THE OPERATIONS AND MAINTENANCE LOGBOOK AND THE SUSTAINABILITY OF COMMUNITY WATER POINTS

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CHALLENGE

In July 2010, the United Nations declared the Access to Clean Water and Sanitation a fundamental right, inherent to all human beings. However, at a global level, each year some 1,5m children under five years old die of diseases linked to low water quality, insufficient sanitation infrastructure and bad hygiene habits.

The present situation of water supply in Mozambique, particularly in the central provinces of Manica, Sofala and Tete, where the 'One Million Initiative[1]' (OMI) is implemented, is characterized by a substantial improvement in the sustainability of the water points, when compared with data available from the start-up phase of the activities.

The national Water Policy[2] envisages the satisfaction of the basic need for human consumption of water, based on a safe and secure potable water supply, and recognizes water as a good with social, environmental and economic value. The Principle of Demand aims at guaranteeing sustainability of the community water points. It commends the satisfaction of basic needs of water supply for human consumption, especially the most unfavourable populations.

With a view to enhancing sustainable water supply and its rational use, it promotes the participation of the beneficiaries, with special emphasis to woman. Involvement of the private sector should be guaranteed so as to speed up the advancements planned in the sector. At the level of SNV, these aspects correspond largely with the social inclusion of woman and other disenfranchised groups as well as the use of local '*capacitators*' (LCBs), concerned with carrying out minor consultancies and direct program implementation.

Data obtained while carrying out the "Water Point Mapping" in Tanzania[3] indicate that, of the 6.109 water points available, only 57% (3.489) were functioning. Estimates for Africa as a whole, indicate that out of every three water points only one works adequately; being one broken down and the other one working with serious problems related to preventive maintenance. These data are co-substantiated by several interventions and findings made by SNV in other countries in Africa and Asia, where it is developing its partnerships.

A broken hand pump leads to beneficiaries seeking alternatives in order to solve their problem until it is put to working condition again, and this certainly could imply the return to non-safe sources, the increase of contamination from water-born and associated diseases (mainly in the young age group), more loss of time in searching for water, over-exploitation of nearby water points and other consequences that culminate in a poor familiar productivity and prevalence of the spectrum of poverty.

Data collected from the consultancy report[4] ordered by UNICEF present the following picture of factors that affect the sustainability of water points in the OMI area:

- deficient community participation in operation and maintenance (O&M);
- Difficulty in accessing the spare parts;
- Lack of routine / preventive maintenance of the hand pumps, and
- Deficient (irregular) financial contributions for O&M of the water points.

[1] Since 2007 the UNICEF is implementing a Program of Water Supply and Rural Sanitation and Hygiene Promotion, called "One Million Initiative" (OMI) financed by the Mozambique Government (US$ 6 m), UNICEF (US$ 7 m) and the Government of the Kingdom of the Netherlands (US$ 28 m) aiming at 1.2 million people in the rural areas of 18 districts in the Central Provinces of Manica, Sofala and Tete.
[2] Water Policy, Ministry of Public Works and Housing – National Directorate of Water (DNA, 2007)
3 Report about 'Water Point Mapping" in Tanzania (SNV, 2010)
4 Report on "Sustainability Check" (Ernst & Young, 2009)

From the documental analysis and the field visits made[5], the dominant factor was the lack of funds at community level for the acquisition of the spare parts. Notable was also the lack of an instrument, which would allow the few contributing communities to feel confident and committed with the user contributions destined for Operation and Maintenance (O&M).
This case study will concentrate on the aspects related to the creation of an instrument of public utility with a view to facilitating the transparent management of the funds collected within the communities for the decentralised maintenance of their water points.

CLIENTS

The chosen site was Dondo District in Sofala Province, where the pilot phase took place, saw the direct involvement of local communities, the Directorate of Public Works & Housing / Water and Sanitation Department (DPOPH/DAS-Sofala); the District Services for Planning & Infrastructure of Dondo (SDPI-Dondo); the Technical Unit of Water Supply & Sanitation of Dondo (UTAAS) and the Netherlands Development Organization (SNV).

METHOD / SNV INTERVENTION

The Situation of Rural Water Supply in Sofala and Dondo Districts
According to the Master Plan[6] for Sofala Province, in 2007 throughout the province existed 1.637 dispersed points (wells and boreholes) equipped with hand pumps. Presently[7] there are a total of 1,570 points equipped with hand pumps. The present level of non-functionality for the province as a whole is about 11,5%, which would mean to say that around 90,000 people are not benefiting from water of a safe source, taking into account that the Water Policy (PA)[8] uses as standard an average of 500 people per point for the calculation of access coverage.

	Total sources	Opera-tional	Percen tage	Out of order	Percen tage	People not served
Sofala 2007	1.637	1.422	86,9%	251	13,1%	125.500
Sofala 2009[9]	1.570	1.390	88,5%	180	11,5%	90.000
OMI 2007	502	374	74,5%	128	25,5%	64.000
OMI 2009	706	655	92,8%	51	7,2%	25.500
Dondo 2007	190	151	79,5%	39	20,5%	18.500
Dondo 2009	224	210	93,8%	14	6,2%	7.000

In the six districts covered by the "One Million Initiative" there are 706 points equipped with '*AfriDev'* pumps, of which 51 are not operational (7,2%) being about 25.500 people without water due to broken down pumps. This level of non-functionality, low in a certain sense, is the result of the interventions carried out during the first two years of the project. However this does not translate itself in terms of preventive maintenance of the water points, because data collected from the districts' reports still present indices below 20% in terms of replacement of spare parts in the course of the last 12 months of functioning of the hand pumps for the new water points constructed by the OMI program and even lower indices at the older points.

Up to now there wasn't an instrument that could facilitate the measurement of up to what point the program is concurring to achieve its goals, because the number of consumers or of those not benefiting from access to water points (due to breakdowns and other problems) is based on estimates.

This logbook constitutes an instrument that - if implemented at a large scale - will supply up-to-date and reliable data about the effective use of the points to all interested: government, the public in general and cooperation partners.

[5] *Including the view points of some CAS members, spare parts suppliers and one spare parts reseller from Dondo and various technicians linked to the sector (NGOs and DPOPH)*
[6] *Master Plan for Sofala Province (UMC Consultants, Ltd., 2007)*
[7] *Annual Report from the Water and Sanitation Department (DPOPH-Sofala, 2009)*
[8] *Water Policy, Ministry of Public Works and Housing – National Directorate of Water (DNA, 2007)*
[9] *It is important to refer that un inventory was made to the sources that did not meet the necessary requirements of a safe water point, therefore they have been removed from the data base tables on provincial coverage; mainly boreholes without manual pumps.*

Management Model Based on Community Participation
The management system to be adopted in any process has to culminate into an acceptable guarantee of sustainability. From the literature studies done for this cases study, it emerges that water point sustainability is the consequence of various factors, among others:

- A strong Water and Sanitation Committee (CAS) with good point management capacities, including a clear definition and attribution of tasks for the various actors;
- An adequate register of expenses that is easily accessible to the contributors and other interested parties;
- A transparent management of funds with acceptable accountability and social inclusion;
- Availability of spare parts and local mechanics for maintenance and repair services, and
- Regular mechanisms for cleaning, operations, routine maintenance and repairs.

The model with Operations and Maintenace Logbook
SNV's vision and approaches emphasize the local ownership of facilities, the active participation of beneficiaries and an acceptable level of accountability. It is in this context that the WaSH sector searched for an instrument that, although not complex, should be able to solve the problems identified in the field, like the poor sustainability of the community water points; deficient supply of spare parts and low purchasing power of beneficiaries.

This logbook was conceived to address the local communities' needs regarding the technical issues and the organisational management of water points. Therefore, it consists of a set of cards, which in a direct manner, by filling in the cards, allows for a transparent management of the communal asset: the capital collected that is destined to pump management.

It is expected that this instrument - while applied in conjunction with other sector interventions - and by contributing to a regular preventive and corrective maintenance of the water points dispersed throughout the rural and peri-urban communities, will assure: i) the increase in coverage of community water supply, through safe sources; ii) that woman will have more time available for their domestic and social chores and iii) it contributes to an increase in productivity and the generation of income, in order to reduce the spectrum of poverty.

The basis for the creation of the present logbook follows a set of cards used between 1999 and 2000 in Maputo province; in Manhiça and Magude districts by EPAR – Maputo. The process was small scale and was not replicated although it recorded significant advances, such as: i) the recording of the contributors, of the values collected and spent; ii) the presentation of an expense report in quarterly meetings and iii) reduction in interference by the suburb's administrative structures regarding water point management issues. This experience was lead at the time by the author, who had the mission of brainstorming the ideas and to create the present product.

Obviously, UTAAS, the Social Consultant (LCB in SNV terminology) was chosen to develop the dissemination and follow-up activities for the CASs use of the logbook. In order to assure that the CAS felt confidence in the product that they would acquire; the following steps were observed:

- Testing the first examples (in ten CAS) and consequent improvements resulting from it;
- Dissemination of the existence of the logbook, done by Community Workers and its sale according to the interest manifested by the CAS;
- Capacity building of committee members (mainly President, Treasurer and Secretary) on the filling in and procedures to adopt for an efficient use of the logbook;
- Establishment of a Joint Monitoring Plan (DAS, SDPI, UTAAS and SNV);
- Carrying out a preliminary evaluation and sharing of results with interested parties;

- Revision of the logbook and the subsequent planning of its massive replication.

The role of the diverse actors

LCBs or CBOs (UTAAS):
- Reproduction of the logbook and direct interventions with communities for the promotion and training on the use of the logbook;
- Monitoring of CAS in order to identify difficulties and other needs with regard to the use of the logbook by CAS, and
- Capacitating other NGOs and/or associations in replicating the logbook to other provinces.

SNV:
- To promote and stimulate the adoption of the logbook at national level by the competent authorities (DNA and DPOPHs);
- Provide capacity development services to LCBs that facilitate the process of replicating the logbook at provincial, regional and national level (*up-scaling*);
- Monitoring and improving the logbook taking into account the information presented by LCBs (UTAAS) and by CAS, and
- Continually put at the disposal of government and of interested partners, the knowledge obtained (like presenting it in the Domestic Accountability Workshop in June) and establish and maintain a network for information sharing (e.g. the provincial and national MSPs).

SDPI and DPOPH:
- To accompany and monitor the process of introduction and use of the logbook at all existing water points (new and old) in the district and in the province;
- Monitoring the activities of the Associations of Artisans and the functioning of Spare Parts Selling Points;
- Secure proper support to the suppliers and resellers of spares, including the NGO, LCB or individual with responsibility for reproduction and sale of the logbook;
- To establish a mechanism that is best adapted to each district in respect of the flow of information for communicating breakdowns and other data related with the activities or orientations of the new approach, and
- To establish periods for the evaluation and systemisation of the information for the benefit of advocacy, in close relation with SINAS and other programs (e.g. WashCost).

The Community:
- The correct utilization and cleaning of water point and support to maintenance and repair;
- Monitoring the functions of CAS (regularity and quality expense reports);
- Effective and regular contribution according to the stipulated value;
- Active participation at the accountability meetings and other mobilisation meetings.

OUTCOME

The objective to be achieved through the creation of the logbook was to obtain a simple and efficient instrument that would:
- Facilitate the communities' perception on their financial contributions to the water point functionality;
- Facilitate the CAS in their control of income and expenses in regard the water point management, and
- Guarantee the existence of own funds, to be used for Operation and Maintenance.

The potential of the logbook: The initial idea was circumscribed in water point management - in basic aspects of transparent use of the user contributions and an acceptable accountability about expenses. However, at analyzing the contents that can be generated from it, in its present composition, other important aspects can be obtained, as described in summary:
- To enhance the organisational level of the community to improve its absorption capacity for other small investments in the community;
- To facilitate the transparent use of other public (or communal) goods by means of the practice of accountability by those in exercise;
- To get to know better the composition of the community (gender, age groups, etc.);
- To facilitate the access to and use of public goods for the most vulnerable people (female- headed households and widows, orphans, abandoned patients and the elderly and people living With AIDS).

An example of the use of book by a CAS:

In a summarized form, some aspects are presented that made a CAS in Mussassa village - Mafambisse sub-district to obtain brilliant results in a very short time. This is the case.

The results before the introduction of the book:

- The CAS was elected by the community in a meeting orientated by UTAAS in August 2008, in preparation of opening the water point. It was composed of the president, Treasurer, Collector, Hygiene Activist and Pump Mechanic;
- Not even one CAS member receives a subsidy (the work is voluntary) by the decision of the community;
- It started in November 2008 with the participation of 95 families, paying 5 Mts each. In August 2009 the number reduced to 59 families contributing;
- There were no regular meetings and the few that were held did not have any records, in addition they included an agenda with various other issues;
- In September it was deemed necessary to raise the contribution value to 10 Mts in order to cope with the maintenance expenses (due to the increase in spare part costs);
- Only 17 families remained faithful to contributions payment;
- The Secretary and Community Leader are external people to the process and they only supervise the activities;

The new dynamic and some results from the use of the logbook:

- The Maintenance Logbook was introduced in October 2009 – acquired by the CAS from each of the targeted water points, who received training from the Community Workers and the logbook was presented to the community by the leader, in a meeting called for this purpose;
- Monthly meetings were introduced for the presentation of expense reports to the community;
- The collection of user fees is done in the first five days of the month at the pump and recorded in an auxiliary book, against issuing a ticket, produced locally by the CAS;
- The CAS prepares the monthly meetings, which count upon with the presence of the Community Leader:
- During the community meeting; besides discussing expense reports and other issues, the non contributing families of the month are also identified and the adjournments;
- For safety reasons, only two people know where the collected amount is kept;
- It has been noted that families were going back to making monthly contributions; rising to 46 at the month of December. In January the number of 83 families is reached and in February 98.
- After carrying out two routine maintenances, the balance in savings was 6.879 Mts (recorded in April of this year).
- The community is feeling comfortable in approaching and using the facilities offered by one of the commercial banks which operates in the proximity for improved security and reliability of the use of collected sums.

IMPACT

After three months of implementation of the logbook in the pilot phase, which happened between October and December 2009, the following results were obtained from a sample of 15 CAS out of a universe of 56 committees that acquired the logbook:

- Old and new points were evaluated, being the newest (OMI program) already in function for about ten months;
- Nine CAS did not have any registration of values when the pilot phase started in October, against five at the evaluation date (end of January).
- The initial average balance declared in October by the 15 CAS was of 231 Mts against 557 Mts in January;
- The three highest values recorded in the balances of the month of October were 1,100, 810 and 600 Mts in descending order. At that time, no routine maintenance or repair had been carried out in any of the water points assessed
- The maximum values recorded in January, collected until the month of December, were 2.268, 1.300 and 769 Mts. At the water points where these balances were recorded, maintenance had already been done or at least the spare parts had been purchased.
- In the month of October there were no records of community meetings where water issues had been discussed, resulting from their irregularity. By January most of the assessed CAS maintained an average level of two meetings in three months and with records of issues raised; exemplifying a meeting held where the agenda only referenced water and sanitation or related issues.

REPLICABILITY

Naturally the main challenge will be replicating the product in an acceptable way, this is, besides fulfilling its main role linked to water point sustainability, not being perceived as something inherently unsustainable (but which in stead sells itself!). Aware of these aspects, SNV prioritises locally existent capacity to take the lead in the process, because this can produce more tangible results and a sustainable development.

From the Dondo experience, some aspects were considered pertinent that contribute to achieving good results, which can be summarized as follows:

- To assure that in each district there is an entity interested and with means to develop the reproduction activity (to photocopy and binding as a logbook) and selling the logbook (respecting its composition and sequence);
- To identify and to capacitate (that or another institution since it has the required of a social consulting profile) in order to train and capacitates the CAS, including its monitoring;
- The Community Workers (once duly capacitated) should train the CAS members in the use of the logbook and for the accountability meetings, and should also ascertain the procedures to be adopted for money collection and safe-keeping.
- The introduction of the logbook in the community must be done during a community meeting, convened solely for that purpose, where the community will also choose the periodicity (monthly, two- monthly or three-monthly) of the accountability meetings;
- The commitment of the beneficiaries, through their monthly fund contribution should be assured as well as the support by the Leadership in the regular supervision of the accountability process.

In the sampling, SNV prepared all the experimental books and followed up all phases of the process: Community Worker training, logbook distribution, capacity building of CAS members and two monitoring sessions; followed by the revision and improvement of the logbook. From that point forward, UTAAS took an (improved) logbook printed by SNV as matrix and reproduced it at a local stationary shop and acquired the respective plastic covers (Bantex type). Each logbook had about fifteen or more paper sheets, depending only on the number of family aggregates existing in each water point. Each logbook was sold by the UTAAS field workers to the CAS at a cost of 50 Mts (the equivalent to $ 1,50). The acquisition value came from the community funds already existent or in some cases delivered in the form of credit. The expenses for training and monitoring by the Animators to the CAS were not accounted for.

At the present, the cost of improved logbook (revised after assessment) could be slightly higher, and it could approach a value of 80 Mts (US$ 2,50) for each group of 25 families. In order to add the cards for each additional group of 25 families, the logbook value will be 10 Mts more expensive (about US$ 0,30). In this calculation of the value no profit margin is foreseen.

If it is possible to combine the capacity building of CAS members with other activities, these costs will be diluted and of little budget significance, however it has to be guaranteed that the capacity building is provided at the desired level and close to beneficiaries. In case the training is targeted at group of 5-6 CAS simultaneously (the ideal size group) then the calculations show a budget of 3.500 Mts (US$ 100), according to estimates by UTAAS.

The biggest investment to be made is linked to the Community Workers' capacity building that can be done in one or even two consecutive or alternate days, depending on the group size and other facilities found in the field. A specific program for capacity building of Community Workers' is being improved.

SUSTAINABILITY

Future steps

- To prepare a modulo for the capacity building of NGO supervisors, water technicians of SPDIs and others interested in introducing the maintenance book in the implementation of community water programs;

- Dissemination the logbook through Provincial GAS meetings and other provincial and national meetings (for example: capacity buildings courses, interventions in the framework of PRONASAR[10] and of other partners;
- Capacity building of UTAAS and other LCBs in order to develop and guarantee this activity at the provincial level (including the districts outside OMI) and possibly at national level in close collaboration with DNA/PRONASAR and other interested partners who operate at a large scale and in several provinces;
- To orientate a business plan related to capacity building, reproduction and sale of the logbook aimed at actors interested in developing this activity at the district level;
- To disseminate the results among the suppliers of manual pumps accessories in order to persuade them to expand their business, through a more commercialization network and with more attractive prices;
- To create records that allow for the monitoring of the maintenance logbook; the spare parts sales through local re-sellers and the CAS performance, at level of each district,
- To mobilize financial and material resources that allow the replication of the logbook to the districts not covered by OMI and other provinces in regard the capacity building and coverage of the marketing expenses. SNV proposes using its own funds for the first training of LCBs and district technicians in Sofala Province.

At present, DNA (through UNICEF/OMI) is introducing the logbook in the provinces of Manica, Sofala and Tete, having distributed 80 copies to each of them, being up to DAS and SDPIs in coordination with the NGOs to reproduce and distribute to CAS. Very recently, DNA launched a public tender for the printing of five thousand units. However, this process awaits the improved version that is being processed by SNV after the preliminary assessment of the Dondo pilot phase and the continuous interaction with the CAS.

LESSONS LEARNED

- The logbook, when adopted by the institutions concerned (DNA and DPOPHs) will confer to the beneficiaries their responsibility and obligations towards the management of the installed facilities in a transparent way;
- Communities with more organisational capacity will be able to take decisions about the technical requirements of the water point, as well as social aspects involving the more disenfranchised (orphaned children, widows, female headed households, the elderly and physically or mentally handicapped, people living with contagious diseases, like leprosy, HIV/AIDS, etc. and others who, for various reasons, are not able to pay for the services rendered);
- The interventions by partners in regard the opening of new water points or their rehabilitation, or even for the expansion of the coverage level, will be better informed on to issues related to investment planning, sharing of responsibilities, access to water facilities and other needs, and promotion and improvement of services rendered, with a view to monitoring and assessment of the envisaged impact.
- The information sharing between the CAS and the Community and with local government will be facilitated. However, constant monitoring needs to be done by the Community Leaders and by the district authorities, in order to maintain the process operational and assure a continuous flow of information. Together with the CAS, investigations should made into more adequate ways to apply the collected sums or they should be assisted in the opening of bank accounts, taking into consideration that the process linked to banks is very cumbersome.
- This instrument facilitates the observance of a transparent process of management of the common good, therefore public gatherings in the realm of the so-called *"open governance"* do not wait for visits of the President of the Republic, but are addressed at the level of provincial governors and district administrators, where those without voice can participate and express themselves in the decision making and present their aspirations.

[10] National Program for Rural Water and Sanitation – PRONASAR (DNA, 2009) is a Common Fund (SWAP) of the main donors in the Sector of Rural Water and Sanitation: EKN/DGIS, UK, Canada, Switzerland, African Development Bank, etc. plus one called "parallel pillar" of UNICEF, Aga Khan, etc.