

Title: Reducing Non-Revenue Water in Kumasi Through Community Monitoring and Maintenance

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DESCRIPTION AND BACKGROUND

The Non-Revenue Water (NRW) Monitoring and Maintenance Action Group will focus on augmenting gaps in the NRW reduction plan adopted by the Ghana Water Company Limited through a Knowledge Sharing, Technological Capacity Building, Stakeholder Engagement for effective Governance and a strategic Business Roadmap to reduce unemployment in the region.

The initiative aims to improve water use efficiency at the end-user to minimize losses due to leakages, illegal connection, poor data management and corrupt practices. This will drive sustainability of ecological services provided by nature and the environment (Yeboah, 2008).

Water supply is rationed in many urban areas due to high demand and inadequate supply. The lack of proper metering of urban water and other factors account for 50% of non-revenue water with a bill collection ratio of 95% (Osei-Wusu & Ferber, 2018).



Non-Revenue Water increasing Water Scarcity in Kumasi, Ghana Env. Community

Restoring Economic Value: The economic value of water resources should not be taken for granted. Inasmuch as government subsidizes water tariffs, individuals, groups and organizations must take action to minimize water waste along the water supply chain.

Identification and Mapping of Leakages: People living in Kumasi must own monitoring and reporting of defects of supply lines from GWCL which increases the risk of chemical, physical biological contamination, NRW losses to GWCL and increase access to water in peri-urban water-stressed communities.

Community Support: Communities that record report leakages and other defects on supply lines and adopt our SI approach to minimize it significantly in a progressive approach, incentives and further training will be provided to them. Community volunteers will be trained to interpret meter readings, use simple Geographical Information Systems (GIS) and carry out affordable pipework maintenance.

Abstract

Water is a valuable resource which supports the livelihoods of people, ecosystems and businesses through portable water supply, irrigation, sanitation, energy & food security (Vandycke Saghir, 2016)

According to a proposal submitted to the Public Utility Regulatory Committee by the Ghana Water Company Limited in 2018, about 50% of treated water was classified as non-revenue water (NRW).

Huge volumes of water is lost annually to NRW due to poor metering, leakages, insufficient data management, theft and corrupt practices. Poor waste handling and sanitation at the catchment of surface water sources also reduces efficiency of Ghana Water Company Limited (Djane Neequaye, 2016).

This Action Group will focus on a community-based Social Innovation module that will equip participants with skills to identify, classify, map and record defects on the water supply lines and develop simple and affordable routine fixes on broken water lines.



Domestic water meter in installed in Kumasi by Ghana Water Company Limited.



TECHNOLOGICAL SOLUTIONS

Technological Solutions must constitute simple, efficient and cost effective tools and applications that will enable volunteers to carryout designed tasks in line with the goals of AfriAlliance.

Mapping of leakages: a free-to-use GIS application will be directed for use by participants to accurately pick location of defects like leaking, illegal connections, exposure of pipelines and faulty meters.

Monitoring on consumption: an electronic Microsoft excel template will be developed for some of the volunteers to collect data on meter readings.

Online-information sharing: An online information sharing platform will be created to give visibility to the Social Innovation. Graphics will be circulated on social media to reach targeted audience.

Review and Assessment: Key stakeholder from AfriAlliance will be identified for mentorship and supervision of the technological resources in use by the AG and recommend modification for continuous improvement.



CAPACITY DEVELOPMENT

Capacity development by Non-Revenue Water Monitoring and Maintenance Action group Will adopt a proven information sharing and engagement platform for the sharing of knowledge. A training matrix will be developed to assess performance of participants and share feedback with external stakeholders.

Stakeholder Contribution: The AG will liaise with stakeholders like GWCL, Ministries, Municipals and District Assemblies (MMDAs) to help with the development of checklists and templates to guide training sessions.

Engagement and Training: Members from the AG will lead training sessions to teach participants how to use a selected mobile application to map defects on water supply lines. Training will be done via virtual platforms or face-to-face sessions.

Professional Training: Participants will be trained to undertake plumbing works, sanitation and hygiene services to help generated internal funds to sustain the initiative after three years of implementation.

Review and Assessment: Participants will be assessed periodically to make sure every activity carried out is inline with the legal framework of the country.

SOCIAL INNOVATION



GOVERNANCE STRUCTURES

Governance structures will apply vertical, horizontal and diagonal reporting channels to ensure transparency, accountability, integrity and teamwork by the AG.

Competence coordination: this integrated management system will help identify the economic, behavioral and organizational variables that will merge to form a comprehensive framework that is dynamic, systemic and cognitive.

Communication channels: a trusted channel for communication will be established to circulate reports and trends within stakeholder of the SI. An upward and down channel between AG and target community.

Micro/Macro economic factors: The AG will clearly identify the strength, weakness, threats and opportunities than will affect the progress of the SI. The operation of the Non-Revenue Water Monitoring and Maintenance AG will set boundaries to safeguard the goals of AG and AfriAlliance.

Performance of AG: The performance of the AG will be assessed quarterly to identify areas of improvement. Team members will be encouraged to be acquire skills to held the AG adjust to changes in the CSO and government environment.



BUSINESS ROAD MAP

A strategic business roadmap will be developed to ensure funds are generated internally by volunteers who are trained to carryout pipe installations, fixing of leakages and rainwater harvesting systems, desilting of gutters and securing of exposed pipelines.

Seed Funding: The Seed funding will be used to embed the SI in Kumasi to facilitate engagement and coordination of events.

External Funding: The AG will develop proposals to raise funds from sponsors who will benefit from the capabilities of the AG, target communities and expert interventions from other AfriAlliance AG network.

Business Sustainability Funds: participants will be provided with incentives to support business startups directly involved in the water supply chain. Return on investment (ROI) will be used strategically to establish our business positioning.

Partnership with Public and Private Sector: the AG will collaborate with business and agencies to introduce our social innovation to potential clients who will help improve the livelihoods of beneficiaries.

Consultation with other AG: The AG will consider engagement with other AfriAlliance AG to effectively manage financial, technological and human resources. There is a wide financing gap created for WASH related development do to the current macro and micro economic factors in Ghana (Embassy of The Kingdom of Netherlands, 2018)

The Non-Revenue Water Monitoring and Maintenance Action Group seeks to drive sustainable water management strategies by building the capacity of end-users and community member to be able to map nonconformities along the water supply chain.

The flight plan considers a three-year project from January 2021 to December 2024.

Seed funding will be used to embed Social Innovation strategies in line the ethics of AfriAlliance.

The Technological, Capacity building, Governance and Business Roadmap dimensions will be instituted to adopt standardized, internationally recognized procedures to promote sustainability in the WASH sector.

Traditional knowledge will be incorporated into all dimensions of the SI to help identify discrete error margins and solve them using the scientific method.



Community engagement with Ankobra Community in the Western Region, Ghana Env. Community

Incentives will be provided for participants who contribute to the reduction of non-revenue water and water losses on metered pipelines. Media and internal information channels will be used to share ideas and business strategies to sustain the social innovation.

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