

NORTHERN REGION SMALL TOWNS WATER AND SANITATION PROJECT (NORST)

Canadian Consulting
Engineering Awards 2017

PROJECT INFORMATION

Project Name: Northern Region Small Towns Water and Sanitation Project (NORST)
Location: Northern Region, Ghana
Year Completed: 2009-2016
Entering Firms: Cowater International Inc., and Norda Stelo
Role of Firm: Canadian Advisory Agency

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SUMMARY

Global Affairs Canada funded this 30M project with the goal of improving the health of residents in 20 towns in Ghana's Northern Region through improved access to water supply and sanitation services. Cowater International, with Norda Stelo provided engineering design, technical assistance, capacity building and management support to the Government of Ghana in the implementation of project activities, resulting in new community-managed water supplies and improved health and quality of life for over 165,000 residents.



Category H
International

PROJECT HIGHLIGHTS

Q.11

Social and/or Economic Benefits (30%) - max. 400 words

Briefly introduce your project, i.e. what was done and why? Then explain the social and economic benefits it provided to the other country. Be specific and provide qualitative and quantitative information.

The Northern Region Small Towns Water & Sanitation (NORST) Project was implemented between 2008 and 2016, funded by Global Affairs Canada (the Client) at a cost of CAD 30M. The goal of NORST was to improve the health of residents in 20 small towns in Ghana's Northern Region through improved water supply and sanitation services and improved stakeholder capacity to deliver these services. At Project outset less than 25% of northern Ghana's rural population was estimated to have access to clean water supplies. The Project was co-implemented with Ghana's Community Water & Sanitation Agency (CWSA) and District towns, who were responsible for procurement of construction services. Cowater/Norda Stelo provided engineering design, technical assistance, training and management support. Benefits include:

- New water systems operating in 20 towns, benefitting a population of 165,774, exceeding the project target of 125,000 beneficiaries. Given the region's topography and hydrogeology, systems typically include borehole sources with submersible pumps, elevated storage tanks, basic treatment, and a distribution system to both public and domestic taps.
- Effective operation and maintenance structures were established in all towns. Town Water & Sanitation Management Teams established in 17 of the 20 towns under public management, while a private sector company was selected to operate 3 systems. All benefited from training on operation, maintenance, administration and financial management. Both public and private operators are successfully operating their water systems.
- Improved capacity of towns to plan and deliver services, including procurement, financial management, construction supervision, monitoring / evaluation, and administration. All towns now regularly prepare and update District development plans which address water, sanitation and environmental concerns and objectives.
- Approximately 2400 latrines constructed; a 13% increase in sanitation coverage. This was achieved using Community-Led Total Sanitation, an approach which motivates communities and households to critically assess their own sanitation situations and plan actions to improve environmental sanitation practices. The Project provided technical assistance, guidance, manuals and training to Districts in support of implementation.
- 400 latrine units constructed at elementary and secondary schools, providing service to 19,500 children where facilities were previously inadequate or absent altogether.
- 10,000 schoolchildren received basic information on health, hygiene and household sanitation through a Healthy Play methodology in which students learn through games and sport. Schools received technical assistance in the methodology, and game/sports equipment to encourage healthy behavior change. This approach leverages children who carry important health messages back home to share with parents and other family members.

Q.12

Technology Transfer (30%) - max. 250 words

Explain how the project transfers new and useful Canadian technology and know-how to the other country.

Capacity building

i.e. the transfer of knowledge and know-how – was the cornerstone of the NORST Project and the foundation for long-term sustainability of Project results. Over the eight-year duration, the Project strengthened Project counterparts at the local, regional and national levels, targeting District towns, CWSA, the Environmental Protection Agency and numerous other government agencies and departments. Capacity building was delivered through various means, including on-the-job training, workshops, and formal courses from learning institutions (Bolgatanga and Tamale Polytechnic). Twelve Canadian experts – in areas including water system engineering design and construction, GIS, hydrogeology, sanitation, environmental management, procurement, gender equality and social inclusion, AIDS/HIV, human resources, and communications provided expert technical assistance to Ghanaian stakeholders over the Project.

For example, as an alternative to public management of water systems, the Project piloted a private sector approach with great success. In most small towns in the north, water systems are operated publicly by the District, and private sector capacity in this area is nearly non-existent. A local private company already active in pump repair and other plumbing work was selected, trained by the Project in system operation and maintenance as well as system administration and financial management, and with Project facilitation was subsequently contracted as operator by three District towns. With on the job coaching by the Project, this operator came to be one of the best performing both technically and financially, with high levels of user satisfaction. This experience led CWSA to consider replicating this model in other small northern towns in future.



Q.13

Environmental Benefits (15%) - max. 250 words

Explain how your project addresses environmental/sustainability issues.

Environmental considerations were built into the Project design to comply with Canadian and Ghanaian environmental requirements and to enhance sustainability. The Environmental Protection Agency of Ghana conducted prior environmental assessments of all project town sites, and recommendations for mitigating potential impacts were incorporated into system designs, including the location of major system infrastructure components. A Project Environmental Action Plan was developed to ensure that recommended environmental impact mitigation measures identified in these assessments were implemented. All 20 towns prepared individual Environmental Management Plans for their sub-projects. Initially, the Project focussed on monitoring and supervision of construction activities, carried out alongside technical staff from District towns and CWSA as part of on-the-job training. Periodic environmental auditing by Project and Environmental Protection Agency staff was also carried out during construction.

Beyond the immediate issues of construction supervision, the Environmental Management Plans also addressed other areas of environmental concern identified in each town, including: sanitation and health issues, drainage, solid waste management, land conservation, deforestation (often due to charcoal production), field burning, and water source protection. In these areas, District town staff and residents benefited from Project technical support and sensitization activities on environmental, sanitation and water-related issues.

The Environmental Protection Agency of Ghana itself benefited from Project interventions, receiving capacity building in (among other topics): water quality and ecological monitoring / assessment; project monitoring and evaluation; data compilation, processing and management. This included the provision of training manuals and analytical software related to these themes.



Q.14

Complexity (15%) - max. 250 words

Explain the complex nature of your project and any extraordinary problems and conditions that were overcome.

Stakeholders: The operating context in Ghana was complex. Key stakeholders included: the Government of Canada; the Ghana Ministry of Water Resources, Works and Housing; regional government; CWSA central and regional offices; and the administrations of all 20 District towns. A Project Steering Committee was established to facilitate major management decisions taken on the Project, meeting twice a year to review progress and approve budgets and work plans for the coming year.

Logistics: The Project was based in Tamale, over 600km north of the capital city of Accra. Most towns were accessed over unpaved dirt roads which sometimes became impassable during the wet season. Construction supplies and equipment were procured from Accra, and timely distribution to the various work sites was a substantial challenge. Wherever possible, procurement was done in bulk well in advance of schedule and transportation to sites was done during dry months.

Financial management: A significant challenge to long term sustainability was the financial management of water systems. Towns benefited from training in financial management prior to the commissioning of each system. Following commissioning, after towns had had some time to begin operating and managing their systems, an assessment of towns' financial management was carried out to gain an understanding of the financial health in each case and determine remedial action if necessary, to ensure the long-term sustainability. Results were discussed with all towns jointly, including recommendations related to improved procedures and processes, human resources and future capacity building needs, and tariffs, among other areas.



Q.15

Meeting Owner's Needs (10%) - max. 250 words

Explain the client's main project goals and how you met them.

Under the overall goal of improving the health of residents, the Client defined results to gauge performance, including:

- Improved access to sustainable potable water supply, and sanitation facilities in selected towns, benefiting a minimum of 125,000 residents;
- Strengthened capacity of District Water & Sanitation Management Teams to fulfill their mandates in water service delivery, management, operation and maintenance; and
- Strengthened capacity of government stakeholders to support the planning, construction and operation of small town services.

A Performance Measurement Framework was established with measurable indicators to gauge performance against baseline values. This framework was revisited semi-annually and reviewed at joint Project Steering Committee meetings. All NORST water systems are operating within CWSA performance guidelines, and recurrent system costs are being recovered through tariffs. Surveys indicate 85% of residents are satisfied with the quantity of water supplied, while 98% perceive water quality to be good.

Given the complexity of the stakeholder context and the fact that CWSA and Districts towns had direct responsibility for procurement of construction services (Cowater/Norda Stelo providing engineering design, technical assistance, capacity building and management support), the key to the NORST success was teamwork and communications.

By December 2016, NORST had substantially achieved all Project goals, exceeding by 29% the target of providing new service to 125,000 residents across all towns, among other goals.

District towns are now better able to manage, operate and maintain these services, and are more satisfied themselves with the level of support received from government counterparts (i.e. CWSA and the regional governing council).







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