewerage Corporation (NWSC)** and the new **Umbrella Authorities (UAs)**.

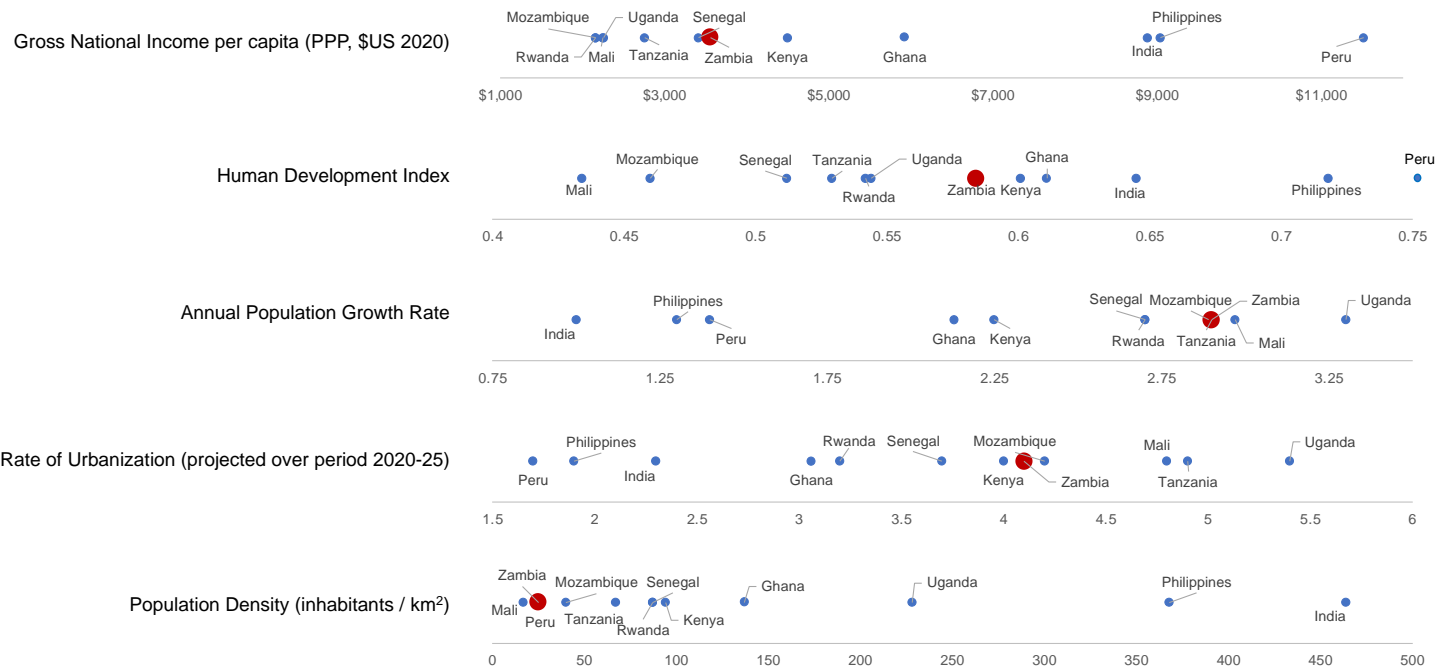
UAs represent a new management model for piped water systems serving small towns and rural growth centres (which are outside NWSC service). There are six regional UAs with direct management responsibility for most or all the piped water schemes within their respective region, formally recognized as Water Authorities. (Previously, the Umbrellas were strictly providers of O&M support to local water supply authorities or communities.) The UAs now operate as public water utilities and are directly responsible for all operations, and employing local scheme operators. UAs are regulated by the Ministry of Water and Energy (MWE), who are also the asset owners.

In addition to being served by the NWSC or by regional Umbrella Authorities, rural populations also can receive service from **Water User Committees (WUCs)** who operate and maintain the systems with oversight from the **District Water Offices (DWOs)** or else by the DWOs themselves, with O&M delegated to Area Service Providers under performance-based contracts.

UGANDA – INSTITUTIONS AND THEIR FUNCTIONS



ZAMBIA – DEVELOPMENT OVERVIEW



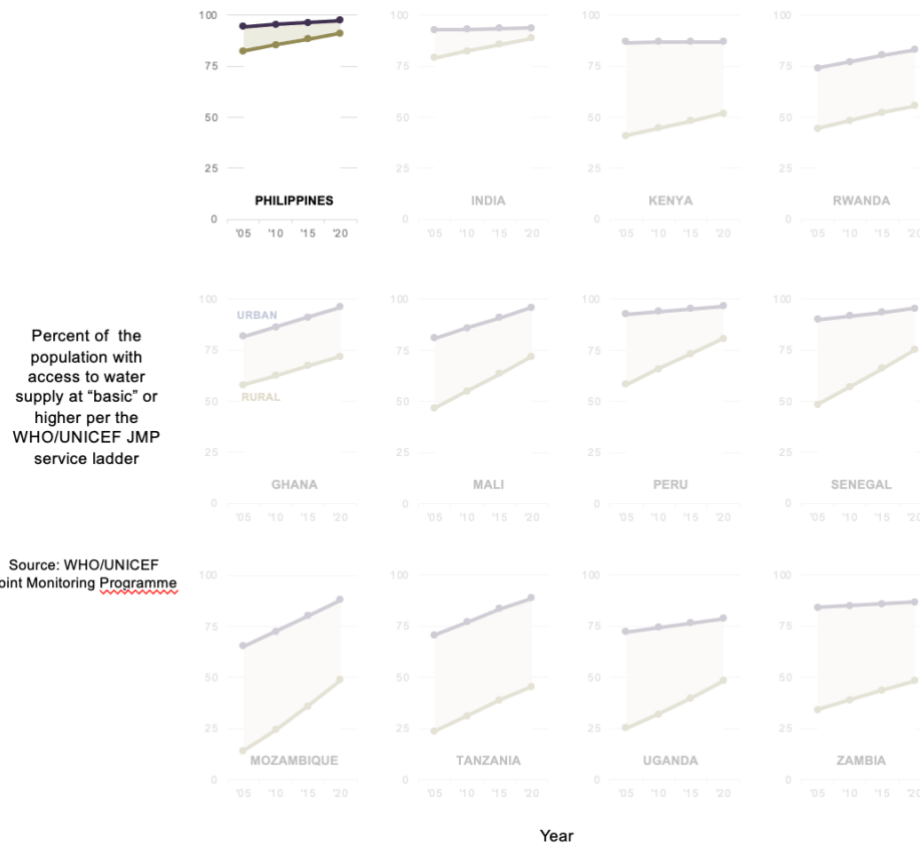
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ZAMBIA – RURAL WATER SECTOR OVERVIEW AND COMPARATIVE ACCESS TRENDS



The management of rural water supply services in Zambia is currently based on two management arrangements: community-based management in which **Village Water Sanitation Health Education (V-WASHE) committees** manage facilities with varying external support from local government and area pump minders; or **large regional commercial utilities** who directly manage piped facilities in some small towns and rural growth centres.

The role of Zambia's 11 commercial utilities is expanding. There are plans to increase the direct delivery of piped water supply services by commercial utilities in rural and small-town contexts, albeit with the recognition that they cannot manage all piped water supply and point water sources in their jurisdictions.

The **National Water Supply and Sanitation Council (NWASCO)** performs all regulatory functions; meanwhile, following NWASCO guidance, several large donor-funded programs are developing alternative arrangements that emphasize the role on commercial utilities, albeit not in the direct delivery of services.

These alternative arrangements include:

- V-WASHE committees managing facilities with commercial utilities performing many ongoing direct support functions;
- commercial utilities delegating preventive maintenance responsibilities to private operators for point water sources, with commercial utilities performing repairs; and
- commercial utilities delegating ongoing operations and management functions to private operators for piped water supply systems.

ZAMBIA – INSTITUTIONS AND THEIR FUNCTIONS

