

**41<sup>st</sup> WEDC International Conference, Egerton University, Nakuru, Kenya, 2018**

**TRANSFORMATION TOWARDS SUSTAINABLE  
AND RESILIENT WASH SERVICES**

**Making water services last: a community-based  
management model for service sustainability in Ethiopia**

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**PAPER 2959**

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*It has been known for many years that efforts to professionalise community management and establish some of the necessary support functions required to keep services running can help to improve service levels and ultimately the longevity of services. This paper outlines WaterAid's experience in Ethiopia of establishing management arrangements for multi-village piped schemes. Since the early 1990s, WaterAid has established a number of Rural Water Boards which remain operational today and ensure water supply services reach hundreds of thousands of people. Their relevance remains as strong today as the Government of Ethiopia seeks to establish more multi-village piped schemes as a means of providing greater water security to rural populations. This paper presents the Ticho multi-village water supply scheme to highlight positive lessons and some of the remaining challenges in professionalising community management.*

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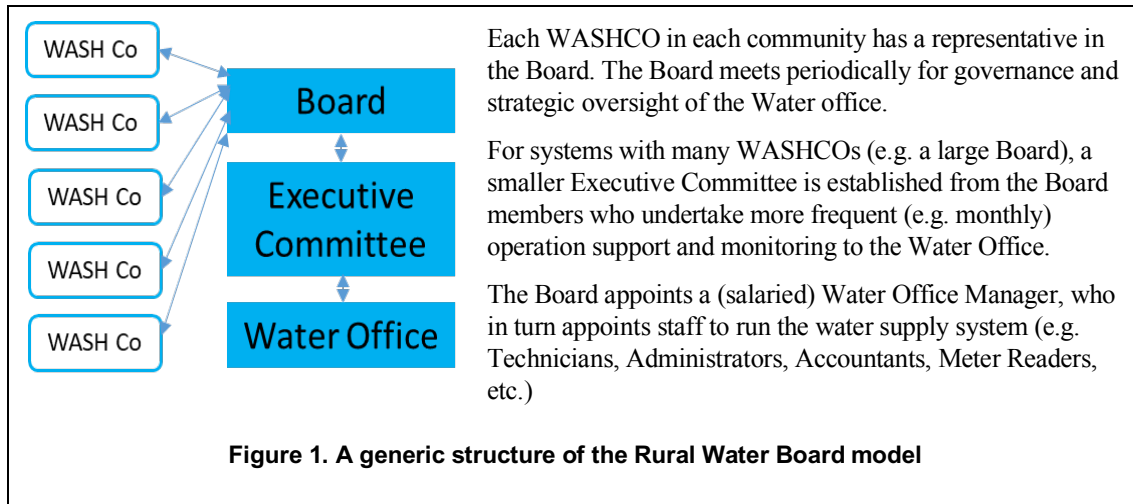
## **Background**

Ethiopia achieved its Millennium Development Goal (MDG) water target to halve the proportion of people without access to safe water, however access is still low, with the JMP reporting only 49% of the rural population accessing safe water in 2015. Whilst the percentage without access has declined substantially, due to the considerable rates of population growth, the absolute number without access has remained similar over the last 25 years. Water quality is a key issue, with a nationwide survey in 2010 finding that only 55% of protected dug wells, 44% of protected springs, and 66% of boreholes were in compliance with government's standards. Functionality is also a challenge, with data suggesting only 74% of rural water supplies are functional nationwide, with some regions (Afar) being as low as 66% (NWI, 2013).

## **The Rural Water Board Model**

In an effort to raise service levels and increase the resilience of rural water supplies, the Government of Ethiopia is increasingly focusing on piped water schemes serving multiple villages. It is a common perception in the sector (in Ethiopia and elsewhere) that community management is not appropriate for larger or more technically complex schemes. There are various ideas in the sector in Ethiopia around the most effective service delivery model for such multi-village schemes, with some stakeholders looking into a rural public utility model, and/or extending the service area of the existing urban utilities into peripheral rural areas to also manage such schemes.

As far back as 1994, WaterAid Ethiopia was one of the pioneering organisations already developing such multi-village water schemes (mainly spring-fed, relying on gravity flow, but also including boreholes and motorised pump-fed schemes). The management model, which WaterAid Ethiopia developed to ensure ongoing service delivery of such schemes, was termed the 'Rural Water Board' (also referred to as 'the Board'). In this model, each individual community that the water scheme serves has a WASHCO, and one representative from each WASHCO is a member of the overall Board, which has oversight over the entire water supply system. The Board, sometimes through an executive committee, appoints a full-time salaried manager for the water system, who in turn appoints and runs the (paid) team of the 'Water Office' who manage the system on a day-day basis.



The members of the WASHCOs are elected by the community, and these in turn elect the representatives to serve on the board. Whilst the Woreda and Zonal Water Office can provide advice and technical support to the Boards and Water Office, there is no appointment of representatives by such external bodies, making the Rural Water Board a community-based management model. However, this community-based model benefits from economies of scale to take a more professionalised approach to managing their water services.

Since implementing the Rural Water Board Model in Oromia Region in 1994, WaterAid Ethiopia has scaled the model to the Benishangul-Gumuz Region. Examples of these multi-village schemes have been used to demonstrate the Rural Water Board model to the wider sector, supporting numerous cross-zonal and cross-regional learning visits. These learning exchanges and documentation activities, together with involving Regional Water Bureaus throughout the process, has helped WaterAid Ethiopia to build the platform for scaling-up of the model within regions, and across the country. With WaterAid Ethiopia's support over the last two decades, Oromia Region, Ethiopia's most populous and second largest region of the country, has fully institutionalised the Rural Water Board model, enacted legislation for the legalisation of Rural Water Boards, and has taken the approach to scale. Other Regions are also at various stages of testing and scaling the Rural Water Board model.

## The sustainability of the Water Board Model – the case of Ticho Rural Water Board

Ticho's spring-fed gravity water scheme is located in Arsi Zone, Oromia Region, serving two towns and four rural Kebeles within one Woreda, covering a population of around 33,000 people. Ticho's relatively high yielding spring sources have allowed the Rural Water Board to extend the network to new customers and areas, so far reportedly without supply shortfalls. Since construction in 2012 the Rural Water Board has added 5.4km of pipeline and 8 new public tap stands<sup>1</sup>, and increased the number of private connections from 200 in 2012, to 1,267 in 2017. In terms of scheme performance, the Ticho Water Office (of the Rural Water Board) reports 100% functionality of the 55 public tap stands; the duration of system breakdowns averaging less than 1 day, with a maximum of 3 days for major failures; private connection customers receive a 24/7 service in terms of water availability; and the public taps are operated for six hours per day.

### Financial sustainability

At the time of system design, WaterAid Ethiopia commissioned a consulting firm to develop a full business plan, projecting demand (and subsequent revenues), supply and likely expenditures over a 20-year period. This guided community decisions on the initial tariff to be set. Since the initial business plan, the Board's Water Office Manager produces annual statements of income and expenditures, and proposes a financial plan for the coming year, which the Board reviews and approves.

Whilst WaterAid Ethiopia subsidised the initial running cost of the Board's Water Office for the first year (in 2012), since then there has been no external financial subsidy from WaterAid Ethiopia or government. Annual revenues have increased steadily each year as the system is expanded and more customers connect to the network. Using their own funds, the Rural Water Board has constructed an additional spring protection to increase supply to the scheme, extended the pipe network by 5.4km, and added an additional

three public taps. In these expansion works they have been able to lever significant community contributions in terms of labour, materials and cash, amounting to around 50% of the total capital costs.

In addition to scheme expansion, the Water Office is investing on average around ETB 68,000 (around US\$3,500) on capital maintenance works, to ensure the continuity of supplies. They are in the process of developing proposals to the Woreda for them to cost-share further expansion works, and thanks to the legal status of the Rural Water Board, they are theoretically able to access repayable finance (loans) if needed in future. The Rural Water Board's legal status also helps it to have greater independence and autonomy in financial matters, and helps them to ring-fence revenues generated for the use of the water system. This is in contrast to WASHCOs which commonly have pressure from Kebele officials to re-divert saved funds for other community development activities. As at July 2017, the Ticho Rural Water Board had accumulated savings of over ETB 890,000 (around US\$38,000). They have already invested some of their funds in a Government Bond.

The water supply system in Ticho is fully metered, which facilitates accountable and accurate billing, with public taps operated by attendants who sell water at a fixed rate (ETB 0.2 per 25 litre container – around US\$ 0.01). The pricing is similar to other rural water points in the area, which charge ETB 0.15-0.30 (US\$ 0.007-0.015) per 25 litre container. The tap stand attendants pay the Water Office for the bulk water they consume at the tap stand on a monthly basis, and keep 30% of the sales revenue as their own commission. For domestic and commercial metered connections, the tariff is based on a minimal fixed monthly rate, together with a volumetric rising block tariff, which ranges from ETB 8-13 (US\$0.35-0.55) per cubic meter. The Board's Water Office reports that payment rates are an impressive 98%. This is because tap stand operators collect revenues at the point of collection, and there is also a financial penalty applied for late payments from tap stand attendants and households with private connections. The Zonal administration undertakes a tariff review every three years for the scheme, and proposes tariff amendment options to the Ticho Rural Water Board, which the Board decides on. Since its construction in 2012, and as recommended in the aforementioned Ticho Business Plan, there has been two such tariff increases, increasing from ETB 0.1 (US\$ 0.005) per 25 litre container initially, to ETB 0.2 (US\$ 0.01), which is the current rate, and is comparable as a tariff to other water supply systems in the area.

### **Institutional sustainability**

The phrase 'big is beautiful' is certainly applicable to the Rural Water Board model. The size of Ticho's scheme (and therefore its revenue stream) allows it to employ skilled personnel to manage the scheme, and its size and legal registration also allows it to receive the same level of monitoring and support from the Zonal authorities as the urban utilities receive.

WaterAid Ethiopia has provided considerable sector support at the Ministerial and Regional levels for the legal establishment of Rural Water Boards, and has produced documented learnings on the process. Following analysis which found that there was no clear proclamation that provided for the powers and functions of rural domestic water supply users associations, WaterAid Ethiopia advocated to the regional authorities to develop legal proclamations, and provided technical assistance to do so. To date five regions have adopted such legislation. WaterAid Ethiopia has further provided considerable support to two Regions (Oromia and Beneshangul Gumuuz) to enact and operationalise the legislation, and has encouraged all of its supported Rural Water Boards to legally register themselves. The legal status means the Rural Water Boards/Water Office can be audited and held legally accountable for their actions, they can legally own, acquire and sell assets, they can delegate the management of their assets, and they can access repayable finance – all aspects that the smaller WASHCOs struggle to achieve.

The number of staff in Ticho's Water Office has grown from six in 2012 to 20 in 2017, and adequate remuneration (which follows civil service protocols, including pension provision) helps to retain skilled staff. Many of the staff have been involved in the system construction and management since its construction, and have been internally promoted as their capacity has increased. WaterAid Ethiopia constructed the Ticho scheme in phases, operating from a project sub-office in Ticho for a number of years. This has allowed not only technical training to the Board and Water Office Staff, but also provided sustained on-the-job learning, mentoring and technical assistance. WaterAid Ethiopia has also supported post-project learning and refresher trainings and helped the Ticho Board's Water Office to develop internal processes such as stock and financial management. The long-term mentoring and support provided by WaterAid does pose a challenge for scaling of the model within the sector, where others (particularly government) may not always be in a position to provide such intensive and sustained support.

Unlike the WASHCO model, the Rural Water Board approach includes clear incentives for performance. The Water Office Manager is appointed and managed by the Board, and can also be replaced in the case of poor performance. With the utility grading structure of the Government (which the Rural Water Board is also part of), there is an incentive to grow and improve performance as a Rural Water Board, as this allows the grade ranking of the utility/Rural Water Board to increase (e.g. from a Grade 6 to a Grade 5). With the increasing grade comes higher pay scales for the Board's Water Office Manager.

The separation of roles between service provision (the Water Office) and service governance (the Board) provides a good basis for downward accountability to the users. Unlike the urban utilities, there is no appointment of Rural Water Board members by the Government, meaning that accountability of service provision continues to be focused on its users. Whilst this can reduce (external) political interference in the running of the water schemes, there may still be local political influences in the Board. The Board members are elected every two years, and have a maximum four-year term. Since 2010, there have been ten examples when Board members were replaced due to poor performance, showing that they are indeed accountable for their activities.

### **Environmental and technical sustainability**

Water scarcity is an increasing challenge in Ethiopia. In Ticho WaterAid Ethiopia undertook spring yield measurements at the time of construction, and the Zonal Water Office has been undertaking yield monitoring periodically since then. WaterAid Ethiopia has promoted catchment protection measures such as fencing, afforestation and land-use management around Ticho's springs, and the Rural Water Board has commenced the process with the Woreda to legally acquire the land around the springs, to help in their efforts on catchment protection. As the Board members are based across all communities served by the scheme, they form a good base for community consultations and efforts for catchment management measures. They also facilitate rapid reporting of leaks by customers to the Board's Water Office. As all domestic connections and public taps in the Ticho scheme are metered, users tend not to wastewater. Metres connected to the source and distribution points enables the Water Office to monitor leakage throughout the water system.

The Water Office has considerable in-house technical capacity, with a team of five technicians, who were trained and equipped with tools by WaterAid Ethiopia. Most of this team were employed as labourers during the construction phase of the project, and hence have good knowledge of the construction and layout of the scheme. The 2012 external evaluation of the Ticho project praised WaterAid Ethiopia for the good technical standard of the water supply infrastructure.

The Water Office maintains a stock of spare parts, and the Store Keeper monitors stock levels and replenishes when running low, ensuring spare parts are available in case of breakdown. This avoids long system downtime while purchasing repair materials from the market. The Water Office projects its anticipated maintenance and likely repair works for the coming year, and makes annual competitive procurements. In addition to increasing cost efficiency, such consolidated procurements help the Water Office to access larger suppliers to obtain materials which are not readily available in local markets.

### **Social sustainability**

The arrangement of Board members located across the water system means that each individual community can be informed of the wider water supply scheme, and therefore understand how this impacts on the services provided or costs in their respective community. This is important for a model which focuses on centralised management of the service.

WaterAid Ethiopia promoted transparency and accountability in its trainings, and emphasised the importance of annual audits of the Water Office's accounts. The presence of WASHCOs and Board Members in each community allows clear communication channels from users upwards to the Board and Water Office, and downwards back to the communities. To further stimulate feedback from users the Water Office has also established feedback and complaints boxes in both of its branch offices.

The community management arrangements of the rural water board, together with an extended period of community mobilisation by Wateraid Ethiopia in the project, and the considerable community contributions made towards the cost of infrastructure<sup>ii</sup>, mean there is a high sense of ownership by the community of the water scheme. Since construction, a number of community by-laws have been established, covering issues such as infrastructure vandalism and illegal connections.

In terms of social inclusion, the Ticho scheme provides two levels of service (domestic connections or public taps) allowing customers to select the level they can afford. The revolving fund established by

WaterAid Ethiopia helps low-income households to connect to the water system. The Ticho Rural Water Board also strives for female empowerment and inclusion, with 50% of Board steering committee members, 45% of the Water Office staff, and 100% of the tap stand operators being female. This is impressive in a country ranked 121 of 134 countries in a 2010 global study on gender disparity (UN Women 2013).

### **Conclusions and future perspectives**

The Rural Water Board model, innovated in Ethiopia by WaterAid, helps to challenge the conventional notion that communities are not able to manage large or complex water supply schemes. The model benefits from economies of scale to employ a skilled team of staff to effectively run the water scheme, while the Board ensures governance and accountability of the Water Office-led service provision. WaterAid Ethiopia has strengthened the links with the Woreda, Zonal and Regional authorities, allowing them to undertake external monitoring, and to provide ongoing support to the Rural Water Boards. The increased scale of the Rural Water Board helps it to avoid many of the institutional, technical, financial and social issues commonly faced by the smaller WASHCOs. The particular case of Ticho provides concrete evidence for a number of success factors which can be built on to address the broader challenges facing the rural water sub-sector in Ethiopia, whilst recognising that the example will not be applicable to all water resource or demographic contexts in the country. Key aspects for success in Ticho have included:

- Lack of direct political interference (no external appointments of Board members) and public accountability of board members
- Legal registration
- Performance based incentives (through inter-Board or Utility competitions organised by the Zonal Office)
- Metering for all household connections and public taps
- Clustering of management and economies of scale
- Staff skills and retention
- Ongoing monitoring, training and peer-peer learning between Rural Water Boards/utilities

WaterAid Ethiopia is in the process of advocating for the inclusion of the Rural Water Board model as one of a range of service delivery models recognised in the national Integrated Water Resources Management Policy and Strategy, which is currently being updated.

However no service delivery model is without its flaws, and there are certainly opportunities to continue to refine and strengthen the Rural Water Board model as it is progressively scaled. In future, there will be need to strengthen aspects such as:

- The autonomy of the Rural Water Board from the Zonal administration, especially on tariff related matters;
- The focus on water resources management, for example: at design stage to fully understand recharge and the features of the source catchment areas, and to factor in environmental flows; and during scheme operation to monitor (and keep records of) yields, environmental flows and recharge; and to ensure ongoing efforts on catchment protection;
- The focus on leakage management; and
- Performance management arrangements between the Board and their Water Office.

There is also the common challenge of local residents and politicians pressuring the Rural Water Boards and their Water Offices to continue to extend their pipe networks into new communities, sometimes regardless of the current and projected yields of the available water sources, and the potential impact on financial viability. Given local stakeholder dynamics, it is not always possible to resist such demands. The expansion of the schemes, both into new areas and communities, or through increasing the number of individual connections, puts pressure on the existing (limited) source yields, and can result in reduced service quality in areas that are already served by the scheme.

However, possibly the greatest challenge in terms of scaling up the Rural Water Board model for multi-village schemes is in the role of WaterAid as an external driver and catalyst. Over many years, WaterAid Ethiopia has provided intensive and sustained capacity building, together with providing support and mentoring following project completion. As other organisations take on the Rural Water Board model in their programmes, they may not be able to provide such extensive or sustained capacity support.

The challenge going forward is therefore to learn from and take up the most successful aspects of the WaterAid Ethiopia-supported approaches, and to fully institutionalise these elements of long-term support

within permanent institutions. In a context where the ONE WASH programme has allocated just 2% of spending on post construction support for rural water supply, there will need to be considerable advocacy for this allocation to be increased in the coming years.

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### Acknowledgements

The authors would like to thank all those involved in the development and implementation of the Rural Water Board Model.

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### Notes

- <sup>i</sup> Of which three were financed by the Rural Water Board, and 5 by the Woreda administration
- <sup>ii</sup> Community contributions (in kind and in cash) was around 10% of the total cost of the initial construction of the scheme, around 50% of the total cost for the scheme expansion, and individual households pay the full cost of their domestic connections and water meters. Connection fees are charged as a percentage of the material cost required for the connection of the line.

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