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**SUSTAINABLE WATER AND SANITATION SERVICES
FOR ALL IN A FAST CHANGING WORLD**

**A case study of the sustainability-focused monitoring
approach of the Basic Services Fund (2006-2012)
in South Sudan**

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BRIEFING PAPER 1937

After decades of civil war, the Basic Services Fund (BSF) with DFID as lead donor, was a major contributor to the reconstruction efforts of the Government of South Sudan to develop its basic services, including improving access to safe water. Between 2006 and 2012, 29 NGOs received grants to improve water supply in the most remote areas of the country. In a post conflict context, sustainability of interventions is often a challenge: the BSF Secretariat took therefore an active role in guiding NGOs towards a more consistent, efficient and sustainable way of implementing WASH projects. Recommendations provided focused on sustainability with the aim to move away from intensive, short-term initiatives inspired by humanitarian concerns to long-term and better planned recovery projects. BSF being recognized as a successful funding mechanism, this article describes the sustainability-focused monitoring approach of the BSF Secretariat, and highlights the main lessons learned.

Introduction

South Sudan is generally well endowed with water resources; however, it still faces many challenges, the primary concern being the access to safe water. Since the signing of the Comprehensive Peace Agreement (CPA) on the 9th of January 2005, the Government of the Republic of South Sudan (GoSS), with the support of international donors, has been actively working on increasing its population's access to improved water sources. The actual access to improved water sources has been estimated to be as low as 34%, according to the South Sudan Development Plan 2011-2013 (SSDP)¹.

To support this effort, many NGOs have been involved in the rural water supply sector, and have received funds for drilling, rehabilitating, or repairing hand-pump boreholes. In a normal development context a newly drilled borehole would be handed over to a trained beneficiary community, who should subsequently be responsible for its Operation and Maintenance (O&M); the intention being to create ownership and responsibility and thus ensuring sustainability. However, the humanitarian context of the second South Sudan's civil war (1983-2005) created a situation where many hand-pump boreholes were drilled as an emergency response with less focus on building a sense of ownership and thus on sustainability. This has led to the current situation where communities hardly participate in maintenance and remain passive when the borehole breaks down, often relying on NGO's support for a solution.

The lack of hand-pump boreholes maintenance leads to functionality issues. According to the WIMS₂, there are about 10,000 water points in the country as of 2010, of which, according to the National Water Policy (2007) echoed by the WASH Sector Strategic Framework (2011), 30-50% are non-functional at any given time.

The Basic Services Fund (BSF), with the Department of International Development (DFID) as lead donor, and contributions from the Governments of Canada, The Netherlands, Norway, Sweden and the European Union, was a major contributor to the efforts of the GoSS to develop basic services in the country. Between 2006 and 2012, four phases of grant for NGOs were consecutively implemented. BMB Mott MacDonald³ was appointed as Secretariat for the BSF, with the responsibility for the financial and technical monitoring

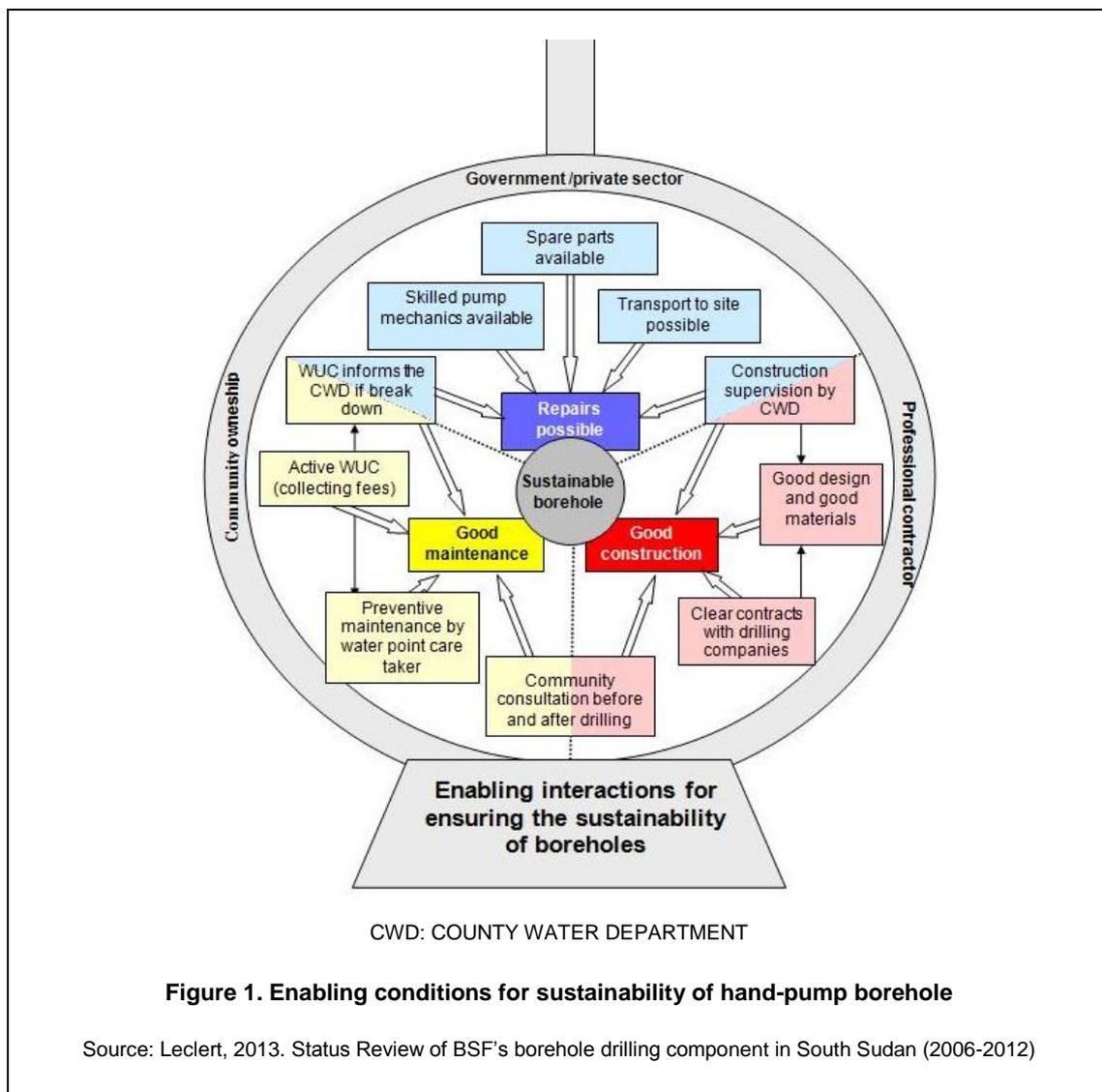
of the grant recipients (NGOs). In its monitoring approach, the BSF Secretariat acknowledged the need to move away from intensive, short-term initiatives inspired by humanitarian concerns, to long term and better planned recovery projects.

In order to assess the real impact of the BSF in terms of outputs and sustainability, DFID requested to execute a status review of the drilling activities carried out between 2006 and 2012. The status review had two main components:

- Component 1: To inform on the actual number of functional boreholes at the end of the BSF, through the execution of a detailed assessment of the operational status of the boreholes; and
- Component 2: To assess whether the recommendations and the frequent monitoring provided by the BSF Secretariat had a positive impact on the sustainability of boreholes; through analysing the feedback from NGOs and government at all levels as well as field observations.

This article focusses on component 2.

Approach: enabling conditions for sustainability



A borehole is sustainable if ‘it continues to function over time’. To remain functional over a long period of time, the following conditions are required (Leclert, 2013):

- **The construction** (drilling) was carried out professionally (design, drilling, installation, borehole development, test pumping, and water quality testing) by a drilling company or a NGO;
- **The maintenance and small repairs** are undertaken adequately by the community on a regular basis, the water point caretaker or eventually the pump mechanics; and
- **The repairs** can be executed in case of more serious breakdowns (when too serious to be handled by the water point care taker and requiring external support).

Over the six years of the BSF, advice provided by the BSF Secretariat was gradually optimised taking into account the recommendations of the Ministry of Water Resources and Irrigation of South Sudan (MWRI) and encompassed these three aspects of sustainability and their enabling conditions (Figure 1). Funds were increasingly allocated for a range of capacity building activities, such as training for Water User Committees (WUC) and pump mechanics, and training and workshops to strengthen the capacity of the government and other key stakeholders at various levels. The main principle was to strengthen the enabling factors to improve the construction, facilitate the repairs and execute the maintenance, rather than that NGOs execute the construction, the repairs and the maintenance themselves. This would indeed have a negative impact on the sense of ownership of the stakeholders (government and community members) and will undermine communities' sense for taking initiatives.

Methodology for the status review

Between February and December 2012, the WASH Monitor from the BSF Secretariat carried out a status review on all drilling activities funded through BSF on the request of DFID. The component 2 of the status review aimed to assess whether the recommendations and the frequent monitoring provided by the BSF secretariat had a positive impact on borehole's sustainability. To get this information, a questionnaire was sent to all 29 NGOs that received BSF grants in the period 2006-2012. It aimed at collecting information and feedback on:

- Construction aspects, including types of contracts used with the contractors, the approach to dry boreholes, whether supervisor was deployed for construction supervision during the drilling;
- Methods to ensure sustainability (type of WUC training, follow up activities...);
- Opinion on the sector's main shortcomings; and
- To which extent was the government involved during the project implementation.

The focus was to compile and get a complete picture of NGOs practices (past and present) related to the enabling factors of sustainability.

Results

How to improve the quality of construction?

Through clearer and easier to monitor contracts with contractors

In South Sudan, the quality of contractors' services provided in borehole drilling and construction varies. Therefore, the selection of contractors is essential for NGOs to ensure construction quality and thus sustainability of a borehole. Two different types of contracts can be used: Bills of Quantities (BoQ) or Lump Sum (LS). In a LS contract, a contractor, apart from a technical proposal, submit a quotation with a fixed price per borehole, without providing the details of the costs per unit and quantity for each activity and material that will be used. Most of the time, a 'no water no pay' clause is included, which means that, in case of a dry borehole, the contractor will not get paid for the work actually performed. The terms of agreement can give a maximum amount of attempts. The decision to execute a geophysical survey is at the contractor's discretion. Another problem is the difficulty in comparing competing bids as the individual budgeted items are hidden. Thus it is difficult to see how contractors are making savings (in services or materials). For a BoQ, the contract is awarded based on the contractor's approach and experience, and value for quoted prices for itemised services and materials. The contractor will be paid based on the actual work done, as certified by the drilling supervisor.

The MWRI recommends the use of BoQ contracts and has developed standard hand-pump borehole designs in its Sectoral Technical Guidelines. The BSF Secretariat also recommended the use of BoQ contracts. As this was not common practice in South Sudan, a contract management and drilling supervision workshop was organised for all grant recipients with a WASH component as well as for government

representatives at different levels. In this workshop, guidelines on geophysical siting, drilling supervision, pumping tests and water quality testing were discussed in detail with participants. The MWRI and the BSF Secretariat also recommended that the BoQ include a budget line for a geophysical survey to be carried out by an external company, so that in case of a dry borehole, the contractors will be paid for the work done.

Out of 20 NGOs who responded to the questionnaire, eight reported to have used LS contracts, nine BoQ and four have their own drilling rig. Reasons put forward by NGOs to still use LS contracts were:

- It is easier to negotiate the total contract price;
- The responsibility for the dry boreholes remains with the contractors so they will also take the responsibility to do a geophysical survey or not (however, the impact of using poor materials and development will not have consequences immediately);
- If the NGO does not have technically qualified staff, it is the easiest solution as it does not require control of the design and specifications (only trust in the drilling company)⁴; and
- In some cases, the difficult accessibility of sites may result in less drilling contractors quoting, leading to NGOs having to accept the terms of the one or two contractors that do bid.

By deploying independent construction supervision during all construction steps

All aspects of the drilling process, including amongst others the optimum depth of the borehole, the accuracy of the borehole design and the use of quality materials can be positively influenced by the deployment of independent supervision on site, from the first day of the drilling until the validation of the borehole once that the pumping test has indicated a yield of sufficient quantity for the community and after the water quality test. An independent supervisor is someone not serving the interests of the drilling company, who can therefore provide objective quality assurance. In an ideal situation, the supervisor is involved at the initial stages including site selection, hydrogeological survey, as well as during actual drilling, well development, test pumping, water quality sampling, and hand-pump installation. The BSF Secretariat recommended NGOs to use the service of an independent supervisor to help assure that minimum quality standards are adhered to while optimising the costs of drilling. Within the project the costs for deploying the supervisor (per diem and transport for local government or full costs for hiring an independent supervisor) were covered by BSF.

20 NGOs responded to the questions on independent supervision. According to the information received, 18 NGOs had deployed a supervisor on site during their drilling activities. What differs is whether someone from the local government ie the County Water Department (CWD) was involved and whether the supervision was full time or part time. 11 NGOs reported to have involved the CWD in the supervision (seven on a full time basis and four on a part time basis, with or without an NGO staff member).

How to enable repairs when a breakdown occurs?

In the event of a borehole breakdown the necessary repairs can only occur if the community passes the information of the breakdown to the local government. This information flow is essential, but not always very clear for community members as many of them tend to wait for someone to come and check on the borehole, or they inform the NGO based in their area. Currently, as the private sector is not yet developed in rural South Sudan, the repairs will depend on the ability of the GoSS to mobilise skilled pump mechanics, spare parts, and transport to the site.

By ensuring that there are enough skilled pump mechanics at local level

Over the years, BSF funded numerous trainings for pump mechanics. Currently, according to the NGOs and government feedbacks, it seems that there are sufficient pump mechanics at local level. Usually communities are aware of who the local pump mechanic is and thus who must to be contacted in case of a breakdown. The remaining issue is that pump mechanics are working on a voluntarily basis and rely on the community's monetary contribution. Though it is part of the WUC trainings to sensitize communities to contribute water fees on a regular basis, it remains a challenge.

By facilitating the transport and the availability of spare parts

UNICEF has been active in South Sudan since the late 1980s, with the establishment of Operation Lifeline Sudan, and played an active role in WASH activities, mobilising resources for borehole construction and rehabilitation and by providing spare parts and support for maintenance of the facilities. UNICEF introduced a unique hand-pump, the India mark II, which is almost the only pump being used so far in South Sudan. Since then, UNICEF has been the main provider of India mark II spare parts. Spare parts are provided to the

State level government that is then responsible for distribution in the counties. Due to lack of transport, storage capacity and reliable needs assessment system for spare parts, resulting in poor stock management, spare parts do not easily reach the local level.

NGOs have also played a role in the spare parts supply chain by procuring spare parts from neighbouring countries and using them for the execution for their own repair and rehabilitation programs, which resulted in a parallel services provision with reliance on NGOs rather than on the private sector or the GoSS. More coordination should exist between the various government levels to ensure transport of spare parts during the dry season, when access to remote areas is good. There is a need for clearer mechanisms in the way local authorities request spare parts. To support this process, the BSF Secretariat supported NGOs who had private sector development activities or development of pump mechanics associations for the provision of spare parts.

How to improve the involvement of communities in O&M activities?

The lack of maintenance can be (partly) explained by the lack of ownership, which depends on the extent to which communities value safe water. Therefore, the BSF secretariat, in line with MWRI Sectoral Technical Guidelines, enforced that NGOs should systematically carry out WUC trainings (including a specific training for a water point caretaker) for each borehole drilled, so that communities gradually take over full responsibility for managing and financing of the O&M of rural water supply infrastructure.

From the analysis of the questionnaires, it appeared that there is however no standard way to providing WUC training in South Sudan. MWRI guidelines are being prepared but no final documents to guide NGOs have been approved yet. Each NGO has its own approach, with different levels of local government involvement, and its own training materials. On average, a WUC training lasts between 2 to 5 days, and are carried out either by an international NGO staff member who speaks the local language, a local NGO, or a member of the local government.

Conclusion and recommendations

BSF has been recognised as a successful funding mechanism, especially due to the strong focus on sustainability. Based on the results of the status review and the lessons learned, the following recommendations can be provided for future donor programs:

- Keep providing O&M trainings to WUC, including refresher trainings that focus on preventive maintenance and early warning signs;
- Maximize the participation of women by providing the trainings in the community, at a time of day that is convenient for the women to attend;
- Continue the efforts to strengthen the capacity of the GoSS at all levels, as well as the coordination and communication between them;
- Support activities that focus on private sector development;
- Do not fund direct repairs as it would further jeopardise the communities' sense of ownership, but fund activities that increase the local capacity to execute repairs, such as refresher WUC or pump mechanics training, sensitising communities on the need to pay water fees, provision of toolkits, supporting the local government in having an updated list of pump mechanics and an improved system for activities monitoring and spare part stock management.

The creation of community ownership, behaviour change and building capacity at all levels are long term processes that require perseverance and education. In the case of the BSF, grants were provided for between one year and one and a half year, which made it difficult for NGOs to engage in long term capacity building activities or to ensure monitoring over a long period of time. This short term approach from donors is mainly due to the fact that, in emergency situations such as the one that South Sudan used to face (or still faces in particular areas), there is a need for quick actions and basic facilities. This can harm sustainability. South Sudan is in a transition phase and needs long-term, sustained interventions where communities are involved from the identification of the project to the O&M and financing.

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Note/s

1. This article is based on an Innovation Brief (14) on International Development Services, Mott MacDonald, June 2013. This Innovation brief was developed using the results of the following report : Leclert (2013) *Status Review of BSF's borehole drilling component in South Sudan (2006-2012)*. For the BSF Secretariat. Government of South Sudan. Department of International Development (DFID).
 2. Lucie Leclert was the WASH Monitor for the BSF Secretariat in 2012, working for BMB/Euroconsult Mott MacDonald, and was in charge of executing the status review. She is currently working for Caritas Switzerland as WASH Unit Coordinator for the Horn of Africa Region.
 3. In the SSDP, the percentage of 34% of people with access to improved water sources is taken as a baseline for 2010. It does not distinguish rural or urban areas. However, the objectives for urban and rural areas are set both independently but both based on this 34%, which seems inaccurate. The target set for 2013 for urban and rural areas are respectively: 45% and 40%.
 4. The MWRI has a Department called Water Information Management System (WIMS) Department, created to manage a database that collates and provides information about water to assist in decision making at all levels.
 5. BMB Mott MacDonald is an international management consultancy based in the Netherlands and part of the Mott MacDonald Group.
 6. It should however be noted that strong supervision at key moments is still of paramount importance, to ensure the contractor is respecting the required standards in terms of depth, materials, water quality and quantity.
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