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# Enhancing benefits from water, sanitation and hygiene interventions

## Case study from Kamba, Southern Ethiopia

With support from the RAIN initiative and Millennium Water Alliance, the Ethiopian Evangelical Church Mekane Yesus (EECMY) and WaterAid Ethiopia, have been working with governments and communities to enhance traditional water supply interventions. The objective was to increase both water and food security. This case study examines how a productive element was added to community water supply.

### At a glance

#### Background on Kamba

183,000 people: 51% with improved water supplies

95 water supply schemes: 15 non-functional

39 kebeles: 11 with no improved water supplies

#### RAIN project activities

Seven springs protected and developed to provide for domestic and productive uses

Three gravity-based spring schemes serving 9,200 people, four on-spot springs serving 1,800 people

Productive use based on gardening with overflows and troughs for livestock watering

Women entrepreneurship group established

Toilets constructed at schools and health posts

Kamba woreda is located in the remote uplands of southern Ethiopia<sup>1</sup>. Although only 40 km west of the regional centre Arba Minch as the crow flies, the road to Kamba winds for 90 km, making it relatively inaccessible.

As a new all weather-road is constructed, transportation is improving and farmers expect to develop new markets. In the highland areas of the woreda, good rainfall feeds springs and streams and farmers cultivate the steep slopes. In the lowlands, water is scarcer and surface water is more likely to be contaminated.



The upland landscape in Kamba woreda

<sup>1</sup> A woreda is equivalent to a district and a kebele is a ward or sub-district.

## Water supply in Kamba

Water supplies in Kamba were surveyed in 2010/2011 for the National WASH Inventory (NWI). The NWI provides one approximate baseline for the situation before the Millennium Water Alliance–Ethiopia Programme (MWA-EP) interventions. It showed that at least 31.3% of residents had access to an improved water source<sup>2</sup>. Most improved access was provided by gravity-based systems in the woreda’s three small towns, including the capital, Kamba.

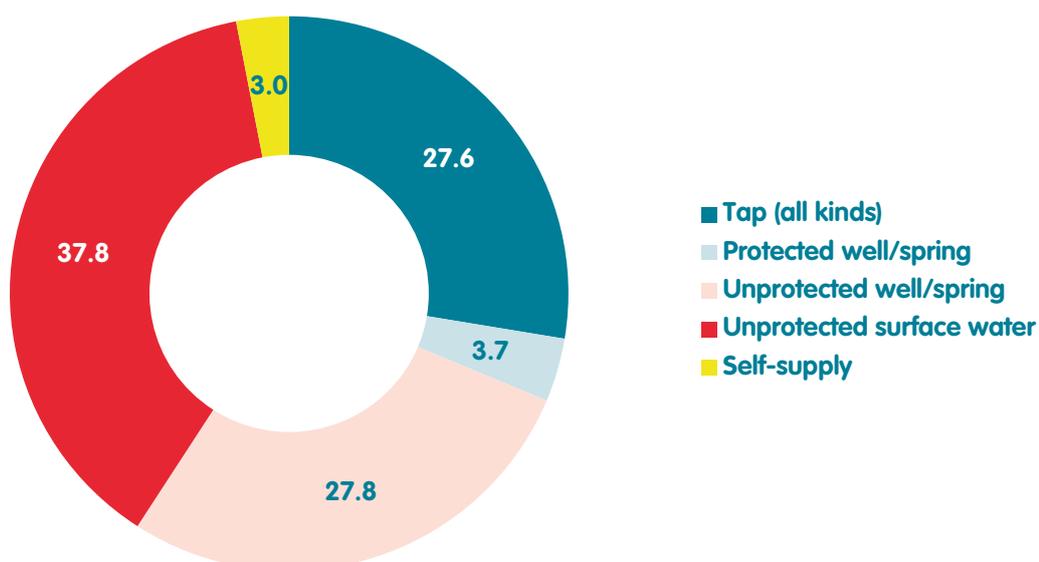
Most people in the woreda, including almost everyone outside the towns, used unprotected wells or springs (27.6%) or unprotected surface sources such as rivers and traditional ponds (37.8%).

How had the situation changed three years on, and what difference has the MWA-EP made?

In 2014, MWA-EP was in the second year of work in Kamba, supported by The Conrad N. Hilton Foundation and the RAIN program. Together, MWA-EP’s, implementing partner WaterAid, its local partner NGOs, local governments and communities had built 31 new water supply systems concentrated in four kebeles (Dombe Sale, Garsa Hanika, Balta Toylo and Balta Soke)<sup>3</sup>.

Most of these systems (28) are spring capping projects to protect the spring ‘eyes’, where water naturally emerges. These projects make water available at the spring or pipe it by gravity to more convenient locations. Water is less easily contaminated after spring protection. Storage tanks and distribution points with taps make collection easier for users. The larger springs with distribution systems (five systems were of this type) serve between 1,500–3500 people each. The on-spot springs where users collect water at the spring location (23 systems of this type were built) generally serve 300–500 people but in some cases up to 1,000. Three shallow wells (drilled boreholes) with handpumps were also constructed in lowland areas.

**FIGURE 1** ACCESS TO WATER SUPPLIES IN KAMBA FROM THE NWI (2010/2011), % HOUSEHOLDS



<sup>2</sup> In the 2010/2011 National WASH Inventory data are reported for 22 kebeles. This totalled some 5,677 households.

<sup>3</sup> Until June 2014 when this research was carried out. Out of these 31 systems, 27 were mainly funded with donations from the Conrad N. Hilton Foundation and four through the additional funding from RAIN. These four systems included two large springs with distribution systems and two small on-spot spring schemes. RAIN funds were also used to ‘deepen’ interventions at the mainly Conrad N.Hilton Foundation funded schemes.

For all these schemes, voluntary committees (WASHCOs) of community members have been established or strengthened to operate and maintain the infrastructure.

The Woreda Water, Mines and Energy office counted 95 water supply schemes in the woreda at the time of our visit (Ethiopian calendar year 2006; 2013/2014). These are mainly protected springs, with 26 on-spot springs and 52 springs with piped distribution to water-points. There are also 11 hand-dug wells, 5 shallow wells (boreholes with handpump) and 1 deep well system.

The projects EECMY implemented with the woreda government and other partners have made a major contribution to improved water supply coverage in the woreda. The systems built by the MWA-EP make up about one third of the woreda's improved water supply systems and serve about 23,000 people.

The woreda government estimated in 2014 that overall access to protected water supplies had climbed to 51%, with 93,766 people having improved access and 89,086 without (note that these figures don't match the NWI figures). Although there is still a long way to go to reach full coverage, it is clear that the project interventions have been responsible for much of the improvement.

The priority of the woreda remains to build new community water supply schemes or expand existing ones. With more needy areas than they could possibly reach with their limited resources, the woreda water office responds to requests from communities in turn. Low cost technologies such as on-spot spring development and hand dug well construction are preferred.

## Adding a productive element to community water supply

WaterAid and EECMY adopted an Multiple Use water Services (MUS) approach to seek to enhance the benefits of conventional community water supplies. Although EECMY had previously worked in rural development areas outside of water sanitation and hygiene (WASH), this was the first time it explicitly linked domestic and productive water use in the same planning process. It was also new for the woreda water office, which made a

special effort beyond its official mandate to extend improved (domestic) water supplies. So, what was done under the MUS banner, and what lessons might be learned?

In general, the innovations introduced were limited to making use of overflows at spring sources, storage reservoirs and water points to irrigate small gardens. Crops include vegetables, potatoes and sugar cane. These gardens benefit few households directly, since the gardening is limited to a small area by the owner of the land on which the reservoir or water point was constructed. A piped water scheme with a storage tank and one water point, for example, may enable small-scale irrigated crop production for only two families.

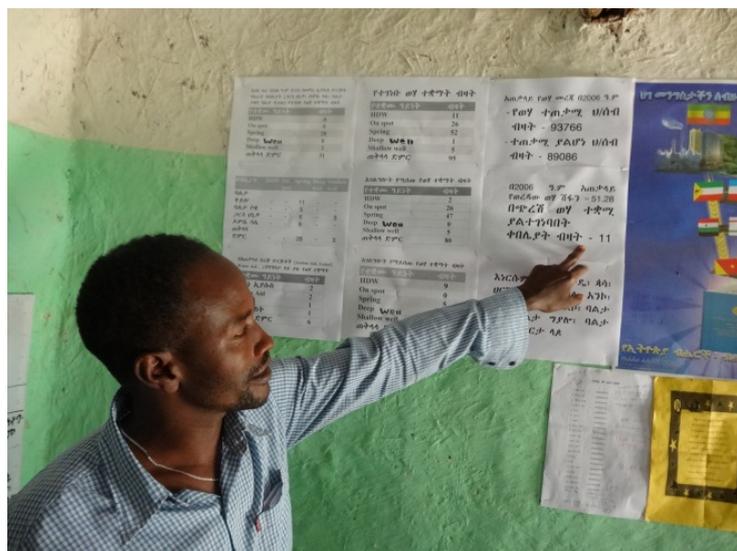


Photo: a typical spring-eye protection; Photo: showing progress on the walls of the Woreda Water, Mines and Energy office



Draining overflows for productive use nearby

## Dombe Sale: going beyond overflows

Dombe Sale is one of the kebeles where WaterAid and EECMY have concentrated their interventions. There are now improved water and sanitation facilities for the villages, school and health post. Six water supply schemes have been constructed, all based on protection of springs. VIP latrines have also been built at the Dombe Sale Elementary school and health post.

Access to an improved water supply in Dombe Sale is now estimated at 90%. That means 90% families have a protected water supply within 1.5 km of where they live. This is a big change from a few years ago. There was only one improved water supply system when WaterAid and EECMY began working in the kebele.

As at the other springs, the MUS component is mainly about making good use of overflows for gardening (Box 1 provides a typical example). Additional interventions in Dombe Sale included a small garden at the school and the start-up of a women's entrepreneur group.

The women's entrepreneur group enables gardening by its ten members, who were selected for their initiative in starting household irrigation. They received training and donated seeds to facilitate start-up. The group now cultivates a productive garden with vegetables like carrots and onions and tree seedlings like coffee and eucalyptus. The garden is irrigated from a stream with water collected downstream from one of the protected springs. Access to the stream remains

difficult and irrigation is performed by bucket. It is a young endeavour and the group will need to find its way, but they are enthusiastic about their venture and even talked of diversifying beyond the garden into trading or milling activities.

The school also developed a small garden (10 by 20 metres) to complement the newly built water point and boys' and girls' latrines. The garden is irrigated with overflow from the water point and was full of cabbages during our visit.

Overall, the interventions in Dombe Sale all add up to a package of integrated improvements as was intended through the RAIN initiative. Water resources are supporting some additional food production by a local women's group and at the local school. The challenge is now to use this new approach to MUS in new water schemes to expand the benefits throughout the community. Since the community appreciated the way the MUS enhancements were made and the projects were successful, EECMY says that they will develop all of their spring systems like this from now on.

What's next? There is still much to do in Dombe Sale. Improved water coverage is close to but not yet 100%. One of the villages in the kebele still has no improved water supply and people consume river water. Further small additions and improvements could also be made. The water committee (WASHCo) at the Wayita scheme mentioned their intention to add a facility for livestock watering (the system has no cattle trough). This seems sensible, and suggests that the implementers might review their procedures to ensure that livestock watering is considered in initial scheme planning at other sites

### BOX 1 THE BENEFITS OF WATER ON THE DOORSTEP

Mr. Salfako Bonkole says he provided part of his land willingly when it was needed for construction of a community water point in Wayita. He remembers using water from distant rivers and streams for domestic use and livestock watering, so he is happy to see water delivered to people closer to their homes. He says the new water point has given him a double opportunity: clean drinking water close to his home and overflow water to grow vegetables, sugar cane and seedlings like coffee.

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## Conclusions and recommendations

- The RAIN interventions in Kamba have clearly triggered changes in the approach of EECMY, which led project implementation in close collaboration with the woreda water office. The RAIN schemes incorporated the basic ideas of the MUS approach and now support productive as well as domestic uses of water. However, this case study identifies a number of key constraints:
    - a focus on water supply technologies such as spring developments resulted in limited yields of water for MUS;
    - livestock water requirements were considered in some but not all schemes; and
    - few opportunities were found to site tanks and water points on communal (rather than private) land, meaning that the benefits of the MUS interventions may not be available to the wider community. Achieving a wider scope for small-scale irrigation would probably be possible only through higher-yielding water supply technologies, such as small dams or shallow groundwater development through self-supply. Working more closely with the local water and agriculture departments could also enhance the scope of MUS approaches.
  - Overall, this pilot appears to have been valuable for the communities, the woreda water office, EECMY and WaterAid. Livestock water needs could be considered further in water supply project planning and design, with several examples in the woreda of how livestock watering can negatively impact on domestic water supply sources if proper arrangements are not made.
  - It may only have been a limited change so far, but a useful first step in linking domestic uses to wider water management has been taken by these communities, WaterAid and Mekane Yesus.
  - Partners in this woreda should advocate for some shift of resources from new building to ongoing operations and maintenance, and to invest more in strengthening community water committees and the back-up systems that might support them. Sustainability of existing water supply schemes is a concern throughout the woreda, especially the supplies from handpumps and in one village, a failed motorised pumped scheme.
  - As well as the vital technical, social and institutional (e.g. strong WASHCos with back-up support that serve their communities), and financial (e.g. revenues and budgets that cover repairs) dimensions of sustainability, the MUS interventions could be supported with more awareness developed on local water resources management such as land management practices around springs and water points, and potential competition for water between upstream and downstream users.
  - The initiative now needs follow up now to systematize the lessons learned, further ‘deepen’ the interventions in Kamba, and extend the approach to other areas through these NGOs’ and government programmes.
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Sign board at project intervention site

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## About RAIN

The Coca-Cola Africa Foundation (TCCAF) has provided support under the Replenish Africa Initiative (RAIN) for Millennium Water Alliance Ethiopia Programme (MWA-EP) partners to ‘deepen’ their water and sanitation interventions. The extra support was used to enhance the benefits of water and sanitation systems in existing programme intervention areas of three leading international NGOs: Catholic Relief Services, WaterAid Ethiopia and World Vision.

One way this was accomplished was extending projects to supply water for productive as well as domestic uses. The approach is called Multiple Use water Services (or MUS).

Project implementation in Kamba (and Dita) woredas was by the Ethiopian Evangelical Church Mekaneyesus of Southwestern Synod (EECMY-DASSC-SWS) with technical support from WaterAid Ethiopia.

## FURTHER INFORMATION

- The Multiple Use water Services (MUS) group website includes guidelines and further case studies on the approach. [www.musgroup.net](http://www.musgroup.net)
- Ethiopia news MWA website: <http://www.mwater.org/programs/ethiopia-news/>
- Millennium Water Alliance – Ethiopia Programme on the IRC website <http://www.ircwash.org/projects/millennium-water-alliance-ethiopia-programme>

## About this case study

This case study was prepared by Lemessa Mekonta and John Butterworth at IRC Ethiopia, based on field visits and interviews in June 2014.

IRC is a Millennium Water Alliance member and supports the MWA-Ethiopia Programme in its documentation and knowledge management activities.

The authors thank Sileshi Gobena at WaterAid Ethiopia for his support in undertaking this case study, and staff from ‘Mekaneyesus’ and the Woreda Water, Mines and Energy office in Kamba. Community members spoke freely and at length about the challenges of managing and using their local water supplies.