EVALUATION REPORT 4/2018

END OF PROJECT EVALUATION

WATER, SANITATION AND HYGIENE IN DISASTER PRONE COMMUNITIES PROGRAMME IN NORTHERN GHANA

UNDP

World Health Organization

unicef

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FOR A BETTER URBAN FUTURE

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This report is available from http://www.unhabitat.org/evaluation
First published in Nairobi in September 2018 by UN-Habitat

Produced by the Evaluation Unit

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HSNumber: HS/091/E

DISCLAIMER

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Front cover photo: New borehole with raised platform next to a school in Pusiga district

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ACRONYMS AND ABBREVIATIONS

CBO	Community-based organization
CLTS	Community Led Total Sanitation
CWSA	Community Water and Sanitation Agency
DA Rep	Representative of the District Assembly
DEHO	District Environmental Health Officer
DPC	Disaster Prone Community
DRR	Disaster Risk Reduction
DTT	District Technical Team
DWSMT	District Water and Sanitation Management Team
FGD	Focus Group Discussion
GES	Ghana Education Service
GH¢	Ghana cedi
GoG	Government of Ghana
Lpppd	litres per person per day
MDA	Ministries, Departments and Agencies
MEP	Minimum Evaluation Procedure
MMDA	Metropolitan Municipal and District Assemblies
NADMO	National Disaster Management Organization
NR	Northern Region
OD	Open Defecation
ODF	Open Defecation Free
O&M	Operation and Maintenance
PE	Poly Ethylene
PMF	Programme Measurement Framework
PUNOs	Participating United Nation Organizations

REHO	Regional Environmental Health Officer
RTT	Regional Technical Team
SDGs	Sustainable Development Goals
SHEP	School, Health and Education Programme of the Ghana Education Services
SMART	Specific, Measurable, Attainable, Relevant, Time bound
ToR	Terms of Reference
UNDP	United Nations Development Programme
UN-Habitat	United Nations Human Settlements Programme
UNICEF	United Nations Children's Fund
UER	Upper East Region
USD	United States Dollars
UWR	Upper West Region
VSLA	Village Savings and Loans Association
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WSMT	Water and Sanitation Management Team

EXECUTIVE SUMMARY

BACKGROUND

The water, sanitation and hygiene in disaster prone communities programme in Nothern Ghana was implemented from June 2014 – May 2017 in three Northern Regions of Ghana as a joint initiative implemented by UN-Habitat, UNDP, WHO and UNICEF.

The programme was funded by the Government of Canada with USD 15,314 million. The programme focused on water, sanitation and hygiene (WASH) in disaster prone communities delivering new and rehabilitating boreholes, school latrines, community-led total sanitation village savings and loan associations, and WASH related awareness raising and training activities.

PURPOSE, OBJECTIVES AND SCOPE OF THE EVALUATION

This evaluation was mandated in the programme agreement between UN-Habitat, the participating United Nations organizations (PUNOs), and the donor, Global Affairs Canada, specifying that an end-of-programme evaluation should be carried out.

The purpose of the evaluation was to assess the extent to which the results of the programme were relevant, efficient, effective, sustainable and coherent and how to better plan, organize/ institutionalize and implement future WASH activities in Disaster Prone Communities.

The overall objective of the evaluation was to provide key stakeholders with an independent and forward-looking appraisal of the involved agencies' operational experience, achievements, opportunities and challenges in the programme and contribute to their planning, reporting and accountability.

The specific objectives were to assess progress made towards achievement of results at outcome and output levels, assess relevance, efficiency, effectiveness and sustainability, assess the performance of the PUNOs, assess the joint implementation approach, bring forward programme opportunities and identify lessons, best practices and make recommendations. The scope of the evaluation was from programme start in June 2014 up to the end of 2017.

INTENDED AUDIENCE OF THE REPORT

All programme stakeholders, including the donor, the district, regional and national levels of the Government of Ghan (GoG) a, UN agencies, NGOs and contractors. Also non-programme stakeholders may be interested, in particular parties that plan to implement WASH programmes in Northern or other parts of Ghana, WASH related studies and students.

APPROACH AND METHODOLOGY USED

This evaluation was commissioned by UN-Habitat, managed by the Evaluation Unit and conducted by two consultants, Mr. Tom de Veer and Mr. Nicholas Guribie. The evaluation team followed the Terms of Reference of the evaluation with focus on assessing performance by evaluation criteria and responding to evaluation questions. A mixed methods approach was used for the evaluation with review of relevant literature including also sources outside of the programme and databases; interviews with officials of the Government of Ghana and other relevant parties at national and partly regional level; cross check/verify/compare the findings with the findings at field level. Data sources included programme and other relevant documents, internet, primary data,

notably notes made by the consultants during the interviews, observations, measurements, etc., and photos and films made by the consultants during the evaluation.

For the field visits to prevent any bias, 41 communities were selected in advance ad randomly divided over 12 districts. These were all visited plus five more nearby communities. Altogether 46 communities were covered by the evaluators during the field visits.

During the visits to communities, districts and regional coordinating councils the consultants worked separately, daily visiting three to five communities and often one district assembly. They were accompanied each day by at least one district Environmental Health Officer to guide and, in the case of the team leader, translate during communication with community stakeholders. The evaluation methods included mainly interviews at the national, regional and district levels. At the community level methods included:

- Per community all water and school and at least several of the household facilities were visited and assessed, mainly through observations, interviews and focus group discussions with relevant stakeholders found on site and through photographs and films.

- Numbers of facilities planned and realized and where possible indications of the functionality and quality aspects as reported were derived from relevant programme documents and verified with the numbers found during the community visits.

METHODS OF ANALYSIS

The community level findings are summarized in tables by product type with aggregated scores for quality effectiveness derived from the scores and explanations regarding questions under these topics. These are stored in a programmed Excel file that produced the aggregated scores. Information regarding questions about performance at district, regional and national/programme level were cross checked against other findings at different levels, relevant literature, photographs and films, after which the information was summarized and presented per each programme level.

EVALUATION LIMITATIONS

Only a limited number of communities could be visited (nearly 18 per cent of the total number) due to lack of time for the field visits. Translation to the team leader may have been distorted in some respects although it is believed that this was a very minor limitation because the accompanying district environmental health officers spoke good English and the team leader is experienced working in areas where he does not speak the language. However, due to the ad random selection of communities, assessment of key programme documents and feedback from key informants the evaluators are confident the evaluation has yielded representative information valid for the whole programme.

A field day was lost because the airplane from Accra to Tamale did not depart and all other flights that day were fully booked. The evaluation team finds that despite the time loss the field level part of the evaluation was properly executed with visits to 46 communities. At the regional level only, a limited number of stakeholders could be interviewed as many were not present during the visits of the evaluators. Also the regional coordinating council of Northern Region could not be visited due to the loss of the first field day.

MAIN FINDINGS AND CONCLUSIONS

The programme achieved much of its planned objective, outcomes and outputs and most aspects were highly relevant in the context of the programme objective[1]. These accomplishments were achieved for different target groups: around 60.000 pupils and their teachers who benefit from realized school latrines and WASH related awareness

1. (More so for the health-related part than for the disaster resilience parts of the objective, as traditional latrines and parts of other programme aspects were not sufficiently suitable and relevant for the context of disaster resilience)

activities, up to 280.000 persons reached with community led total sanitation and other WASH and disaster resilience related awareness activities, and 211.390 people with access to water points and schemes that were newly built, rehabilitated or expanded by the programme[2].

The programme cost seems (too) high[3]. Reasons for the high costs are believed to comprise a combination of: (a) software activities which were not always relevant (e.g one-off-trainings which had little effect), (b) the choice to work in single flood prone communities dispersed over a large area, (c) the many management layers and parties involved, (d) expensive surveys and assessments, which were not always fully necessary and/or could/should have been executed in more simple ways and possibly in some cases by programme parties instead of by consultancy bureaus, and (e) high salaries/fees for top level temporary staff and consultants.

Monitoring, quality control and reporting was not optimal. Progress versus finance and qualitative information was scattered over documents and/or not sufficiently available. Quality of hardware and software were not always optimal meaning they were most probably not always or insufficiently monitored.

Sustainability of many of the programme impacts, outcomes and outputs is reasonable to good. Many water points, both new and rehabilitated, and school latrines are of reasonable to sometimes good overall quality.

Also community led total sanitation (CLTS) changed the awareness of almost the entire target population in favor of latrines and improved hygiene behaviors which has been so profound that it may be expected to be sustainable after the end of the programme. However, several aspects of water points and school latrines are too often of limited quality, e.g., limited quality of the platforms of water points, cracks in school latrine walls.

In addition, many of the facilities realized are insufficiently resilient to the disasters threatening them (partly water points and school latrines but mainly traditional latrines). Also for almost all facilities it was found that the community and district level structures to operate and maintain and repair them or give guidance to people to do so are insufficiently developed in terms of financial resources, expertise, materials, tools and equipment. The limits in sustainability of facilities as well as the limited resources especially at the district level to sustain training and guidance of households and communities and their operation and maintenance (O&M) structures also affects the sustainability of the outcomes and impacts of the programme.

The programme set-up and approach were in the spirit of the UN 'deliver-as-one' concept. The approach was clearly positive with advantages of exchange of internal expertise and best practice, contacts and collaboration with the GoG and gave weight to the programme. It also enhanced the GoGs motivation and commitment for the programme and its results. However, the concept of 'deliver-as-one' was hampered by the fact that the PUNOs do not have all their systems harmonized. It was therefore not visible at the operational level of the programme. So for instance due to the complex programme structure, systems that were not harmonized leading to difficulties with integration of activities. Going forward and as will be seen in the recommendations, PUNOs should begin to work at greater harmonization of systems and integration at the operational level.

A major achievement has been the initially cumbersome but later successful coordination and exchange between UN agencies, NGOs, companies and the different institutes of the Government of Ghana. The steering committee was particularly important in providing strategic decisions and ensuring accountability while the UN Resident Coordinator fulfilled an important role in improving the coordination and collaboration of all programme level stakeholders.

[2] The number of people with access to programme water points/schemes is a based on UN-Habitat figures as explained in paragraph 5.1.1.

[3] See paragraph 4.5.6.

However, a challenge continued to be the cooperation and commitment of the Focal Persons of the PUNOs. Also the PUNOs acted much on their own, focusing mainly on their own tasks and responsibilities. This affected programme efficiency, learning and progress to some extent, especially in the beginning of the programme but remaining throughout, especially with the activities in the districts and communities. On the other hand, coordination picked up and was better organized and harmonized towards the end of the programme.

The PUNOs hired consultants for many roles and tasks under their responsibility. This sped up programme implementation and in some cases supported capacity building at the district and regional levels notably the UNICEF consultants. However, it limited, in several cases, the understanding of PUNOs of what was happening on the ground and in some respects limited learning and building experience among district and regional staff. The evaluators believe this way of working also challenges the institutional learning of the PUNOs. In the context of the WASH in DPC programme the lack of attention (or the wrong attention) for longer term sustainability and the virtual absence of an exit strategy should be noted.

The programme set up district technical teams and regional technical teams at the district and regional levels respectively. They however, did not function optimally in terms of their ability to monitor but were pivotal in the implementation of the CLTS programme which by all accounts was a success. The level of coordination at the regional and district level for the programme was lacking and the role of these bodies was transactional and adhoc. They were not aware of important construction works and were not involved in the coordination for the deployment of these aspects of the programme. There was a communication gap where decisions taken at the top were not communicated to regions and districts.

Many of the planned outputs at community were achieved and, in some instances, surpassed. The main outputs achieved at the community level are summarized in the below table. The scores are averages of the scores for quality and sustainability for all facilities and services in the communities that were assessed by the evaluation team.

Legend:

Average score >= 3,2 (good)	
Average score 2,2 to 3,2 (reasonable but some attention needed)	
Average score lower than 2,2 (bad)	

ITEM	# PLANNED / ACTUAL	EFFECTIVENESS	IMPACT	SUSTAINABILITY	CROSS CUTTING ISSUES
Community hardware					
Household latrines	2.000 / appr. 8.000	3,1	4,0	3,4	2,6
Community & school water systems	600/600 (appr.)	3,3	4,0	3,1	3,5
School latrines	167 / 224	3,1	4,0	2,5	3,2
Community sofware					
CLTS	People reached: 200.000 / >200.000	3,0	4,0	2,4	3,0
VSLA	Groups: 24 / >24 HHs used credit for latrines: 2650 / <2650	2,7	2,0	2,2	3,2
WSMTs	WSMTs: 265 / 265	2,5	2,0	2,5	3,2
WSMT members: 1855/1325	2,5	2,0	2,5	3,2	
Schools with WASH O&M	167 / 224	2,7	2,8	3,2	3,7
Trained artisans	400 / 555	2,8	1,5	2,5	3,2
School health clubs	167 / 333	3,4	3,2	2,5	3,5
Other	Communities: 265 / 265 Pupils: 50.000 / 45.440	2,6	2,4	2,0	3,5

Effectiveness of the outputs is reasonable to good but could have been better. Community hardware is in most cases functional, nearby, easily accessible and properly used, while most beneficiaries indicated to be satisfied with the facilities. In total, 85 per cent of the schools has sufficient toilets and 50 to 60 per cent of the beneficiary households has a toilet. Close to 65 per cent of the beneficiaries were covered with water points. Most of the other beneficiaries and the schools that were not covered with programme water points have access to other water points, though not all, and people from other nearby communities who were not covered with water points come to the programme water points to fetch water.

Many traditional latrines are not flood resilient. School latrines and water points, often of reasonable quality, need better designs, e.g., stronger pit linings in school latrines and better drain and cattle trough designs in water points). Some boreholes with hand pumps with platforms that were not raised may experience and be affected by flooding in which case the effectiveness is low. Mechanized boreholes were found to be often dysfunctional and therefore have a low effectiveness.

The capacity and to some extent the motivation for O&M is limited, especially with regard to repairs. Water points are often overburdened because of use by unintended users. Among the flood resilient

boreholes provided by the programme around 30 per cent have raised platforms. Raised platforms are not required where flooding does not occur, but it seemed strange in the light of a programme particularly focusing on flood prone areas.

The evaluators also felt that in a few cases raised platforms were required but were not in place. Community software scores well on issues such as coverage of beneficiaries but limited for village savings and loan associations (VSLAs) and utilization of the raised awareness, even if people were not always consequently practising what they learnt, e.g., hand washing and water treatment

The CLTS effects are undermined because people were insufficiently guided on flood and wind resilient designs. However, many people have started developing and implementing more resilient latrines themselves. VSLA fails in the context of the programme because people do not save money through VSLA groups for improved latrines which was the idea behind it while the groups may not do so if they are not guided more intensively beyond the programme period. Effectiveness of capacities realized in the districts is limited because most capacity building activities were stand alone and one-off trainings that would need follow up.

Sustainability of outputs is insufficiently guaranteed. Some facilities are not sufficiently robust and/or resilient to floods and/or wind such as water points, school latrines, traditional latrines. Traditional household latrines often collapse during floods while people do not upgrade to improved latrines with purchased materials to make the latrines more robust and disaster resilient.

However, even though latrines collapsed, people are now so motivated that they use the experience to better understand why latrines collapse, then try to develop more resilient local designs and build those. CLTS has really triggered communities and changed their awareness regarding the need of latrines structurally. Often, people rebuild latrines with local resources in a more disaster resilient way. This may or may not be sufficient as many improved traditional latrines still are vulnerable and/or have other disadvantages, e.g., a lining with old car tires may still collapse and reduces the size of the pit drastically.

New and rehabilitated school latrines are often not sufficiently robust and of limited quality. Water points are robust below ground but less so above ground. The main concern is the hand pumps. Mechanized boreholes often suffer from breakdowns with communities lacking access to expertise, materials and equipment to repair them. O&M structures, especially water and sanitation management teams (WSMTs) are in danger of becoming inactive due to limited drive and limited need felt for action and school O&M structures (sustainable and active due to motivated teachers) can carry out normal O&M tasks and small repairs. But the O&M structures lack the funds to pay for larger repairs, in which both capability and willingness to pay play a role.

The sustainability of required district services is under stress, especially for CLTS and VSLA facilitation, and, not covered but highly required, preventive maintenance of water points and possibly school latrines, due to lack of financial resources, equipment and fuel. Continued further training and guidance of district level staff is required.

Cross cutting issues are in most cases quite well covered. Most hardware is partly suitable for use by handicapped persons, e.g., entry in most school latrines is possible with wheelchairs, but there are no handholds in the toilet cubicles for handicapped persons, attempts were made to be ready for floods that may increase due to climate change, while human rights and gender were also important issues in the designs and software. Improvements are still possible and needed in some cases, especially with regard to menstrual material disposal, privacy of girls' urinals, and use of school latrines by handicapped persons, vulnerability to floods and wind of traditional latrines and increased drying of boreholes due to climate change.

Visibility of the programme in the programme results was absent, with exception of new boreholes with new hand pumps and some of the mechanized boreholes.

LESSONS LEARNED

- Communities are ingenious and resourceful. When guided they often have the capacity to develop and implement solutions themselves.
- CLTS motivates both beneficiaries and facilitators. The districts are motivated to continue and expand CLTS activities though in need of resources to do so, while other parties, mainly local NGOs, are starting to copy the CLTS and the VSLA approach in their integration.
- The programme was implemented in phases. Lessons from previous phases were incorporated into the next phase. This practice enhanced ideation and learning.
- The commitment of the UN Resident Coordinator was instrumental for the success of the programme. It increased participation and commitment at the steering committee meetings by stakeholders, brought in accountability, ensured that corrective action was taken when needed and sped up the implementation process
- The Ghana Education Service/School, Health and Education Programme highly recommended the Values based WASH education concept for implementation in schools.
- The work of drilling and other companies was successfully and strongly monitored which contributed to the relatively high quality of these facilities. It shows the importance of good monitoring.
- The governmental donor and implementation by PUNOs gave political weight and therewith contributed to the motivation and active involvement of and uptake of lessons, methods and good practices by the Government of Ghana and contributed to the speed and successes of the programme.
- The districts have limited resources and are in need of especially hardware such as transport, communication means and materials such as fuel.
- The water safety plans developed in 18 communities was a useful lesson.
- The PUNO partnership was a novelty harnessing several capacities for WASH implementation, and it still has scope for improvement as for instance described in the recommendations.
- The best practices and designs of the programme positively resulted in other agencies adapting and learning.
- The programme developed a checklist and handing over document with 14 items for joint stakeholder commitment, which is a good step in gathering stakeholder commitment to own and sustain programme goods and services – assuming they follow through.

RECOMMENDATIONS

1. **Introduce a follow up programme for the WASH in DPC communities** that continues and expands CLTS and VSLA to cover all programme communities fully, to all other communities in the target districts and introduces and sustains a preventive maintenance scheme for water points and possibly also school latrines in the target districts for a period of at least 10 years.
2. **Use a different approach for similar future programmes.** The core of it is to cover all people in selected areas, e.g., districts, both the flood and not flood prone parts, instead of single flood prone communities dispersed over large areas (leave no one behind), increase participation, involvement and decision-making of the lowest levels (district and community levels, but also local contractors), continue

programmes and programme activities over longer periods of time, ensure long-term sustainability of outputs, outcomes and impacts and drop programme activities that will not lead to sustainble outputs, outcomes and impacts), increase the quality and suitability of programme facilities and services, and improve visibility in programme results.

3 **Introduce structural integrated systems to be able to 'deliver as one'.** Setting up integration and integrated systems per programme requires huge efforts each time and is therefore also not always properly accomplished. It is better to build a structured framework of systems and tools that can be and will be used by all who wish to deliver-as-one in all programmes and activities where delivering-as-one is meant to be.

4. **Employ core expertise** with regard to the programmes and other activities the PUNOs execute and/or are responsible for, and not (only) on a programme or temporary contract basis. As much as possible such staff should be located where the activities are implemented, e.g., in the regions or even, preferably, in the districts.

5. **Create stronger coordination mechanisms** to prevent delays, high costs and other inefficiencies, overlaps and gaps, frustrations and so on, not only in programmes but in all activities of the UN organizations in Ghana. It is for that reason recommended that the role of the UN Resident Coordinator's Office is reinforced further in collaborative UN programmes and activities.

1 INTRODUCTION

The water, sanitation and hygiene (WASH) in disaster prone communities (DPC) programme was implemented from June 2014 – May 2017 in the three Northern Regions of Ghana as a joint initiative of the PUNOs that implemented the programme. Programme funding comprised 19.915 million Canadian Dollars (USD 15,314 million) provided by the Government of Canada. The programme was jointly implemented by UN-Habitat, UNDP, WHO and UNICEF and focused on WASH in 265 disaster prone communities, including new and rehabilitated boreholes, school latrines, CLTS and VSLA, and WASH related awareness raising and training activities.

A final evaluation was commissioned by UN-Habitat in May – June 2018. An international consultant, Mr. Tom de Veer (team leader), and a local consultant, Mr. Nicholas N.M. Guribie, carried out the evaluation. After interviews at the national, regional, district and community levels and community visits the evaluators produced this final evaluation report according to UN norms and standards for evaluation, which are in line with the OECD/DAC criteria and based on the Terms of Reference.

1.1 INTERVENTION BACKGROUND AND CONTEXT

Droughts, epidemic outbreaks, floods, and wildfires and other forms of disasters significantly impact vulnerable populations in disaster prone areas in the three Northern regions of Ghana, in particular, recurrent flooding events that often result in the disruption of WASH services. In response the programme objective was formulated as:

Structurally improved flood resilient WASH related health among 200.000 beneficiaries in 265 flood prone communities in the North of Ghana including 50.000 school children.

To implement the programme the PUNOs worked in close collaboration with national institutions, the private sector and NGOs. The Environmental Health and Sanitation Directorate of the Ministry of Local Government and Rural Development (MLGRD), later taken over by the Ministry of Sanitation and Water Resources, led the coordination in collaboration with the NADMO and SHEP. The Joint UN team's role was the provision of technical assistance, facilitation and funds management support.

A mid-term review was completed in 2016, which concluded that the Programme is beneficial to the beneficiaries. It identified areas for improvement, including the need for sustainability plans and an exit strategy, and issues related to O&M of water facilities, engagement of authorities at regional and district levels, promotion of ODF areas and latrine artisans training. An early impact assessment was finalized in 2017. It concluded that the programme's key accomplished components and their performance, according the perception of the beneficiaries, are improved flood resilient water facilities, disaster preparedness, elimination of waterborne diseases, improved flood resilient school latrines and flood resilient household latrines including attaining ODF.

1.2 MANDATE OF THE EVALUATION

The evaluation was mandated in the programme agreement between UN-Habitat, the PUNOs, and the donor, Global Affairs Canada. The evaluation is in accordance with UN-Habitat's Evaluation Policy (2013) and UN-Habitat Revised Evaluation Framework (2015), which requires that projects of value USD 1 million and more shall be evaluated by an external evaluator. The forward-looking elements of the evaluation will play an instrumental role in shaping the focus of the agencies in planning, organizing/institutionalizing and implementing future

WASH activities at country level as part of delivering their Programmes. An evaluation reference group of the PUNOs and key national stakeholders was established to oversee the evaluation process. These stakeholders reviewed the ToR, Inception Report and draft evaluation report.

1.3 PURPOSE, OBJECTIVE AND SCOPE OF THE EVALUATION

The purpose of the evaluation is for Partner UN Organizations and other relevant key stakeholders, including national partners and the donor learn to what extent the results and effects of the project support and services provided by UN-Habitat, UNICEF, UNDP and WHO are relevant, efficient, effective, sustainable and coherent, forward-looking for similar future WASH activities.

The overall objective is to provide the PUNOs, their governing bodies, national partners and the donor, with an independent and forward-looking appraisal of the agencies' operational experience, achievements, opportunities and challenges. What will be learned is expected to play an instrumental role in informing decisions of the PUNOs in the planning and programming of projects, influencing strategies, adjusting and correcting as appropriate, exploiting opportunities, replicating and up-scaling the implementation approach used, and generating credible value for targeted beneficiaries and addressing national priorities. Evaluation results will also contribute to PUNOs' planning, reporting and accountability.

The specific evaluation objectives as stated in the ToR are to:

- Assess progress made towards the achievement of results at the outcome and output level of the Programme and its activities; and how the regions in northern Ghana benefited from the Programme at regional, district and community levels;
- Assess the relevance of the PUNOs in supporting the GoG towards achieving its overall mandates by focusing on complimentary methodologies and joint approaches;
- Assess the efficiency, effectiveness and sustainability of the Programme in achieving its results. This will entail analysis of actual against expected outcomes, in terms of delivery of outputs, achievement of outcomes and long-term effects;
- Assess the extent to which the joint implementation approach of the WASH DPC Programme has worked well or not;
- Bring forward programming opportunities that indicate potential for future joint partnership between PUNOs and the GoG and local governments, and partners;
- Identify lessons learned and best practices and make recommendations on what needs to be done to promote water, sanitation and hygiene in disaster prone communities and similar joint UN Programmes in the future.

The evaluation assessed achievements, challenges and opportunities in the WASH in DPC Programme. The focus was on achieved outcomes and outputs as were planned in the PMF during the implementation of the programme from June 2014 – May 2017.

1.4 INTENDED USERS OF THE EVALUATION RESULTS

The evaluation of the programme is intended for learning by all stakeholders and collaborators on the part of the UN agencies, Government of Ghana, NGOs, MMDAs and MDAs. The findings will be used by the PUNOs in the light of the UN delivering as one concept and will inform the UN Resident Coordinator's Office and UN system in Ghana on how to do better and strengthen what is working well. The GoG collaborating partners from

the MMDAs and MDAs will have insight into what the project achieved including recommendations for sustaining programme gains. Government agencies will use the findings to inform their future collaborations with other agencies and thereby become more effective partners. The involved NGOs and the WASH sector in Ghana will use the evaluation report to improve their development delivery to communities. It can be a useful document within the global development community to learn about WASH programme in DRR. The evaluation may also be suitable for students and academics to learn about WASH programming within disaster prone areas and provide lessons, questions and indications for further research.

1.5 OUTLINE OF THE REPORT

The report contains an introductory chapter, which outlines the programme background and the setting of the evaluation. This is followed by chapters providing an overview of the programme, explanations of the evaluation approach and methodologies, and main findings of the evaluation divided over the different programme levels, including national/programme, regional, district and community level. The final chapters provide conclusions, lessons learned and recommendations.

2 OVERVIEW OF THE PROGRAMME

2.1 MAIN CHARACTERISTICS OF THE WASH IN DPC PROGRAMME

2.1.1 Background and development

Droughts, epidemic outbreaks, floods, and wildfires and other forms of disasters significantly impact vulnerable populations in disaster prone areas in the three Northern regions of Ghana. In particular, recurrent flooding events, which are the most pervasive in terms of financial damages and the number of people who are affected, usually result in the disruption of water, sanitation and hygiene (WASH) services.

To ensure that when such floods occur, the quality of water supply is not contaminated presents immense challenges to the health of these communities. The situation is further aggravated where there is a lack of water, sanitation and hygiene services. Women, children and the youth suffer the most.

The WASH in DPC programme addressed these challenges by putting in place resilient and durable solutions so that when flood disasters in particular occur, the quality of water supply sources is not contaminated (during collection, handling, storage, and use), and good sanitation and hygiene practices are maintained. Such solutions, when complemented with adequate emergency preparedness activities will assist the flood prone communities to quickly return to a normal and sustainable existence.

The objective of the USD 15,3 million programme, funded by the Canadian Government, was to improve WASH related health and disaster preparedness during a 3-year period (June 2014 – May 2017) in 265 selected flood prone communities and their schools in 24 districts distributed over Northern, Upper East and Upper West regions of Ghana by increasing access to resilient facilities and services for good drinking water and proper sanitation on a sustainable basis. It was implemented by Partner UN Organisations (PUNOs) consisting of the United Nations Human Settlements Programme (UN-Habitat) as the convening Agency, the United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), and the World Health Organization (WHO).

The PUNOs worked in close collaboration with the relevant national institutions as well as private sector and non-governmental organizations involved in the WASH and Disaster Management sectors in the country. From the side of the GoG, the Ministry of Sanitation and Water Resources, through CWSA, led the coordination for the implementation in close collaboration with the National Disaster Management Organization (NADMO) and the Ghana Education Service of the Ministry of Education, who were involved with aspects of the programme relevant to their mandates on WASH and the management of disasters and emergencies. The Joint UN team's role was the provision of technical assistance, facilitation and funds management support.

2.1.2 Theory of change

The outcomes framework presented in Table 1 below shows how the envisaged outcomes relate to each other. It is largely based on the Performance Measurement Framework (PMF). The outcomes of one level should effectuate or lead to (directly or in time) the outcomes at the next level (cause-effect relation).

However, as outcomes per definition always comprise changed behaviors or products or actions resulting from changed behaviors it should be remarked that the level 1 outcomes are in fact not outcomes. They are aggregated outputs because the realization of each of them was fully within the

influence sphere of the programme[4]. This level is therefore in the Findings chapter covered by the assessment of programme outputs. The outcomes of level 2 are real outcomes and covered by the assessment of programme outcomes in the Findings chapter.

TABLE 1: OUTCOME LEVELS OF THE PROGRAMME

Outcomes level 1 (aggregated outputs)	Outcomes level 2	Outcome level 3
Increased access to gender-sensitive, child-friendly, disaster-resilient and improved WASH facilities in schools and communities in DPCs.	Increased equitable sufficient access to and use of disaster-resilient improved WASH facilities by people in communities (public water facilities, household CLTS latrines) and schools of the communities (school latrines) in Northern Ghana	Improved, consequent year round use by targeted beneficiaries of sustainable, sufficient and always well-functioning disaster-resilient WASH facilities in households, communities and schools in targeted Disaster Prone Communities (DPCs) in Northern Ghana.
Improved capacity of community members and schools to maintain disaster resilient and improved water and sanitation facilities.		
Increased knowledge and capacity of youth in DPCs in northern Ghana to construct and maintain disaster resilient and improved sanitation and water facilities in communities and schools.		
Increased awareness among community members and schools to collect sufficient proper quality water, treat water and adopt safe water storage practices before, during and after emergency situations.	Improved hygiene and safe water use practices among women, men, girls and boys before, during and after disasters in DPCs in Northern Ghana	
Enhanced capacity of WSMTs and communities to enforce Open – Defecation Free (ODF) by-laws in DPCs.		
Increased knowledge of hygiene, public health and environmental WASH issues amongst the population, particularly children, youth and women in DPCs.		
Strengthened capacity of local officials in planning, implementation, monitoring and evaluation of gender-sensitive and disaster-resilient WASH programs and activities.	Improved planning and implementation of disaster resilient WASH programs and support to communities to sustain the realized facilities by district and (to some extent) regional institutions	
Strengthened capacity of local institutions to deliver disaster resilient WASH services (e.g. a safety net for repairs + large maintenance of community WASH facilities) in DPCs in Northern Ghana.		

[4] If a programme has all resources it needs, functions well, and is not jeopardized by factors outside its influence sphere, it will realize its planned outputs. This includes outputs such as hardware facilities, trainings (and the knowledge created by trainings) and capacities (in terms of knowledge, materials, equipment, etc.). Taking this into account it can easily be observed that the level 1 outcomes are in fact almost entirely aggregated outputs.

With regard to the cause-effect relations between the outcomes the evaluators have several observations. These are described in the Findings chapter.

2.1.3 Implementation strategy and key assumptions and risks

The WASH in DPC Programme was implemented by four PUNOs: UN-Habitat, UNICEF, UNDP) and WHO. The PUNOs worked in close collaboration with relevant national institutions (Ministry of Sanitation and Water Resources, CWSA, NADMO and SHEP), private sector (drilling and related companies, construction companies) and NGOs (Plan International, World Vision and CARE International). A Programme Implementation Manual completed in March 2015 provided detailed guidelines on institutional arrangements, governance, implementation process, monitoring and evaluation, and sustainability and service delivery. Overall leadership was provided by a steering committee, co-chaired by the Ministry of Sanitation and Water Resources on behalf of the Government of Ghana and the UN Resident Coordinator and with core members representing key national partners and the PUNOs. The committee met semi-annually and more often when needed and it was responsible for providing strategic guidance, fiduciary and management oversight and coordination.

A mid-term review recommended improvements, including the need for sustainability plans and an exit strategy, O&M of water facilities, engagement of authorities at regional and district levels, promotion of Open Defecation Free areas and latrine artisans training.

Key assumptions and risks identified (as presented in the programme proposal) included:

- Willingness of all stakeholders to effectively engage in order to implement the components of the initiative in line with existing national policies, strategies and plans.
- Willingness of local institutions, CBOs and project beneficiaries to utilize the project outputs and embrace new ideas, technologies and approaches.
- All target communities are poor and unable to contribute the mandatory 5% of the cost of interventions.
- GoG will not renege on its contribution, expected to be mostly in-kind.

2.2 BUDGET OF THE PROGRAMME

The programme budget of USD 15,3 million was shared between the PUNOs with 11 million USD allocated for operations (see Table 2).

TABLE 2: PROJECT BUDGET

Budget (summary)	Amount (CAN$)	Amount (USD) [5]
Personnel	2.271.567	1.738.975
Equipment	275.811	211.144
Consultants	238.323	182.446
Travel	900.000	688.986
Operations (see detailed budget below)	14.492.750	11.094.780
Administrative / Programme Management	262.200	200.725
UN recovery cost (7% of programme cost)	1.290.846	988.194
UN financial agent cost (1%)	184.407	141.171
TOTAL COST	**19.915.904**	**15.246.421**

Source: *Budget and Implementation Schedule in CAN Dollar – Final Version revised.xlsx.*

The majority of funds was directed towards achievement of improved and resilient sanitation and drinking water facilities and services (outcome 1) as shown in Table 3.

TABLE 3: BUDGET FOR THE OPERATIONAL COSTS BY OUTCOME

Operations (detailed)	Amount (CAN$)	Amount (USD)
Preliminary Result: Communities selected based on agreed criteria and baseline information available		
1.1 - 265 disaster prone communities selected based on agreed criteria	135.000	103.348
1.2 - Baseline information available on current water supply, sanitation and hygiene situation in the select beneficiary communities.	475.250	363.823
Outcome 1: Disaster prone communities and schools in 3 Northern Regions sustainably use improved and resilient sanitation and drinking water facilities and services by 2016		
1.3 -200,000 people disaggregated by gender and 50,000 children in basic schools in 265 disaster prone communities have access to sanitation facilities for improved health.	4.352.250	3.331.821
1.4 - Established and functional microfinance for household sanitation facilities in 21 disaster prone districts.	1.890.000	1.446.871
1.5 - 200,000 people and 50,000 children in basic schools have access to safe drinking water facilities in 265 disaster prone communities for improved health.	4.325.000	3.310.961
Outcome 2: Education programmes and awareness of hygiene practices improve the sanitation and health conditions in the beneficiary communities and schools		

[5] Calculated with the exchange rate of 21-08-2018, because of which the amounts in USD differ slightly from the original amounts.

2.1 – 50,000 children in basic schools in 15 communities adopt good hygiene practices for improved health	337.500	258.370
Operations (detailed)	**Amount (CAN$)**	**Amount (USD)**
2.2 - Strengthened and functional structures at the community and school levels manage installed facilities and provide sustainable services to the beneficiary communities.	258.250	197.701
Outcome 3: Enhanced regional, district and local capacity in the beneficiary communities ensure sustainable management of installed resilient WASH facilities and services		
3.1 - 105 technical officers and 21 National and Local government WASH authorities in the 3 northern regions are able to plan and facilitate implementation of WASH programmes in disaster prone communities.	591.000	452.434
Outcome 4: Disaster prone communities in 21 districts adopt measures that ensure disaster preparedness and minimize future risks in the communities		
4.1 - Enhanced preparedness by beneficiary communities as a result of the project contributions to complement other national efforts.	1.388.500	1.062.952
Monitoring & complementary actions	740.000	566.500
TOTAL COST OPERATIONS	**14.492.750**	**11.094.780**

Source: *Budget and Implementation Schedule in CAN Dollar – Final Version revised.xlsx.*

2.3 ROLES AND CONTRIBUTIONS OF STAKEHOLDERS

The key partners and stakeholders of the WASH in DPC programme were the PUNOs i.e., UN-Habitat, UNICEF, UNDP, and WHO and governmental partners i.e., Ministry of Sanitation and Water Resources, National Disaster Management Organization, School Health Education Programme of the Ghana Education Services (SHEP/GES), and the Community Water and Sanitation Agency (CWSA).

Global affairs Canada provided funds for the WASH in DPC programme. As part of its mandate on the project, GAC supported UN-Habitat in the development of a strong management, tracking and reporting system to ensure consistent follow up on project deliverables and concrete assessment of progress towards the achievement of project targets. GAC also periodically undertook joint field/site monitoring visits to provide technical and management inputs to the implementing agencies.

The Ministry of Sanitation and Water Resources of the Government of Ghana was the lead government agency in the programme. It played key roles at the strategic and operational levels of the programme. The Ministry was responsible for overseeing programme implementation representing the interests of the Government of Ghana. It provided direction for the implementation of the project technically and operationally. Operationally, the staff of the Ministry at the regional and district levels played key roles in the implementation of the programme for both water and sanitation facilities.

National Disaster Management Organization (NADMO) was a key partner in the implementation of the WASH in DPC project. It worked closely with the PUNOs particularly UNDP in developing disaster preparedness capacity and planning. At the local levels the organization played a role in community mobilization and education.

School, Health and Education Programme of the Ghana Education Service (SHEP) was a key partner in putting in place structures and systems for WASH in schools. SHEP played a key role in training teachers and building capacity for effective management of WASH facilities. They played a role in the development of School Health Clubs and the management of the WASH facilities provided in schools particularly the institutional latrines. SHEP also played a key role in hygiene education for schools and the maintenance of clean school compounds.

Community Water and Sanitation Agency (CWSA) was a key partner in the construction of Boreholes and the setting up of water operations and management systems. CWSA carried out the construction of boreholes and the constituting of Water and Sanitation Management Teams and their training. They played a key role in the training of Area Mechanics and Caretakers to management water systems. CWSA also provided guidelines and quality control for boreholes that were drilled by private contractors in the program.

UN-Habitat was responsible and accountable for the overall coordination of the operation and programmatic aspects of the programme. In addition, UN-Habitat implemented the programme component for provision of water supply systems; values-based education to complement the WASH in school's component; complemented the interventions by UNICEF on microfinance for household sanitation facilities and capacity development of national and local level WASH officers.

United Nations Children's Fund (UNICEF) led the roll out of the Community Led Total Sanitation (CLTS) process, sanitation marketing, a social norms campaign, microfinance for household sanitation facilities, capacity development of national and local level WASH officers, WASH in schools, 'hand washing with soap' and the assessment of technology options for disaster resilience.

United Nations Development Programme (UNDP) liaised with NADMO to put in place measures to enhance the preparedness to flood disasters and minimize future risks in the selected communities. UNDP was also responsible to liaise with NADMO to contribute to the outcome that 'Disaster prone communities adopt measures that ensure disaster preparedness and minimize future risks in the communities'. Key activities included liaison with NADMO and other partners and assist with the sensitization of communities for disaster preparedness as it relates to the WASH sector and identification of strategies and plan for appropriate household emergency WASH kits in emergency situations.

World Health Organisation (WHO) built the capacity of the district and regional Technical teams in Water Quality Assessment and Monitoring, Health Emergency preparedness and response in flood disasters and the promotion of behavioral change through support of school health Clubs activities. The activities to achieve the planned targets were done through training, practical and hands on exercises and field work in Household Water Treatment and Storage (HWTS) and piloting the novelty Water Safety Planning (WSP), which uses the risk-based approach along the supply chain from source to the end-user. The health improvement outcomes of the intervention will be highly motivated and well-prepared Communities and Technical staff to manage flood disasters better should they occur and improvement in programme performance indicators.

2.4 PROGRESS AND KEY OUTPUTS OF THE PROGRAMME

The programme was completed in May 2017. During the implementation period the programme delivered key outputs in the construction of borehole water systems, institutional latrine with rain harvesting systems, CLTS facilitation with outputs in the construction of household latrines and capacity building for district and regional level officers in

MDAs and MMDAs. An overview is provided in the Findings chapter of the achievement of the programme outputs in the PMF.

2.5 JUSTIFICATION OF THE FINAL EVALUATION

PUNOs and other key stakeholders, including national partners and the donor wish learn to what extent the results and effects of the project support and services provided by UN-Habitat, UNICEF, UNDP and WHO are relevant, efficient, effective, sustainable and coherent. This is of special importance as the WASH in DPC progamme was the first of its kind in which a number of PUNOs acted together as a consortium in a programme. Hence there is a need to learn to what extent this way of working leads to successful results.

The evaluation also has forward-looking elements that will play an instrumental role in future programmes. What is learned from the evaluation findings is expected to play an instrumental role in informing decisions of the PUNOs in the planning and programming of projects, influencing strategies, adjusting and correcting as appropriate, exploiting opportunities, replicating and up-scaling the implementation approach used, and generating credible value for targeted beneficiaries and addressing national priorities. Evaluation results also contribute to PUNOs' planning, reporting and accountability.

3 EVALUATION APPROACH AND METHODOLOGY

3.1 APPROACH

3.1.1 General approach

In line with the ToR and the Inception Report the focus of the evaluation was on the evaluation criteria relevance, efficiency, effectiveness, impact[6], sustainability[7] and coherence (see Annex 1: Terms of Reference). In line with the key objectives formulated in the ToR the evaluation assessed two levels:

1. **Field level.** Results and effects at field level (results and effects in the communities and the organizational levels above up to regional for as far as relevant for the results in the communities) are assessed by looking at the current versus the baseline/before programme situation and the targeted achievements as laid down in the different indicators in the PMF. This is mainly assessed per programme outcome and the underlying expected results and outputs as to cover the first and third evaluation key objectives of the ToR. The focus is on effectiveness (functionality, quality, utilization, access and coverage) and sustainability of results and outputs.

2. **Programme level.** This part will cover the second, fourth, fifth and sixth evaluation key objective. It will answer the question whether the intervention in its set-up at the programme level was effective and cost-efficient and led to sustainable improved policies, organizational structures, etc., at the regional but especially also the national level. It will also answer the question whether other programme approaches, both in terms of programme activities and programme implementation, and/or methodologies could have yielded programme results and effects in better and/or more efficient ways. In addition, it will assess to what extent stakeholders have learnt from the programme for future programmes, collaborations, etc.

3.1.2 Approach on cross-cutting issues

The evaluation delved into cross cutting issues mainly the involvement of the youth, gender equality, human rights and climate change. The role of the youth in the delivery and management of WASH facilities was explored. Other key development issues that were explored, especially as part of the indicator questions at the community level, included the role of women and gender balance, human rights issues and disaster preparedness and flood resilience of facilities and communities.

To sufficiently cater for these key development components the evaluation included these segments in the sample selection for interviews, questions to elicit learnings in these areas and including these issues in the analysis of the data.

Especially during the focus group discussions efforts were made to include women and youth. Specific indicator questions covered the roles of these groups in planning, implementation and governance. Also included were questions on human rights, disaster and risk preparedness.

[6] As the programme results are quite recent the emphasis will be on impact outlook (how the impact is likely to be in the coming years).

[7] Sustainability is divided in the FIETS criteria. FIETS in Dutch means bicycle which is broadly seen as a sustainable form of transport. In regard to evaluating the sustainability of programs the FIETS criteria encompass: Financial sustainability, Institutional sustainability, Environmental sustainability, Technical sustainability and Social sustainability.

The evaluators consciously cross-checked the responses on cross-cutting issues. Based on qualitative and quantitative findings conclusions were drawn regarding the extent to which cross-cutting issues were successfully covered by the programme.

3.2 METHODOLOGY

3.2.1 Desk review of documents

During the evaluation active use was made of key UN and programme documents as listed in Annex 4. Of importance were the Programme Measurement Framework (PMF), Mid-term programme review, Programme Implementation Manual, Programme budget, Perception-based Impact assessment, Baseline Report, and the Annual Reports 2015, 2016 and 2017.

3.2.2 Selection of Communities

To prevent a biased evaluation, e.g., select communities that do better than other communities, 40 communities were selected ad random as follows:

Based on the target population and the numbers of target communities per region, the numbers of communities to be visited per region were determined: 12 in Northern, 16 in Upper East and 12 in Upper West region.

The team leader pointed with his eyes closed with a pencil to the computer screen showing the communities in one region then noted the number of people in the communities. If the number was 400 or higher; it meant this community was selected.

Per region four districts were chosen where most of the ad random selected communities were located and that together were believed feasible to be reached within the timeframe available. To get to the required total number of communities per region (as several districts with selected communities were thrown out) within the four districts per region new communities were ad random selected in the same way as described above.

Finally, instead of 40, 41 communities were selected ad random following the above procedure, divided over 12 districts with four communities per region. During the field mission at least 30 of these communities were to be visited with the intention, if possible, within the constraints of time and road conditions, to visit all selected communities. In fact this number was surpassed during the field visits as altogether a total of 46 communities was visited.

3.2.3 Evaluation methods at programme level

At programme level, the evaluators applied the evaluation criteria of relevance, effectiveness, efficiency, sustainability and impact.

Evaluation methods used include:

- Review of relevant literature, also outside the programme (for instance of different WASH programme approaches), and databases e.g., with monitoring data of WASH solutions realized, notably borehole data.
- Discuss the questions in meetings with officials of the Government of Ghana and other relevant parties at national and regional level (See Annex 3: List of persons interviewed).
- Cross check/verify/compare the findings with the findings at field level.

3.2.4 Evaluation methods at field level

At the community level the delivery effectiveness focused on 'Effectiveness' in terms of (a) capacity, coverage and access, (b) water yield & quality, and (c) utilization. 'Sustainability' at output level were divided into: financial sustainability, institutional sustainability, environmental sustainability, technical sustainability and social sustainability. Altogether

38 questions were answered for each product assessed. Per community on average slightly over four products were assessed. The results were put in a programmed Excel file from which also the different tables in this report presenting scores for effectiveness and sustainability have been derived.

The evaluators worked separately, daily visiting three to five communities. Each evaluator was accompanied by a district representative of the District Assembly (DA Rep, e.g., the Environmental Health Officer) who guided and, in case of the team leader, translated during communication with field level stakeholders (See Annex 2: Travel and activities schedule and Annex 3: List of persons interviewed).

Methods used to answer the evaluation questions included:

- Numbers of facilities planned and realized and where possible indications of the functionality and quality aspects as reported were derived from the PMF, project reports and other project documents available and verified with the numbers found during the community visits.

- Per community visit all water and school and at least several of the household facilities realized and assess them, through observations and interviews with beneficiaries and community level stakeholders such as operators, water committee members etc., to answer the indicator questions relevant for the facility. The focus was on numbers realized, functionality, quality, access, coverage, utilization, and sustainability.

- In most communities the evaluators also conducted focus group discussions with beneficiaries, often including WSMT members and operators of the water facilities, with regard to the disaster preparedness of the communities, the activities realized in this context by the programme, coverage and access people have during flooding to the facilities and what they feel is good or bad in terms of facility design and quality, distance to the facilities, repair of facilities if too difficult for the operator or beneficiary (by who, how quick will it be done, is the system functioning well?), availability and affordability of spare parts and tools for maintenance and repairs. In some cases, informal focus group discussions were held with women focusing on gender aspects and utilization by themselves, their families, handicapped and sick people of programme outputs, etc. In these discussions also other cross-cutting issues such as gender, human rights, climate change and youth were sometimes covered.

3.2.5 Method for the analysis of the data and production of the final report

The main findings are presented in the next chapter. The field level findings have been summarized in tables presenting per realized product type with effectiveness and sustainability aggregated scores derived from the scores for questions under these topics. The scores have the following meaning:

Score 1 – very poor situation with regard to the indicator

Score 2 – poor situation with regard to the indicator

Score 3 – Reasonable situation with regard to the indicator

Score 4 – Good situation with regard to the indicator

For each score, explanations are provided on the background and the reasons for the score allocated. In addition, the information found on questions that were not scored (mainly the indicator questions at district, regional and national/programme level) were cross-checked against other findings at different levels, relevant literature and so on, after which the information was summarized and presented per each programme level.

The findings of the evaluation are described at national, regional, district and community level. Issues and problems at higher levels often translate into problems and shortcomings at the community level and vice versa strong points at higher levels are often reflected as strong points at the community level. Hence in the description of findings at higher levels reference is made to the community and other lower levels whenever relevant.

For the community level, the findings are described per community product type (output delivered and sometimes outcome achieved by the programme) in all visited communities together. Findings are not presented per group of communities e.g., per district or region, because the evaluation covered only a limited number of communities in a limited number of districts and a detailed overview of, for instance, the findings in communities per district would not add to the overall programme analysis. By describing the findings per product type and per UN evaluation criterion in-line with the ToR for all visited communities provide a more relevant picture, and according to the evaluation team the findings are representative for all communities covered by the programme.

Comparisons with the PMF document are presented at the programme level although the evaluation was rather qualitative in its focus, assessing to what extent programme interventions, results and effects were of proper quality, properly utilized, sufficiently covered the communities, had sufficient capacity in the communities and among the people benefitting from them, etc.

3.3 LIMITATIONS TO THE EVALUATION

There were hardly any limitations to the evaluation apart from lack of time available to visit more communities and stakeholders.

Road conditions were good and as such did not present a limitation. Also due to this the evaluation team was able to visit five communities on top of the selected 41 communities.

The team leader did not experience a language barrier as he was always accompanied by a DA Representative who spoke English.

One field day was lost because the airplane from Accra to Tamale did not depart at all while all other flights that day were fully booked.

The evaluators were able to identify and speak with most community and district level stakeholders in each community and district. However, at the regional level only a limited number of stakeholders could be interviewed as many persons were not present during the visits. This was also the main reason that a planned participatory exercise with district and regional level stakeholders to discuss and brainstorm on alternative programme approaches and business cases did not materialize, and time was lacking for the exercise.

Only the Regional Coordinating Councils of Upper East and Upper West Regions were visited due to the loss of the first field day during which also a visit to the Northern Region Coordinating Council was planned which as a result could not materialize therefore the information obtained at regional level is somewhat limited.

4 MAIN FINDINGS

4.1 ACHIEVEMENTS – OUTCOMES

The level 3 (ultimate) outcome level in the PMF is: Improved, consequent year-round use by targeted beneficiaries of sustainable, sufficient and always well-functioning disaster-resilient WASH facilities in households, communities and schools in targeted Disaster Prone Communities (DPCs) in Northern Ghana. It should be the logical result if the underlying outcomes at outcome level 2 are achieved.

The findings regarding the level 2 outcomes have been summarized in the below Table 4. It shows that many of the targets have been achieved or nearly or somehow achieved. However, the targets are largely quantitative, not saying anything or much on the quality of outputs, their effectiveness, sustainability, and so on. Achieving the targets show the huge strength of the programme and its weakness by not emphazing sustainability.

TABLE 4: ACHIEVEMENT OF THE PROGRAMME'S OUTCOMES

#	Outcomes level 2 [8]	Indicator	Baseline	PMF target (cumul.)	Realized by WASH in DPC	Comments
1	Increased equitable sufficient access to and use of disaster-resilient improved WASH facilities by people in DPCs (public water facilities, house-hold CLTS latrines) and schools of the communities (school latrines) in Northern Ghana	Percentage of population with access to improved disaster resilient sanitation facilities	NR=3.3% UE=4.1%; UW=4.9%	NR=7.7% UE=5.5% UW= 7.7%	Could not be measured	The PMF reports: There has been no national survey after GDHS 2014 to inform any update.
		Percentage of population with access to safe drinking water sources	NR=64.1% UE=76.69% UW=77.6%	NR=70.9% UE=80.8% UW=88.6%		
		Percentage of rural population with sustainable access to safe drinking water sources	NR=62.96% UER=60.73% UWR=76.21%	NR=70.9% UE=80.8% UW=88.6%		
		Number of women, men, boys and girls with access to improved disaster resilient sanitation facilities in DPCs	7.800	13.933	>80.000	Aproximately 8.000 traditional latrines were constructed as a result of CLTS = 80.000 persons if 10 persons/fam. See paragraph 4.4.1 for explanation of the estimate of 8.000 realized latrines.
		Number of women, men, boys and girls with access to safe water	145.553	200.000	170.000 – 210.000	The estimated range is explained in paragraph 5.1.1.
		Girls' assessment of suitability of improved disaster resilient sanitation facilities in DPCs by region [9]	1	4	Could not be measured	It is likely that girls, like other people, will be happy with the WASH facilities realized whoich was also found in programme investigations. However, in the school latrines the menstrual changing rooms need improvement (e.g. include proper incineration of menstrual materials) and restricted access to only the girls.

[8] These are intermediate outcomes in the PMF. Colors indicate to what extent the consultants feel the outcome has been effectuated among people reached, taking into account that only part of the target population was covered, differing per facility and service (green means 'fully effectuated', orange means 'partly effectuated' and red means 'not or largely not effectuated'; the same meaning of colors is used in other tables in this report).

[9] Rating scale: 1, Highly unsatisfactory, 2. Unsatisfactory, 3 Neither satisfactory or unsatisfactory, 4. Satisfactory, 5. Highly satisfactory.

	Improved hygiene and safe water use practices among women, men, girls and boys before, during and after disasters in DPCs in Northern Ghana	Number and Percentage of population (m/f) practising hand washing with soap in DPCs	50.000 (25%)	200.000	77.083	Source: 'Draft annual report April 2016 – May 2017'. However, the number is based on the believed number of people with access to household hand washing facilities which is no guarantee for actual practising of hand washing. Also a lot of people may practise hand washing now but this may relapse if no further follow up is given.
		Number of school children practising hand washing with soap in DPCs	31.500 (63%)	50.000	45.440 + 14.880	45,440 persons were present at CLTS sensitization forums up to May 2017 (schools where toilets had been realized) and 14.880 were by then expected to later benefit as in their schools toilet construction was still going on (source: 'Draft annual report April 2016 – May 2017'). It was however observed that hand washing is not always practised due to water shortage while availability of hand washing facilities plus water does not guarantee that pupils will always practise hand washing.
2		Number of school children (m/f) having access to improved disaster resilient sanitation facilities in target DPCs	19.400 (38,8%)	50.000	> 50.000	UNICEF Tamale indicated that in 224 schools, school latrines were constructed, more than the 167 planned. In the draft WASH in DPC report April2016 – 31 May 2017 to GAC Table 2 reports that up to May 2017 a total of 167 school latrines were completed with 'ongoing construction of sanitation facilities in additional 55 schools'. This means the target has at least been realized and is likely to have been surpassed.
		Number of communities in DPCs with access to disaster resilient sanitation facilities	0	265	265	All have access. However, the sanitation facilities are not always disaster resilient as explained in the text.
		Number of communities practising household water treatment and safe storage in DPCs	140 (53%)	265	150	Source: Consolidated Final Narrative Report (Period from June 1, 2014 to May 31, 2017). 150 communities reported, but probably only part of the households per community who do it consistently and properly.
		Number of people (m/f) using household water treatment and safe storage systems	106.000	200.000	>82.000	Source: Consolidated Final Narrative Report (Period from June 1, 2014 to May 31, 2017). It is observed that most people apply some form of water treatment (e.g. cooking water) but that they do not always do it consequently. Also many people in communities interviewed during the field visits stated not to treat their water anymore as they trusted the quality of the water from the borehole.

3	Improved planning and implementation of disaster resilient WASH programs and support to DPCs to sustain the realized facilities by district and (to some extent) regional institutions	Number of districts with roll-out implementation programs of WASH in DPCs	24	24	24	During the programme all districts did roll out WASH interventions. However now the programme has finished they struggle to continue as district officers claimed in all districts visited.
		Effectiveness of district WASH implementation program8	3	4	2	Most districts indicated they can't do much in terms of implementation of programme related district services after the end of the programme due to limited resources, while the the DEHOs reported they avail their own motor bikes and pay for fuel themselves to visit the communities.
		Number of targeted districts with functional NADMO offices	24	24	24	All are believed to have functional NADMO offices as NADMO officers were met and interviewed in all visited districts. The evaluation did not asses the extent to which and how well they function. NADMO offices have been improved in capacity in disaster planning and preparedness.

There are some discrepancies between the level 2 and the level 3 outcome and within the wording of these outcomes, which affects the analysis of achievements. They are:

- The outcomes of level 2 were effectuated among different parts of the target population. Hence also the level 3 outcome and subsequently the programme objective have only been achieved among the people covered (the actual number of people differing per level 2 outcome and even per underlying output as explained in more detail in paragraph 4.5.6).

- The outcomes were planned to be achieved in and for disaster prone communities (DPCs). However, the consultants found that up to 33 per cent of the communities was not disaster prone (seven out of 21 communities assessed on their extent of disaster proneness were found to be not disaster prone).

- Several of the hardware facilities realized were not (sufficiently) disaster resilient, especially traditional latrines, some school latrines and some of the (above ground parts of the) water points. This is partly because they are located at places that are not prone to flooding and as such their structures do not need to be flood resilient. In some cases, however, facilities are not resilient to floods, have not yet been affected by floods because flooding did not yet occur, but are vulnerable because flooding may occur in the future (in which case the facilities should be disaster resilient). In addition, 'disaster resilience' does not cover for facilities that have not been made disaster resilient because floods will not reach these facilities while to the contrary siting of facilities at locations that are not flood prone can also be regarded as a measure to increase resilience[10].

[10] Within the programme 'Boreholes/protected wells/protected springs were classified as resilient when:

- They have a platform raised above the flood level (at least 30 cm).
- They are accessible during the rainy season. If they are poorly accessible during floods this then needs to be notified. Of course it should always be tried to locate water points where they can easily be reached, also during floods, but this is not always possible, while a water point that does provide sufficient and proper quality water will in such a case still be of utmost importance, because although it may be difficult to reach, people will try to access it and then at least have (some) proper water at their disposal. If access is totally impossible during floods a water point should be regarded unfit for use in such conditions.
- They have no changes in water quality before and after rainy season during a large number of years (this implies that sanitary seal was installed). Changes in water quality may not occur in a normal borehole even if flooded several times. However in such water points the water quality may start to deteriorate during and after floods after several years due to the insufficient sanitary seal. Hence it is not appropriate to determine a borehole to be flood resilient if in its first or second year after construction the water quality is good as this is insufficient proof of a flood resilient sanitary seal. Also finding clean water throughout the year is not a proof that a flood resilient sanitary seal was put in place. To determine the flood resilience of a borehole therefore also the used materials, depth and quality of the sanitary seal should be taken into account (upper 4 to 10 m of the annular space properly filled with proper mix cement grout).
- No diarrhoeal diseases while drinking from the source during and after the rainy season. However, the absence of diarrhoeal diseases is also present in normal boreholes that are not flooded and even often if they are flooded (to some extent; see the above point).
- In addition, flood resilience also requires that the above ground parts of a water point are robust and not affected by floods (including proper entrenchment).

4.2 OUTPUT LEVEL ACHIEVEMENTS - REGION

The Regional Technical Team (RTT) was the body set up at the regional level to oversee programme implementation. The RTT had a role in coordination, monitoring, evaluation and reporting on all district activities. During programme implementation UN-Habitat operated from Accra, Tamale, Bolgatanga and Wa. WHO and UNDP operated from Accra. UNICEF had Regional WASH Consultants located in all the Regions.

The programme was relevant to regional development and filled gaps in water facilities, latrines, and school WASH infrastructure. Table 5 presents a breakdown of water facilities in the three regions of Upper East Region, Upper West Region, and the Northern Region.

TABLE 5: WATER FACILITIES SET-UP IN THREE REGIONS

Region	New bore-holes	Reha-bilitated boreholes with flood resilient aprons	Rehabili-tated and airlifted boreholes	Rehabilitated boreholes + solar pumps + different standposts (minigrids)	Rehabilitated boreholes with electri-cal pumps	Rehabilitated boreholes with solar pumps	Rehabilitated Hand dug wells	Hand pump or resilient apron on existing well
UER	40	94	50	-	-	1	11	1
UWR	26	50	65	3	4	1	24	16
NR	101	55	54	11	12	1	7	14
Total	167	199	169	14	16	3	42	31

The RTTs were involved in the monitoring of the programme though not regularly and with limited logistical capacity. The regional levels were supported by the programme with some short-term trainings and support through consultants (mainly for CLTS) contracted by the national (programme) level attached to the regions. The use of consultants contributed to the quality of activities to be carried out, sped up implementation and was crucial to meet the stringent planning requirements. It may however have limited capacity building at the regional level to some extent as regional level stakeholders were not always fully involved in all activities as a consequence. Table 6 indicates the numbers of regional officials in the regions that were supported with capacity building activities by the programme in which PMF targets are compared to the actually realized numbers.

TABLE 6: CAPACITY BUILDING OF REGIONAL OFFICIALS

INDICATOR	PMF TARGET	ACTUAL	COMMENTS
Number of regional officials trained to plan, implement and manage WASH in DPC projects	12	17	Source: 'Draft annual report April 2016 – May 2017'. The staff from the regions benefited from trainings by the PUNOs such as in SanMark, Water safety and quality issues, Values based WASH training and Disaster Risk Reduction
Nr. of regional offices provided logistics to manage WASH in DPCs	3	3	Logistics were provided but minimal, e.g. a computer and some furniture.

The regions main role in the programme was to monitor the programme activities in the districts and communities, train district officers and channel funds from UNICEF to the districts. However, most of these activities were conducted by consultants with exception of the finance part with funds for CLTS channeled by UNICEF to the regions and from there to the districts. In addition, the NADMO regional officer in Bolagatanga claimed to have conducted the DRR trainings in the communities because there was no time to train district officers to do so. Programme design and execution were largely coordinated and implemented by the national level and to some extent by offices of the national stakeholders (UNICEF, CWSA) in the regions. Technical designs, designs of trainings ,etc., came from the programme level with limited or no input by the regions. In addition to training, the REHOs were provided with support for implementation as well as monitoring of WSP activities. They were also provided with some logistics.

The RTTs did not coordinate key aspects such as the implementation of water systems and school latrines which was handled at the national level, by consultants based at the regional level by the national level, while the regional CWSAs contracted the companies that built the school latrines. The RTT had a bigger role in other aspects of the programme, particularly CLTS and DRR training in communities. REHOs were provided support for implementation as well as monitoring of WSP activities.

4.3 OUTPUT LEVEL ACHIEVEMENTS - DISTRICT

Table 7 summarizes the findings at the district level regarding the main capacities realized by the programme at this level.

TABLE 7: DISTRICT LEVEL OUTPUTS DELIVERED

Items	# Planned / Actual	Relevance	Effectiveness	Impact	Sustainability	Cross-cutting issues
District capacity						
CLTS facilitation	72 / 162	4,0	3,4	4,0	2,4	3,5
VSLA facilitation	72 / 320	2,0	3,1	2,0	2,2	3,5
Other (including awareness, skills and knowledge obtained through trainings provided at regional level in which district staff participated)	72 / 320	3,4	3,1	2,4	2,0x	3,5

The Planned / Actual column of Table 7 is detailed further in Table 8 in which PMF targets are compared to the actual numbers.

TABLE 8: OUTPUTS DELIVERED AT DISTRICT LEVEL BY INDICATORS

INDICATOR	PMF TARGET	ACTUAL	COMMENTS
Number of district officials trained to plan, implement and manage WASH in DPC projects (CLTS, VSLA and other)	72	320	Source: 'Draft annual report April 2016 – May 2017'. The staff from the districts benefited from trainings by the PUNOs such as in SanMark, Water safety and quality issues, Values based WASH training and Disaster Risk Reduction. It was reported that 162 officers were trained on CLTS and 320 on establishment and management of VSLAs.
Nr. of district offices provided with logistics to manage WASH in DPCs	24	24	Source: 'Draft annual report April 2016 – May 2017'. However, only some logistics were provided (e.g., fuel to district health engineers which was insufficient to them as claimed by DEHOs).
Nr. of district officials trained + supported to establish SanMark in DPCs	72	320	Source: 'Draft annual report April 2016 – May 2017'. This comprises District Officials trained for SanMark implementation.

Significantly more district level officers were trained than initially planned. The question is why there is such a large discrepancy between planned and actual delivery? The most probable explanation is, as was stated during interviews, that especially for CLTS and VSLA a lot of EHOs are required, something which possibly the programme developers were not aware of before the start of the programme. This is confirmed by UNICEF in their comments on the draft final evaluation report.

4.4 OUTPUT LEVEL ACHIEVEMENTS - COMMUNITY

The main outputs realized at the community level have been summarized in Table 9. The scores are averages of the scores for the evaluation questions as answered by the evaluators per evaluation criterion for all facilities and services in the communities that were assessed.

Legend: The colors have the following meaning (as in most tables presented in this report)

Average score >= 3,2 (good)	
Average score 2,2 to 3,2 (reasonable but some attention needed)	
Average score lower than 2,2 (bad)	

TABLE 9: COMMUNITY LEVEL OUTPUTS DELIVERED

Item	# Planned / Actual	Effectiveness	Impact	Sustainability	Cross-cutting issues
Community hardware					
Household latrines	2.000 / >8.000	3,1	4,0	3,4	2,6
Community & school water systems	600/600 (appr.)	3,3	4,0	3,1	3,5
School latrines	167 / 224	3,1	4,0	2,5	3,2
Community sofware					
CLTS	People reached: 200.000 / >200.000	3,0	4,0	2,4	3,0
VSLA	Groups: 24 / >24				
HHs used credit for latrines: 2650 / <2650	2,7	2,0	2,2	3,2	
WSMTs	WSMTs: 265 / 265				
WSMT members: 1855/1325	2,5	2,0	2,5	3,2	
Schools with WASH O&M	167 / 224	2,7	2,8	3,2	3,7
Trained artisans	400 / 555	2,8	1,5	2,5	3,2
School health clubs	167 / 333	3,4	3,2	2,5	3,5
Other	Communities: 265 / 265 Pupils: 60.000	2,6	2,4	2,0	3,5

Source: *mostly 'Draft annual report April 2016 – May 2017'.*

The Planned / Actual column is detailed further in Table 10 with PMF targets and actual achieved.

TABLE 10: OUTPUTS DELIVERED AT COMMUNITY LEVEL BY INDICATORS

Item	INDICATOR	PMF TARGET	Actual [11]	Comments
Community hardware				
Household latrines (traditional and improved latrines)	Nr. of communities in DPCs with access to disaster resilient sanitation facilities (3 northern regions)	265	265	Probably at or nearing the PMF target (although programme documents say 149 communities built traditional latrines), with around 40% being ODF. However, most latrines realized are not disaster resilient (which however, is also not always needed at locations not prone to flooding).

[11] How to read the colors in the 'Actual' column is as follows: green indicates that the achievement is positive and larger than the PMF planning, orange indicates that the PMF target is not fully achieved and/or there are other issues involved, red indicates the PMF target is clearly not achieved and/or achieved in a very poor way, blue indicates that the evaluators are not fully certain about the achieved number(s).

	Nr. of DPCs that are ODF	265	133	Most sources claim up to 40% of the communities being ODF. The 'Draft annual report April 2016 – May 2017' indicates 133 ODF communities. This roughly coincides with the observations and information of the consultants. This is a huge achievement within such a short period while many other communities are committed to become ODF.
Community & school water systems (mechanized, new and rehabilitated boreholes)	Nr. of communities with functional disaster-resilient water systems in place	265	265	Source: 'Draft annual report April 2016 – May 2017'. Target was achieved. In all communities visited the consultants found at least one and sometimes more functional water systems. However, most of these systems are not or only partly disaster-resilient (which also is not always required, but in some locations not assessed to be flood prone it is believed that flooding may occur at some point in time). In most communities not more than 30 to 50% of the population was covered with the water systems implemented by the programme.
	Nr. of schools with functio-nal disaster-resilient water systems and safe water storage facilities for disaster preparedness in place	18	112	Source: Consolidated Final Narrative Report (Period from June 1, 2014 to May 31, 2017). The consultants found during their field visits only relatively few programme water systems next to schools. These water systems are shared with the community. The above ground parts were not always fully disaster-resilient (see paragraph 4.1) and did not all have safe water storage. Besides most schools were provided with roof water catchment systems attached to the toilets.
School latrines	Nr. of schools where child/girl, disability friendly and disaster-resilient improved school latrines are constructed / rehabilitated	167	224	UNICEF Tamale indicates that in 224 schools, school latrines were constructed. This coincides with statements in the draft annual programme report covering 30 April 2016 – 31 May 2017. In the 46 communities visited 29 schools were present each with one or more school latrine blocks realized. If this was representative for the programme communities it would mean that a total of 167 schools would be covered with school latrines which is less than was reported but still equals the PMF target.
Community software				
CLTS	Nr. of beneficiaries of WASH sensitization forums	200.000	>200.000	Source: 'Draft annual report April 2016 – May 2017'. Communities benefited from sensitization in CLTS and other sanitation and hygiene sensitizations from the District staff of GoG implementing partners.
VSLA	# of established and functional microfinance for household sanitation facilities.	24	>24	In many of the villages visited 1-2 VSLA groups were formed, although they were not always active. Altogether there must be many more VSLA groups than the PMF target. However, there is virtually no lending for latrine construction.

	Nr. of households that accessed microcredit to construct latrines	2.650	<2.650	The consultants found few cases of people saving and/or borrowing money through VSLA groups for construction of latrines. In Upper West region only 5 people were found who did so while in the communities visited in Upper East and Northern regions it also was only a handful of people. Reasons may be that people started to save but have not saved enough yet (probably not much, after feedback from beneficiaries) or that people choose to save monmey for other priorities.
WSMTs	Nr. of WSMT members trained to operate and maintain WASH facilities and plan and implement WASH projects	1.855	1.463	Source: 'Draft annual report April 2016 – May 2017'. Most WSMTs have 3 to 9 members. Altogether 265 WSMTs were trained, hence according to calculations by the consultants a maximum of 2.400 WSMT members. For the proper functioning of WSMTs even 3 members is sufficient. Hence, the consultants feel the number of members trained is sufficient.
	Nr. of functional WSMTs trained in ODF and safe excreta disposal	265	265	Target was achieved. It was found by the consultants that in each of the communities visited a WSMT has been trained while this is also stated in different programme reports.
Schools with WASH O&M	Nr. of schools trained in O&M and management of WASH facilities, safe excreta disposal, water treatment and storage	167	224	Source: 'Draft annual report April 2016 – May 2017'. Target was achieved. The assumption is that in each school where school latrines were set up the schools were trained also in the aspects mentioned in the indicator.
Trained artisans	Nr. of artisans trained in construction of improved latrines + equipped with resources/tools to construct and maintain the facilities	400	555	The draft annual programme report 30 April 2016–31 May 2017 states that 75 local artisan were trained and another 480 will be trained. However, no reporting was found whether indeed 480 more local artisans were trained.
School health clubs	Nr. of school health clubs established to promote health + hygiene in schools	167	318	All schools in the communities were covered, also those that did not receive infrastructural support from the programme (source: draft annual programme report 30 April 2016–31 May 2017).
Other	Nr. of communities trained in water treatment+storage	265	144	This component was handled by WHO. WHO in its comments on the draft final evaluation report stated that 144 communities were trained, far below the PMF target. The 'Draft annual report April 2016 – May 2017' reports that 133 communities were trained.
	Nr. of beneficiaries (girls / boys) of ODF sensitization forums in DPC schools.	50.000	45.440 + 14.880	From the records 45,440 persons were present at CLTS sensitization forums. It was below the target (although near it) because many of the CLTS activities started late. It was also reported that additionally 14.880 p[upils will still be sensitized. Source: 'Draft annual report April 2016 – May 2017'.

In the following paragraphs each of the main outputs realized in the communities is described separately because the community outputs are a main focus of the evaluation and at the heart of what the programme wanted to realize as they directly serve the final beneficiaries. The evaluation criteria most relevant for the outputs are described per output type. The focus is on the evaluation criteria effectiveness and sustainability. The findings regarding these two evaluation criteria are therefore also presented in more detail (than in the above summary table) for each output type.

4.4.1 Traditional household latrines

Many households, as a result of CLTS built traditional latrines. CLTS started late and is still on-going in most communities. The evaluation team found that around 40 per cent of the communities were ODF while at least 8.000 latrines have been realized (by extrapolating the figures found in the communities visited to all communities together). Some of them were ODF but because many traditional latrines collapsed during flooding, they are no longer ODF now (reported by DEHOs). In these communities people were often busy to develop plans for or implement improved traditional latrines. Most traditional latrines are not shared (at least not structurally) with other households.

4.4.2 Improved household latrines

The programme trained local artisans, often young masons, to construct three types of improved latrines: (a) Mozambique type with a dome concrete platform and a lining with cement bricks or stones (upper and lower two courses with mortar), (b) rectangular type with a reinforced concrete platform and a lining (with cement bricks all with mortar between them) that can be emptied, and (c) pour flush double pit latrine of which the pits can be alternated. However, these latrines are rather expensive. The Mozambique type costs in the order of 600 Cedis (USD 120), the rectangular type 750 Cedis (USD 150) and the pour flush type 1.000 Cedis (USD 200). VSLA groups were introduced to enable people to save money for an improved latrine (and for other needs though this was not the reason to enhance people to set up VSLAs). In some communities pro-poor latrines were constructed by these artisans; altogether 500, as derived from progress reports. These are improved latrines built for the poorest households, paid for by the programme. These also serve to show people the possibility of improved latrines, and provided the trained artisans with some initial contracts.

4.4.3 Mechanized boreholes

Five mechanized boreholes were visited, two of which comprised a minigrid solar pumped system (each with three stand posts), two were a stand-alone solar pumped water point, of which one was replaced by a hand pump, and one was a stand-alone system with the submersible pump connected to the electricity grid. Due to this low number the findings may not be fully representative although the total number of mechanized boreholes is limited (30, about half of them executed as minigrids with three water collection points each and the other halve as stand-alone water points[12]).

4.4.4 New boreholes with hand pumps

The programme put in place 167 new boreholes[13]. In the communities visited by the consultants about 20 per cent of the new boreholes with hand pumps had raised (flood resilient) platforms while the others had 'normal' (not raised) platforms. However, altogether only 15 new boreholes with hand pumps were found which may not be representative for all new boreholes with hand pumps (probably about 30 to 40 per cent of the new boreholes is equipped with raised or otherwise flood resilient platforms, which would be a bit more in-line with the situation for rehabilitated boreholes for which separate figures in the aforementioned UN-Habitat Excel file are available with the number of with and without a raised or otherwise flood resilient platform). Some of the lower platforms may be flood resilient to some extent (deepened foundations while also the sanitary seal of the borehole is deepened) but is difficult to observe during a visit.

[12] Source: UN-Habitat Achievement per community Excel file.

[13] Source: UN-Habitat Achievement per community Excel file.

4.4.5 Rehabilitated boreholes with hand pumps

The programme rehabilitated 368 boreholes, 169 with 'normal' (not raised) platforms and 199 boreholes to which new raised or otherwise flood resilient platforms were fitted[14]. In many rehabilitated boreholes the old hand pumps were left in place: Nira pumps with a T shaped pump handle, India Mark II or III pumps and in a few cases Afridevs.

4.4.6 School toilets

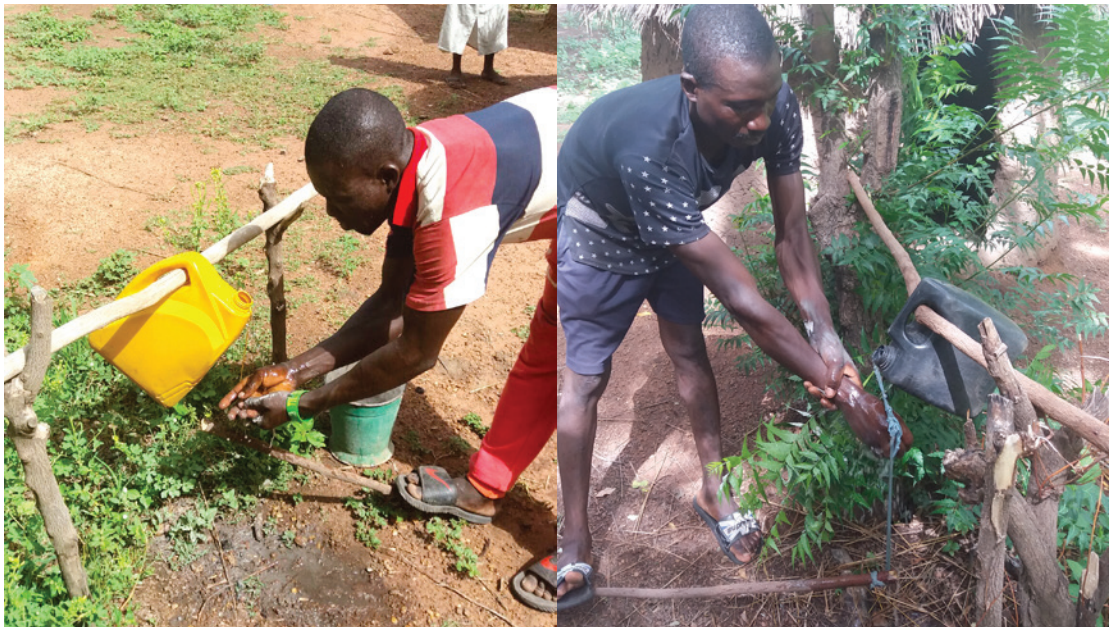
Contractors constructed altogether school latrines in 224 schools designed to be flood resilient. From our observations we believe that 70 per cent of the targeted schools now have flood resilient latrines with sufficient capacity, gender separated with changing rooms for females and accessible for handicapped persons and can be entered by a wheel chair.

Completed school latrine with a tippy tap made by the school children in Sazie in the Daffiama Busie Issa district.

4.4.7 CLTS

Most communities were covered with CLTS facilitation. In about 80 to 90 per cent of the targeted communities the whole community was covered. In the other communities the involved DEHOs did not have time to cover the whole community. DEHOs stated that they want to continue in those communities but were unsure whether they would be able to do so considering the lack of resources, especially fuel for their motor bikes. In the large communities/small towns, the initial focus was on flood prone sections as dictated by the programme. CLTS started late in the programme and still is implemented by district environmental health officers assisted by volunteers ('natural leaders') in most communities. A total of 133 programme communities are claimed to be ODF in programme documents while over 200.000 persons were sensitized.

[14] Source: UN-Habitat Achievement per community Excel file.



Residents of Bikunjibe Kutom and Bikanbombe Bitatabe practising handwashing in Tatale District

4.4.8 VSLA

VSLA groups were introduced with the idea that through credit and saving groups people can save money for an improved latrine. In VSLA groups the members (maximum 25 persons, often women) put about 2 to 3 Cedis per member per week in three different saving funds, typically: 2 Cedis/ week in a general savings fund, 0,5 Cedis/week in a sanitation fund and 0,5 Cedis/week in a social fund. The groups are not connected (yet) to any micro finance institutions or banks. In most communities visited there were one or two VSLA groups, although sometimes they were not active, but altogether this is much more than the 24 groups planned in the PMF. The PMF also has as target that 2.650 households access credit through the VSLAs to construct latrines. However, with 24 groups of maximum 25 members per group, the maximum number of people that could do so would be 600. The evaluators found only few cases of people saving and/or borrowing money through VSLA groups for construction of latrines. UNICEF has commented on this that "Overall, the programme helped to establish 274 VSLAs (about 6,850 people). Generally, it was still early days for the VSLAs to have saved enough money for latrines. With the few cases of people accessing funds to construct latrines, it is taken as an indication that with other complimentary components of the programme, this for sure will be a source of financing for sustainable household toilets." It is to be seen whether people will do so and will probably depend on whether the districts are able to continue to support and guide the VSLAs.

4.4.9 School health clubs and schools with WASH O&M

In all schools visited, school health clubs were in place and active. In all 318 schools in the targeted districts school health clubs were established by the programm[15]. The students of the clubs displayed a high sense of interest, knowledge and practice of hygiene and sanitation behaviors. There were 224 schools, which developed facility management plans (FMPs) and maintenance systems for school WASH facilities as a result of (values based) training and guidance by the programme (although this

[15] The draft annual programme report 30 April – 31 May states that altogether 311 schools were covered, while other sources speak of 318.

was not properly executed in at least a quarter of the schools). The toilet angels in the school health clubs play a great role in management of facilities. The teachers in charge of the clubs were trained by the programme. In many schools as a result hand washing with soap is practiced and school compounds are often (reasonably) clean. It is believed that these accomplishments have a relatively high chance to be sustainable because the school teachers are aware of the importance and will probably not need much further follow up and enhancement to keep organizing these structures and activities. However, some limited follow up, for instance, a workshop with teachers and pupils from different schools, now and then, in which they share experiences and make plans for improvements, would boost the initiative a lot and enhance the chance for longer term sustainability hugely.

4.4.10 WSMTs, trained artisans and other software items

In each community a WSMT was formed and trained (265 altogether), usually with 30 to 50 per cent female members. They are not always active though and often they were found to be incapable of establishing a proper financial system for O&M of the water facilities. They also often lack the expertise, tools and equipment required for repairs and depend on area mechanics who are often expensive, sometimes not quick to arrive on site or incapable of carrying out the repairs. The main problem is financing repairs though.

Young local artisans have been trained in construction of improved latrines and equipped with resources/tools to construct and maintain the facilities[16], more than the 400 planned as described in the PMF. Their main challenge is to find sufficient clients as people are hesitant to invest in and even save money, e.g., through VSLA groups for improved latrines. Their skills are probably sustainable because most of these artisans are masons who perform similar skills regularly in construction of houses and other masonry activities. However, follow up trainings, e.g., on a further improved but cheaper improved latrine with small rotating chambers of high quality of reinforced concrete and initiatives to assist them with getting clients for improved latrines, e.g., effective marketing, but especially also initiatives that enable the market to buy their products, e.g., cash transfers to community members[17] would boost the success of their training hugely and would of course also add to the programme achievements as this would result in many more improved household latrines.

Other software included among others the training of households in water treatment and storage. This component was handled by WHO together with DEHOs who also did some monitoring on how households actually practised what they learnt. WHO reports in their comments on the draft final evaluation report that households in 144 communities received training, far below the target of 265 (as in the PMF). As these were one-off trainings it is believed the sustainability of the awareness and knowledge raised by them is limited. The same goes for DRR trainings.

4.5 PROGRAMME PERFORMANCE

4.5.1 Relevance

The programme was in line with and complementary to the relevant national policies, structures and programmes of the Government of Ghana. It built on the different government levels and expanded knowledge and insights in how disaster (notably flood) resilient WASH infrastructures and awareness can be realized and effectuated in disaster prone rural areas. It was in line with the Environmental Sanitation Policy, Rural Sanitation Model and Strategy, national Disaster Risk Management Plans, and Ghana Shared Growth and Development Agenda (GSGDA II).

[16] The draft annual programme report 30 April 2016–31 May 2017 states that 75 local artisan were trained and another 480 will be trained. Other sources speak of 555 trained local artisans.

[17] Cash transfers were planned in the programme proposal but the consultants have further not found anything on the subject, not in the communities or in interviews with key informants and also not in the financial programme budgets which normally come together with the proposal.

The achievements of the programme in terms of improved health and privacy, reduced burdens (especially for women and girls) and resilience to disasters among targeted communities (the programme objective), within such a short period, are impressive and hugely important as is the DRR and WASH learning and increased capacities at all governmental levels.

As such relevance for the Government of Ghana, all other programme level stakeholders and especially the programme beneficiaries at large was high. The learning and awareness raised through the programme has not yet led to improved related laws and formal policies of the Government of Ghana. However, this may still happen at some point as UN-Habitat has indicated that 'policy dialogues are in the pipeline with GoG counterpart partners which prepares the ground for mainstreaming the findings of the programme into existing policies'.

The programme is aligned with development themes such as water, education, sanita-tion, environment, hygiene, and community development. In all districts visited the programme was touted as being in line with national and district plans of development.

The obvious benefits of the programme, water points, household latrines, school toilets, school and community health, were by all levels stated to be highly relevant and were highly praised by interviewees.

Also most of the capacity building activities at the community, district and regional levels were highly relevant in the context of the programme health part of the objective. Of limited relevance for the programme objective were found to be the VSLA activities because community members did not (yet) use these structures to save money for improved latrines (which was the idea behind it) and some part sof the capacity building activities focusing on WASH related disaster preparedness (because it is believed that disaster preparedness may better be covered as a separate subject covering all aspects of disaster preparedness at community level and not only the WASH aspects). Specific important WASH related disaster preparedness activities in this context could have better been covered by other programme parts, for instance, incorporated in the CLTS sensitization and training activities.

A major achievement at the overall programme level has been the initially cumbersome but finally successful coordination and exchange between UN parties, NGOs, companies and the different institutes of the Government of Ghana which were involved in the programme. This has enhanced highly relevant awareness and learning among all parties, particularly also the Government of Ghana and the UN parties.

4.5.2 Relevance at district level

DTTs supported, coordinated, monitored and reviewed programme implementation. They consist of key district government staff, including NADMO, and were constituted in all programme districts visited. DTTs were relevant in decision making and addressing challenges. A main role the teams fulfilled was the frequent follow up on the implementation of CLTS. VSLA training and guidance capacity is less relevant in the programme context as it was found that they are not effective in getting people to invest in improved WASH facilities.

The district preparedness plans are believed to be less relevant as they constitute plans that are largely unfeasible due to lack of resources for equipment and materials. Also district preparedness plans should have a wider scope than WASH otherwise a district would end up with separate preparedness plans for health, nutrition, etc. which would be largely confusing and complex. Such plans, however, are beyond the boundaries, scope and objective of the WASH in DPC programme.

4.5.3 Effectiveness

Programme collaboration was productive but conversely as with such a complex programme inherent challenges also arose. The PUNOs played their roles successfully based on their expertise and the roles they were given in the programme. The model used for the implementation of the programme was based on nominating programme

Focal Persons which came with a number of challenges in the process of implementation. Programme coordination was satisfactory. The PUNOs worked well together after an initial period with start up problems. There was an appreciable level of dialogue and meetings on the programme to guide implementation. However, a challenge was the cooperation of Focal Persons who only had a percentage of their time available for the programme while performing their regular duties. This affected their attendance at monthly meetings and other meetings called for under the programme.

As a result of the numerous stakeholders there was disjoint implementation of the programme being handled by different UN agencies. It resulted in the syndrome of agencies operating in silos with regards to their assigned role in the programme. It was a situation that confused government partners having to deal with several UN agencies sometimes on issues that overlapped. As such the spirit of delivering-as-one was somehow limited. PUNOs did not always share common resources, e.g., vehicles during monitoring andat times would carry out its own aspect without working together. Hence they tended sometimes to focus mainly on their own roles.

The programme steering committee was set up for partners and stakeholders to meet bi-annually to take strategic decisions. Due to the coordination challenges, especially in the beginning its started to meet more often, often also with presence of the donor. It was the highest decision-making authority for the Programme and was responsible for strategic guidance, fiduciary and management oversight and coordination. It was co-chaired by the UN Resident Coordinator and the Ministry of Local Government and Rural Development. The committee played a strategic role in decision making and directing the key aspects of programme implementation.

The top-down approach instigated at the national/ programme level, especially with regard to programme design, technical designs, contracting and coordinating professional companies, designs of trainings, etc., had a negative effect on the programme. The regional and district governmental levels were surpassed on these issues, which caused limited participation and priority setting at these levels and at the community level with consequences for the implementation and monitoring.

4.5.4 Effectiveness at district level

The deficit in WASH facilities in the districts was reduced significantly, particularly for schools and households. The districts were largely effective to effectively build and execute their capacities for the planned activities, especially through the efforts mainly of the DEHOs in CLTS and (to a lesser extent) VSLA. However, the districts effectiveness was limited due to the following reasons:

- Limited capacity. For instance, the capacity to hold meetings did not adhere to strict reporting as outlined in the PIM and monitoring was insufficient. The absence of a monitoring database and technical shortcomings in community facilities should have been detected and prevented by district officers. District staff reported benefits from trainings for SHEP, DEHO, and NADMO. Trainings covered subjects such as water quality testing, value-based education, school health education, sanitation marketing CLTS, VSLA facilitation and DRR.

  Most trainings, however, were one-off activities which, without further follow up, are in danger of declining in terms of knowledge among district staff and implementation; the same goes for trainings provided at the community level, such as DRR. The trainings were relevant for the current functioning of the agencies but were not always practically oriented, geared towards implementa-tion on the ground or complete, e.g., CLTS trainings did not include customization of latrine designs to the circumstances per community.

  Other bottlenecks include: (a) insufficient resources, e.g., leading to DEHOs using their personal motor bikes and paying maintenance and depreciation themselves,

while also the fuel provided was insufficient), (b) staff having too many things on their plates, (c) variety of poorly integrated subjects divided over different district departments, e.g., DRR separately from CLTS, (d) possibly limited awareness and drive among district leadership.

- Coordination with higher levels was cumbersome. Often decisions were taken at national and regional level and not coordinated or communicated with the districts. DTTs, for instance, were not informed about drilling and construction company activities and where districts were to train artisans on improved latrines this was changed, without discussion with or explanation to the districts. Consequently, the role of the DTTs and district staff in monitoring and assuring proper quality of works was limited, also because they were not sufficiently prepared for these tasks and did not have proper mandates, e.g., they were not allowed to send a contractor home if works were not properly executed.

  Also districts were not involved in designing school latrines or even community level activities such as DRR awareness raising, CLTS and VSLA facilitation. This has contributed to the sometimes limited or poor quality and designs of facilities and activities at the community level. Yet, many facilities were of good enough quality, as explained before, notably the new boreholes, also rehabilitation of boreholes was often reasonable to good, while also quite a few school latrines were of reasonable to good quality, even though in most cases there were some design and/or quality issues.

- Several programme aspects were delayed and brought in at wrong times which hampered the activities in the communities, but which were outside the control of the DTTs. As such the teams suffered from a lack of formalized programme planning and institutionalization of tools to carry out work. It would have been cheaper for DTTs to monitor community level activities but in most cases, they were not empowered logistically and not involved in project mobilization and commissioning. Therefore, DTTs stated their relation to the programme was ad hoc and transactional.

4.5.5 Effectiveness of key outputs

TRADITIONAL HOUSEHOLD LATRINES

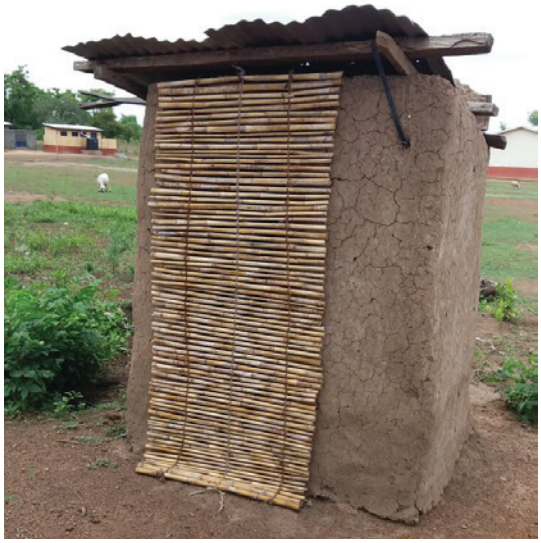
Capacity, coverage and access scoresrelatively low because nearly 50 per cent of the communities has no full coverage (see Table 11).

TABLE 11: EFFECTIVNESS RATING OF TRADITIONAL HOUSEHOLD LATRINES

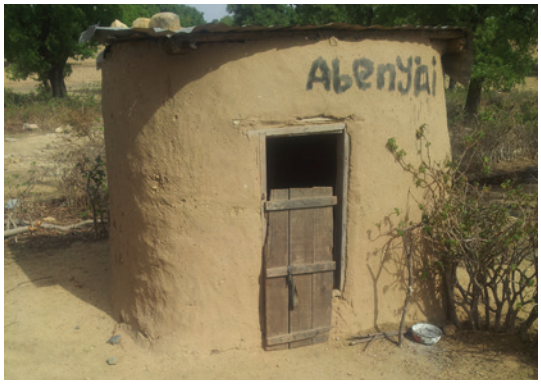
Topic	Average score
Capacity, coverage & access	3,3
Water yield & quality	
Utilization	3,1
Functionality	2,9

Several communities were fully or nearly ODF but fell back into open defecation because their latrines collapsed, due to flooding, rains and runoff but mostly because as a result groundwater rose causing the unlined pits to collapse. Also quite often latrine roofs were affected by wind. In many cases people have started to rebuild more resilient latrines. However, this is an ongoing effort that takes time after they lost energy, time and sometimes money in their first attempt to construct a latrine, also because people often come to the conclusion that they need an improved latrine for which they need money, which they often do not have.

Utilization scores relatively low because, especially in Upper East region and several parts of Northern region, many latrines do not have a hand washing facility, which was one of the four relevant questions under this topic. This should be considered in the context as often people claimed to have a hand washing option within their houses.



Household toilet in Pagmado in Zabzugu District.



Pusiga district, Sangabuli village. One of the 20 traditional latrines in the village. Pits were said hardly to fill up, which is a confirmation that the soil is quite sandy and porous which can also be seen.

Bunkpurugu district, Molso community. Collapsed traditional latrine.

Functionality scores low due to the potential collapse of latrines with the wrong design plus the finding (especially in Upper East region) that many latrines lack a hand washing device.

The evaluation team was pleased to see many innovative designs people developed, unfortunately often after their first latrines had collapsed. For example, linings of all kinds of materials, including of clay pots or old car tires stapled on top of each other, linings of rocks, linings of twigs, and so on. Instead of concrete platforms in one community they used large flat stones that happened to be present naturally in the community. Also, relatively low-cost walls with the lower part with bricks and mortar and the upper parts with foam were found, while roofs were attached better, often after they had been affected by wind, with strings and other metal materials attached to the roof and the walls. However, despite all these interesting and innovative solutions, most latrines made with locally found (not purchased) materials remain quite vulnerable to floods, rains, runoff and water table rising and/or to wind. In addition, the solutions have led in many cases to small pits that cannot be emptied and used again. Hence, the culture of using pit contents as dung cannot be benefitted from in permanent structures that can be used on rotational basis which feels like a missed opportunity. On the other hand, some people have immediately after the collapse of their latrine moved on to saving money (often through a VSLA group) for an improved latrine, sometimes including a twin pit kind of design in which rotational use of pits and use of pit contents as dung is possible.

IMPROVED HOUSEHOLD LATRINES

The capacity, coverage and access score is tempered slightly only because in some communities latrine coverage was low (see Table 12).

TABLE 12: EFFECTIVENESS RATING OF IMPROVED HOUSEHOLD LATRINES

Topic	Average score
Capacity, coverage & access	3,7
Water yield & quality	
Utilization	3,8
Functionality	3,2

This was, however, due to absence of traditional latrines as improved latrines were not meant to cover the communities fully. Other questions under this topic such as the capacity of the improved latrines and access to these latrines were mostly answered very positively. Water yield and quality is not relevant for latrines, hence is not scored.

Utilization scores very well with the only set-back that not always proof of hand washing was found, especially in Upper East region. Proof of hand washing was one of the four relevant questions under this topic, beside questions about how people use the latrine, hygiene of the latrine and user satisfaction with the latrine. This should be considered in context though, as often people claimed to have a hand washing option within their houses.

Functionality scores lower because where these latrines collapsed (which happened in a few cases due to flooding) they were not quickly rebuilt, sometimes there was no hand wash facility, but, most important, they were not always sufficiently flood resilient. Where flooding/run-off water can reach the latrines, which is often the case, the water may enter the pit if the floor is lower than the maximum flood level. Also, the surrounding of the pit latrine was often not raised with earth or earth dikes. This can cause collapse and at least causes unhygienic circumstances as pit contents will flow out of the pit. Not all vent pipes had a screen on top. Sometimes too much light was coming in the superstructure and/or there was a cover on the hole. In a Ventilated Improved Pit latrine the hole in the platform should not be covered, contrary to a traditional latrine where a cover of the hole is of fundamental importance to keep flies and smells away. Further, the improved pit latrines usually had single pits while the circumstances and culture of the people are good for twin pit latrines and usage of the pit contents as fertilizers, although the rectangular type can be emptied; people claimed that once the pit is full they will make another similar latrine and then rotate between the two, which is good practice but expensive as two latrines are required. Probably a more simple, cost-effective, twin pit within one latrine, i.e., small double pits under the platform and slightly raised above the ground, would be as expensive or even cheaper than the designs used currently and would be more flood/runoff resilient.

MECHANIZED BOREHOLES

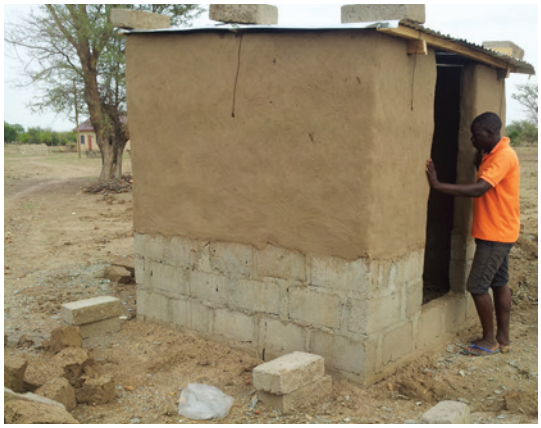
Capacity, coverage and access score relatively high regarding access and proximity because in most communities these are satisfactory (see Table 13).

TABLE 13: EFFECTIVENESS RATING OF MECHANIZED BOREHOLES

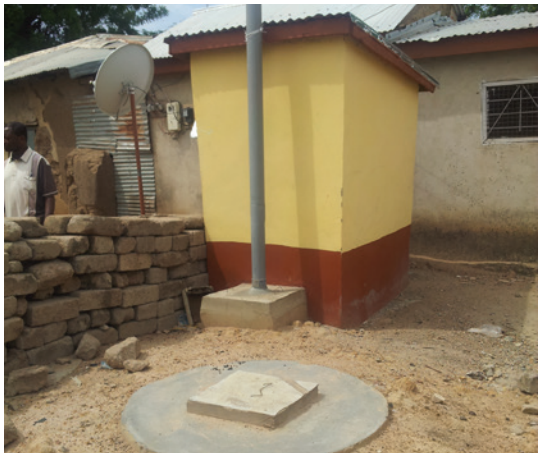
Topic	Average score
Capacity, coverage & access	3,0
Water yield & quality	3,6
Utilization	3,3
Functionality	2,6

There are also often indirect users, especially in the dry season, who come from beyond 1 km. However, the total numbers of water points (and the total amounts of water) in the whole community was found in 75 per cent of the cases to be insufficient. This means that the number of people per water point or tap is more than 300 persons.

Water yield and quality were good in four of the five systems. In one system the water yield is limited, especially in the dry season.



Kassena Nankana West district, Basengo Moo village. Improved latrine with under part cement blocks and upper part mud walling. Petty is that from the pit the contents cannot be removed. The construction is quite large which has made it probably more expensive than necessary.



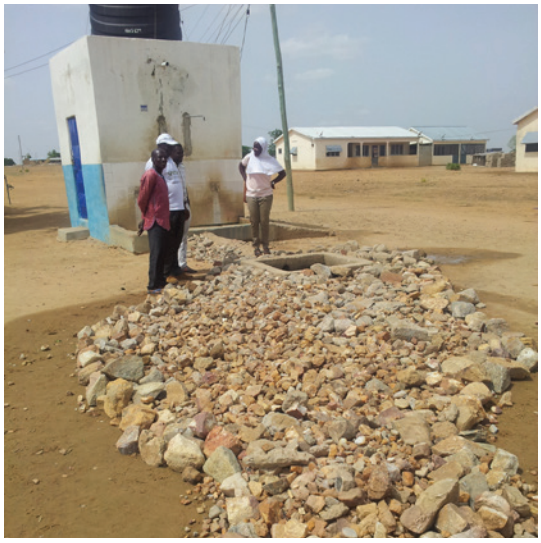
Sandema district, Sandema town. Poor flush latrine constructed by the programme. In towns only improved latrines are allowed. At the grey wall of the house it can be seen that the floods reach higher than the entry of the latrine (brown colour at the wall). Due to this water will enter in the pit during flooding. No earth around the latrine and pit to protect it from that.

Bawku district, Tampizua village. Lining in pit of an improved pit latrine consisting of cement blocks (first and last two courses are with mortar between the blocks, the rest is without mortar).

Utilization is good but most probably many people use less than the recommended 20 litre per person per day. In the dry season this may be due to limited water availability but in general it is believed that many people simply do not collect so much water even if it is possible.

Functionality needs some further explanation. Three of the four functional systems had not failed at any time since their implementation except for the fourth one and the one which was replaced by a hand pump did, meaning that two of the five systems were already standing idle or replaced within a year after their implementation which the evaluation team feels is a lot. The evaluators have doubts about the design of mechanized boreholes. The reason is that the systems end up standing idle as soon as a major problem occurs because they are more vulnerable to technical problems than systems with hand pumps and because the community has no access to repair services and may also not have sufficient money to pay for it (see also further on). This means that it is probably better, as long as this bottleneck remains, to implement hand pumps instead.

Bunkpurugu. Raised water tank. Good construction, only the metal pipes that form the platform are not galvanized, hence subject to rusting.



Bawku district, Baribari village. Stand alone mechanized borehole with submersible pump connected to the electricity grid. Poor quality PE tank dangerously fixed (with some rusty wires) on a raised platform. Brickwork is limited quality. Large stones around platform and drain is good but there is no soakaway. There was a discussion going on about who is the owner: the nearby school or the community, and also who should pay user fee. They will probably solve it, but no finance system was yet in place and at the time of the evaluator's visit they were yet to pay an electricity bill.

NEW BOREHOLES WITH HAND PUMPS

Table 14 shows that the total capacity and coverage of water points for the whole community including other water points was sufficient in terms of persons per water point (<300), yield, proximity and ease of access (also for handicapped persons) and scored high.

TABLE 14: EFFECTIVENESS RATING OF NEW BOREHOLDES WITH HAND PUMPS

Topic	Average score
Capacity, coverage & access	3,8
Water yield & quality	3,9
Utilization	3,6
Functionality	3,3

Also water yield and quality scored high. Water yield was sufficient as according to the beneficiaries. It should be noted though that the number of new boreholes with hand pumps visited was limited. From the borehole data of the implementing partners assigned drilling works it is known that the yields of new boreholes with hand pumps are indeed in most cases above the minimum yield (set by the programme) of 10 l/minute.

Regarding water quality, no faecal coliform tests were done during the visits to the water points, but faecal coliform tests that were done as part of the programme, just after completion of the water points, showed that there is no bacteriological contamination. The evaluators observed that the water is clear, tastes good and people claim there is no diarrhoea nor are there any other threatening contaminations. Laboratory results show that there are other contaminants. However, no testing has been done for arsenic. Arsenic is a potential problem in some parts of the programme regions.

Different documents[18] conclude for groundwater sources in the three Northern regions that 'There is occurrence of fluoride, lead, and, to a lesser extent, arsenic, nitrates, manganese and elevated TDS and major ions concentrations in ground waters in some instances'. UN-Habitat responds to this that 'The area with arsenic problem is well known by CWSA teams. None of the programme facilities falls in that risky geographic areas. That explains why arsenic test was not conducted.' The evaluators find this a bit tricky though considering the experiences with arsenic, for instance, in Bangladesh where the problem has long time been underestimated.

Utilization scored lower due to: (a) the hygiene at and/or around the water points was found in 14 per cent of the cases insufficient. Partly because of neglect of cleaning but usually in combination with poor drainage of waste water and still standing water in the cattle troughs; it is likely that in the rainy season hygiene will be much worse and in more water points, (b) the evaluators believe that not all people obtain 20 Lpppd from the water points.

[18] Sources: Executive Report on the State of Groundwater Resources of the Northern Regions of Ghana, WRC, Dec., 2011. Additionally WHO documents and the WASH in DPC programme proposal ' Water, sanitation and hygiene in disaster prone communities in Northern Ghana.

This is sometimes because the yield of the boreholes is insufficient but more often it is because people choose not to collect so much water from the water points. Hence, despite the often-sufficient proximity, good access and sufficient yield some people limit their water use themselves (from feedback by beneficiaries when asked how much water they collect for their families each day).

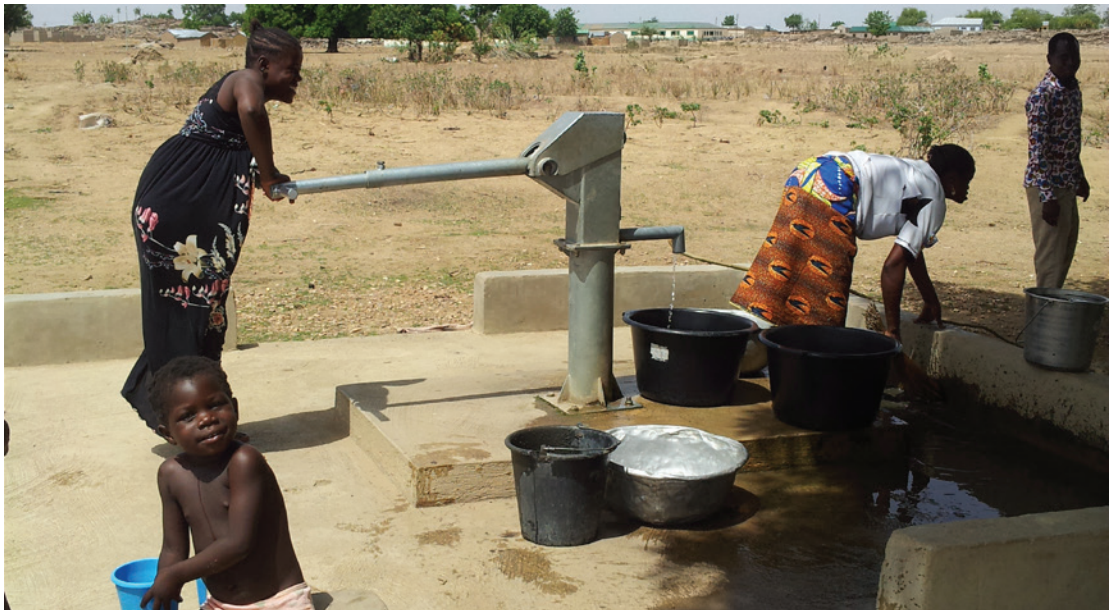
Functionality scores well but slightly lower than the other aspects of effectiveness. The reason is that although all facilities visited were functional in terms of water provision, there are some design considerations, notably: cattle troughs often have still standing water because the floor slopes in the wrong direction and/or the outlet is too high, there is not always a soak-away, in many cases the drain is a PVC pipe which is easily blocked, and platforms may not always be able to withstand severe flooding (depending on how well the platform is entrenched there may be danger for undermining while the small side walls and even the platforms are or may be have been built with bricks with limited quality plaster that could be affected). Specifically, for the new boreholes with raised platforms a concern is that the drainage pipe at the higher platform is located where containers are put when they are filled, which then blocks the drainage, at least partially.

REHABILITATED BOREHOLES WITH HAND PUMPS

Table 15 indicates that in 37 per cent of the cases the total capacity and coverage of water points for the whole community (including other water points) was insufficient in terms of persons per water point (>300) and water yield. In 44 per cent of the cases observed the water points had insufficient capacity for the intended users. Proximity and access (also for handicapped persons) were sufficient in all cases, although there are often indirect beneficiaries who live further than 1 km from the facility.

TABLE 15: EFFECTIVENESS RATING OF REHABILITATED BOREHOLES WITH HAND PUMPS

Topic	Average score
Capacity, coverage & access	3,1
Water yield & quality	3,6
Utilization	3,3
Functionality	3,4



Pusiga district, Madrugu village. Proper quality new borehole with hand pump. Only the drainage is a pipe which was blocked with dirt during the visit.

Water yield was sufficient in 69 per cent of the cases as according to the beneficiaries. Usually where yields were said to be limited they were limited during the dry season while during the rainy season the yields were said to be sufficient. Regarding water quality, no faecal coliform tests were done during the visits, but faecal coliform and other tests done as part of the programme, just after completion of the water points, showed that that water is suitable for drinking. Refer further to the former sub paragraph about quality issues and the absence of Arsenic water testing.

Utilization scored low for three of the five questions under this topic:

- The hygiene at and/or around the water points was in all cases not bad but was in most cases also not optimal (partly because of slight neglect of cleaning, usually in combination with poor drainage of waste water and still standing water in the cattle troughs). It is likely though that in the rainy season because of this hygiene will be worse and also in more of the water points.

- The evaluators believe that people do not always obtain 20 Lpppd as they choose not to collect so much water (as explained before).

- In 25 per cent of the cases beneficiaries complained about the low yields of the boreholes in the dry season while this was often in combination with problems with the pump (difficult pumping in general and sometimes broken parts which made pumping difficult). Where T-handle pumps were used people often complained about broken parts that were very expensive to replace (more expensive than Afridev parts according to them) while these pumps are also less user friendly (especially for pregnant women) than other hand pump types.

Functionality scores relatively high. All water points visited were functional. However, in nearly 20 per cent of the rehabilitated boreholes with hand pumps visited the pumps were functioning but not optimally. Reasons as said by beneficiaries and partly also observed: rods and plungers replaced by the programme but since then more difficult pumping and often they have to wait each time after pumping a few times—possibly because the plunger was installed too high up because too few rods were placed, and difficult pumping in general. People did not take action to repair the pumps when needed, probably because they still function though with problems.

Bawku district. Strange drainage system (pipe can get blocked; entry is where the water container is placed) but further good quality water point.

Bawku district, Baribari village. Rehabilitated bore-hole with hand pump. The tyre, put there by the users, is to prevent that the handle is pushed down too far which can affect it. Water is clean and plenty. If the pump breaks they say they will collect money for repair which is a limited system but will work if the repair is not too expensive and if people are sufficiently motivated for sustaining the water point, which in this case they probably are as the alternatives, especially in the dry season, are limited. They claimed they just changed the finance system and people now pay 2 Cedis per house per week. Fifteen houses use the water point. One house can be 10 to 20 persons. Cattle trough was wrong design (floor sloping towards the platform).

The design, although in general terms satisfactory both for the normal and the raised platforms, has the same issues as mentioned in the former sub paragraph for new boreholes with hand pumps: cattle troughs often have still standing water because the floor slopes in the wrong direction and/or the outlet is too high, there is not always a soak-away, in many cases the drain is a PVC pipe which is easily blocked and causing unhygienic and dirty situations. It is not always certain that the facilities may be able to withstand severe flooding. It depends on how well the platform is entrenched there may sometimes be danger for undermining still while the small side walls and even the platforms are or may be of bricks with limited quality plaster that could be affected. Specifically, for the raised platforms it is a concern that the drainage pipe at the higher platform is located exactly where containers are put when they are filled, which then blocks the drainage, at least partially.

SCHOOL TOILETS

Capacity, coverage and access score relatively high because in most of the schools where school latrines were constructed the capacity and coverage was sufficient to cover all pupils and teachers (see table 16). In slightly over 15 per cent of the school latrines visited this was not the case though. Access is in almost all cases easy and sufficient because, with exception of one toilet, all school latrines were next to the school and easy to reach, also for handicapped children.

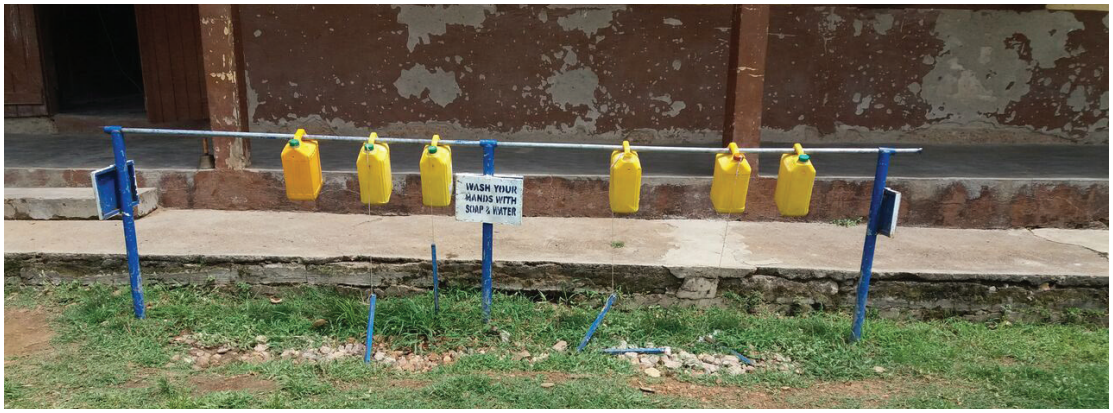
TABLE 16: EFFECTIVENESS RATING OF SCHOOL TOILETS

Topic	Average score
Capacity, coverage & access	3,6
Water yield & quality	1,9
Utilization	2,9
Functionality	2,9

The evaluators observed that the water quality of the roof water catchment systems attached to the school latrines was poor. However, the purpose of this water is not drinking but hand washing and cleaning for which it is probably satisfactory. The quantity of water for hand washing and cleaning was often too little because there was no roof water catchment system in some cases and no other water source was nearby, or PE tanks were poorly connected to the gutters due to which no or only little water was present in the tanks or there were no proper taps from which water could easily be obtained.

[19] In many cases there was a tap at the bottom of the PE tanks but this is insufficient for hand washing while also their intensive use will damage the PE tanks as the taps were not fixated with brick or concrete work to avoid movement of the taps.

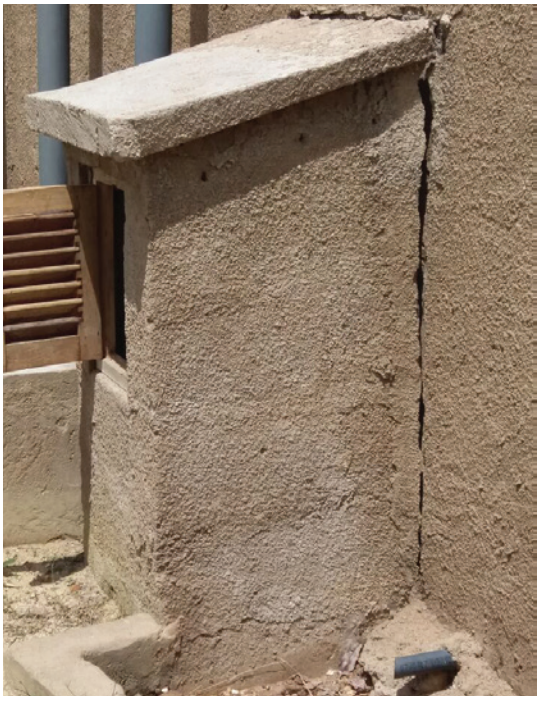
Utilization scores relatively low because (a) often the toilets were not clean in 27 per cent of the toilets visited, and/or (b) there was no proper hand washing facility[19]. In many cases schools claimed they lack water for cleaning and hand washing, which was observed to be true. Water collection for use in the school is usually done by the pupils. One school head teacher claimed that because the food programme in the school had stopped pupils did not have sufficient energy to collect water more than once a day. He stated that now that the food programme was starting again they will start to collect water twice a day. In most schools (77 per cent) teachers + pupils indicated to be satisfied with the school toilets.



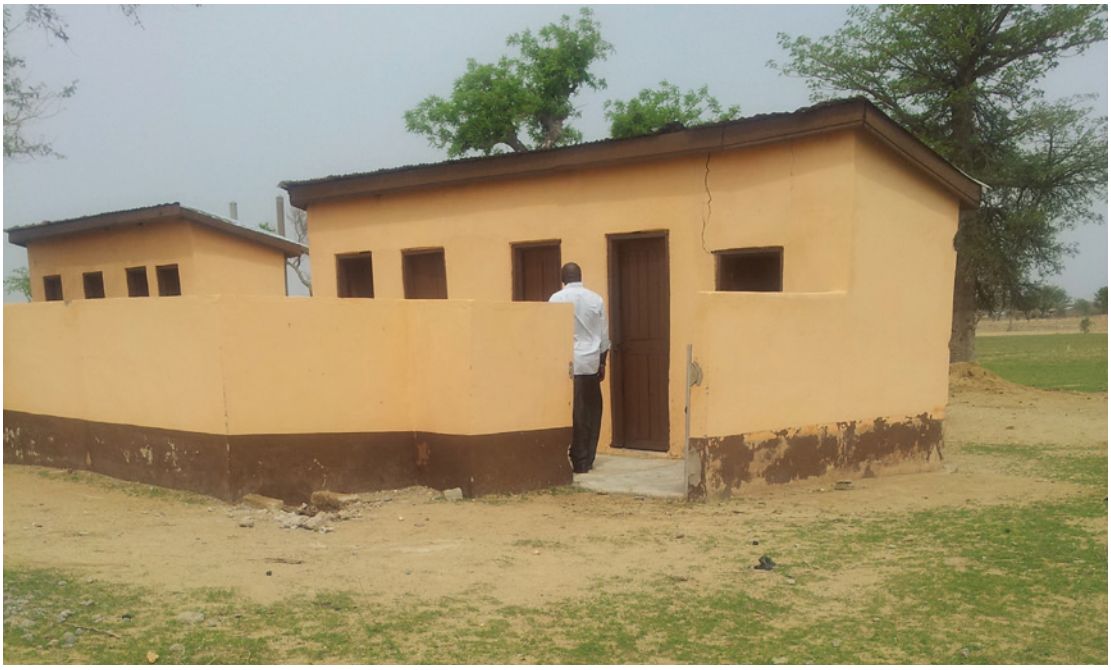
Hand washing facility in a school in Douri in the Jirapa district

Functionality scores rather low. Although the facilities have in most cases (85 per cent) not failed yet the main reasons for the relatively low scores are that required repairs were not executed as long as they did not completely hinder the use of the facility (and even then it is doubted whether the schools will repair the facilities), several school toilets did not have hand washing facilities or they were inadequate, broken or only partially functional. The evaluators spoke with some teachers who claimed they have hand washing containers in the classes, but often not containing water.

The evaluators also have some doubts with some parts of the design of the school latrines as explained below.



Construction defect on a toilet facility in a school in Kpare in the Daffiama Bussie Issa District



Kassena Nankana West district, Amutanga village. School latrines has cracks in the walls at different places which probably indicates improper foundation. In this case the lining of the pit is also the foundation, hence probably the lining is no good. Doors had fallen out and the roofing plates were loose and broken due to the wind. This latrine should be considered dangerous and be closed!

The design of the school latrines is rather good, but often not well implemented (see also the remarks regarding the quality of the school latrines further on). This the evaluators believe has a connection to the design as well. A design is not merely a technical drawing showing how the facility should look like. The design should also describe in detail the different quality standards for each of the materials used, e.g., cement quality, mortar mix, concrete mix, quality of bricks used, amount and dimensions of reinforcement bars in the different parts where reinforced concrete is used, minimum quality of the PE tank, gutters, etc. and construction works, e.g., pit digging, depth of trenches, how the lining should be put in place, etc.Looking at the different toilets constructed and the large variety in quality the evaluators feel this has not or insufficiently been done and probably also not or insufficiently been monitored.

Other design issues observed were: limited privacy in the girls urinal, limited quality of the floors in front of the cubicles, poor foundations under the outer walls of the toilets, poor connection of the urinal part to the cubicles part (often cracks in the wall at the connection of the two parts), door frame timbers of poor quality (in some cases they were already affected by termites), pit lining and pit walls are constructed with bricks and mortar while for long-term use these should be reinforced concrete, menstrual material from the changing room for girls is designed to drain into a separate chamber behind the toilet. The chamber was sometimes there and sometimes not, in the second case often with a bucket in the changing room instead. It seems girls are often afraid to leave their menstrual materials behind out of fear that people come and collect it to use for witchery practices, hence pilots are required to find solutions such as for instance to include in the design the incineration of these materials as was suggested by one district environmental health officer. In none of the cubicles were handles fixed on the wall for handicapped persons. Sometimes there was no roof water catchment system, while also no other water sources were present.

COMMUNITY LED TOTAL SANITATION

People make active use of the awareness raised of which the effect is that large numbers of the beneficiaries have constructed latrines and are proud of it, a huge achievement! This translates into high scores for capacity and coverage in most communities all people were covered (see Table 17). Water yield and quality are not relevant for CLTS hence no scores for this topic. Utilization scores high because most people used the awareness raised to construct a latrine and use it hygienically.

TABLE 17: EFFECTIVENESS RATING OF CLTS

Topic	Average score
Capacity, coverage & access	3,9
Water yield & quality	
Utilization	3,7
Functionality	2,9

For functionality the average score is relatively low because for 20 per cent of the questions belonging to this subject the answer obtained a score of 2 or less. The reason is that many latrines collapsed, especially in Upper East and parts of Northern region, because during the CLTS sensitization people were insufficiently guided on flood and wind resilient designs. Interestingly people found many innovative ways to rebuild latrines often again with local materials but with more flood resilient designs.

During CLTS sensitization traditional latrines should have been piloted together with community members to learn from their experience and insights and come to feasible designs suited for the community. Per community this means customized designs that fit to the natural circumstances (soil and groundwater conditions), the morphology, e.g., if located in a depression the latrine needs to be flood and runoff resilient, and the motivation and possibilities of people to form VSLA or other types of credit and saving groups to spare money for improved types of latrines, as well as the financial reserves people have.

VILLAGE SAVINGS AND LOANS ASSOCIATION

Capacity, coverage and access scores relatively low because many communities don't have a VLSA group, even if sensitization has been done, and the communities that do usually have 1 or 2 groups which do not cover the entire population (see Table 18). In several communities that have one or more VSLA groups there are groups that are not active. Also communities were found that do not have a VSLA group because they already have other types of saving and credit groups.

TABLE 18: EFFECTIVENESS RATING OF VSLA

Topic	Average score
Capacity, coverage & access	2,6
Water yield & quality	
Utilization	2,6
Functionality	3,1

Utilization also scores relatively poor with nearly 60 per cent of the answers to questions under this topic having a score 2 or lower (meaning the situation regarding the question is believed to be poor or very poor). The following reasons are involved: the VSLA sensitization did not always lead to the formation of VSLA groups (people did not use information or awareness raised by the sensitization to form groups), funds from VSLA are not often spent on the construction of latrines, and VSLA groups are not always active/functioning. On the other hand, it should be said that members of a lot of the functioning VSLA groups express a high level of satisfaction with these groups.

Functionality scores relatively low on the question whether the service failed in the last year. The reasons include that many VSLA groups are not active, in many communities despite the sensitization no VSLA groups were formed and also several active VSLA groups were found to not use the saved money for construction of latrines but for other purposes. The evaluators believe that the way sensitization is done to motivate people to form

VSLA groups is good while also the way people are stimulated to organize things within the groups is well designed. This is also seen in VSLA groups that are active and that do use part of the saved money for construction of latrines. People cannot be forced to be active or use their own money for construction of latrines. Hence it is probably wise to accept that VSLA groups have a wider objective upon which their level of success should be evaluated. The fact that on average in a community there are one to two VSLA groups is a huge achievement. It is simply unrealistic to expect all households in a community to take part in a saving and credit group as a result of a limited sensitization intervention while many people simply choose not to go for such a group no matter how much sensitization is done.

Success of the VSLA initiative could probably better be defined for instance in terms of achieving at least 1 active VSLA group per community with per year two members using saved money to construct an improved latrine. In the PMF document the indicator for success in this regard is 24 active VSLA groups in total. This number is widely surpassed as the consultants identified at least 40 active VSLA groups in the 46 communities visited (16 per cent of the total number of programme communities). However, although achieving VSLA groups in part of the communities is good, the consultants believe it is better to implement a credit and saving initiative to cover all program communities, sensitizing all people and enable those who want to be part of a VSLA group to do so. Otherwise the danger is there that the initiative is a side business, which may have been the case in the programme. In addition, the design of the VSLA initiative is restricted to sensitizing and guiding people in these groups during but not beyond the programme period which is poor practise.

4.5.6 Efficiency

Programme efficiency regards the efficiency in terms of collaboration, integration of activities and so on, as well as efficiency in regard to the actual costs made. The efficiency of collaboration, integration, etc. was limited, although improving throughout the programme. It should not be underestimated what the involved complexities are of a programme like the WASH in DPC programme in terms of efficient implementation. Good examples of efficient working were trainings and workshops in which usually participants from different districts and even regions participated which also boosted exchange of experience and collaboration between the districts and regions while the PUNOs at their level tried to join each other in the field when possible and streamline their activities in order to avoid overlaps. Unfortunately still some overlaps were found, especially in the trainings provided at the district and regional levels and in the guiding documents produced.

Efficiency was also hampered by factors outside the influence sphere of the PUNOs such as the rainy seasons during which drilling was impossible. On the other hand efficiency was hampered by things within the influence sphere of the PUNOs, like too stringent cash transfer arrangements due to which for instance CWSA had to stop drilling works at a certain moment as it ran out of cash. Also the choice of the programme to work with flood prone communities of which many were far apart from each other has not contributed to the programme efficiency.

Another factor that has probably had an effect on efficiency was that most PUNOs did not have field offices in the regions, which meant higher costs for going to the field, and limited local networks and contacts.

Programme cost seems high considering the following maximum prices and price ranges which the evaluators find are reasonable and include organization, management and overhead costs[20]:

- The investment costs for water facilities is put at USD 15 per beneficiary[21],
- For sanitation awareness (which led to production by people of latrines) around USD 5 per beneficiary should be budgeted as a maximum for a three year period.
- For training and guidance of VSLA groups about USD 5 per beneficiary is a maximum for a 3 year period.
- For school sanitation + awareness a maximum of USD 30 per pupil should be budgetted.
- For disaster preparedness awareness in the way executed by the programme a cost of maximum USD 4 per beneficiary seems reasonable for a three-year period.

Calculating the maximum programme cost with the above figures gives the result (costs are in USD) shown in Table 19.

TABLE 19: COST BY PROGRAMME PART

Programme part	Nr. of beneficiaries	Maximum cost/ beneficiary	Total maximum cost (USD) million
Water facilities	211.390	15	3,17
Sanitation awareness (incl. CLTS, pro-poor latrine, artisans training and hygiene awareness)	280.000	5	1,40
VSLA	50.000 (estimate)	5	0,25
School sanitation + awareness	60.000	30	1,80
Disaster preparedness awareness	280.000	4	1,12
		GRAND TOTAL	**7 ,74**

The above indicates that the programme was expensive, not so much for the hardware and software parts as argued (together comprising somewhere in the order of USD 7,7 million as shown above, about 50 per cent of the total programme cost), but on other aspects.

Factors, the evaluators believe have increased programme costs, are the many organizations involved (all with their overheads, managerial and other internal costs, etc.), remote areas and communities, high costs for salaries of high level staff and consultants, the many assessments and surveys executed which were not always fully relevant, overlaps in works executed, and inefficient ways of working.

[20] The awareness costs were compared to a rural water, sanitation and community development programme executed by the charity Connect International in Tanzania, Zambia and Mozambique for five years (2006 – 2010), reaching 250.000 to 500.000 beneficiaries per year. Beneficiaries were guided and trained weekly in groups by community coaches who were trained intensively (two weeks initially full time and after that one full day per month) and guided by staff of the involved local partner organizations of Connect International. Those staff on their turn were regularly trained and guided by staff of Connect International, based full time on site, and by consultants. The costs for the software part of the programme (which covered a wide range of issues, including WASH awareness, disaster prevention, preventive and curative health, agriculture, small businesses etc. and included guided action by large numbers of village action groups, e.g. including latrine construction, improved hygiene and health behaviors, and instigation of small businesses) was around USD 1 per beneficiary per year, including also costs such as management and overhead of partners and Connect International. For the described costs, in the text stated to be acceptable, somewhat more than this amount has been used to avoid being overly critical. The in this way obtained maximum total expenditure for the software parts are almost the same as the total amount budgeted for in the programme for all software parts (at all levels together). This means that the costs of the software parts of the programme (including the activities at all levels) was reasonable.

[21] The cost is based on the number of beneficiaries of water works as reported by UN-Habitat in its Excel document presenting all water Works realized (211.390) and the costs of all water works as derived from the audit reports availed to the consultants by UN-Habitat of the sub-contracted organizations who where responsible for implementation of these Works (USD 2.278.110). Some amount is added to account for overhead, management costs etc.

4.5.7 Impact

Described as 'The ultimate outcome of the programme' in the PMF and the ToR, but in actual fact the impact the programme hoped to achieve, was: to reduce the burden of WASH-related diseases among men, women, boys and girls in disaster-prone communities in northern Ghana. Findings confirm that significant improvements in this regard have been achieved among the people who were actually covered with the facilities and services provided by the programme, which differs per type of works realized by the programme as stated and explained before. The achievement of a significant contribution to the described impact is based on the ToC and the Minimum Evaluation Procedure, which assumes that if functional WASH facilities are put in place and if these are utilized properly it is for sure that a considerable positive health impact and reduction of burdens is achieved among the people accessing these facilities.

4.5.8 Impact at district level

A key finding was improved health behaviours (hygienic use of toilets, using water from safe water points, hygienic use of and clean school toilets and compounds) resulting in improved WASH related health, largely because of the CLTS capacities and efforts of the districts and the trainings provided in schools. Especially CLTS and the school based trainings and awareness raising capacities of the districts contribute to the programme health impacts.

Capacity for VSLA facilitation does not contribute much to WASH related health impacts in communities as people currently hardly invest in WASH (improved latrines) through these groups as described earlier as well (although this may of course change in the future, but the expectations of the consultants in this regard are limited, also because the VSLA groups require further trianinga and guidance which may not materialize anymore). Other capacities such as capacities for DRR and safe water planning trainings and sensitization, monitoring, etc., contribute much less to WASH related health impacts because the districts were trained and supported too short term to do so properly, and only have limited capacity to execute these capacities properly and over sufficient prolonged periods of time.

4.5.9 Sustainability

Acknowledgement is to be given to the programme results and outcomes with a reasonable to high sustainability. Especially the below ground parts of the boreholes realized, and the achievements of the CLTS part of the programme which has accomplished that now the need of toilet facilities and hygiene is anchored in most people's heads even if no further follow up is given. In schools the sensitization and training efforts have resulted in structures and motivation to keep the schools hygienic, both the toilets and surroundings of the school, while pupils also take their awareness back home. Due to teachers who understand the importance of this and the pupils involved who keep informing new ones it is believed that this also is a reasonably sustainable part even though it will not be followed up in a strong way. It leaves it to the motivation and capabilities of involved DEHOs visiting the communities now and then.

The O&M structures for water points may not be optimal, but the combination of good boreholes, often quite strong pumps (especially Afridevs) and the motivation of many beneficiaries to at least pay for small repairs will most probably in the majority of water points mean a reasonable long-term functioning in terms of water provision to people, expected for at least five and maybe 10 years or longer.

The sustainability of the programme achievements however, also leaves much to be desired. Quite some of the realized facilities are of limited quality (many traditional latrines, part of the school latrines and some of the water points) and often not resilient to the disasters threatening them (notably traditional latrines and some of the water points). Important is also that the community and district level structures to operate and maintain (and repair) facilities are insufficiently developed in terms of financial resources, expertise, materials, tools and equipment.

Hence, although many of the facilities are now functional and as such significantly contributing to the programme objective the evaluators foresee that in a few years time several of the facilities may start to fall more and more into disrepair. Quite some of the programme software in the communities was one-off or in need of follow up which is not (sufficiently) provided for (e.g., DRR and other WASH awareness issues that were covered by the different trainings and sensitization events held in the communities).

The effects of these inputs are therefore limited and most probably not or insufficiently sustainable. From government side, it was revealed that they do not have the capacity (and/or commitment) to sustain the programme results at all levels. The MDAs are constrained financially and logistically to effectively carry on with the project gains and may have other priorities. They are also constrained with monitoring and (preventive) maintenance measures. The institutions set up do not have the financial means, plans and procedures to ensure that they can cater for the products and services in a financially sustainable manner. The trainings given at the national and regional level are not sufficient to ensure sustainability as they were one-off and aggravated by the capacity issues in terms of materials, tools, equipment and finance, as mentioned.

4.5.10 Sustainability at district level

The built capacities by the programme may lead to sustainable results in the communities as these results are effectuated through multiple levels such as the school, the household and the community level, although in most aspects follow up and (preventive) maintenance by or with district support are required. However, the districts are insufficiently capable (partly in terms of knowledge, skills and time availability of district officers, but moreover in terms of materials, tools, equipment and finance) to take over and sustain programme infrastructures and services, such as water quality testing, (preventive) maintenance of WASH facilities and continuation of CLTS, VSLA and WASH awareness raising activities. A limited drive of district leadership may undermine district capacities.

The districts, however, are enthusiastic about the idea and role of the DTTs and are motivated to try to continue with these committees. It was even claimed that NGOs are starting to copy these approaches. The districts want to try to continue CLTS and VSLA facilitation and expand these to other communities despite the lack of resources for these activities. The districts also require infrastructure for preventive maintenance of water points and repair of school latrines. However, the knowledge and finance required for this are lacking.

The sustainability of realized WASH facilities and services at the community level remains a challenge largely because the districts are not sufficiently positioned to carry out required tasks for this. For instance, water quality testing and facility repairs are problematic as most districts do not have the infrastructure and resources for them. They are also not executing preventive maintenance in water points and schools and have not instituted a robust system to detect and report issues with water and school infrastructure. In some communities visited WASH infrastructures are already recording problems. The question also is whether all these requirements should be covered by the districts. For instance (preventive) maintenance of water points, and possibly also school toilets may need to be placed under regional or even national levels (for instance CWSA setting up structures for preventive maintenance of water points as it is planning and willing to do but lacking the required financial resources for).

4.5.11 Sustainability at output level

TRADITIONAL HOUSEHOLD LATRINES

TABLE 20: SUSTAINABILITY RATING OF TRADITIONAL HOUSEHOLD LATRINES

Topic	Average score
Financial Sustainability	4,0
Institutional sustainability	3,3
Environmental sustainability	3,3
Technical sustainability	3,3
Social sustainability	3,8

Table 19 shows that financial and institutional sustainability score high because people can sustain their toilets with local materials and with their own labour, in which women usually fulfil a central role in terms of labor for cleaning, but also where the toilet is built or rebuilt, whether to allow others to use it. However, the scores were lower for the question of people actively carrying out large repairs or constructing new latrines after they collapsed (from the answers found for the question it can be derived that at least 20 per cent of the households confronted with a collapsed latrine returned to open defecation).

Environmental sustainability is good with regard to most hazards except for floods, rain and run-off, including rising water tables, as discussed before.

Technical sustainability seems satisfactory. This is because the latrines can be maintained locally with local skills and materials. However, with regard to the quality of the product, over 30 per cent of the latrines score poorly. This concerns latrines that collapsed or could collapse in the future, meaning that for the circumstances their quality is insufficient.

Social sustainability is quite good as all persons in the household can use the latrine (if it is functional), the latrines are accessible and user friendly in most cases, they are near their houses and they have clear positive effects on women and girls (less burdens, less diseases, etc., as explained before). Still, the evaluators did not see any adapted latrines for handicapped people.

IMPROVED HOUSEHOLD LATRINES

TABLE 21: SUSTAINABILITY RATING OF IMPROVED HOUSEHOLD LATRINES

Topic	Scores
Financial Sustainability	4,0
Institutional sustainability	3,8
Environmental sustainability	3,7
Technical sustainability	3,8
Social sustainability	3,8

Table 20 shows that financial sustainability scores high because people can sustain the toilets themselves, without the need for a specific financial system. Cleaning is done by the household members.

Repairs can be executed by the households with local materials. Sometimes some cement or other materials may need to be bought but usually only small quantities, unless a latrine collapses and needs to be rebuilt completely.

Institutional sustainability scores relatively well for the same reason; people organize it themselves, in which women usually fulfil a central role (labour for cleaning, but also deciding whether allowing neighbours to use it or not, etc.). Of importance for the high score, and in some contrast to the lower score on this issue for the traditional latrines, is that because people invested heavily in their improved latrine and their motivation to properly operate, maintain and also repair it when needed is high.

Environmental sustainability is good with regard to most hazards except for floods, rain and runoff (including rising water tables), which also in improved latrines can cause problems in some cases as discussed before.

Technical sustainability is relatively high because all required O&M skills, equipment and spare parts are available at community level (often even within the households), maintenance is good and the quality of the improved latrines is often reasonable to good. As said before it is believed possible though to implement even better quality improved latrines for the same or even a lower cost if the design is adapted to a twin pit with small pits under the

platform and raised slightly above ground level. The quality of the construction is then of course of fundamental importance and with the work of the trained artisans it is believed that this will be satisfactory to good, although monitoring and guidance will remain required (e.g., by environmental health officers who are in the communities relatively often, but currently do not have the technical skills to do so).

Social sustainability is quite good as all persons in the household can use the latrine, the latrines are accessible and user friendly, they are near their houses and they have clear positive effects on women and girls (less burdens, less diseases, etc. as explained before). Still, the evaluators did not see any adapted latrines for handicapped people. The only set-back is reflected in slightly lower scores for two of the five questions under this topic, is that not all households will be able and/or willing to pay the construction cost of an improved latrine.

MECHANIZED BOREHOLES

TABLE 22: SUSAINABILITY RATING OF MECHANIZED BOREHOLES

Topic	Average score
Financial Sustainability	2,6
Institutional sustainability	2,5
Environmental sustainability	3,8
Technical sustainability	2,5
Social sustainability	3,8

As indicated in Table 21 financial sustainability is rather poor because in at least halve of the mechanized boreholes there was not a proper funding system and insufficient money for O&M. Only in one case a solid finance system was found, in one of the minigrids, where people pay 0,1 Cedis per 20 litre which should yield somewhere around 2.000 Cedis (USD 400) per month.

However, it is believed the income is not that high as there are people who refuse to pay which may at a certain point undermine the whole system (hence the remark that it remains to be seen how this system will work out in practise in the longer term). In other systems, people pay a fixed amount per unit of time (differing form two weeks to six months).

However, in all cases the representatives of the WSMTs admitted they had only just introduced or were about to introduce the payment system and currently have no or hardly any funds available for O&M. If both schools and households use a water system (found in one case) there is some struggle regarding who should pay what and when. In the one case found they already solved it with an agreement that households will pay 2 Cedis/2 weeks (which seems a lot though and will probably not be accepted by quite some people) and the school will pay 1 Cedis per pupil per term of three months.

This is also the main reason for the relatively low scores for institutional sustainability; the not (yet) functioning of the O&M system. The scores are also low because the systems visited are there for at least six months and only now the involved WSMTs (all trained by the programme) start to think about their financial and O&M system. Of course, the situation may improve, especially if the WSMTs are properly guided by the district environmental health or other officers (although there are no resources to do so).

Environmental sustainability is relatively good because the water systems are only partly vulnerable to drought and resilient to flooding. But climate change may potentially cause drying of boreholes in the future. Temperatures in Northern Ghana are predicted to increase while it is likely that rainfall will decrease at least to some extent[22]. This may mean that boreholes will start to fall dry in the somewhat further future.

Technical sustainability scores rather low because solar and electrical pumps were seen to give problems in two out of five cases while in a third case there was also an issue (though much less serious) which was not resolved. Area mechanics cannot repair solar systems, electrical pumps and all the parts needed for them. When parts break (which it seems they often do), they cannot be repaired in the community and in practice, as was observed, stay idle for a long-time leaving people deprived of

[22] Sources: Rainfall and temperature changes and variability in the Upper East Region of Ghana. Abdul-Rahaman Issahaku Benjamin Betey Campion Regina Edziyie. First published: 21 July 2016 https://doi.org/10.1002/2016EA000161; Ghana EPA and others.

water. People were asking for hand pumps instead, which was actually granted by the programme in one of the five systems observed.

The two minigrid systems were of good quality in general (with some issues such as PE pipes not entrenched deeply enough) but two other stand-alone systems (one with solar and one connected to the grid) had quite some quality issues. Issues includiepoor quality PE tank, poorly fixed with rusty wires to the raised platform, which could actually lead to dangerous situations, if the tank would tumble down the platform, cattle troughs with still standing water because the outlet is too high and/or the floor is sloping in the wrong direction, drain is a PVC pipe which can get blocked easily, poor plasterwork pump house and raised (concrete or brick) platform. Important is that the boreholes seem of good quality, but they were already in place.

Social sustainability scores high because the water systems can be used by all people, are sufficiently nearby and have a positive effect on women and girls (less diseases, meaning less burdens to take care of ill persons, nearby facilities mean less burdens for water fetching, etc.). Some of the poorest households in some of the systems may find it difficult to pay for the water, but in practice it is often seen that the community solves this, for instance by giving discounts to the poorest households.

NEW BOREHOLES WITH HAND PUMPS

TABLE 23: SUSTAINABILITY RATING OF NEW BOREHOLES WITH HAND PUMPS

Topic	Average score
Financial Sustainability	1,7
Institutional sustainability	3,1
Environmental sustainability	3,5
Technical sustainability	3,2
Social sustainability	4,0

Table 22 shows financial sustainability is poor because in most cases people simply do not have a proper financial system to have money for O&M. In most cases people collect money as soon as technical problems occur. As repairs can be quite expensive in practise often the repair simply is not done, with the ultimate stage of a water point standing idle. It depends on the alternatives that people have for water collection and whether they are good or poor alternatives. If no other water source is nearby people are usually motivated to bring together whatever funds are needed. However, if there are alternatives, even if these are poor in terms of water quality, water availability and/or collection distance and burdens, people often refuse to pay for expensive repairs. At the boreholes visited it was found that in most cases people were probably highly motivated to repair their pumps when needed as the alternatives are limited. It also depends on whether people will be able to pay for a repair at a very short notice. Whatever the alternatives people have for their water and whatever their capabilities to pay, it is clear that the haphazard financial system is vulnerable and a potential danger for the longer-term sustainability of the water points although this vulnerability will probably only surface in several years to come as the facilities are new.

Institutional sustainability actually scores quite well on issues such as the presence of WSMTs (also called water committees; in almost all cases there was a trained WSMT), capability and motivation of the WSMTs (both men and women) and involvement of women in these committees (usually at least 30 per cent). The scores are very low concerning the question under this topic regarding the functioning of the O&M system, which was found to be poor in most cases, mainly due to the vulnerable finance system for it, while also some doubts exist regarding how active these water committees are if it comes to maintaining and repairing the facilities.

Environmental sustainability is good because the water systems were found to be less vulnerable to drought and quite resilient to flooding (with some concerns in case of severe flooding). In the longer run both (extreme) flooding and drying up of boreholes could increase due to climate change, as explained in the former sub paragraph.

Technical sustainability scores rather good with regard to the quality of the products (taking the design issues described earlier into account, which will need attention, while also quality of implementation may improve with regard to plaster work and possibly entrenchment of the platforms) and maintenance state (currently good in most cases, also because the products are still very young). The evaluators feel that it would be best if platforms, drains and all other stone works are executed in thigh quality reinforced concrete. This will improve the lifetime of these parts of the facilities enormously and make the facilities look even more robust and attractive (although the quality is not bad at all, it is just argued that it could be better and that investing slightly more money into it is worth the investment for such intensively used facilities). Scores are lower with regard to the availability of O&M skills and equipment and spare parts, which are not sufficiently available at the community level. Trained community caretakers are there but they can only do very simple tasks; in the districts are also area mechanics who are capable to do larger repairs, but they cannot always be on site quickly.

Social sustainability scores high because the water systems can be used by all people, are sufficiently nearby for the intended beneficiaries and have a very positive effect on women and girls (less diseases, meaning less burdens to take care of ill persons, nearby facilities mean less burdens for water fetching, etc.).

REHABILITATED BOREHOLES WITH HAND PUMPS

TABLE 24: SUSTAINABILITY RATING OF REHABILITATED BOREHOLES WITH HANDPUMPS

Topic	Average score
Financial Sustainability	2,0
Institutional sustainability	2,9
Environmental sustainability	3,6
Technical sustainability	3,1
Social sustainability	3,8

As shown in Table 23 the financial sustainability is poor for the same reasons as mentioned for new boreholes with hand pumps; in most cases people simply do not have a proper financial system to have money for O&M; people start to collect money as soon as technical problems occur. As repairs can be quite expensive in practise a repair is not done as long as things more or less function, with the ultimate stage of a water point standing idle and at that point users being unable to bring up sufficient money for the repair or replacement of parts.

The motivation to bring up the required money when really needed largely depends on the alternatives people have for water collection, even if they are poor alternatives e.g., with poor quality water or far away sources. Whatever the alternatives people have for their water and whatever their capabilities to pay, it is clear that this haphazard financial system is vulnerable and a potential danger for the longer-term sustainability of the water points.

Institutional sustainability scores quite well on issues such as the presence of WSMTs (in almost all cases there was a trained WSMT), capability and motivation of the WSMTs (both men and women) and involvement of women in these committees (usually 30 – 50 per cent). The scores are low concerning the question under this topic about the functioning of the O&M system, which was found to be poor in most cases, mainly due to the vulnerable finance system for it, while also some doubts exist regarding how (pro) active these WSMTs/water committees are if it comes to maintaining and repairing the facilities.

Environmental sustainability is good because the water systems are hardly vulnerable to floods because where floods may occur the sources were made flood resilient. It is noted though that only few of the boreholes had raised platforms (30 per cent as reported by UN-Habitat but found in only 17 per cent of the boreholes visited by the consultants) which is not required where flooding does not occur but is strange in the light of a programme particularly focusing on flood prone areas. If boreholes are put in flood prone areas at highest poinst where the floods cannot reach, the water point does not necessarily need to be flood resilient. The evaluators felt that sometimes flood resilience was required, at least to some extent, but not in place. A main challenge is drought: 36 per cent of the rehabilitated boreholes with hand pumps were found to have limited yields in the dry season. In the longer run both (extreme) flooding and drying of boreholes could increase due to climate change.

Technical sustainability scores reasonable with regard to the quality of the products taking the design issues described earlier into account, which will need attention, while also quality of implementation may improve with regard to plaster work and possibly entrenchment of the platforms. Add themaintenance state, which was reasonable in most cases, although in several cases it was noted that the pumps do not function optimally as described earlier. The evaluators feel that it would be best if platforms, drains and all other stone works are executed in high quality reinforced concrete and with a slightly adapted design (open drainage canals, cattle trough with outlet at the bottom and floor sloping towards the outlet, and a soak-away, a drainage of the upper platform designed differently so that waste water spills in the drain and not onto the lower platform, while the drainage of the lower platform should enter into the main drain and not through a hole to the outside of the lower platform). Strong reinforced concrete platforms and drains will improve the lifetime of these parts of the facilities enormously and make the facilities look even more robust and attractive. The quality is not bad, it is just argued that it could be better and that investing slightly more money into better materials is worth the investment for such intensively used facilities.

Scores under the topic of technical sustainability are lower with regard to the questions about availability of O&M skills (trained community caretakers are there but they can only do simple tasks; in the districts are also area mechanics who do larger repairs, but they cannot always be on site quickly) and equipment and spare parts (not sufficiently available at the community level). In this regard the evaluators support further standardization of the hand pumps implemented through a WASH programme.

Reasons would be that for area mechanics it is difficult to have skills and spare parts for all kinds of different pumps, spare parts of some pumps are more expensive (claimed by area mechanics to be the case with the Nira pump), and T-handle pumps are less user friendly than other types of pumps. It is also for this reason and simply because they were often very old, argued that it would have been better if all T-handle (Nira) pumps in the rehabilitated boreholes had been replaced with Afridevs.

Social sustainability scores high because the water systems can be used by all people, are sufficiently nearby and have a positive effect on women and girls with less diseases, less burdens to take care of ill persons, less burdens for water fetching, etc.

SCHOOL TOILETS

TABLE 25: SUSTAINABILITY RATING OF SCHOOL TOILETS

Topic	Average score
Financial Sustainability	1,1
Institutional sustainability	2,3
Environmental sustainability	4,0
Technical sustainability	2,9
Social sustainability	3,8

Schools have no funds or do not want to spend their very limited funds on school maintenance, notably repairs. This is also the main reason for the relatively low institutional sustainability score (see Table 24). Environmental sustainability is good because the latrines are slightly raised above ground

and therefore less prone to flooding while other hazards such as drought are believed not to affect the latrines. It would be good if around the school toilets, earth and stones could be put raising the ground so floods and runoff cannot come near the toilets and drainage of the direct surroundings of the toilets (and therewith hygiene) further improves.

Technical sustainability scores rather low because the maintenance state (both hygiene and hardware) was found to be inadequate in about 50 per cent of the toilets visited while in 30 per cent of the toilets it the hardware quality itself was insufficient. Typical quality problems found in several school toilets include timbers of door frames eaten by termites and/or not well attached to the wall, cracks in the walls and poor plastering (often seen), doors out of their hinges, no fly screen on vent pipes, vent pipes poorly attached to the walls, absence of a roof water catchment system, absence of hand washing facilities, cracked wall between urinal and cubicles part, cracked outer wall probably due to insufficient foundation and/or poor mortar quality (or too quick drying of it), twin pit holes both open (quite often), poor quality PE tanks (quite often), poor pipe connections between gutters and PE tank, poor PE tank platform and stairs, PE tank poorly attached to the platform (with rusty wires), poor gutter connections.

In some cases, the pit lining is poor and cracks in the cubicle walls (although usually minor) were observed. In some schools, the roofing plates had come loose from the roof due to wind (needs better solution and attachment), absence of collection chamber for menstrual material. All of this requires a better design, including detailed description of the minimum standards and way of working required, and better and more intensive monitoring, working through trained and capable monitors who use detailed check lists with indicator questions per each construction stage.

Social sustainability scores high because the facilities can be used by all pupils and teachers, they are usually near the school, pupils do not pay for the service and, most of all they have a huge impact on the female pupils as they can change their menstrual material (though in some cases they fear to do so as explained earlier) which enables them to attend school also during their period, which increases their learning, happiness in school and self-esteem, while probably it even contributes to reducing the numbers of girls leaving school before finalizing it.

There were also two schools in which one block of cubicles was rehabilitated. This was done by splash plastering the walls, which is poor practice as this type of plaster will most probably start to peel off from the walls within a few years time.

COMMUNITY LED TOTAL SANITATION

TABLE 26: RATING OF CLTS

Topic	Average score
Financial Sustainability	2,1
Institutional sustainability	2,0
Environmental sustainability	
Technical sustainability	2,9
Social sustainability	3,9

Table 25 shows rating of CLTS. Because CLTS activities started late in the programme and were not yet completed when the programme finished and/or still needed expansion to other parts of the communities. In some districts, for instance in Bunkpurugu the CLTS activities are taken over by other programs (in Bunkpurugu this is the 'Accelerated sanitation program') but in most districts CLTS has to be continued and expanded without any further finance available for it.

Although communities developed bye laws to ensure their ODF status is sustained (looked after by natural leaders) regular follow up by district officers will be required. During the programme such (environmental health) officers were provided fuel, although too little, for their personal motor bikes (paying for maintenance and depreciation of their motor bikes themselves).

These officers now even pay the required fuel for continuation and expansion of the CLTS activities themselves. The programme has not anticipated on this in its design. Still the situation may be sustainable if environmental health officers continue

to provide the service on their own expense, but this is not how it should be and it is also likely that at some point environmental health officers may start to refuse to do so. Environmental health officers are pretty busy with other things, and their attention tor CLTS may and probably will diminish in the longer run. This is the reason for the low score for financial sustainability. It is also related to the failure of the VSLA approach to enhance people to save money for improved latrines (see further on).

Institutional sustainability was related mainly to the difficulty that districts have to continuing CLTS beyond the programme period and the vulnerability of communities, despite their bye laws, to keep up their ODF status and expand it to further advanced stages (e.g., by increasing the number of further improved, more disaster resilient latrines). Environmental sustainability questions were not relevant for CLTS hence no scores have been given to these questions.

Technical sustainability was about the quality of the CLTS sensitization. It scores relatively low because CLTS did not incorporate piloting of latrine designs per community. The evaluators found that more flood and other hazard resilient latrines were required in up to 65 per cent of the visited communities, though differing per region, in some of which all or a large part of the latrines collapsed!

However, the social and awareness raising part CLTS was very well implemented by the involved environmental health officers. This could easily be determined by the way people responded to the questions about their latrines (high motivation and pride) and the fact that where latrines had collapsed, despite the disappointment over it, people have started to implement improved latrines, often again with local materials but with, often innovative, better customized designs for the circumstances. Alternatively, some people spared money, often in VSLA groups, for improved latrines with for instance brick and mortar linings, a concrete slab and/or a brick superstructure.

Social sustainability of CLTS is high because CLTS is accessible for all people inside their own communities in the local language and custom made. Also, CLTS had a direct positive effect on women as they were involved in all stages and built important awareness with regard to sanitation and hygiene. The effect of CLTS (latrines made by the people and hygiene behaviours) had a positive effect on women and girls as explained in the next paragraph.

VILLAGE SAVINGS AND LOANS ASSOCIATION

TABLE 27: SUSTAINABILITY RATING OF VSLA

Topic	Average score
Financial Sustainability	(2,0)
Institutional sustainability	(2,0)
Environmental sustainability	
Technical sustainability	2,3
Social sustainability	3,8

Table 26 shows rating of VSLA. The VSLA groups are not dependent on any finances for their existence and operation as the groups are run and sustained by their members.

However, the VSLA groups need continued guidance and enhancement by professionals, such as for instance the district environmental health officers. For this funds are absent beyond the programme period hence the low scores.

Institutional sustainability scores high on issues like the governance of the groups and involvement of women in governance (they are largely women led) which in the active VSLA groups functions well. However, the same problem as described for financial sustainability is apparent: guidance and enhancement is required in the longer term to keep these groups active and properly governed, which beyond the programme is not in place and will depend on whether districts will find other sources of funding for it (which most will probably not). Hence also low scores for this topic.

Technical sustainability for VSLA groups depends on the quality and how active the groups are. Since quite a few groups are not active or not functioning optimally the scores are relatively low. Important is to understand that the quality of the VSLA groups

is an outcome rather than an output on which the influence of guidance and enhancement by professionals (in this case district environmental health officers) is limited no matter how well they perform their tasks. It is believed that environmental health officers involved in the sensitization, guidance and enhancement of VSLA groups have done a proper job and are still doing so, largely with their own resources (paying for fuel, maintenance and depreciation of their own motor bikes themselves, as with the CLTS activities).

Social sustainability scores high because all community members can be part of a VSLA group if they wish, the groups and their way of working is open and easy to understand for all while they have large positive effects on women and girls by enabling women to become more economically active, realizing improved latrines with the described positive effects of these facilities for women and girls, increasing self-esteem of women, and so on. The only factor negatively affecting the score somewhat is that for the poorest people there may be a financial barrier to take part in a VSLA group if they feel they are incapable to set aside the required weekly payments in the saving funds.

4.5.12 Coherence, programme implementation approach, and reporting

The UN aims to 'deliver-as-one' in order to benefit from and complement each others expertise, approaches and infrastructure, and get things done better, cheaper and quicker. It is supposed to further contacts and collaboration with the government using the networks and contacts of each PUNO and putting weight to the programmes executed by the UN, enhancing GoG collaboration, support and learning. The WASH in DPC programme should be seen in this light and it did achieve intensive collaboration of and coherence with the relevant GoG structures, policies, etc.

It was found that the programme PMF was well-developed with clarity on the indicators to be measured, targets, data sources and means of verification taking into account the shortcomings and discrepancies described earlier with regard to the PMF and its outcomes. A disjoint was found between some of the indicators and their Intervention logic[23]. The institutions continually updated the PMF.

Although coordination was cumbersome at the beginning, with all partners having to get used to this new, collaborative working style in one programme, the PUNOs caught up and have realized and sometimes even surpassed all the planned results as laid down in the PMF and agreed with the donor. A huge achievement! Several of the staff of the PUNOs interviewed admitted (and some even strongly argued) that although on paper things were collaborated and coordinated, the actual fact was that each partner did its own things. It was more a division of the "cake" than an integration of each organization's activities. "Not sufficiently synchronized" was a term used by an interviewee. The lack of integration had negative consequences for the coherence of the programme, which was designed for a truly integrated intervention. Not doing so resulted in overlaps and gaps in activities, guidelines, training programmes, etc.

The arrangements between the PUNOs and the GoG MDAs and MMDAs and other partners at the national level was good in terms of assembling expertise in water, sanitation and hygiene. Important was the intensive exchange and collaboration, though not integrated between the PUNOs so much, but definitely working well in the field, between staff and consultants of the PUNOs and staff of especially the MMDAs. It is noted though that relatively few of the activities were actually executed by staff of the PUNOs, which hired consultants

[23] Examples: (a) The first indicator for the immediate outcome '1.110 Increased access to gender-sensitive, child-friendly , disaster-resilient and improved sanitation and water facilities in schools and communities in DPCs' is 'Number and Percentage of population (m/f) aware of the 3 behaviors for improved hygiene practices (- hand washing with soap, safe excreta disposal and household water treatment and safe storage-) in DPCs in 3 northern regions' which is not related to the outcome as it concerns a behavior while the outcome is about access to facilities. (b) The first indicator for the immediate outcome '1.210 Increased ability of community members and schools to treat water and adopt safe water storage practices before, during and after emergency situations' is 'Number of Water and Sanitation Management Teams (WSMTs) (out of total) provided training in household water treatment and safe storage systems in DPCs in the 3 northern regions'. The outcome is not a real outcome while the indicator is an output and not an outcome indicator. There are quite a few of these discrepancies throughout the PMF.

for most activities. This puts question marks at the capacity of the PUNOs to control the quality of the activities executed under their responsibility if they did not have the expertise in house to monitor and quality control such activities. Consultants are usually expensive, and , maybe most important, do not add to the institutional capacity and memory of the PUNOs. The main strength of the PUNOs seems to be their capacity to design and manage the the activities under their responsibility and the contractual and financial arrangements involved in them. This is an accomplishment because in order to ensure proper implementation in a logical and useful way of activities in the field, good oversight and in-depth understanding is required of what is possible and needed at the levels where the activities are executed.

There was one convening UN agency – UN-Habitat. Other PUNOs nominated Focal Persons for coordination and implementation of the programme activities. The arrangement proved to be challenging in terms of commitment. As said the PUNOs were more focused on implementing their parts of the programme and the level of cohesion was limited. The partners indicated that they found a crowding of agencies and overlaps. The UN agencies did not share common resources in the implementation of the programme, each PUNO concentrating on delivering its outputs with its budget.

The governance structures of the steering Committee, RTT and DTT were functional and played oversight role at all level of programme implementation. In fact, these bodies were instrumental in programme control particularly the steering committee. The RC of the UN played an instrumental role in the improvement of coordination and the speeding up of the implementation when this was required.

Programme design was based on the objective to assist flood prone communities with sufficient resilient facilities, including software required with regard to awareness, skills and structures to operate and maintain the facilities and hygiene in general both in the communities and in their respective schools.

Programme design was much influenced by the desire to ' deliver-as-one' approach which led to the inclusion in the programme of many different parties which had a positive effect on issues such as awareness raising among these parties, satisfaction of these parties and the GoG in general and support by the GoG and other parties for the programme activities and designs. It caused challenges however, for instance, the large geographical distances between the selected communities which raised costs and efforts (e.g., among drilling companies), coordination and integration of the programme activities with and between all parties, exclusion of communities bordering the selected communities. Probably most important was the programme design, which assumed to effectuate sustainability largely by training district and community level structures and actors that proved insufficient. The important link in the O&M chain for water points; area mechanics were not considered in the programme design.

Documents and reports produced under the responsibility of the PUNOs

Good quality documents have been produced. However, the consultants found it difficult to obtain a proper overview of activities, outputs and outcomes realized/effectuated. Information is often scattered over (many) different documents while also some subjects have only been partly and shortly described (e.g., water systems and safe water storage in schools, SanMark activities and District and Regional SanMark teams, sanitation supply chain activities, Community Technical Volunteers and latrine artisans, facility management plans and maintenance of school WASH facilities). It was difficult to find comprehensive descriptions of the roles and responsibilities of each PUNO and the organization structure of the programme[24].

[24] The Programme Implementation Manual provides an overview but presents a strange, incorrect and incomplete programme implementation structure. It also provides incomplete descriptions of the roles and responsibilities of the PUNOs. For UNDP for instance its role as administrative agent is well described but further only reference is made to its role to 'implement its programme component that ensures that assessment of environmental effects of projects are carried out when it is required'. For UNICEF among others referral is made to 'capacity development of national and local level WASH officers' and other statements that are subject to interpretation.

The evaluation team found in the review of documents that there was a lack of monitoring data about the quality of works and results. Assessment report go into some aspects of the quality of visited infrastructure and observed results but details about the quality of for instance trainings and workshops, construction works, and underground parts of facilities (e.g. boreholes and pit linings) are absent. This indicates that the monitoring capacity of the programme was limited, mainly focusing on gathering data regarding numbers of activities and results accomplished without assessing the quality of results.

4.5.13 Cross-cutting issues

These were quite well covered as the districts now have the awareness and capacities to include gender mainstreaming, handicapped persons, climate change and human rights issues in their WASH planning and implementation.

Traditional household latrines

The score is relatively low because traditional latrines are vulnerable to floods and wind (expected to increase due to climate change) and not adapted for handicapped people.

Improved household latrines

Improved household latrines are less vulnerable to floods and wind than traditional latrines (in most cases) but they are usually not adapted for handicapped people.

Mechanized boreholes

Flooding and drying of boreholes may increase in the future due to climate change which goes for each type of groundwater point.

School toilets

Scores for cross cutting issues in school latrines are tempered because disaster resilience, menstrual material disposal, privacy of girls' urinals, and use by handicapped persons still have room for improvement.

CLTS

Cross cutting issues have an important place in the software items implemented as they all incorporate gender issues, are accessible for handicapped persons, touch upon human rights for proper water and sanitation and in some cases focus on or take into account disaster resilience in WASH and climate change issues. For CLTS the limiting factor is the absence of piloting latrines to optimize them for the circumstances, especially where flood and wind hazards prevail and may deteriorate further due to climate change.

4.5.14 Visibility

The evaluators observed that visibility of the programme and the PUNOs in the communities was limited. School toilets did not have any indication of the PUNOs or implementing partners involved in school sanitation while new water points often had an indication of the implementing partner, but rehabilitated water points didn't. In some cases, even other parties claimed to be the implementers of programme facilities. At some larger structures, visibility was somewhat better with boards indicating the programme, the PUNO and the implementing partner.

Bunkprugu district, Jilik No.1 village. Proper visibility of a solar powered borehole with minigrid.

4.6 PERFORMANCE OF THE PUNOS

The PUNOs as separate entities functioned well. The performance of the PUNOs is rated by responsibilities in Table 27.

UN-Habitat. UN-Habitat was competent regarding its role in programme implementation but had challenges in coordinating all PUNOs. It delivered on the provision of water points and their management systems. The provision of water points was excellently carried out through its partner organizations. The management systems for the water points had some gaps in terms of operationalizing all the tenets of operations and maintenance. UN-Habitat played an important role in working with the SHEP and GES stakeholders in terms of trainings and capacity building.

UNICEF. UNICEF led the sanitation component of the programme, working on CLTS, construction of household latrines, provision of pro-poor latrines, school WASH facilities and strengthening WASH governance systems in schools. UNICEF's role contributed to national priorities and was aligned with national plans. It implemented the CLTS compo-nent creditable with thousands of traditional toilets built and about 500 pro-poor toilets. The CLTS toilets were not disaster resilient. The VSLA component to support latrine construction was little used for latrine construction. It was observed that the level of facilitation for VSLA was lacking in terms of commitment and the districts reported not going through the entire cycle. UNICEF also delivered in the construction of school latrines and supporting the setting up of O&M mechanisms. UNICEF supported 224 schools and put in place management systems for the school WASH facilities provided.

UNDP. UNDP played a role in disaster risk reduction and supported in the coordination of the programme. It worked well with government partners and delivered on its mandate of producing disaster risk reduction plans and equipping NADMO and the districts for disaster preparedness. UNDP was the administrative agent reporting on the Multi Task Fund and working on the Disaster Risk Reduction components and coordination of the programme. It worked well with government partners, produced disaster risk reduction plans and equipped NADMO and the districts for disaster preparedness. UNDP supported the development of disaster risk plans for the 24 districts under the programme. UNDP also carried out a flood simulation exercise in Bunkpurugu, which was used as a test case for partners to learn about disaster preparedness.

WHO. WHO focused on water safety and public health education. It contributed to disaster risk planning and health emergency preparedness and response monitoring and carried out a number of capacity building trainings of regional and district level staff and supported communities level activities. The items delivered in terms of training communities on household water treatment and safe storage was 144, below the target of 265 communities. Twenty-four communities were supported to develop water safety plans.

TABLE 28: PERFORMANCE OF THE PUNOS

PUNO	Responsibilities	Performance score	Reasons
UN-Habitat	Overall coordination, planning and reporting	3	The coordination was relevant in ensuring that PUNOs comply with their obligations. However, effectiveness was challenging due to competing agency demands.
	Provision and rehabilitation of water systems	3-4	Water systems were appreciated by districts and communities alike. The implementation of water points was effectively coordinated and organized.
	Establishment and training of WSMTs	2	The partners of UN-Habitat established WSMTs in most communities. Challenges still exist with effectiveness as regards preparedness of maintenance of facilities.
	Values based training for schools	4	It was reported as successful and well appreciated by national, regional and district officers. The learnings are being incorporated into schools.
UNDP	Disaster Risk Reduction plans	4	Disaster risk preparedness plans in 24 districts with simulations were carried out.
UNICEF	CLTS facilitation	3	CLTS facilitation carried out in all districts and successful with 40% of communities that became ODF. However, the approach did not include customizing of latrines to the local circumstances, especially regarding flood hazards.
	Latrine construction	4	Latrine construction as a result of CLTS was impressive. In UWR alone 2024 latrines were constructed and 500 pro-poor latrines in three regions.
	Sanitation financing	1	VLSAs were established in all districts. However, it did not translate into credit for latrine construction.
	School latrines	3	School latrines provided convenience for boys and girls. They are managed quite well although repairs are not executed, and cleanliness is not always good.
	School Health clubs	4	School Health clubs were established in all schools. The student members are active and enthusiastic.
WHO	Build capacity of regional and district staff for water quality testing + monitoring	2	Water Quality Assessment and Monitoring Workshop held for regional and district level staff (Environmental Health, Community Development, NADMO, SHEP, CWSA, DEHOs, District Engineers) from 23 districts. Water Safety Plans (WSP) Template Orientation and Field Testing conducted for 7 districts. Two follow-up review meetings conducted for WSP implementing districts.
	Built capacity in emergency prepa-redness and respon-se among regional and district staff	2	Disaster Preparedness and Flood Response and Recovery Formulation Workshops conducted for 13 districts. Health Emergency Preparedness and Response training Workshops conducted for 24 districts.
	Water Safety pilot	1	Water Safety Planning (WSP) Template for Rural and Small Town Systems and training materials. Developed and Field Testing workshop held. 24 communities developed WSPs. selected to develop water safety plans in 12 districts. HWTS activities conducted in 144 communities.
	Public health and environmental education	3	Healthy School Environment Competition was held in selected schools by SHEP with WHO support. Other public health education campaigns were held.

Findings on how the PUNOs collaborated and worked:

- Initially coordination among PUNOs was problematic because the focal persons were busy and not committed. This was improved with the nomination of deputies to the focal persons. Subsequently coordination improved resulting in regular coordination meetings and planning sessions at the end of each month, semi-annually and annually. Regular discussions were held on progress and corrective actions. Regular Skype calls with minutes produced was a coordinating mechanism used.

- Limited collaboration and integration. "Working in silos" was a term used. The PUNOs concentrated on their own piece of the pie. As a result, there were overlaps and inefficiencies including people travelling separately to the areas, guiding documents and field level trainings and awareness messages with overlap e.g., the WHO document has hygiene messages that are also covered by CLTS, DRR, the artisans training, and SHEP documents and trainings. The GoG parties suffered in this context as their different involved departments often had to collaborate with different PUNOs on often overlapping subjects, which caused confusion. For instance, UNICEF and UN-Habitat both worked on WASH in Schools (WinS) when ideally one agency should have done so. UN-Habitat worked on the values-based concept, but UNICEF had a much larger outreach to GES and schools.

- Focal persons with limited commitment and not very active as the programme activities for them were competing with their other duties they had in their respective PUNOs.

- High general motivation and enthusiasm to try and work together. This seems to contradict the above point which is related to the fact that one can be enthusiastic and motivated but when it comes to serious limits in time availability for certain tasks it can end up in people not or not properly executing those tasks.

- The PUNOs worked well with and through the GoG systems and structures supporting them in building disaster resilient WASH systems and services. The process contributed to ownership, sustainability and replicability of the interventions. The PUNOs worked with all 24 district assemblies and put in place mechanisms for ownership such as the use of the handing over documents signed by all stakeholders.

- The PUNOs contracted out most works, functioning as organizers, clients and finance managers. The advantage of this way of working is that with a limited number of staff large programmes can be managed. Disadvantage is it may be difficult to monitor and quality control programmes due to absence of staff skilled to do so. Even if monitoring is also contracted out the responsible party may not have sufficient sense of what is happening e.g., monitors doing a poor job go by unnoticed. More important is that an organization not possessing core expertise on programme contents will have difficulty to determine most optimal strategies and programme elements and may end up implementing less needed activities and sub-optimal approaches. This is partly the case for this programme with the lack of attention for and the incorrect assumptions made about sustainability of hardware and software.

5 EVALUATIVE CONCLUSIONS

The evaluative conclusions provide answers, in line with the ToR, regarding the program-me achievements, the performance of the PUNOs and the extent to which the design and joint implementation approach of the WASH in DPC Programme worked well.

5.1 PROGRAMME ACHIEVEMENTS

5.1.1 Programme objective

The programme was highly relevant for and has significantly contributed to achieving its objective. The target population benefits hugely in terms of:

- **Improved WASH related health.** Based on findings of the evaluation team concludes that this is the case as people have access to improved nearby WASH facilities and consequently use them in largely proper ways.
- **Reduced burdens** especially for women and girls, with issues like shorter water collection distances, less care and costs for sick children with diarrhoea, partly the possibility for girls to attend school also during their period, more privacy and safety due to nearby toilets, etc.
- **Resilience to disasters.** Many of the public infrastructures and some private facilities realized in the communities are flood resilient and some awareness was effectively raised regarding flood preparedness and how to cope with floods). However, the evaluators found that seven out of 21 villages assessed with regard to their flood proneness were not disaster prone.

The programme benefited different magnitudes of target groups. Although the numbers of beneficiaries of the programme as claimed by programme reports vary from 200.0000 to almost 330.000 the actual numbers are quite different and can best be presented per group of programme activities. For all programme activities that focused on schools (construction of school latrines and different WASH awareness raising events in schools) nearly 60.000 pupils plus the teachers of the involved schools have benefitted.

With regard to CLTS and village WASH and disaster preparedness awareness activities a reasonable estimate is probably somewhere between 200.000 and 280.000 beneficiaries. It is difficult to determine because one member of a household may have attended an awareness raising event but the question is to what extent the other household members should be counted as direct beneficiaries as well.

For the population reached with water works (new, rehabilitated or expanded water points and systems) the number was estimated in UN-Habitat reporting to be 211.390[25].

Household latrine coverage is approximately 50 to 60 per cent of the target population which is a huge achievement for a three year programme and has surpassed the planned target by far. It may be expected that this percentage will increase further, especially if the districts manage to continue the CLTS activities beyond the programme period.

[25] A UN-Habitat Excel document presenting water works per community comes to a total of 323.416 persons living in the target communities and 211.390 persons assisted with new, rehabilitated and/or expanded water points and systems. The evaluators tried to verify these numbers in several communities visited and got the impression that the UN-Habitat figures for the total village populations are slightly high. The evaluators used an estimate of 280.000 total target population.

Several programme impacts have a reduced chance of longer term sustainability because longer term O&M of realized hardware is insufficiently guaranteed, quality and designs of hardware and software are not always optimal while required services, by the districts and others, cannot easily be sustained due to lack of materials and funds, notably CLTS and VSLA facilitation and preventive maintenance services. However, below ground parts of newly realized (and to some extent the rehabilitated) boreholes are believed to be of good quality and can be considered sustainable while small O&M and small repairs will most probably be solved by the involved O&M structures. Main issues remaining are the larger repairs of pumps and pump parts, and all brickwork as well as drainage issues, which may lead to crumbling walls and platforms and unhygienic circumstances. The evaluators doubt that linings of school toilets may always be strong enough, although this was difficult to verify. Where household latrines keep collapsing or fill up too quickly in the future there is a danger that some people will replapse to open defecation, although people's motivation to build and use latrines was generally found to be high during the field visits.

It was an expensive programme. It is believed that the high costs are mainly because of the following points:

- Activities with limited relevance for the programme objective, e.g., most short-term activities, including stand alone trainings, workshops and plans that were not embedded in a longer-term approach.

- Working in very dispersed communities which raised costs, for instance, for the drilling companies that had to mobilize their rigs over large distances.

- Many management layers. With the PUNOs, GoG Ministries + departments, national NGOs, regional and district level parties, and companies, all with costs for their managers, overheads, coordination and communication, transport, and so on.

- Many surveys and assessments, of which only limited parts were relevant and used (hence they could have been executed in more simple ways)[26], executed by expensive consultancy companies, while with some proper guidance relevant surveys could have been executed by programme and/or involved government staff.

- High salaries and consultancy fees. For example, two senior international programme staff were each paid around USD 14.000/ month on a 36 months contract, while the earlier mentioned baseline survey did cost 360.000 USD, largely for consultancy fees for a survey that could have been more simple and done by district officers.

Monitoring, quality control, accountability and reporting were not optimal. As described the evaluators had difficulties getting a proper overview of the programme expenditures, the numbers of programme beneficiaries and the quality and utilization of realized programme outputs. For most aspects the information was scattered over different documents. This made life difficult for the evaluators, but the scattered information probably also made it difficult for programme staff and managers to obtain sufficient overview and insights needed to properly learn and improve the programme. The evaluators observed low quality on part of the hardware results (some parts of water points and school latrines, traditional latrines) and found limited relevance and/ or quality of some of the software parts. Altogether this indicates that monitoring, quality control, accountability and reporting were not optimal. This

[26] Example: the baseline survey was budgetted at a cost of 360.000 USD, an excessive amount for a survey (see also the next bullet point in the list). In addition the survey has provided a lot of details that were not directly relevant for the implementation of the programme while it also overlapped with pother surveys and assessments conducted under the programme. Within this survey some examples of ietms investigated believed to be of limited relevance are the disaggregation by sex is in many cases not very interesting while the info weas not used inthe programme design or implementation for almost all of its aspects; prevalence of diarrhoea is difficult to get accurate figures about while the figures weren to used in the decision where to construct or rehabilitate water points (which was mostly based on the availability of water and quality of the water); hygiene practices could ave been investigated in say 5 to 10 communities to be sure because it is generally known that in most remote rural poor communities hygiene practices are not so good.

is despite the large numbers of programme reports that were produced and the often lengthy, and sometimes good, descriptions in such reports.

5.1.2 Programme outcomes level

The programme outcomes have partly been achieved but may not all be sustainable. People have largely increased equitable sufficient access to and use of WASH facilities in their communities and schools (first intermediate outcome), especially water facilities, household and school latrines. However, part of the household latrines have collapsed while other outputs have room for improvement and/or are not sufficiently disaster-resilient. Not all people are fully covered. Part of the people and pupils in schools practice improved hygiene and safe water use practices before, during and after disasters (second intermediate outcome). Hand washing is practiced, especially in schools (although the schools do not always have the required water for it), but less so by other people. People are believed to treat their water in simple ways e.g., boiling, but not always and not consequently. Many people stated that they not treat their water anymore as they trust the quality of the water from the borehole. All districts, and to some extent the regions improved planning and implementation of disaster resilient WASH programs and support to communities to sustain the realized facilities (third intermediate outcome). However, the required expertise and structures have not been fully developed yet while the most stringent bottleneck is that now the programme has finished especially the districts struggle to continue programmes and support due to limits in resources, especially materials (mainly fuel), equipment (mainly motor bikes) and funds.

5.1.3 Programme outputs level

Outputs were achieved and surpassing what was planned for almost all programme outputs. The planning of almost all outputs has been achieved or surpassed especially in the case of traditional latrines, local artisans trained and DEHOs trained. Main exception is the number of households that used credit and/or savings through their VSLA group for the realization of improved latrines, which is much less than was planned but the number of groups formed is higher than planned. This is a huge achievement!

Most programme outputs were highly relevant in relation to WASH related health but several were not or only partly relevant in relation to disaster resilience. The hardware provided to the communities is fundamental for improved hygiene and health, and reduced burdens. Also the relevance of most community software is high because they have a high importance for WASH related health and/or disaster resilience. The main exception is VSLA because only few people obtain funds through these groups for sanitation (although their relevance for other issues is probably very high). Relevance for disaster resilience was found in some cases to be limited, e.g., CLTS and traditional latrines and the software at different levels behind it, which did not (sufficiently) take disaster resilience into account. Some of the school latrines and water points are insufficiently resilient to disasters, notably flooding e.g., some school latrines do not have overly strong pit linings and foundations which may collapse when flooded, while some 'normal platforms' at water points looked quite fragile and were sometimes already affected to some extent; also the brickwork used in the platforms is not always strong enough, while a question remains to what extent the platforms were sufficiently entrenched in the under ground to prevent undermining during floods. However, most school latrines and part of the water points are located where floods cannot arrive which makes them much less vulnerable, while damage in brickwork for instance can often be relatively easily be repaired.

Effectiveness of outputs is mostly reasonable to good but could and should have been better, especially with regard to coverage and designs of hardware and software. Community hardware is in most cases functional, nearby, easily accessible and properly used, while practically all beneficiaries indicate to be satisfied with the facilities. However, 15 per cent of the schools still has insufficient toilets and 40 to 50 per cent of the beneficiaries still has no household toilet. Coverage of water

points is reasonable to good: 30 – 50 per cent of the beneficiaries were covered with water points while a relatively large part of the beneficiaries and also the schools that were not covered with programme water points has access to other water points (though not all, while also people from other nearby communities were not covered with water points and come to the programme water points to fetch water).

Many traditional latrines are not sufficiently flood resilient, while school latrines (especially the underground parts) and water points (especially the above ground parts) have scope for better designs. Some of the boreholes with hand pumps with 'normal platforms' may experience flooding (although several of them are slightly raised and/or to some extent reinforced). Mechanized boreholes were too often dysfunctional. The capacity with regard to larger repairs in many facilities is limited. Water points are often overburdened because othey are used by unintended users, which is a consequence of the focus on flood prone communities (see earlier comments).

Community software scores well on issues such as coverage of beneficiaries (though limited for VSLA) and utilization by people of the software related awareness and structures for CLTS, school health clubs and partly for school WASH O&M and for the artisans, but scores lower on utilization of other items, mainly because people are not always consequently applying what they learnt. For CLTS effectiveness is limited because people were insufficiently guided on flood and wind resilient designs. Many people afterwards try to develop and implement more resilient latrines themselves. For VSLA relatively few groups were formed (although many more than planned) and several are not active. Also funds from VSLA are not often spent on the construction of latrines. Effectiveness of capacities realized in the districts is limited. All relevant district officers were effectively trained and they used the obtained knowledge and skills to train and facilitate people at the community level. However, they were stand-alone and one-off trainings (less so for CLTS capacity building) that need follow-up.

Programme hardware contributes significantly to WASH results, much of the programme software less so. If WASH hardware is functional (which it often still is, although design and quality issues may lead to dysfunctionality of several facilities in the future as argued before) and is used well, it contributes to WASH related health and reduction of burdens (following the MEP proven logic). Currently, the evaluators are worried whether these impacts can be sustained everywhere in the future due to quality, design and O&M shortcomings as described. The contribution to WASH impacts of community software is high for CLTS due to its huge effect on people's motivation for latrines and better hygiene practices. This is also, though slightly more limited, the case for WASH O&M structures in schools and school health clubs because these structures are relatively active and guided by motivated teachers. For the other software items e.g., VSLA, DRR, artisans training and safe water handling. WASH results are limited because they were not sufficiently relevant (VSLA and to some extent DRR) and/or were too short to lead to changed WASH related behaviors.

Sustainability of the outputs is insufficiently guaranteed. Some of the facilities are not sufficiently robust and/or resilient to floods and/or wind. Traditional household latrines often collapse during floods while people do not upgrade to improved latrines (more robust and disaster resilient) because they have no money and/or are unwilling to pay for it. However, if a latrine collapses people often rebuild it with local resources in a more disaster resilient way, which may or may not be sufficient. School latrines are often not sufficiently robust. They are in most cases functional now but the quality was often found to be limited. Water points are robust below ground[27] but less so above ground.

[27] Based on drilling reports, reports by external supervisors (e.g., Aqualogical Technologies Ltd.; although only one such supervision report was found, it is assumed other boreholes were also supervised by such external agencies), oral reports by beneficiaries claiming in all cases that water was clear and fit for drinking, also in the rainy and flooding seasons, and water related diseases were no longer present, in combination with observations by the consultants of water quality. However, the evaluators believe that installation of pumps was not always done properly (considering reports by beneficiaries at some of the rehabilitated boreholes that pumping is often hampering while it was good before).

The main worry is the hand pumps, some of which may break down even at short notice and may not always be repaired. Mechanized boreholes already often suffer from breakdowns while communities have no access to expertise, materials and equipment to repair them. O&M structures, especially WSMTs (in danger of becoming inactive due to limited drive and limited immediate felt needs for action when there are no major breakdowns) and school O&M structures (believed to be sustainable and active due to motivated teachers guiding the structures) are capable to execute normal O&M tasks and small repairs.

However, the O&M structures often lack the funds to pay for larger repairs, in which both capability and willingness to pay play a role. Also the sustainability of required district services is under stress, especially for CLTS and VSLA facilitation, and, not covered but highly required, preventive maintenance of water points and possibly school latrines. Main bottlenecks at the district level include financial resources, equipment, especially simple transport means such as small motor bikes and fuel. Also continued further training and guidance of district level staff is required.

Cross cutting issues are in most cases well covered. Most hardware is suitable for use by handicapped persons, attempts were made to be ready for floods (that may increase due to climate change), while human rights and gender were also important issues in the designs and software. Improvements are still possible and needed in some cases, especially with regard to menstrual material disposal, privacy of girls' urinals, and use by handicapped persons in school latrines, vulnerability to floods and wind of traditional latrines and increased drying of boreholes due to climate change.

Visibility is limited. Most programme infrastructure did not have an indication at all of the PUNO and implementing partner involved nor the name of the programme.

5.2 PERFORMANCE OF THE PUNOS AND PROGRAMME ORGANIZATION

The PUNOs together and the overall programme functioned reasonably well with a number of challenges. Main features included:

The PUNOs effectively involved the GoG, including different levels and departments. This has enhanced the support and learning as well as the feeling of ownership over the programme results of the GoG stakeholders significantly.

Programme coordination was satisfactory after an initial period of start-up problems. It was enhanced and improved by the UN Resident Coordinator on the UN side and the Ministry of Local Government and Rural Development on the GoG side. The PUNOs also changed the persons acting as focal persons and added others to assist the focal persons.

The PUNOs worked in silos with regard to their assigned role in the programme. They do not have harmonized systems in terms of monitoring, finance and administration. which made it difficult for them to work together. This also further confused government partners.

The PUNOs managed the programme and directed implementation mostly through other parties. The PUNOs contracted out most works and mainly designed and managed the pathways, or process, of the activities under their responsibility and the contractual and financial arrangements involved in them. This enabled them to operate mean and lean with limited numbers of staff managing the programme while also many programme parts were properly executed and monitored, largely by contracted parties.

However, at points this way of working restricted the PUNOs' insights in and control over the quality and direction of the interventions and approaches e.g., the problem that CLTS did not (sufficiently)

incorporate a process of customizing traditional latrine designs to the circumstances, and the sometimes limited quality of school latrines constructed by contractors who were not or not properly monitored.

The monitoring and quality control by hired consultancy bureaus of the drilling works is a positive example of how this way of working can lead to good results, which the evaluators believe is also due to the fact that CWSA organized this which is an organization fully experienced in this work, knowledgeable of the most experienced consultancy bureaus and probably also monitoring the monitors. This way of operating by contracting out most works also has a danger that it can limit institutional learning.

The top down approach had a negative effect on the programme. Aspects such as programme design, technical designs, contracting and coordinating professional companies and designs of trainings were undertaken largely at the national level.

Monitoring systems and reports focused mainly on numbers of outputs realized, much less on qualitative and utilization issues. No databases and little information were found in programme reports available to the consultants with quality and utilization data with exception of some of the realized new boreholes with hand pumps and mechanized boreholes for which some reports were available made by consultancy bureaus who did qualitative monitoring and supervision.

5.3 PROGRAMME DESIGN AND APPROACH

The PMF helped guiding the programme implementation although it had some confusing issues e.g., no indication of the numbers of different types of water points to be realized and the indications for CLTS are limited in this respect. The indicators were not always suitable while the immediate outcomes were in actual fact aggregated outputs. However, despite these inconsistencies the PMF contained clear guidance and targets on what was to be achieved. Reports used the PMF to assess progress and adapt the implementation schedules accordingly when required. Good was also that there was flexibility to adapt the PMF with growing insights and experience during the programme.

The programme design and approach was complex and did not include a proper exit strategy. Many parties and many subjects were involved. This was required because WASH, especially in disaster prone areas, is a complex matter. The programme has made a huge effort, and has largely succeeded, in covering all required subjects in this respect and involved parties with expertise regarding these subjects sufficiently to exclusively cover them. Questions remain in this context why it was decided to use so many consultancy companies? Another observation is that despite the efforts some elements were not included which are of importance such as infrastructure for the repair of public WASH facilities.

The most important issue though is the absence of a proper exit strategy for all those facilities that need continued attention and efforts after the programme period. With a more limited but longer term approach with less but longer term interventions, better and more sustainable results, outcomes and impacts could probably have been achieved. In this respect the coherence of the programme design and approach was limited. It is also believed, as stated before that there was quite some overlap in the expertise and infrastructure of all the different parties. Some of that was no problem, for instance the NGOs and CWSA each having expertise with regard to groundwater points as the number of water systems to be realized and rehabilitated could be well divided over these different parties. For other aspects the overlap meant that possibly certain parties could have been left out.

6 LESSONS LEARNED

1. Communities are ingenious and resourceful as was seen in the implementation of CLTS. After facing the collapse of traditional latrines due to floods and wind many of the programme communities came up with more resilient designs for latrines and hand washing facilities which they could realize with local resources and which were (reasonably) well adapted to and fit for the circumstances. If guided often communities have the capacity to develop solutions themselves, which can and should be incorporated in programme approaches.

2. The CLTS approach motivates beneficiaries and facilitators. As a result, the districts are motivated to try to continue the CLTS activities with their own resources. Also, NGOs in the districts, who were not familiar with the concept of CLTS, are starting to copy the CLTS approach as well as the VSLA approach which is less developed but has a similar motivating effect on people.

3. The programme was implemented with an incremental approach which phased the programme. This resulted in lessons from previous phases were incorporated into the next phase. This practice enhanced the ideation process of coming out with best practices and greatly enhanced the programme.

4. The commitment of the highest levels of the UN in Ghana particularly the UN Resident Coordinator was very useful in the implementation of the programme. The resulting increased participation and commitment at the meetings of the steering committee by stakeholders brought in accountability for all partners, ensured that corrective action was taken when needed and sped up the implementation process.

5. The GES/SHEP highly recommended the Values based WASH education concept for implementation in schools. This concept is used to teach and reinforce positive values associated with WASH into children. The methodologies of modeling, role playing, games and simulations, moral dilemma episodes with small group discussions and structured relational discussions among others are effective in inculcating positive WASH values.

6. The work of drilling and other companies working on the water points was successfully and strongly monitored and may have contributed to the relatively high quality of these facilities. It shows that good monitoring (and monitoring the monitors) is essential for the quality of programme results and should be incorporated and reinforced in each and every programme part. This is important because high quality infrastructure is often less vulnerable to poor O&M where poor O&M is often the reality in rural communities as was also found in the WASH in DPC programme.

7. The combination of a programme steering committee with representation from the donor, highest levels of government, regions and a consortium of UN organizations (the PUNOs), gave the necessary political weight and acceptability to the programme. This has contributed significantly to the motivation and active involvement of and uptake of lessons, methods and good practices by the Government of Ghana at each of its instrumental levels (national, regional and district). It has also contributed significantly to the speed and successes of the programme which would otherwise have encountered more obstacles most probably.

8. The districts have limited resources, which they need to spread over a large number of responsibilities and tasks. The focus of the WASH in DPC programme and other development activities offered at the district level was and is often on building of knowledge and skills among district officers. The results of these efforts, however, tend to get lost and/or are under-utilized due to bottlenecks with regard to other pressing issues, especially hardware such as transport and communication means.

9. The Water safety plans developed in 24 communities was a useful lesson. Water safety in Ghana is critical and the development of such plans can be essential for communities to have water security if they are well implemented.

10. The PUNO partnership was a novelty harnessing several capacities for WASH implementation, which however still has scope for improvement as for instance described in the recommendations.

11. The best practices and designs of the programme positively results in other agencies adapting and learning. Other agencies are quickly adopting the designs that were rolled out. The four international NGOs that were involved have received capacity building to replicate in other intervention areas.

12. The programme developed a 14 points checklist and handing over document for joint stakeholder commitment. The document is a good partial step in gathering stakeholder commitment to own and sustain the programme goods and services assuming that they follow through.

7 RECOMMENDATIONS

1. **Introduce a follow up programme for the WASH in DPCs** that: (a) continues and expands CLTS and VSLA to cover all programme communities fully (and ideally also all other communities in the target districts) and is managed and implemented by the districts with results based financing, (b) upgrades facilities that are currently not sufficiently robust and/or functional, and (c) assists the GoG to develop and implement a sustainable system for the operation and maintenance of all WASH infrastructures in North Ghana (regarding this last point see also Annex 5 which provides some background to this and possible options how this could be realized).

2. **Use a different approach for similar future programmes.** The core of it is to:

   (a) cover all people in selected areas (e.g. districts, both the flood prone and not flood prone parts) instead of single flood prone communities dispersed over large areas (leave no one behind),

   (b) increase participation, involvement and decision-making of the lowest levels (notably the district and community levels, but also local contractors where appropriate),

   (c) continue programmes and programme activities over longer periods of time,

   (d) ensure or significantly contribute to longer term sustainability of outputs, outcomes and impacts (and throw out the programme activities that are not likely enough to lead or significantly contribute to sustainable outputs, outcomes and impacts),

   (e) increase the quality and suitability of facilities and services that the programmes wish to realize for the final beneficiaries (and hence the quality of the services that need to accomplish this), and

   (f) improve visibility of the programme in the programme results.

Annexes 5 and 6 provide more details, ideas and suggestions in this regard.

3. **Introduce improved and structural integrated systems to be able to 'deliver as one'.** For example, the UN organizations should develop one common PMER system which is used for Planning, Monitoring, Evaluation and Reporting in order to enhance proper qualitative and quantitative monitoring, to be able to assess and account for numbers of output realized as well as their quality and utilization and to have better insights in the costs of the different programme parts, costs per beneficiary etc.

   Especially when all kinds of parties under different PUNOs are involved it is important that such systems are comprehensive and properly structured and streamlined, applied by all parties and used to regularly assess progress (both narrative, financial and their combination) and qualitative issues and take remedial action where and when required. It helps tremendously to keep overview and grip on complex and highly dispersed programmes, and to better account for and report about such programmes.

   The system should have the characteristics of an internal library with qualitative indicators and minimum standards for all kinds of outputs (especially WASH outputs), both for their monitoring during implementation and after completion. It can easily be customized to the circumstances and the wishes of the users, and can also expanded with new outputs and new indicators.

Contractors should be monitored, not only focusing on the numbers of output they accomplish but especially also on the quality of their work and monitors should be monitored, which will probably require separate M&E departments fully engaged with this task and would ideally be a separate UN entity/party within the UN Ghana system.

Ideally, all UN organizations worldwide should develop such integrated systems together. If this is not possible the UN organizations in Ghana should make an effort to do so in Ghana and ensure the systems are applied by all involved internal and external stakeholders. The deliver as one desire requires an integration of structures and tools. Setting them up per programme requires huge efforts each time and will often lead to scattered data, loss of overview and impossibilities to properly account for realized results and achieved effects. It is much better to build and apply a structured framework of systems and tools used in all programmes and activities by all parties together.

4. **Employ core expertise** regarding the programmes and other activities the PUNOs execute and/or are responsible for, and not (only) on a programme or temporary contract basis. Each PUNO should provide such staff a clear task description, sufficient time, resources and mandate for each of the activities they are to engage in. Their actions should be properly monitored, and managers should see to it that they spend enough time and effort for each task and responsibility directed to these staff. As much as possible such staff should be located where the activities are implemented, for instance at the regional, or even, preferably, at the district level. Institutional memory should be enhanced through such longer-term expert staff.

5. **Create stronger coordination mechanisms.** Coordination between UN organizations and between UN and between GoG and UN and other stakeholders were often challenging. It is paramount that this challenge is overcome to prevent delays, high costs and other inefficiencies, overlaps and gaps, frustrations and so on, not only in programmes but in all activities if the UN organizations in Ghana. The consultants recommend that for this purpose the role of the UN Resident Coordinator's Office is reinforced further in collaborative UN programmes and activities.

   This could be accomplished by giving the UN Resident Coordinator a more intensive role in monitoring and even guiding processes, structures, programmes and activities and take a lead in guiding UN agencies on how to coordinate their actions more effectively, while stepping in immediately when needed, for instance, in coordination meetings and for as long as required, as soon as the first signals of (potential) coordination and collaboration problems appear.

ANNEX 1: TERMS OF REFERENCE

Terms of Reference – End of Project Evaluation:

Water, Sanitation and Hygiene in Disaster Prone Communities in Northern Ghana

November 2017

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1. Background and context

Droughts, epidemic outbreaks, floods, and wildfires and other forms of disasters significantly impact vulnerable populations in disaster prone areas in the three Northern regions of Ghana. The impact of these disasters may lead to unnecessary losses of social and economic capital. In particular, recurrent flooding events, which are the most pervasive in terms of financial damages and the number of people who are affected, usually result in the disruption of water, sanitation and hygiene (WASH) services. These lead to significant damages to properties and trigger other health emergency situations.

To ensure that when such floods occur, the quality of water supply is not contaminated during collection, handling, storage, and use presents immense challenges to the health of these communities. The situation is further aggravated in those communities where there is a lack of water, sanitation and hygiene services. In such circumstances, the challenges include the prevalence of water borne, vector borne and sanitation related diseases such as diarrhoea and cholera. Women, children and the youth suffer the most from the effects of this lack of access to WASH facilities and related services.

The challenges can be addressed by putting in place resilient and durable solutions so that when flood disasters in particular occur, the quality of water supply sources is not contaminated (during collection, handling, storage, and use), and that good sanitation and hygiene practices are maintained for the health of the communities to offset potential health impacts on the people before, during and after such events. Such solutions, when complemented with adequate emergency preparedness activities will assist the flood prone communities to quickly return to a normal and sustainable existence.

1.1 Objective of the WASH in DPC Programme

The overall objective of the Water, Sanitation and Hygiene in Disaster Prone Communities Programme (hereafter referred to as the WASH in DPC Programme) in northern Ghana is to improve health and disaster preparedness in selected communities and schools in the Northern, Upper East and Upper West regions of Ghana by increasing access to resilient facilities and services for good drinking water and proper sanitation on a sustainable basis.

The ultimate outcome of the programme is to reduce the burden of WASH-related diseases among men, women, boys and girls in disaster-prone communities in northern Ghana. The project is designed to directly benefit 265 communities in twenty-four targeted districts.

The objective of the programme is in-line with the national development policy framework, Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013.

The specific objectives of the WASH DPC Programme are to:

- Implement resilient WASH solutions and reduce the number of people in disaster prone communities in the 3 Northern Regions without safe drinking water, basic sanitation facilities and hygiene services;
- Promote education programmes and awareness of hygiene practices to improve the sanitation and health conditions in the beneficiary communities and schools;
- Enhance regional and local capacity in the beneficiary communities to sustainably manage the WATSAN facilities and related services to be put in place;
- Contribute to measures to enhance the preparedness to disasters and minimize future risks in the communities.

The WASH DPC Programme is implemented over a 3 year period commencing activities in June 2014. The total value of the programme is CAD19,915,000 (about US$14,754,541) and funded by Global Affairs Canada (GAC); which is entity leading Canada's international development and humanitarian assistance.

Programme activities ended on 31st May with wrap-up activities continuing. Field level activities in most of the 265 targeted communities have completed or are nearing completion. Some of the facilities are already operational and project outcomes are being progressively realized. As per the implementation plan, a final evaluation is anticipated at the end of the third year of implementation.

1.2 Implementation strategy and management

Under the WASH in DPC Programme, UNDP is the administrative agent and is responsible for financial management, while each participating UN organization has programmatic and financial responsibility for the funds disbursed to it.

The WASH in DPC Programme is being implemented by Partner UN Organisations (PUNOs) consisting of the United Nations Human Settlements Programme (UN-Habitat) as the convening Agency, the United Nations Children's Fund (UNICEF), United Nations Development Programme (UNDP), and the World Health Organization (WHO).

The PUNOs work in close collaboration with the relevant national institutions as well as private sector and non-governmental organizations involved in the WASH and Disaster Management sectors in the country. From the side of the Ghana Government, the Ministry of Local Government and Rural Development (MLGRD) (now Ministry of Sanitation and Water Resources) leads the coordination for the implementation in close collaboration with the National Disaster Management Organization (NADMO) and the Ghana Education Service of the Ministry of Education, who are involved with aspects of the programme relevant to their mandates on WASH and the management of disasters and emergencies. The Joint UN team's role is the provision of technical assistance, facilitation and funds management support.

A Programme Implementation Manual completed in March 2015 provides detailed guidelines on institutional arrangements, governance, implementation process, monitoring and evaluation, and sustainability and service delivery. It specifies that the overall leadership of the WASH DPC Programme is provided by a steering committee, which is co-chaired by the Ministry of Local Government and Rural Development (now Ministry of Sanitation and Water Resources) on behalf of the Government of Ghana and the UN Resident Coordinator and with core members representing key national partners and the PUNOs. The committee would meet semi-annually and be responsible for providing strategic guidance, fiduciary and management oversight and coordination.

A mid-term review of the programme was completed in late 2016, which concluded that the programme is beneficial to the people in Northern Ghana particularly those living in disaster prone areas. It identified areas for improvement, which included the need for sustainability plans and an exit strategy, and issues related to maintenance and operation of water facilities, engagement of authorities at regional and district levels, promotion of Open Defecation Free areas and latrine artisans training.

1.3 About the UN Agencies Working Together

UN-Habitat

The United Nations Human Settlements Programme (UN-Habitat) is the lead United Nations Agency for cities and human settlements. Its mission is to promote socially and environmentally sustainable human settlements development and the achievement of adequate shelter for all.

UN-Habitat's engagement in Ghana has included support to Government led initiatives that seek to promote sustainable urban development, slums and livelihood improvement, and increased resilience in disaster prone communities.

UN-Habitat has supported the national urban forum process providing a platform for all stakeholders in Ghana to consciously support work towards sustainable urban development in the country. The National Habitat committee supports this process and in the preparations towards the Habitat III conference in Quito (Ecuador) in 2016, adopted a road map that included national and local consultations to debate and define priority issues, and identify solutions to urban challenges. The committee also supports the annual celebrations of the World Habitat Day.

Ghana has completed the Housing Profile and inputs have been incorporated in the final National Housing Policy, which was launched in March 2015. UN-Habitat is collaborating with the Ministry of Works and Housing to develop a national housing strategy under the Global Housing Strategy. The Ministry of Housing is in the process of mobilizing resources to develop housing strategy in collaboration with UN-Habitat.

Under the Slum Upgrading Facility (SUF) in Ghana Two city-level Local Finance Facilities have been set up namely Tema/Ashaiman Metropolitan Slum Upgrading Fund (TAMSUF) and the Sekondi/Takoradi Local Finance Facility (STMA-CSUF). These two city level facilities have undertaken projects including a mixed used residential commercial facility comprising 31 residential units, 15 stores and commercial bathrooms and toilets, market sheds to accommodate 60 women who have also benefitted from livelihood and housing improvement loans some of which have been used to acquire land for housing, and upgrade to a 45-bedroom accommodation for 60 households in New Takoradi. UN-Habitat is

working closely with the Ministry of Local Government on the Participatory Slum Upgrading Programme (PSUP) in Ghana to integrate spatial planning, community development, local economic development and poverty reduction as overarching goals within which slum upgrading interventions are implemented.

UN-Habitat also provides assistance to the Government of Ghana, on efforts towards mitigating the negative effects of rapid urbanisation. For example, a vision and plan for a City extension in the Ningo Prampram area has been finalised and is being subjected to further consultations prior to implementation.

UN-Habitat is the convening Agency for the implementation of the Joint UN WASH in DPC Programme. It is responsible and accountable for the overall coordination of the operation and programmatic aspects of the joint programme. In addition, UN-Habitat implements the programme component for provision of water supply systems; values-based education to complement the WASH in schools component; complement the interventions by UNICEF on microfinance for household sanitation facilities and capacity development of national and local level WASH officers.

UNICEF

UNICEF works in 190 countries and territories to protect the rights of children. UNICEF works with the United Nations other United Nations agencies to make sure that children are on the global agenda. UNICEF saves and protects the world's most vulnerable children, working to ensure child rights and providing health care, immunizations, nutrition, access to safe water and sanitation services, basic education, protection and emergency relief.

UNICEF is currently implementing a number of WASH programmes in Ghana, much of which is directly relevant to the WASH in DPC Programme. These programmes span across national advocacy and policy support for WASH in schools, WASH in emergencies and upscaling of WASH to significant on-the-ground delivery of water supply, sanitation, hygiene behavioural change and infrastructure and WASH in schools programs in the three northern regions.

An example is the Enhanced Water, Sanitation and Hygiene (WASH) Services in Schools and Communities in Ghana (2012-2016) in collaboration with the Government of Ghana and with funding support from GAC. The initiative is designed to contribute to improved health and well-being of children in schools, and of women and men in communities, in the Upper East, Upper West, Northern, Volta and Central regions (the five most deprived regions) of Ghana.

The main beneficiaries are communities in 13 districts and specifically children and youth in 150 basic schools (i.e. primary and junior high). Through the delivery of water, basic sanitation and hygiene (WASH) services, the project aims to enhance WASH service uptake and sanitation practices among the beneficiary population.

The initiative also aims to strengthen relevant national institutions and monitoring and evaluation systems to provide an enabling environment for better planning, delivery and sustainability of decentralized water, sanitation and hygiene services in Ghana.

Lessons from UNICEF's programmes range from political engagement at all levels, through increasing government efficiency in delivering WASH outcomes, to engaging communities and children to empower themselves to deliver WASH outcomes.

In the WASH in DPC Programme, UNICEF leads the roll out of the Community Led Total Sanitation (CLTS) process, sanitation marketing, a social norms campaign, microfinance for household sanitation facilities, capacity development of national and local level WASH officers, WASH in schools, water safety planning, 'hand washing with soap' and the assessment of technology options for disaster resilience.

UNDP

UNDP partners globally with all levels of society in more than 170 countries and territories offering a global perspective and local insight to help empower lives and build resilient nations that can withstand crisis, and that drive and sustain growth that improves the quality of life for everyone.

Under the overarching goal of empowering lives and building resilient nations, UNDP in Ghana focuses on three inter-connected thematic areas: promoting inclusive growth, democratic governance and sustainable development.

In the area of *disaster risk reduction*, UNDP has supported a wide array of activities, spanning from institutional strengthening to capacity building and awareness creation, for example, creation of National Platform and Regional Platforms on DRR to promote coordination of DRR at sector and regional level. In the area of *disaster preparedness*, UNDP supported the review of the National Contingency Plan for a more coordinated and effective response to disasters; the development of District Disaster Management Plans in Greater Accra, Eastern and Northern Regions; and facilitated a national simulation exercise (floods scenario) to enhance the capacity of national and international institutions to quickly and effectively respond to emergencies. In the area of *disaster response and recovery*, UNDP has been providing logistical support to NADMO to respond to disaster and emergency situations, such as floods in Northern Ghana in 2008-2010, floods in Accra in 2011, influx of Ivorian refugees and Ghanaian returnees from Libya. UNDP also provided recovery support and alternative livelihood activities to communities affected by disasters in Northern Ghana. UNDP has also partnered with NADMO to define how to systematically forecast the surge of floods and drought, and how to issue timely *early warning*.

Since 2008, UNDP has supported climate change and DRR related activities in Ghana. UNDP has facilitated stakeholder engagement/consultation, high-level policy dialogues, and provided technical and financial support to a series of key national processes aimed to mainstream climate change and DRR into development planning, develop policies and plans, and meet Ghana's international obligations under United Nations Framework Convention on Climate Change (UNFCCC). These include: The National Development Planning Commission (NDPC), together with the Environmental Protection Agency (EPA) and the National Disaster Management Organization (NADMO), have undertaken a process to *mainstream* climate change and DRR into national and district development plans and budgets. Climate change was also fully integrated into the Ghana Shared Growth Development Agenda (GSGDA 1 and 2). The *National Climate Change Policy (NCCP)* was approved by Cabinet in June 2013. As a second phase of the Policy, the Government developed the National Climate Change Policy Strategies (NCCPS) in 2014. DRR considerations have been fully incorporated into the NCCP, which recognizes that "more than 80% of the disasters in Ghana are considered to be climate-related". The process to revise Act 517, which led

to the establishment of NADMO, is well advanced and puts more emphasis on disaster prevention, with the creation of a National Disaster Management Fund. UNDP also technically contributed to the development of the *Ghana Plan of Action on DRR and Climate Change Adaptation* (2011-2015), and the revision of the *National Contingency Plan*.

As per the programme document, UNDP is expected to liaise with NADMO to put in place measures to enhance the preparedness to flood disasters and minimize future risks in the selected communities.

UNDP was also responsible to liaise with NADMO to contribute to 'Outcome 4: Disaster prone communities in 24 districts adopt measures that ensure disaster preparedness and minimize future risks in the communities'. Key activities included liaison with NADMO and other partners and assist with the sensitization of communities for disaster preparedness as it relates to the WASH sector and identification of strategies and plan for appropriate household emergency WASH kits in emergency situations.

WHO

WHO is the directing and coordinating authority on international health within the United Nations' system. Working through offices in more than 150 countries, WHO's staff work side by side with governments and other partners to ensure the highest attainable level of health for all people.

WHO does this by providing leadership on matters critical to health and engaging in partnerships where joint action is needed; shaping the research agenda and stimulating the generation, translation and dissemination of valuable knowledge; setting norms and standards and promoting and monitoring their implementation; articulating ethical and evidence-based policy options; providing technical support, catalysing change, and building sustainable institutional capacity; and monitoring the health situation and assessing health trends. WHO main areas of work are health systems, promoting health through the life-course non-communicable diseases, communicable diseases, corporate services, preparedness, surveillance and response.

With respect WASH, WHO works where the health burden is high and where evidence-based interventions could make a major difference. Our work in the area of WASH includes normative work (mainly on water quality, but also on monitoring approaches and interventions, usually resulting in guidelines and best practice texts), providing evidence (through various monitoring activities, but also through commissioned research), supporting Member States (through technical cooperation and capacity building) and responding to emergencies (the role in the Health Cluster - WASH in healthcare - and in the WASH cluster - restoring safe water supplies and adequate sanitation).

WHO's role in the WASH in DPC programme was to build the capacity of Technical teams in Water Quality Assessment and Monitoring, Health Emergency preparedness and response in flood disasters and the promotion of behavioural change through support of school health Clubs activities.

The activities to achieve the planned targets were done through training, practical and hands on exercises and field work in Household Water Treatment and Storage (HWTS) and piloting the novelty Water Safety Planning (WSP) which uses the risk based approach along the supply chain from source to

the end user. The health improvement outcomes of the intervention will be a highly motivated and well prepared Communities and Technical staff to manage flood disasters better should they occur and improvement in programme performance indicators.

1.4 Mandate of the evaluation

This evaluation is undertaken in accordance with programme agreement between UN-Habitat, the PUNOs, and the donor, Global Affairs Canada that requests for an end-of-programme evaluation.

The evaluation also in accordance with UN-Habitat's evaluation policy (2014), which requires that projects of value US$1 million shall be evaluated by an external evaluator.

The forward-looking elements of the evaluation will play an instrumental role in shaping the focus for the agencies in planning, organizing/institutionalizing and implementing future WASH activities at country level as part of delivery of their Programmes.

2. Purpose of the Evaluation

The PUNOs, with UN-Habitat as convening agency and leading the evaluation, are undertaking this end-of-programme evaluation of the WASH in DPC Programme in Northern Ghana to assess to what extent the overall support and services provided by UN-Habitat, UNICEF, UNDP and WHO are relevant, efficient and effective, and sustainable, and overall all effects/changes from the projects implemented.

The sharing of findings from this evaluation will inform the Partner UN Organisations and other relevant key stakeholders, including national partners and the donor, on what was achieved and learned.

3. Objectives of the Evaluation

The evaluation of the WASH in DPC programme is to provide the Partner UN Organisations, their governing bodies, national partners and the donor, with an independent and forward-looking appraisal of the agencies' operational experience, achievements, opportunities and challenges. What will be learned from the evaluation findings are expected to play an instrumental role in informing decisions of the PUNOs in the planning and programming of projects, influencing strategies, adjusting and correcting as appropriate, exploiting opportunities, replicating and up-scaling the implementation approach used, and generating credible value for targeted beneficiaries and addressing national priorities. Evaluation results will also contribute to PUNOs' planning, reporting and accountability.

The period of the evaluation will cover the start of the WASH DPC programme in June 2014 up to the end of 2017 at the time of the evaluation and at a time when most of the activities in the programme are completed or nearly completed.

Key objectives of evaluation are:

a) To assess progress made towards the achievement of results at the outcome and outputs level of the programme and its activities; and how the regions in northern Ghana have benefited or not

from the programme at regional, district and community levels;

b) To assess the relevance of the PUNOs in supporting the Government of Ghana towards the achievement of the agencies overall mandates by focusing on complimentary methodologies and joint approaches;
c) To assess the efficiency, effectiveness and sustainability of the programme in achieving its expected results. This will entail analysis of delivery of actual outcomes against expected outcomes, in terms of delivery of outputs, achievement of outcomes and long term effects;
d) To assess the extent to which the joint implementation approach of the WASH DPC Programme has worked well or not;
e) To bring forward programming opportunities that indicate potential for future joint partnership between PUNOs and the Government of Ghana and local governments, and partners;
f) To identify lessons learned and best practices and make recommendations on what needs to be done to promote water, sanitation and hygiene in disaster prone communities and similar joint UN programmes in the future.

4. Scope and Focus of the Evaluation

The end-of-programme evaluation is expected to assess achievements, challenges and opportunities from the implementation of the WASH in DPC Programme.

The focus is the delivery of activities as outlined in the Performance Measurement Framework Document of the WASH in DPC Programme, which was prepared and adopted by the PUNOs at the beginning of the programme and updated throughout the life cycle of the project, notably at Project Steering Committee meetings.

The evaluation will be a systematic review of the activities delivered by the programme. It will identify lessons and recommendations for improvement of similar future joint programmes. Best practices and lessons learned from this programme will be shared with key stakeholders including government bodies, other NGOs, and other stakeholders for further programming.

5. Relevant Evaluation Questions Based on Evaluation Criteria

The evaluation will use evaluation questions related to the criteria of relevance, efficiency, effectiveness, impact outlook and sustainability in its assessment and rating of the performance of the WASH in DPC Programme. In addition to these evaluation criteria, coherence will also be assessed and rated. The assessment will be based on the questions below. The evaluators may expound on each of the components and activities of the programme in order to carry out the objectives of the evaluation.

Relevance:

- What is the relevance and value added of the activities carried out through the WASH in DPC Programme and was the project designed in a way that is relevant to reach its goals?
- To what extent are the programme activities relevant to the real needs of the intended beneficiaries? Did the project/activities meet relevant needs of the beneficiaries?

- To what extent is the programme relevant in improving resilience to flood in the selected 265 affected communities and in creating better livelihoods, and improving the health and disaster preparedness in the beneficiary communities?

Effectiveness:

- To what extent are the activities and outputs consistent with the objectives of the project and do the activities meet the objectives and results set out in the project (as outlined in the logical framework)?
- What kind of positive changes to beneficiaries have resulted from products and services delivered?
- To what extent have the identification, design and implementation processes, including outreach involved communities, local and national stakeholders as appropriate?
- To what extent and in what ways has ownership, or lack of it, impacted on the effectiveness of work and projects implemented?
- To what extent did the project succeed in integrating a gender[1] perspective?
- How were other cross-cutting issues such as youth, climate change and human rights considered in the design and implementation of activities?

Efficiency:

- To what extent was the programme run/delivered in an efficient way?
- To what extent were implementation arrangements adequate in terms of management, coordination and human resources? What type of administrative, financial or managerial challenges did the programme face and to what extent has it affected planning and delivery?
- To what extent were the resources made available sufficient for the planned interventions for the programme?

Impact outlook:

- What is the short-term, medium term and longer term changes in the lives of the disaster prone communities as a result of the programme? Specifically, any changes resulting from improving lives of the beneficiary community members in terms of environmental health, empowerment of the targeted community through the programme and livelihoods?

Sustainability:

- To what extent are the outputs delivered and results achieved so far sustainable?

[1] In addition to gender policies of the PUNOs, the donor, Canada, has recently released its new Feminist International Assistance Policy.

- To what extent has the training and awareness raising activities at the regional, district and community levels resulted in the acceptance by beneficiaries of the WASH in DPC programme deliverables?
- What are the key factors for sustainability and broad-based ownership of the WASH in DPC programme deliverables, and for mainstreaming these into national and local policies and activities?
- What are the opportunities for up-scaling and replication of the programme approach and components?
- Which unmet needs would be relevant to consider for delivering future sustainable WASH solutions in DPC in northern Ghana?

Coherence:

- To what extent was the joint implementation approach supported by the institutional arrangements in place and complementarity of expertise made available by the PUNOs?
- To what extent were the performance framework and its result indicators and means of verification adequate and supported the joint implementation approach?
- Which best practices have emerged for effective and timely joint collaboration of the UN organisations involved?

6. Stakeholder Involvement

A key determinant of evaluation utilization is the extent to which clients and stakeholders are meaningfully involved in the evaluation process. It is expected that that this evaluation will be participatory, involving key stakeholders: beneficiaries, partners, PUNOs and project developing and implementing entities of the agencies, Global Affairs Canada as donor, and other interested parties.

Stakeholders will be kept informed of the evaluation processes including design, information collection, and evaluation reporting and results dissemination to create a positive attitude for the evaluation and enhance its utilization. Relevant entities, United Nations agencies, national partners, beneficiaries of the programme, donor, and other civil society organizations may participate through a questionnaire, interviews or focus group discussions. Some key stakeholders, including those stakeholders involved in the implementation and users/recipients/beneficiaries will participate through interviews, questionnaires or group discussions.

Key partners/stakeholders to be involved/consulted during the evaluation include:

- Governmental partners: Ministry of Sanitation and Water Resources, National Disaster Management Organisation, School Health Education Programme of the Ghana Education Services (SHEP/GES), and the Community Water and Sanitation Agency (CWSA).

- UN Organisations (Ghana): UN-Habitat, UNICEF, UNDP, and WHO.

7. Evaluation Approach and Methods

The evaluation shall be independent and be led by UN-Habitat in close consultation and collaboration with UNICEF, UNDP and WHO. The evaluation will follow the evaluation norms and standards of the United Nations System. The evaluation analysis will be based on evaluation criteria, evaluation questions, and the Theory of Change applied to the work implemented through the WASH in DPC programme i.e., outlining the results chain and contribution towards the four specific objectives of the programme.

The evaluators are expected to use a variety of methods to collect and analyze data. Participatory methods will be used to collect qualitative and quantitative data.

The key methods include, but are not limited to:

- Household survey using survey questionnaires;
- Literature review of existing documents and review of context and poverty trends, including the project proposal and other documents, annual and quarterly reports, monitoring and evaluation reports.
- Field observation of the targeted community (-ies) and village (s);
- Interviews and meetings with staff of PUNOs, Government Counterpart partners (National, regional and District level), implementing partners, local authorities and local development institutions;
- Key informant interviews with project and national management teams and other relevant stakeholders;
- Review "Before and After" photos;
- Focus Group Discussions involving primary project participants (i.e., men, women, youth, etc.), other social groups and key stakeholders;
- Reflection and feedback sessions with staff and partners.

The field visits will include consultations with beneficiaries of projects as well as visits to project sites. *Field visits* will be initiated with a visit to Accra, where the team would meet with key personnel involved with the programme from UN-Habitat, UNICEF, WHO and UNDP and the Government of Ghana partners. They will also be provided with any more documents that they might require. The team will also obtain the views of Steering Group members, and field implementing partners to facilitate the subsequent trip to the field. From Accra, the team will travel to the UN Field Office in Tamale for interactions with the UN team there. From Tamale they will visit select beneficiary communities in the three regions (Northern, Upper East and Upper West) to selected sites and hold discussions with the beneficiaries and other stakeholders on programme implementation, provincial and district level and other cooperating partners, conduct survey and assessments and collect the requisite data on the ground to facilitate the subsequent evaluation work.

In preparation of the field missions, a teleconference will be held with the Evaluation Reference Group.

The following documents, among others, will be made available to the evaluators:

- Programme Document
- Detailed Implementation Plans
- Budget plan/Cash flows
- Baseline Survey Report
- Community Selection Report
- Performance Measurement Framework
- Programme Implementation Manual
- Draft Technical Guidelines for WASH in Flood Prone Communities
- Guidelines And Minimum Standards For Resilient WASH Facilities In Disaster (Flood) Prone Communities
- Disaster Risk Reduction Toolkit
- Bunkpurugu – Yunyoo Disaster Preparedness Simulation Exercise Report
- District Level Disaster Preparedness Plans
- Community Disaster Risk Reduction Plan
- Water Safety Plan Training Report
- Early Impact Assessment Report
- Steering Committee Meeting Reports
- Annual reports
- Semi-annual reports
- Monthly reports
- Mid-term Review Report
- Annual Financial report (3 year report)

8. Accountability and Responsibilities

The Evaluation is commissioned by the donor, Global Affairs Canada, and managed by the UN-Habitat Evaluation Unit in close consultation with UNICEF, UNDP and WHO.

An **Evaluation Reference Group** with members from UN-Habitat, UNICEF, UNDP and WHO, and from the donor, will be responsible for comments on the inception report and drafts of the evaluation report. Key governmental partners may also be invited as members of the reference group as deemed necessary and useful.

The **Evaluation Team** is to comprise of two international consultants: A **Team Leader** (International Consultant) and a supporting **Evaluator** (National Consultant). The international consultant is the team leader and responsible for meeting professional and ethical standards in planning and conducting the evaluation, and producing the expected deliverables. The National consultant will support the evaluation in particular, data collection and analysis.

Once the inception report is approved by the Evaluation Reference Group, it will become the management document for guiding delivery of the evaluation in accordance with expectations. The draft evaluation report, prepared by the international consultants, will be shared first with the Evaluation Reference Group. Comments from PUNOs and other key stakeholders will be consolidated by UN-Habitat's Evaluation Unit and forwarded to the consultants for incorporation. The consultants will submit the final draft report to the Head of the Evaluation Unit, UN-Habitat.

The UN-Habitat Evaluation Unit in close consultation with Programme Management Team will lead the evaluation by guiding and ensuring the evaluation is contracted to suitable candidates. The Evaluation Unit will provide advice on the code of conduct of evaluation; providing technical support as required. This collaboration will ensure that contractual requirements are met and approve all deliverables (Inception Report/ Work plan, Draft and Final Evaluation Reports).

In preparation of the evaluation, a teleconference will be held between the Evaluation Reference Group and the Evaluation Team in order to discuss and agree on the work plan and methodology. A second teleconference will be held at conclusion of the evaluation in order to review findings, if possible also with key partners.

9. Qualifications and Experience of the Evaluation Team

The evaluation shall be carried out by two consultants.

The International Consultant is expected to have:

- Over 15 years of programme management, monitoring and evaluation experience building on the results-based management approach.
- Extensive, proven, evaluation experience. The consultant should have ability to present credible findings derived from evidence and putting conclusions and recommendations supported by the findings. Examples of at least two evaluation reports should be submitted with the letter of interest from candidates.
- Specific knowledge and understanding of UN Organisations and the organizational context of urban basic services/ WASH.
- Advanced academic degree in development or similar relevant fields.
- Specialized knowledge of projects or programmes in the field of urban basic services, water, sanitation, hygiene and community engagement. Relevant experience of other major humanitarian and development agencies or programmes, in particular in relation to similar programmes is an asset.

- Familiarity with approaches to development in small communities in a lower middle income country such as Ghana is desirable.
- Fluency in English (understanding, reading and writing) is a requirement.

The National Consultant is expected to have:

- First level academic/ recognized university degree in development or similar relevant area
- Good local working knowledge
- Proficient in English and local languages (depending on field visits)
- Five years of experience in implementation, management and monitoring of donor-funded development projects.

The profile of the consultants should complement the following attributes and expertise in: WASH and water quality issues, building community resilience to disasters, joint UN programming, capacity building and strengthening institutions; good knowledge of the UN system standards and norms for evaluation and experience in applying results-based evaluation policies and procedures; knowledge of participatory monitoring approaches; experience applying SMART indicators and reconstructing or validating baseline scenarios.

Competency in the following is required: excellent English writing and communication skills; demonstrated ability to assess complex situations in order to succinctly and clearly distil critical issues and draw forward looking conclusions; excellent facilitation skills; and integrity, sound judgement, analytical skills, networking and interpersonal skills, and proven report writing skills.

10. Work Schedule

The evaluation will be conducted over the period of eight weeks spread over four months, including the desk review, from December 2017 to March 2018.

The Evaluation Team is expected to prepare an inception work with a work plan that will operationalize the evaluation. In the inception report, understanding of the evaluation questions, methods to be used, limitations or constraints to the evaluation as well as schedules and delivery dates to guide the execution of the evaluation should be detailed.

The draft will be reviewed and comments provided by the Evaluation Reference Group. The comments received will be considered by the evaluators, who will be expected to submit a revised report, after incorporating all the comments on the draft report. If deemed useful and resources permitting, the consultants would return to Accra at the end of the assignment to present the final evaluation report to the PUNOs and Government of Ghana partners.

A provisional timetable is as follows in Section 13.

11. Deliverables

The three primary deliverables for this evaluation are:

I. **Inception Report** with evaluation matrix and evaluation work plan. The inception report will guide the evaluation process and address the evaluation questions of the TOR, including selection of field visits and time schedule, limitations to addressing and answering the questions and the Theory of Change. Once approved, it will become the key management document for the evaluation, guiding evaluation delivery in accordance with UN-Habitat's expectations throughout the performance of contract.

II. **Draft Evaluation Report**. The Evaluation Team will prepare an evaluation report draft to be reviewed by the PUNOs and members of Evaluation Reference Group. The draft should follow standard format for evaluation reports. The draft report must meet minimum requirements for draft reports (as assessed by the Evaluation Unit) before the draft is shared more widely with relevant stakeholders for comments. The evaluation report should follow the standard format evaluation reports, putting forward the purpose, focus, scope, evaluation methodology, evaluation findings (with assessment of achievements and rating of performance according to evaluation criteria), lessons learned and recommendations.

III. **Final Evaluation Report** (including Executive Summary and Appendices) will be prepared in English language and follow the UN-Habitat's standard format for an evaluation report. The report should not exceed 50 pages (excluding Executive Summary and Appendices). In general, the report should be technically easy to comprehend for non-specialists, contain detailed lessons learned, actionable recommendations, and list of all people interviewed and survey templates in Annexes.

12. Resources

The funds for the evaluation of the WASH in DPC Programme are available from programme budget. Daily subsistence allowance will be paid only when working outside the official duty stations of consultants.

13. Provisional Time Frame

#	Task Description	October 2017				November 2017				December 2017				January 2018				February 2018				March 2018			
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Establishment of Evaluation Reference Group			X	X																				
2	Call for consultancy proposals and recruitment of consultants					X	X	X	X	X															
3	Review of background documents									X	X	X	X												

4	Inception - preparation and approval of inception report with work plan and methodology of work										X	X	X									
5	Data collection including document reviews, interviews, consultations and group meetings												X	X	X	X						
6	Mission – analysis of evaluation findings, commence draft report writing and briefing to Evaluation Reference Group														X	X	X					
7	Draft Evaluation Report																X	X	X			
8	Review of Evaluation Report																		X	X	X	X	X	
9	Production delivery of Final Evaluation Report (including editing, translation into layout, printing, publishing)																							X

ANNEX 2: TRAVEL AND ACTIVITIES SCHEDULE

Date	Time	Organization	Participants	Place	Method	Responsibility
14/05	Whole day	UN-Habitat NADMO SHEP UNICEF	Representatives of the organizations	Accra	Separate meetings + discussions with each organization	Tom and Nicholas
15/05	Whole day	UN Resident Coordinator UNDP WHO	Representatives of the organizations	Accra	Separate meetings + discussions with each organization	Tom and Nicholas
16/05		Canadian High Commission Plan CARE CWSA	Representatives of the organizations	Accra	Separate meetings + discussions with each organization	Tom and Nicholas
17/05	Whole day	N.A.	Tom and Nicholas	Accra	Discussions + computer work	Tom and Nicholas
18/05	6.30 am	Airplane Accra - Tamale		Accra/Tamale	Airplane	Tom and Nicholas
	07.30 am	Travel to Bunkpurugu	Driver		Vehicle	Tom
	09.30 am	Bunkpurugu District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Central Gonja District Assembly	Meetings and discussions	Tom
	11.00 am	Bunkpurugu Village Visits		Central Gonja Villages	FGD & Observations	Tom
	10.00 am	Zabzugu District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person		FGD & Observations	Nicholas
	15.00 pm	Tatale District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person		FGD & Observations	Nicholas
19/05	09.00 am	Bunkpurugu Villages Continued	Villages visits	Bunburga Villages	FGD & Observations	Tom
	15.00 pm	Travel to Tamale	Driver		Vehicle	Tom
	09.00 am	Tatale and Zabzugu village visits		Tatale and Zabzugu village visits		Nicholas

20/05	09.00 am	Travel to Tamale	Driver		Vehicle	Nicholas
	12.00 pm	Meeting	Tom and Nicholas	Tamale	Meeting	Tom and Nicholas
	09.00 am and 13.00 pm	Work on report	Tom	Tamale	Analysis + writing	Tom
	13.00 pm	Work on report	Nicholas	Tamale	Analysis + writing	Nicholas
21/05	9.00 am	Regional Coordinating Council - Upper East Region in Bolgatanga	Regional Coordinating Director or RCC Rep, Regional Environmental Health Officer, Regional NADMO Director, Regional CWSA, Regional SHEP	Bolgatanga	Meetings and discussions	Tom
	10.30 am	Travel to Kassena Nankana				Tom
	11.30 am	Kassena Nankana West District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Kassena Nankana West District Assembly	Meetings and discussions	Tom
	12.30 pm	Visit villages - Kassena Nankana West	DA Rep	Paga	FGD & Observations	Tom
	9.00 am	Regional Coordinating Council - Upper West Region	Regional Coordinating Director or RCC Rep, Regional Environmental Health Officer, Regional NADMO Director, Regional CWSA, Regional SHEP	Wa	Meetings and discussions	Nicholas
	11.00 am	Wa East Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Wa West Assembly	Meetings and discussions	Nicholas
	13.00 pm	Wa East Village visits		Funsi	FGD & Observations	Nicholas
22/05	07.00 am	Travel to Pusiga	Driver		Vehicle	Tom
	09.00 am	Pusiga District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Pusiga District Assembly	Meetings and discussions	Tom
	10.00 am	Visit Pusiga Villages	DA Rep	Pusiga	FGD & Observations	Tom
	07.00 am	Travel to Nandom	Driver		Vehicle	Nicholas
	09.30 am	Nandom District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Nandom District Assembly	Meetings and discussions	Nicholas
	11.30 am	Visit villages Nandom		Nandom	FGD & Observations	Nicholas

23/05	07.00 am	Travel to Jirapa	Driver	Jirapa	Vehicle	Nicholas
	09.30 am	Jirapa District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Jirapa	Meetings and discussions	Nicholas
	11.00 am	Visit Jirapa communities and villages		Jirapa	FGD & Observations	Nicholas
	15.30 pm	Daffiama/Bussie/ Issa District Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Daffiama	Meetings and discussions	Nicholas
	07.00 am	Travel to Bawku	Driver		Vehicle	Tom
	09.00 am	Bawku Central Municipal Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Bawku Central Municipal Assembly	Meetings and discussions	Tom
	10.00 am	Visit Bawku villages	DA Rep	Bawku	FGD & Observations	Tom
24/05	09.00 am	Visit Villages in Daffiama	DA Rep	Daffiama	FGD & Observations	Nicholas
	07.00 am	Travel to Sandema	Driver		Vehicle	Tom
	09.00 am	Builsa North Assembly	District Coordinating Director or MMDA Rep, District Environmental Health Officer, District NADMO Director, District SHEP, Technical/ Engineers focal person	Builsa North Assembly	Meetings and discussions	Tom
	10.30 am	Visit Builsa North villages	DA Rep	Sandema	FGD & Observations	Tom
25/05	08.30 am	Travel to Tamale	Driver		Vehicle	Tom
	01.00 pm	Travel to Tamale	Driver		Vehicle	Nicholas
	Whole day	Work on report		Tamale	Discussions + computer work	Tom & Nicholas
26/05	07.00 am	Fly back to Accra			Air	Tom & Nicholas

ANNEX 3: LIST OF PERSONS INTERVIEWED

No.	Date	Organization	Persons met	Designation
1.	14.05.2018	UN-Habitat	Eric Moukoro	Project Director
2.	14.05.2018	SHEP - Accra	Ellen Gyekye	SHEP Coordinator
			Nana Esi Inkoom	SHEP DIrector
3.	14.05.2018	NADMO - Accra	Bright Adama	Project Officer
			Ruth Arthur	Project Officer
			Eugene Ayew	Project Officer
4.	15.05.2018	UN Resident Coordinator's Office	Dr. Christine Evans-Klock	UN Resident Coordinator
			Maya Togobo	Project Officer
5.	15.05.2018	UNDP	Stephen S.Kansuk	Programme Analyst
6.	15.05.2018	WHO	Akosua Kwakye	National Programme Officer
			Edward Gyepi-Garbrah	National Programme Officer
7.	16.05.2018	Canadian High Commission	Francis Bedros	First Secretary Development
			Eric Chimsi	Development Analyst
8.	16.05.2018	Plan International Ghana	Asum-Kwarteng ahensah	Ag. Country Director
			Gloria Ackai	M&E Officer
			Joseph Appiah	Project Officer
			Vera Abbey	Finance Manager
9.	16.05.2018.	Care International	Gifty Blekpe	Dep. Country DIrector
10.	16.05.2018	CWSA	Theodora Adomako	Extension Services Officer Engineer
11.	18.05.2018	Bunkpurugu District Assembly	Idriza	District Environmental Health Officer
			Nicholas	Community Development Director
			Fredals	Assistant Planning Officer
			Gipti	District Resource Person (under UNICEF)
12.	18.05.2018	Zabzugu District Assembly	Cyprian Douchebe	District Coordinating Director
			Michael Musah	Environmental Health Officer
			Salahudeen Mohammed	Planning Officer
			Omar Nuhu	NADMO Director
			Shirlene Tangia Ward	Dept. of Community Development
			Samuel Adjei	Works Department

13.	18.05.2018	Tatale-Sanguli District Assembly	Abdul Manaan Ziblim	Environmental Health Officer
			Anthony Boakye	Asst. Environmental Health Officer
			Sule Albert Tier-i	CLTS Focal Person
			Abdullah Seidu	Environmental Health Assistant
			Timbanja James	Snr. Environmental Health Assistant
14.	21.05.2018	Upper West RCC	Henry Bagah	Regional Environmental Health Officer
			Freda Natu	CLTS Focal Person
			Mahmud Farouk	Dept of Community Development
			Emmanuel Alasidongor	NADMO
			Samuel Adjei Nimo	UNICEF Regional Consultant
			Asaglertuo Simon Peter	SHEP
			Alhassan Inusah Agambire	Regional Environmental Health
15.	21.05.2018	Upper East RCC	Ibrahim	WASH Vocal person
			Eva	UNICEF Regional Consultant
			Jule	Regional Environmental Health Officer
			David	NADMO Regional Officer
		Kasena Nankana West District Assembly	Elizabeth Nyawaze	District Environmental Health Officer
			Asst. Coordinating Director	
			Coordinating Director	
16.	21.05.2018	Wa East District Assembly	Alhassan Suraka	Environmental Health Officer
			Samuel Larbi	Budget Officer
			Amos Bayor	Engineer
			Mumuni Rasheed	Asst. Coordinating Director
17.	22.05.2018	Nandom District Assembly	Rita Nyorka	Planning Officer
			Teri Raymond	SHEP
			Samson S. Dery	NADMO Director
			Jerry Sabogu Yakubu	Environmental Health Officer
			Hon. Thaddeus Angsoglenang	District Chief Executive
			Abdul Karim	District Coordinating Director
			Stephen Kutom	MASLOC
			Kasim Habibu	Works Engineer
18.	22.05.2018	Pusiga District Assembly	Ray	Regional Officer
			Saga	District Environmental Health Officer
			Mumuni	District Environmental Health Officer

19.	23.05.2018	Bawku District Assembly	District Environmental Health Officers	
			Asst. Coordinating Director	
			Coordinating Director	
			District Chief Executive	
			NADMO Director	
20.	23.05.2018	Jirapa District Assembly	Petro Ankorle	District Coordinating Director
			Paul Baba Mornah	Environmental Health Officer
			Wilfred Kuubele-ire	NADMO Director
			Emmanuel Okyere	Works Engineer
			Dennis Naaso	SHEP
21.	24.05.2018	Builsa North / Sandema District Assembly	District Environmental Health Officers	
			Asst. Coordinating Director	
			Coordinating Director	
22.	24.05.2018	Daffiama-Bussie-Issah District Assembly	Clifford Atanga	Asst. District Coordinating Director
			Emmanuel Yobunt	CLTS Focal Person
			Matthew Apana	Environmental Health Officer
			Elham Issahaku Adams	NADMO
			Tahiru Zakiu	Planning Unit
			Gregory Y. Tusore	SHEP
			Abiba Zakaria	District Finance Officer
23.	24.05.2018	Plan International Ghana - Wa	Kamal Nuhu	Project officer
24.	25.05.2018	CWSA - Wa	Cletus Bapuogyang	Extension Services Officer
25.	25.05.2018	UNICEF Field Office - Tamale	Gloria Nyam-Gyam	WASH Specialist
26.	29.05.2018	Ministry of Sanitation and Water Resources	Kweku Quansah	Programme Specialist

ANNEX 4: BIBLIOGRAPHY

1) Project proposal for Water, Sanitation and Hygiene in Disaster Prone Communities in Northern Ghana. For Submission to Foreign Affairs, Trade and Development, Canada (DFATD). 2014.

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3) Water, Sanitation and Hygiene in Disaster Prone Communities in Northern Ghana. Programme Implementation Manual.

4) Joint UN Water, Sanitation and Hygiene in Disaster Prone Communities Programme Document.

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7) Consolidated Annual Financial Reports of the Administrative Agent of the JP Ghana WASH.

8) Steering Committee minutes and reports.

9) Report on Flood Simulation Exercise at Bunkpurugu-Yunyoo district.

10) Water, Sanitation and Hygiene in Disaster Prone Communities. Monthly reports 2015, 2016 and 2017.

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12) Water, Sanitation and Hygiene in Disaster Prone Communities. Perception-based Impact assessment. Resilience to floods of the infrastructure and services provided. August 2017.

13) Draft annual report April 2016 – May 2017.

14) Consolidated Final Narrative Report (Period from June 1, 2014 to May 31, 2017).

15) District floods disaster preparedness, response and recovery action plans under the WASH in DPC programme.

16) Water, Sanitation and Hygiene in Disaster Prone Communities. Baseline Report. 2015.

17) Water, Sanitation and Hygiene in Disaster Prone Communities. Annual Reports 2015, 2016 and 2017

18) Executive Report on the State of Groundwater Resources of the Northern Regions of Ghana, WRC, Dec., 2011.

19) Rainfall and temperature changes and variability in the Upper East Region of Ghana. Abdul-Rahaman Issahaku Benjamin Betey Campion Regina Edziyie. First published: 21 July 2016.

20) https://doi.org/10.1002/2016EA000161; Ghana EPA and others.

ANNEX 5: OPTIONS FOR SUSTAINABLE WASH INFRASTRUCTURE IN RURAL AREAS IN NORTH GHANA

For the development of options and standards for institutionally and financially sustainable operation and maintenance systems for rural WASH infrastructure in North Ghana an assessment should be made of similar systems in other countries in Africa. For instance the Government of Uganda is currently (mid to end 2018) initiating the development of exactly such systems in Uganda with the support of the Danish Government.

However, important is that also in Uganda and other countries it is acknowledged that it is in many rural areas and situations not possible to get these systems financially sustainable without (some level of) external support. Such support then needs to be provided by the national Government or by external donors. It is good to take this for granted and develop insight in the extent to which a WASH system can or cannot become financially sustainable on itself in different situations, including the extent and form of external support required. The amount and types of support will most likely change over time with the development of the local and national society.

Some options for sustainable systems include:

- Introduce a preventive maintenance scheme for rural water systems and possibly also school latrines in the target districts for a period of at least 10 years. CWSA could for instance set-up, manage and guide such preventive maintenance schemes in the involved districts which will also provide CWSA the opportunity to pilot and optimize this approach (and find out who should best manage the preventive maintenance schemes in the districts) in the context of the involved districts and use the experience for replication within the North and other parts of Ghana.
- Introduce umbrella WASH Authorities per region or group of districts for rural WASH systems that contract and supervise local companies for scheme operation and maintenance (usually requiring payment for especially water by the local inhabitants) instead of O&M by local WASH committees by the beneficiaries (the WASH committees can continue to function as monitors of the scheme oprators and as communicators of the interests of the customers they represent in the WASH Authorities).
- Introduce a revolving facility to provide immediate support (e.g., by financing repairs or scheme extensions) and require back payments from the customers (where needed in combination with other funding sources) over time. This makes accumulation of local savings for scheme repair and extensions on investment accounts – an approach that often fails – redundant and ensures direct repairs whenever needed so the water supply to people is not stopped for more time than absolutely necessary. It also prevents that systems lie idle or broken down when for instance there is a conflict regarding who is responsible to pay the costs for a breakdown or other problem.
- Introduce more robust public WASH facilities. This has already been stipulated in some parts of the main report. It encompasses for instance the implementation of high quality pit linings in school latrines (for instance with prefabricated high quality reinforced concrete panels that can be moved to site by truck and assembled in situ by trained local artisans). For such structures blue print designs can and should be introduced that are vigorously enforced upon contractors (e.g.

by introducing clear contracts that present the design clearly including an exhaustive Bill of Quantities and exhaustive high minum standards for all part of the construction).

- In relation to the above a proper and effective monitoring system will need to be put in place to control the quality of each facility during construction and after completion. The data should be entered in a central database that automatically produces different reports that can be used at all involved organizational levels and users to ensure timely signaling of quality issues as well as utilization and progress of works. This should go together with proper training and monitoring of the monitors to ensure that they do not only measure the involved indicators but also assess in general whether works are properly executed (to avoid 'automatic piloting' where monitors only focus on the prescribed issues and only note down what they observe and measure regarding these issues) and, most importantly, take proper and immediate remedial action whenever needed. This aspect includes the option to stop works temporary or permanently when a monitor feels this is required.

- Introduce subsidy schemes for the construction of individual (household) WASH solutions to enable households to realize robust and disaster resilient solutions that are customized to their situation. These can and should include blue print designs. Example; twin pit latrines with recepticles of optimized volume (large enough to ensure sufficient decomposition of excreta, to be come sufficiently sterile and as small as possible to reduce investment costs as much as possible). The recepticles again should be of high quality, ideally also of high quality prefabricated reinforced concrete, transported to site by trucks and assembled in situ by trained local artisans, while the artisans can then also finalize the above ground parts of the latrines (including putting these structured on raised earth mounts and/or surrounding them with earth to protect them from floods). Other household WASH infrastructure may include upgrades of hand dug wells and/or hand drilling of boreholes and equipping them with locally produced pumps (e.g., EMAS pump or Rope pump). Such water points may in some cases be used for both drinking and small scale irrigation. They are very well used and sustained mostly (reports about this can be availed on demand by the consultant), mainly because they are individual property, provide some form of income to people and can easily and cheaply be maintained and repaired by people themselves. The organization Pumping is Life, based in Wale Wale, North Ghana, which operates on a semi-commercial basis is specialized in these solutions.

ANNEX 6: MAKING PROGRAMMES MORE SUCCESSFUL

This Annex build forward on recommendation number 2 in the main text, providing more detailed suggestions on how similar future programmes may be more successful.

1. **Put dedicated personnel on the programme with sufficient expertise, resources, time and mandate.** Future programmes should have dedicated personnel from each agency solely or at least largely responsible for implementing the programme at the regional level as well as the national level. In the same vain, agency resources for the programme should be dedicated to it and not mixed with wider agency resources. For instance programme vehicles should be dedicated to the programme and not mixed in a general pool.

2. **Go for a ' leave no one behind' strategy.** The focus on flood prone communities has excluded many neighboring communities that are as much or even more in need of assistance. More over the water points and other facilities realized by the programme are often overburdened by people who were not reached with programme assistance. Thirdly the focus on communities that are often far apart has raised costs. And fourthly many of the ' flood prone' communities did not even need flood resilient facilities (e.g. in many of the flood prone communities the water points realized by the programme were not flood resilient), hence why the focus on such communities only. It is better to select a number of areas and ensure full coverage of all people in these areas with all programme interventions, with flood and other hazards as a cross cutting issue instead of a programme objective.

3. **Develop a more integrated, participatory and sustainable approach at the community level.** This can be realized through a slight or through a larger deviation from the approach as was used by the WASH in DPC programme:

    - Reduce the number of subjects, activities and implementing stakeholders in the communities (e.g. only CLTS and VSLA, facilitated by DEHOs) and work with the communities over a longer period of time. Participation could be enhanced further by for instance piloting designs of traditional latrines (and other household facilities) within the specific circumstances of the community and let communities build public facilities such as school latrines themselves (e.g. under guidance eof experienced local artisans) in a demand driven way (they can get the assistance if they go for it, otherwise the assistance goes to another community). The implementing organization(s) (in this case the district assemblies, but can also be locally based NGOs or other parties) should receive sufficient resources and support during the entire length of the community interventions in terms of training, monitoring, quality control and guidance, but also money, materials, tools and equipment.

    - A more elaborate deviation, with increased, improved and more sustainable effects and impacts, would be to custom-make interventions in communities based on community self assessment and prioritization of needs (e.g. through for the purpose trained DEHOs) and detailed assessment of these needs. From experience with such programs[28] it is known that the community

[28] See for instance the results of the TAZAMO programme by Connect International which reached 1 million people in 400 communities in Tanzania, Zambia and Mozambique.

process can be blue printed (after piloting in limited numbers of communities) and incorporate activities such as CLTS and facilitation of credit and saving groups. It is also known that the list of priority hardware and investment needs by communities is often rather short (usually water points, primary schools plus toilet and water facilities, health clinics, and business and agriculture investments). Support in fulfilling these needs can be (largely) covered by a limited number of organizations (while it is not necessary to cover all the priority needs). For so-called hidden needs (usually sanitation and hygiene belong to this) awareness raising on these topics should be part of the blue print process (e.g. through CLTS) and be followed up by action to fulfill these needs once the demand for it in the community has developed. This can be stimulated further by offering financial or in-kind support (see also next point).

4. **Appreciate and integrate the indigenous knowledge of communities.** A development programme should integrate the knowhow and ingenuity of communities at all levels of programme planning and implementation in identifying their felt needs and facilitating them to come up with best actions that are suitable for their locality with expert support. Also to fulfill priority needs communities often need support, not only in terms of awareness and skills raising, but more over in terms of finance. It is known that if fulfillment of priority needs is subsidized or in-kind supported the level of ownership over and care by people for the results is as high as when they are not subsidized. Assisting people to fulfill their priority needs through subsidies, grants, in-kind support or connection to affordable credits can speed up development and increase the resilience of people enormously. In the context of the WASH in DPC programme this entails two important issues: (a) VSLA groups develop their own regulations for which investments and expenditures the credits obtained through the groups can be used while programmes can encourage them to invest in latrine construction and other health options as an option, and (b) additional financial or in-kind support should be introduced[29] for the fulfillment of priority needs that fit within the programme objective but are difficult for people to realize fully themselves (e.g., twin pit latrines[30]).

5. **Make facilities even more suited to the local circumstances.** This entails three issues: robustness, suitability for local O&M systems and affordability. Robustness is especially required in facilities (both public and private) that are prone to hazards and/or are used intensively over a long period of time. It implies the use of better materials (e.g. reinforced concrete instead of cement bricks with plaster), improved production systems (for instance pre-fabricated pit linings in school latrines instead of in situ produced linings), improved minimum standards for materials, equipment and works, better designs (e.g. household latrines with small relatively cheap twin pits raised partly above ground, roof water catchment systems with better quality PE tanks) and improved quality assurance and monitoring systems. It needs to be said that the quality and robustness of many of the facilities was quite reasonable within the local context.

   However, with such an overwhelmingly large programme with so many highly experienced and skilled organizations involved it is feasible to increase the standards further. This will increase costs, sometimes even up to 50% compared to the current facilities, but will make an increase of say 5 to 10 year up to 15 to 30 years proper and pleasant functioning of facilities.

[29] A similar recommendation was also stated in the mid-term review of the programme.

[30] The evaluators also believe that if such support is not provided the training of local artisans on the production of such facilities will be irrelevant because without such support the number of households that will invest in these facilities themselves will remain very limited as is also seen in the programme results to date.

Also more robust facilities usually keep on functioning better than less robust facilities if O&M is poor, which is often the case in rural communities. In this regard the sub surface parts of new boreholes as realized by the programme are a positive example as these have been realized with highly professional skills and equipment as well as with high quality materials, proper monitoring and so on and as a result are expected to survive at least 30 years.

Suitability for existing O&M systems means among others the need for water systems that can be repaired by area mechanics (which excludes for instance the mechanized boreholes that were too often standing idle due to technical problems that cannot be addressed by area mechanics) but also the logic of replacing old, though still (somehow) functional, Nira pumps with Afridev pumps. Affordability means that communities and community households need to be able to pay for both the investment and O&M costs of facilities. If this proves difficult they may need to be assisted with it (as is done with the investment in public facilities, such as water points and school latrines, but with a need to also address O&M financing sufficiently in terms of funding and/or increased guidance to WSMTs and schools to develop suitable O&M finance systems).

In this context the consultants also have a clear preference for introduction of twin pit latrines with pre-fabricated reinforced concrete recepticles which are donated to households who further finalize their latrines themselves with obvious advantages including: (a) high robustness of the part of latrines that cannot be repaired or replaced, (b) use of pit contents as dung (which is common culture in the area), (c) structural facility that will not need to be rebuilt when a pit is full, (d) hygienic and easy to clean slabs, (e) no need to train DEHOs on how to pilot technical designs for traditional latrines with communities as part of CLTS[31], (f) it is expected that almost all people will grab this opportunity and realize a latrine, (g) high level of satisfaction among beneficiaries, (h) resilience to floods, runoff water and other hazards, (i) no more need to customize latrine designs in each community (one size fits all).

6. **Avoid short term capacity building and awareness raising interventions if they are not embedded in a long-term integrated approach.** Building capacities in people and organizations and raising awareness (and therewith different practices) among people in a sustainable way is notoriously difficult for all kinds of reasons. Therefore short term stand alone interventions that are not embedded and integrated in a longer term approach that aim to achieve exactly that (capacities and/or awareness) are doomed to fail. In this respect we place question marks around the awareness activities executed in the communities and in the targeted schools that were often consisting of one or a few trainings and/or workshops without further follow up (e.g, DRR, clean water, WSMT trainings, school WASH awareness trainings, etc.). Even the CLTS and VSLA interventions and the local artisan trainings were too short term in this respect and are in need of continuation, follow up and integration with related support activities.

7. **Give a larger role and responsibility to the district/local level** (either district assemblies and/or NGOs active, and preferably based in the districts or region), including: baseline surveys, financing of district level activities with exception of the activities by highly professional companies (drilling and related companies, concrete pre-fabricating companies, etc.) under proper programme monitoring, management of CLTS, VSLA and school social programme activities under proper programme monitoring, coordination of all activities (including drilling and related works, construction of school

[31] As the Programme's Mid-term review stated: 'CLTS is right for behavior change but not for flood resilient latrine construction'. This is also important because DEHOs are not technically educated and oriented.

latrines, etc.) with the programme contract holder. Contract holder to ensure proper training, guidance and monitoring/quality assurance of all district level implementing stakeholders. The contract holder and its partner organizations should for this purpose be based and operate near the district and community level.

8. **Introduce results based financing** at the district and other levels where possible to further enhance the motivation and activeness of the involved parties.

9. **Introduce and fund preventive maintenance of water points in the districts through contracted area mechanics.** If water points are realized where it is to be expected that O&M, especially larger repairs, by the local level will be cumbersome in the Northern region one should consider the establishment of preventive maintenance systems. In Northern Ghana with its system of reasonably capable area mechanics it would be logical to build on this system and offer area mechanics longer term contracts for preventive maintenance of water points. This system could be set up and managed by CWSA (possibly managed by the districts later on). CWSA already has plans in this direction but has not worked them out yet and lacks the funds required for it. To ensure proper transport of the area mechanics and the materials and equipment they need they should be enabled to buy a tricycle for the purpose (e.g., with a loan from the programme). Funding should be long-term and should come from external funding sources (government or donors) who pay the cost of the area mechanics and the tools and materials required while communities could then still pay for repairs required in between. Such a preventive maintenance system is relatively cheap while it largely prevents water points standing idle, mobilization costs for sudden repairs and the problem of communities unable or unwilling to pay for repairs.

10. **Reduce the number of programme parties, expensive staff and consultants and unessential activities.** The programme started with difficulty and lost time due to the many parties involved and the difficulty they had to determine their role and integrate and coordinate their activities. Also the complexity and the many subjects of the programme contributed to the difficulties and delays and raised costs. This can be improved on by reducing he number of programme parties. Many organizations have all or large parts of the expertise and infrastructure required for a programme like the WASH in DPC programme. For instance one contract holder supported by one partner, both acting at regional level, could suffice. They could sub contract drilling and other companies, and work together with especially district assemblies and district officers and/or NGOs active in the target communities. Regional Coordinating Councils could be involved in terms of advice (e.g., on where to implement interventions), required permissions and coordination with district assemblies. The numbers of expensive staff and consultants should be reduced drastically as well as activities not essential for the programme objective (e.g., disaster preparedness plans, partly the Facility Management plans in schools, large parts of different surveys and assessments executed, e.g., the baseline survey, etc.).

11. **Ensure sufficient cash flow at implementing partners.** Within a framework of results based financing it is paramount that implementing partners that perform well should not have to stop or delay activities due to cash flow problems in case these are related to improper fund transferring by the programme. This means that the cash transferring needs to be designed to take account of this and include flexibility to speed up transfers in case there are good reasons to do so. In this context it was argued by implementing partners to have a larger percentage paid upfront to allow them more financial space.

12. **The Government of Ghana should commit better to the funding of plans** for the different Government levels and agencies. Programmes should not start before such commitment is made explicit by the GoG, including contractually afgreed consequences for not adhering to the agreed commitments (which will especially be needed where longer term input by the GoG is required after finalization of a programme).

13. **The branding and visibility of the programme should be explicit.** This gap makes other actors take credit for these products and services and can pervert and undermine sustainability particularly when politicians step in.

14. **Prevent that programmes depend too much on integrated efforts.** Integration in the WASH in DPC programme had negative consequences for the coherence of the programme which was designed for a truly integrated intrervention. As the PUNOs tended more to divide the pie in pieces and concentrate on their pieces, the consequent lack of integration resulted in overlaps and hiates in activities, guidelines, training programs, etc. There is a logic in organizations preferring to divide the pie rather than to integrate it.

Each organization has its own way of working, its own infrastructure, its own procedures, etc. In order to really integrate these with those of other organizations is a huge effort (see the recommendation 3) while a programme is only a temporary initiative, often beside numerous other programmes that are executed with other organizations. Hence the efforts of integration will not necessarily merit structural advantages while they require huge efforts and may easily overburden staff and structures, especially if there are several programmes that require such integration efforts. In that sense it is better to be realistic and try to design a programme in a more simple way, as much as possible limiting the amount of required integration between organizations and the number of involved organizations. Therefore to 'deliver as one' should be regarded as a means to an end, applied when it really has clear advantages and in practical ways, not as a goal.

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