HOUSEHOLD WATER USE CASE STUDY FOR MAYEPU VILLAGE

Background

The Mayephu Village, situated in Dzumeri, Giyani, falls within Ward 27 of the Mopani District Municipality. This rural community has 365 households, housing a total population of 1,940 people. The village's water supply has undergone significant changes over the years, influenced by climate change, infrastructural inefficiencies, and load shedding.

Initially, water for Mayephu Village was sourced from the Letavi River through a bulk supply scheme until around 2007. However, water shortages and supply unreliability emerged as challenges. In response, the community transitioned to a system relying on three community-level boreholes, installed in 2007, 2016, and 2022, respectively. These boreholes pump water to a village reservoir, which is then distributed through approximately 108 communal standpipes.

In addition to these communal water sources, many households in Mayephu have their private boreholes, estimated to be around 120 boreholes. Some of these boreholes predate the introduction of the bulk water scheme in the area.

Water Use in the Village

The water supply system operates by filling the village reservoir, with a capacity of 700,000 liters, once a week. Pumping continues for six days to achieve this goal, and taps are opened on Friday afternoons. By the next day, the reservoir is empty, and the pumping cycle restarts.

Water allocation and operation are managed by a 15-member water committee, including a pump operator employed through the Mopani District Municipality. The committee represents various stakeholders, including traditional and ward councils, cooperatives, and the livestock association.

Households in Mayephu have adapted to this system by acquiring containers (25 liters), drums (210 liters), and JoJo tanks (2200 liters) to store water for the week. These containers are filled from standpipes or informal tap connections in their yards. It's estimated that there are close to 300 of these "informal" taps in the village.

Household Categories

In Mayephu village, households can be categorized into four main groups based on their water storage and access:

1. Group 1 (< 20L per person per day allocation): These households, constituting about 17% of the total, are extremely vulnerable and impoverished. They often consist of woman-headed households, pensioners, newcomers, or "foreigners." They rely on communal standpipes for water.

2. Group 2 (< 40L per person per day): This group is somewhat more secure, with access to yard taps. Around 25% of households fall into this category, and some engage in small-scale productive activities like gardening.

3. Group 3 (< 90L per person per day): Similar to Group 2, these households have access to more water storage options and generally have containers, drums and 2500l JoJo tanks. They engage in limited productive activities, mainly small household gardens averaging around 200 square meters. Roughly 24% of the community falls within this category.

4. Group 4 (> 200L per person per day): Households in this category, constituting around 33%, have their private boreholes in addition to the previously mentioned water storage options. They enjoy access to larger gardens, small livestock, and fruit orchards.

Right: Water access options in Mayephu village; communal standpipes, Yard connections with some storage, private boreholes with more substantial storage.

Water Use Practices

In reality, only households in Group 4, with their private boreholes, have managed to maintain reasonably sized household gardens (200-400 square meters). Households in Group 3, with JoJo tanks filled from the communal system, often have smaller gardens (20-100 square meters). Households in Groups 1 and 2 are less active in productive activities.

Irrigation practices in the gardens mainly involve hosepipes and buckets for adaptations of short furrow irrigation, or drip irrigation. Householders are well aware of water salinity issues and have adjusted their crop varieties, watering routines, and soil management practices accordingly.

Conclusion

The Mayephu Village's water use practices demonstrate a clear progression from no productive activities to household gardens, small livestock, and fruit trees, depending on the consistent availability of water. Despite the challenges posed by climate change and water scarcity, community members are intrinsically aware of water demand for productive activities and adapt their practices accordingly.

Dryland field cropping, once common, has become unviable under current climatic conditions, pushing villagers towards more water-efficient gardening methods. While challenges persist, including equitable water access and addressing salinity issues, the community's resilience and adaptive practices are evident in their agricultural endeavours.

Right: Examples of water use activities including diversified homestead food gardens, fruit production and small livestock husbandry.

Although roof rainwater harvesting is practices by almost all households, this is not a focus – as storage options are very limited. Foreseeably, a greater focus and more support in this area can improve the management of limited water resources in the village substantially.

Mayephu Village's experience highlights the importance of sustainable water management and the integral role of water in supporting household livelihoods and local food production.

References:

- Van Koppen, B., et al. (2009). Multiple Use Services (MUS) for water. Retrieved from [link].
- Jovanovic, A., & Maswanganye, S. (November 2022). Mayephu Water Management System Analysis. [Internal Report].