PROMOTING SUSTAINABLE WATER INFRASTRUCTURE FOR RURAL AREAS OF MYANMAR

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Abstract

This poster is aimed at describing how sustainable water infrastructure is crucial for rural populations to get access to safe drinking water. In this study, market-based programming and water and energy correlations are considered to promote the utilization of locally available resources to construct water infrastructure. Moreover, the importance of policy and legislation has added to the need for a holistic view.

Introduction

The rural populations in Myanmar withdraw most of their drinking water from surface water such as ponds, streams and rivers. These water resources are typically renewed from the rainfall as the average annual rainfall in Myanmar is approximately 2100 millimeters (ADB, 2017). It may indicate that sustainable water infrastructures are vital for rural communities and for the fact that Myanmar is a disaster-prone area in Southeast Asia. Although thousands of drinking water infrastructures have been constructed in rural areas in the past few years, some of them have became dysfunctional due to natural disasters and lack of operation and maintenance. As a result, rural communities in marginalized areas are struggling with access to safe drinking water.

Figure 1 - Open well for drinking water

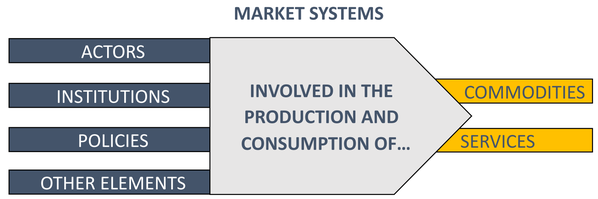
Figure 2 - Gravity-fed water system

Figure 3 – A girl fetching drinking water

Market-Based Programming

Market-based programming is aimed to promote the use of locally available materials through the local markets. Access to the market is quite important for the host communities in rural areas as it may provide essential materials needed to maintain their water infrastructures. It may indicate that people can access their needs even in disaster events rather than depending on international aid.

Figure 4 - Looking at market systems to identify and address water needs in rural populations.



Promoting Local Materials

Introducing locally available water filtration systems in rural areas might help them get access to safe drinking water. A bio-sand filter is a traditional water filter which can filter contaminated water through different sizes of rocks and sand layers while creating bio layers to trap harmful pathogens. It can easily be constructed in either concrete or plastic bins, which are available in the local markets.

Figure 5 - Bio-Sand Water Filter (Source: CAWST)

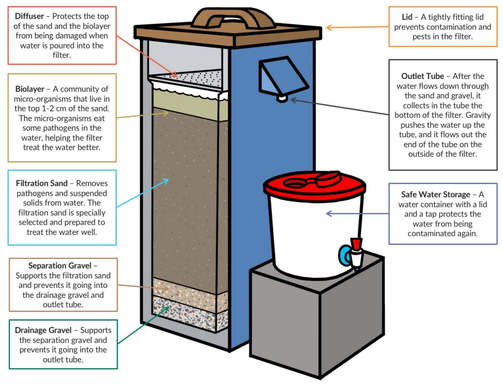
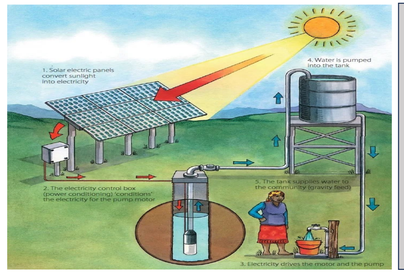


Figure 6 - Bio-Sand water filter in Myanmar
(Source: Malteser International)

Water and Energy

The rising water demands in the world might suggest that more energy is needed for the extraction of the multiple purposes of water use. In Myanmar, bioenergy is mostly used for groundwater exploration in rural areas. But it is not a sustainable solution for the rural communities. One of the solutions is to apply solar energy for water extractions. In the context of rural communication, solar energy is relatively cheaper than wind or bioenergy in the long run.

Figure 7 - Solar Water Pumping (Source: World Bank)



- Solar power is generated through the photovoltaic array in the panel.
- The controlled panel provides power to a water pump.
- The water pump pumps water to the storage tank.
- Then, water can be distributed through the pipe network in either gravity flow or standpipe.

Policy and Legislation

The water resources management in Myanmar is administrated by several ministries. Although legislation is presented for water and environmental conservations, it may suggest that there are weak actions taken for stressing the environment. However, it showed that the collaboration between the national government and international organizations in recent years has addressed the drinking water needs of rural populations.

Conclusion

Access to safe drinking water is still a challenge for rural populations in Myanmar because of inadequate water infrastructures. Not only Involvement of local communities but also strong support from government institutions is needed to address those issues. Moreover, the utilization of local materials and awareness of solar water pumping should be promoted as they may help to ameliorate the drinking water crisis in Myanmar.

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