Report

WaterAid learning for advocacy and good practice

Water and sanitation mapping in West Africa

A WaterAid report

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Report of findings from visits to Ghana and Nigeria

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Abbreviations and acronyms

BERWASSA	Benue State Rural Water Supply and Sanitation Agency
CAP	Community Action Plan
CERSGIS	Centre for Remote Sensing and Geographical Information Systems
CONIWAS	Ghana Coalition of NGOs in Water and Sanitation
COWAN	Country Women Association of Nigeria
CWSA	Community Water and Sanitation Agency
DPCU	District Planning and Coordination Unit
DWMCU	Dass Women Multi Purpose Cooperative Society
DWST	District Water and Sanitation Team
ENDA	Environmental Development Action in the Third World
FMWR	Federal Ministry of Water Resources
GEF	Global Environmental Facility
GIS	Geographic Information System
GoN	Government of Nigeria
GPRS	Ghana Poverty Reduction Strategy
GPS	Geographical Positioning System
HoD	Head of Department
IFI	International Finance Institution
JMP	Joint Monitoring Programme
LDP	Local Development Plan
LEEDS	Local Economic Empowerment and Development Strategy
LMDG-I	Localising the MDGs Initiative
MDGs	Millennium Development Goals
M&E	Monitoring and Evaluation
NDPC	National Development and Planning Commission
NEEDS	National Economic Empowerment and Development Strategy
NGN	Nigerian Naira
NGO	Non-Governmental Organisation
ODI	Overseas Development Institute
O&M	Operation and Maintenance
PRUWASSA	Plateau State Rural Water Supply and Sanitation Agency
RAPID	Research and Policy in Development
RUWASSA	Rural Water Supply and Sanitation Agency
SEEDS	State Economic Empowerment and Development Strategy
STU	Small Towns Unit

SWA	State Water Agency
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WAG	WaterAid Ghana
WANG	WaterAid Nigeria
WCA	Water Consumer Association
WES	Water and Environmental Sanitation
WSP	Water and Sanitation Program
WSS	Water Supply and Sanitation

Table of figures

Table of contents

Executive summary

This report is part of WaterAid's project on Learning for advocacy and good practice – water and sanitation mapping. The purpose of the project is to create a better understanding of the processes, methodologies, outputs and impacts of mapping carried out by different WaterAid country programmes and its local partners so as to encourage learning around water and sanitation mapping across WaterAid's country programmes and partners. The project comprises case studies from six different countries: Malawi and Tanzania in East/Southern Africa, Nepal and Pakistan in South Asia, and Ghana and Nigeria in West Africa. The present report focuses on the last two countries.

The **purpose** of this report is twofold. On the one hand the report documents how two of WaterAid's West African country programmes apply water and sanitation mapping. This includes the objectives, target groups, inputs, methods and processes of mapping in-country. On the other hand the report assesses – as far as possible – the use of mapping and its repercussions for decision-making of local level water supply and sanitation delivery and likely reasons for limitations thereto.

The **main features** of water point mapping are summarised in Table 1 below.

Based on field visits to Ghana and Nigeria, the following **opportunities** arise for mapping in the West Africa country programmes.
In West Africa, WaterAid has embarked on the Localising the MDG Initiative (LMDG-I). This initiative marks a significant change by WaterAid in West Africa from project- to programme-based assistance. Participatory mapping of water supply and sanitation services is the backbone for local development plans towards reaching the MDGs at local government level. Mapping under the LMDG-I has the potential to increase transparency and accountability for water supply and sanitation delivery at the local level. As such, the initiative complements national efforts towards programme-based assistance.

The visits to Nigeria and Ghana have also shown that there is a high potential at local government level to extend mapping under the LMDG-I beyond the water sector. The interrelationship between water supply, hygiene, health, education and the productive sectors is generally recognised. Nevertheless, a tunnel-thinking predominates in all sectors. By including other facilities in mapping such as schools and health centres and by referring to multiple uses of water in socio-economic surveys, there is a lot of potential cross-fertilisation between sectors at the local level.

On the other side, the field visits have also revealed a number of **challenges** for future mapping activities. A critical external issue for the future of mapping under the LMDG-I are the structural, contextual challenges i.e. frequent transfer of staff, the structural weakness of water and sanitation units within local governments and the uncertainty of obtaining development budgets.

Open questions also remain with regard to the sustainability the initiative itself. One concrete example is the updating of information. Neither in Ghana nor in Nigeria is it clear how future repetitions of the mapping process will be paid for. The current costs are, with GBP 5,000 to 7,000 per local government, expensive. Also, technical issues around updating are not resolved in either country. Yet, mapping information is only valuable as long as it is up-to-date. How will this issue be resolved on the long run?

There is also a tension between outreach and impact: The case studies from Ghana and Nigeria indicate that most changes occurred where an independent organisation, which had the trust of the local government, was able to follow up on the local government's commitments on a regular basis. But, will WaterAid be able to ensure an intensive and continued engagement in all cases? This question is particularly relevant as WaterAid country programmes are under strong pressure to scale up the LMDG-I across local governments and countries. Mapping is a time consuming activity, which can easily over-stretch staff and there is a danger in compromising quality over quantity as a result.

Table 1: Main mapping features in Ghana and Nigeria

	Ghana	Nigeria
Main features		
History of mapping	In Ghana, mapping was first carried out by the Afram Plains Development Organisation (APDO), one of WaterAid's local partners, at the request of the local government in the Afram Plains in 2004. The broad methodology developed by APDO is now replicated by other WA country programmes and partners under the "Localising the MDGs Initiative" (LMDG-I; see also: Nigeria).	In Nigeria, mapping started on a larger scale in 2005/6. It is now the main tool for the Localising the MDG's Initiative, which forms the basis of all WaterAid's operations in the country. Under this initiative, WaterAid in Nigeria encourages Local Governments to prepare plans to achieve the Millennium Development Goals (MDGs). The LMDG-I stretches across all West African WaterAid country programmes, but is at different stages of development.
Objectives	APDO sees mapping not only as a tool to improve planning and monitoring of water supply and sanitation services at district level but also as a means to empower representatives from sub-district structures (area councils) and citizens. In addition, APDO uses mapping to make its own interventions more demand-responsive.	For WaterAid in Nigeria, the objectives of mapping are closely linked to the LMDG-I. The intention is to use mapping as a planning, monitoring and fundraising tool that will support local authorities across Nigeria to deliver water and sanitation services to their constituencies.
Target groups	APDO's strategy is to include as many stakeholders as possible in mapping from community to area council and to local government level. The most important target groups are the stakeholders at sub-district level.	The target groups are local government staff from different sectors, traditional leaders and communities but also the regional government agencies involved in water supply and sanitation service delivery.
Implementing partners	APDO established two committees in order to support the mapping process, an advisory committee at national level and a supervision and conceptual team at district level. Data collection and collation is done by community	In those areas where WaterAid has local partners, they act as intermediaries in the mapping process. Local government officials from different sectors are directly involved in data collection, input and analysis. At the regional level, partnerships are sought with the Ministry

	representatives under the supervision of area councils, whereas more complex data analysis is carried out at district level. CERSGIS, a mapping centre at the University of Ghana, will now become an additional mapping partner.	of Water Resources and/or sub-sector government agencies and with donor organisations.
Inputs		
Costs	APDO had a budget of GBP 10,000 in order to develop and test the mapping methodology. These funds covered the whole pilot phase from 2003/4 until 2005/6 including staff time and all inputs except for the print of maps. No major set-up costs were involved since APDO inherited technical equipment from UNICEF. WaterAid in Ghana estimates that the average total budget for carrying out mapping in one district will amount to GBP 5,000 in the future.	The average budget for mapping in Nigeria is GBP 7,000 per local government. This amount varies slightly depending on the population and geographic size of the local government and on the local contribution to the process. The set-up costs (purchase of a plotter, GIS software and 15 GPS receivers) are not included in this figure.
Methodology and technical inputs	APDO uses a combination of participatory and conventional research methods for data collection. GIS-based analysis has only played a secondary role, so far, and has been limited to improved water points.	WaterAid in Nigeria uses a combination of socio-economic data collection and GIS analysis for mapping. The country programme has created water and sanitation maps and also encouraged the drawing of community maps. For water, improved as well as unimproved sources were recorded.
Time and human resources	Mapping is envisaged to take three to five months from data collection to feedback at local government level. The exercise is very human-resource intensive. In the Afram Plains, as many as 240 data collectors from communities were involved.	On average, the mapping process in one local government is carried out in a time-span of three to four months. In addition to WaterAid and partner staff, 20-40 local government employees are directly involved in the process.

The mapping process		
Information, training and surveying	The process of mapping starts with an information campaign across the local government. In a second step, data collectors are chosen among communities and trained in participatory methods for socio-economic data collection. The surveys are done in teams of two under the supervision of area councils.	In Nigeria, the process is essentially the same as in Ghana with the difference that awareness raising mainly targets traditional leaders. Also, government officials from different sectors rather than community representatives act as data collectors under the supervision of WaterAid and/or its local partner.
Mapping and analysis of results	Area councils with support from local government staff carry out a first, rough, compilation of data. The more complex analysis and report writing is done by the district mapping team consisting of APDO and the district planning and coordination unit.	Data input and analysis of the socio-economic data, and report writing are ideally carried by local government staff. In practice, WaterAid has provided substantial back-stop support so far. The analysis and production of maps is done entirely by WaterAid.
Feedback	Feedback sessions are conducted at area council and district level. As a first step, the data is verified by all stakeholders. This provides the basis for the projection of future needs and the prioritisation of actions at the different administrative levels.	A draft report is sent to different stakeholders including the traditional leaders, the local government chairman and other relevant agencies. A feedback session is convened, which serves to validate the report and to identify and prioritise action at local government level in order close the MDG gap in water and sanitation.
Updating	The data of newly constructed facilities are updated yearly based on reports from the different area councils. It is envisaged that a comprehensive review of the situation will take place every three years.	There was not yet a clear strategy about updating of information in August 2006.
Institutionalisation	The sector ministry has been closely involved in mapping from the start through its participation in the advisory committee at the national level. Discussions are currently underway with a wider	WaterAid in Nigeria intends to encourage collaboration with the Federal Ministry of Water Resources. Yet, the institutionalisation of mapping will also depend on the role that regional-level sector agencies play in mapping

	set of stakeholders.	within the respective states.
Source: Interviews in Ghana and Nigeria		

1 Introduction

This report is part of WaterAid project on "Learning for Advocacy and Good Practice – Water and Sanitation Mapping". The purpose of the project is to create a better understanding of the processes, methodologies, outputs and impacts of mapping carried out by different WaterAid country programmes and its local partners so as to encourage learning around water and sanitation mapping across WaterAid's country programmes and partners. The project comprises case studies from six different countries: Malawi and Tanzania in East/Southern Africa, Nepal and Pakistan in South Asia, and Ghana and Nigeria in West Africa. The present report focuses on the last two countries.

In Ghana and Nigeria, water and sanitation mapping is part of the "Localising the Millennium Development Goals Initiative" (LMDG-I). The goal of the LMDG-I is to break the Millennium Development Goals (MDGs) down to the local government level and to support decentralisation processes in West Africa. The two main activities of the LMDG-I are (1) conducting an in-depth situation analysis with regard to water supply and sanitation (WSS) at the local authority level and (2) improving the authorities' capacity to plan, implement and monitor water supply and sanitation services (WA and ENDA, 2004). The mapping of water supply and sanitation facilities is the main tool and backbone of the LMDG-I. The initiative is based on a partnership between the WaterAid in West Africa Region and ENDA (Environmental Development Action Third World), a membership organisation working on environment and development issues.

Conceptualised in 2003/4, the initiative has fully taken off in 2005/6. In May 2006, it was carried out in four local governments respectively in Burkina Faso, Ghana, Mali, Mauritania, Nigeria and Senegal. There is now a strong emphasis on scaling up the LMDG-I to other local governments within these countries as well as expanding it to other countries in West and Central Africa. Starting from 2004, a sequence of workshops and conferences were organised by WaterAid and ENDA to agree on common methodological denominators and to share experiences between countries. This said - each country has developed its own methods and processes for data collection, analysis, feedback and advocacy and in-country mapping partnerships. Nevertheless, the case studies of Ghana and Nigeria broadly reflect the mapping situation throughout the participating countries because mapping was pioneered in these two places.

This report is based on field work carried out in Ghana in the Afram Plains District, Eastern Region where mapping under the LMDG-I was piloted within West Africa and in Nigeria in Gwer West Local Government in Benue State, Dass Local Government in Bauchi State and Kanke Local Government in Plateau State during April/May 2006. Qualitative interviews were undertaken with staff of WaterAid and of its partner organisations and with representatives and staff of governmental organisations at national, regional and local level. In addition, this report relies on a number of published and unpublished studies, manuals, articles and on internet sources. First findings and early lessons of

the research were presented at the regional LMDG-I conference held in Accra, 10-12 May 2006.

The report is structured along the objectives of the project. It is divided into three major parts: the two case studies and an overall analysis setting out general lessons and opportunities and challenges arising from the cases. The case studies first touch on the political context of sector reforms and decentralisation with an immediate relation to mapping. Then, they provide an overview of the individual mapping approach itself including the history, the inputs needed and the process and methodology used. The last part of the case studies provides insights into the repercussions and uses of mapping. The subsequent analysis is based on a framework developed by the Research and Policy in Development programme (RAPID)[1] at ODI in order to investigate how Civil Society Organisations (CSOs) use evidence to influence policy processes. The analysis draws lessons from the present case studies. Finally, opportunities and challenges for future steps are identified for mapping under the LMDG-I.

[1] See also: http://www.odi.org.uk/RAPID/index.html

2. Ghana

The Republic of Ghana is a West African country with approximately 22 million inhabitants in 2006 (CIA, 2006) of whom 54% live in rural areas (JMP, 2004). Within West Africa, Ghana is seen as a politically stable and peaceful country and has recently been lauded for its progress in poverty reduction and sustained economic growth (IMF, 2005).

The Ghana Poverty Reduction Strategy (GPRS) sets out a national strategy for growth, poverty alleviation and protection of the vulnerable "within a decentralised, democratic government" (GPRS, 2002, in ISODEC, not dated: 3). In Ghana, the local government is the basic decentralised political, administrative and fiscal unit. In total, there are 138 district assemblies in Ghana, on average responsible for 167.500 people (CLGF, undated). Each district assembly is headed by a district chief executive, nominated by the president and assisted by the district coordinating director, the head of the paid service. The local governments in rural areas and small towns have a three-tiered structure. The highest tier of local government is the District Assembly (DA), followed by town/area/zonal councils and unit committees as the lowest tier (CLGF, undated).

The Ghanaian planning and budgeting process envisages that fiscal decentralisation is district-based and that district budget allocations reflect national and district priorities as set out in the GPRS and local development plans (ISODEC, undated). At least five percent of the country's revenues are channelled to the district assemblies' common fund, of which 49% are pre-allocated to specific sector activities (CLGF, undated). The water sector's share of these fixed local government allocations is six percent. In addition, the district assembly may choose to allocate its own revenues and part of the district's non-allocated resources for water supply and sanitation (Interviews with DA and NDPC). Each district assembly is obliged to prepare a five-year district development plan and to revise it annually based on projected investment needs of all sectors (Interview with NDPC).

2.1 The water sector

In Ghana, access to improved water supply and sanitation is high compared to the Sub Saharan African average. According to official statistics, 75% of all Ghanaians had access to water supply and 18% had access to sanitation facilities in 2004 (JMP, 2002).

2.1.1 The sector policy framework

Ghana embarked on a process of water sector reforms in the early 1990s moving from centrally-driven supply policies to a decentralised demand-based approach to water supply. As a result, ownership of water supply schemes was transferred to districts and communities, who are now responsible for managing their systems. In order to express demand for future facilities, communities are expected to contribute five percent of the capital costs. According to the new sector policy, central government agencies are not directly involved in infrastructure implementation any more. Instead, the private sector is expected to provide the soft and hard components of WSS

service delivery. At central government level, the Community Water and Sanitation Agency (CWSA) has been formed as a semi-autonomous body, which acts as a facilitating and coordinating agency for the sub-sector (WSP, 2002).

At local government level, water and sanitation issues are handled by the District Water and Sanitation Team (DWST), which reports directly to the district planning officer. The DWST is generally a weak unit within the local government because it does not have a separate budget line and therefore often relies on external donor funding. This is also the case in the Afram Plains, where all interventions and equipment of the DWST are financed by a bilateral sector programme and therefore have a limited connection with the overall, district-wide planning process (Interviews with DA, APDO and WAG).

2.1.2 Obstacles to decentralised WSS service delivery

In Ghana, fiscal decentralisation is increasingly taking shape. Although budgets often arrive late, local governments do generally receive development funding from the central government via the National Planning and Development Commission with the above predefined budgeting lines and are expected to draw up their local development strategies in accordance with nationally set priorities.

A further objective of decentralised government is to enhance and encourage citizens' participation in the democratic process (CLGF, undated). In practice, however, the sub-district tiers of government tend to remain largely inactive because of insufficient funds and lack of concrete responsibilities (Interviews with APDO, WAG). As a result, the relationship between the local government and its constituency is weak or even non-existent in many cases. Further, in the water sector, planning and implementation of service delivery is hampered by unreliable data, by the weak position of DWST within the district government, late and insufficient allocations from central government and uncoordinated donor interventions. In the case of the Afram Plains this led to an unequal and unsustainable water supply and sanitation delivery across the district. Those constituencies with the strongest voice tend to get the bulk of the services while marginalised communities continue to be left out.

2.1.3 Data for sector monitoring

The Ghanaian government set out that citizens are entitled to a borehole per 300 inhabitants or a hand dug well per 150 people (Interview with WAG). These figures are supposed to serve as a guideline for local governments providing water services at the local level. Yet, official statistics are not detailed and reliable enough to provide clear guidance for planning and monitoring services at the local government level. Current planning for service delivery relies on generalised national census figures and on approximations and assumptions at district level. Planning often remains piecemeal and inaccurate given that DA staff lack the means to comprehensively collect sector data across the local government. In the case of the Afram Plains, for instance, data based on national census figures projects facilities for 300

communities whereas the mapping exercise revealed that there are around 500 communities within the district (APDO, 2006; APDO and WA, 2004; Interviews with WAG and APDO). The Community Water and Sanitation Agency acknowledges that its current database is weak and not comprehensive. The CWSA's intention is to develop a performance-based monitoring system based on the mapping methodology from the Afram Plains in collaboration with APDO, UNICEF, the national statistical services and the National Development and Planning Commission, which coordinates all activities under the GPRS (Interview with CWSA).

2.2 Water and sanitation mapping

WaterAid has been active in Ghana since 1995. It works through eight NGO partner organisations, which implement service delivery projects on behalf of WaterAid. At the national level, WaterAid in Ghana is engaged in advocacy activities to support the development and implementation of sector policies that benefit the poor. An important part of WaterAid in Ghana's advocacy activities is the Localising the Millennium Development Goals Initiative (LMDG-I), which attempts to improve the capacity of local governments to deliver the MDGs for their respective constituencies (see also Introduction). Water and sanitation mapping forms an essential part of the LMDG-I in Ghana. The initiative is actively supported by all WaterAid's local partner organisations and was implemented by four different partners in May 2006 (Interviews with WAG and APDO).

2.2.1 The history of water and sanitation mapping

In Ghana, the original initiative for water and sanitation mapping came from the Afram Plains district assembly (DA) rather than from WaterAid or any of its partners. Having participated in a school mapping exercise supported by UNICEF, the DA was keen to extend the activity to other sectors. School mapping had been an eye opener for the DA. It provided essential information about the location and status of existing school facilities and highlighted the deficiencies in the district. Based on the data, the local government now had a tool in hand that enabled it to plan strategically. The Afram Plains Development Organisation (APDO), one of WaterAid in Ghana's local partners, was an obvious partner for the Afram Plains DA for extending mapping. APDO had been present in the district for many years and also participated in school mapping (see also Box 1 for more information about APDO). With financial support from WaterAid, APDO thus undertook to pilot a mapping methodology and process in the Afram Plains starting in 2003 (Interviews with APDO and DA).

Box 1: The Afram Plains Development Organisation (APDO)
APDO was established in 1986 as an organisation focused on rural water supply. In 1995, when WaterAid started to work in Ghana, APDO became one of its first local partners. The continuous financial support from WaterAid enabled APDO to scale up its WSS services within and beyond the district. In addition, APDO also works on environmental protection, school education and on HIV/Aids with funding from bilateral and multilateral organisations. APDO is an innovative organisation interested in trying out new approaches to development. Apart from mapping, it is currently experimenting with a community radio programme in the district and with the local processing and sale of plastic-sachet water at an affordable prize. The organisation also received widespread recognition for its new approach to community-based child education, which is being taken forward by UNICEF in other parts of the country. Over the last years, APDO has expanded its work to 15 other districts in Ghana and its director, Mr. Ayo Modoc, is currently the Southern Zonal Representative of the Ghana Coalition of NGOs in Water and Sanitation (CONIWAS).
Source: Interviews with APDO and WAG

Around the same time, in 2004, WaterAid in Ghana was looking for a tool to break down the MDGs to the local level in Ghana. The mapping exercise in the Afram Plains provided the missing link between the MDGs and wider poverty reduction processes at the national level and the need to support decentralised planning, implementation of WSS at the local level. Mapping thus became the main method of the initiative to "Localise the MDGs" (Interview with WAG). The concept was picked up quickly by other WaterAid country programmes throughout West Africa, who also felt the need to support local governments with decentralised service delivery.

After a long pilot phase in the Afram Plains, from 2003 – 2005, the methodology is now being implemented by three other local partners under the LMDG-I in Ghana. In addition, APDO has also provided input into the development of the LMDG-I methodology in Nigeria, the first West African country to follow suit in implementing the initiative. Apart from that, CWSA is interested to use APDO's methodology as a basis for the development of a nation-wide system to monitor progress against the WSS MDGs. A national working group has recently been established to incorporate mapping into the new national sector monitoring framework.

2.2.2 Objectives and target groups

When the Afram Plains DA requested APDO to assist it in developing WSS mapping, its objective was to improve planning, implementation and monitoring of WSS service delivery within the district. For this, it needed to obtain a better understanding of the water and sanitation situation within the district in terms of coverage and the adequacy and sustainability of service delivery. APDO's objective went beyond the aim of the DA. It wanted "to use a participatory process in order to empower area councils and communities to better understand their needs and to support the implementation of the decentralisation process in Ghana". Further, APDO saw mapping also as an

opportunity to assess the effectiveness of its project interventions over the years (Interview with APDO). WaterAid in Ghana conceptualises mapping under the LMDG-I as a tool for pro-poor and participatory planning and for MDG-targeting and monitoring to the local level. The overall objective of the LMDG-I is to enhance the capacity of local governments and to encourage citizens' direct involvement in their development processes (Interviews with WAG). CWSA, the government agency responsible for rural WSS, also expressed considerable interest in the mapping methodology. The agency, for its part, views mapping as an opportunity to synthesise data collection under a single methodology that allows for performance monitoring and the tracking of the MDGs (Interview with CWSA).

APDO's main **target groups** are communities and area councils. With more funds becoming available at the district level under decentralisation, APDO especially intends to encourage the activation of the lowest levels of local government. It is important to notice, though, that this has not been the intention of the DA, who is now put under pressure from area councils and communities about the utilisation of district funds. Additional target groups for APDO and WaterAid Ghana are the higher layers of government involved in WSS service delivery, in particular the regional and national offices of CWSA and the National Development and Planning Commission, which steers the Ghanaian GPRS process.

2.2.3 Inputs

In Ghana, the **costs** involved in mapping can be broken down into two distinct phases. The first phase relates to the piloting of the tool under APDO in the Afram Plains. APDO had USD 10,000 (~ GBP 5,000) available in order to develop a mapping methodology. Since 2003, this funding covered all activities related to the development and implementation of the first mapping cycle in the Afram plains including fuel, per diems, staff time etc. The design and print of a spatial map (at GBP 300) was outsourced to CERSGIS at the University of Legon. The DA covered the expenses of its staff and expended staff time for the entire exercise. On some occasions, it provided vehicle to support mobility.

The second phase relates to the replication of mapping in three other districts in Ghana. The projected budget per district is GBP 5,000, including all expenses related to the process i.e. transport, allowances, photocopying, accommodation and subsistence (WAG, 2006).

The **technical inputs** into mapping have been relatively low in the case of the Afram Plains, mainly because maps were not produced in-house. APDO developed simple questionnaires, which it subsequently processed and analysed based on Excel. The organisation did not invest in hardware since it already used GPS receivers on a regular basis to document the coordinates of newly built water schemes. mapping exercise. As part of the mapping process in the Afram Plains, the DA and APDO entered into collaboration with the British Geological Survey, which produced maps displaying the geology and borehole locations and depths in the Afram Plains. For future mapping

under the LMDG-I, WaterAid in Ghana seeks a prolonged partnership with CERSGIS, the GIS centre at the University of Legon, Ghana. In addition, the regional research and development coordinator at WaterAid in West Africa holds relevant degrees and has teaching experience in the field of GIS.

However, APDO's mapping methodology requires a high **human resources** input, because it was developed as a participatory exercise. In the Afram Plains, as many as 240 community members were involved in data collection in addition to personnel from each of the 17 area councils, the Afram Plains district assembly and APDO.

When assessing the **time** required for mapping, a distinction needs to be made between the development of methods on the one hand the data collection, analysis and feedback process on the other hand. During the pilot phase, which lasted two years, APDO developed and tested appropriate indicators, formulated user-friendly guidelines for data collection and designed new participatory evaluation methods.

The typical process of water and sanitation mapping is estimated to take between three and five months depending on the responsiveness of the district assembly. The process consists of a number of steps starting with the training of data collectors and supervisors (10 days), followed by data collection (three weeks) and data analysis at area council and district assembly level (two weeks). Then, feed back and validation workshops are held at area council and district level and the respective reports are produced within two to four weeks (Interview with APDO).

2.2.4 Mapping methodology

The assumption behind APDO's methodology is that people only get involved in setting development goals at the local level and demanding their implementation when they understand and appreciate the relevance of the data collected. When developing its methodology, APDO therefore put an emphasis on participatory tools for data collection that address the interests of communities rather than on number crunching. Water and sanitation mapping is thus conceptualised as a data management and planning process that creates room for local people to participate and advocate for fair resource allocation (APDO, 2006). APDO has therefore developed a methodology that supports the active participation of as many stakeholders as possible in the mapping cycle.

APDO sees water and sanitation mapping as consisting of two major components (a) GIS-based mapping and (b) socio-economic mapping. It is the second component that relies on a participatory process and that provides the majority of information to support decision-making processes.

(a) GIS-based mapping is used for creating a spatial map of all improved water facilities. GPS receivers are used in order to locate the spatial coordinates of all facilities accompanied by a questionnaire compiling additional technical information such as year of construction, depth, water level, pump technology etc. The GIS survey, data input and

analysis was carried out by APDO staff and the map itself was produced by CERSGIS.

(b) Socio-economic mapping compiles data related to access, consumption, user satisfaction, management performance, behaviour change and gender. The data covers both water supply and sanitation. APDO has developed a number of indicators to capture these different aspects (see Box 2). The raw data is collected through questionnaires, focus group discussions and participant observations at household and village level.

Box 2: APDO's Indicators for socio-economic mapping

APDO has developed 12 indicators with a number of sub-indicators to carry out socio-economic mapping. The indicators described below illustrate the type of information collected. The rationale for developing a comprehensive data set was partly for APDO to assess its own performance in the district. When APDO's methodology was adapted to mapping in other districts under the LMDG-I in Ghana, the number of indicators was slightly reduced.

Water consumption: APDO uses a number of different indicators to assess the (a) the different sources of water used, (b) the average daily consumption of water per capita and household on a daily basis and (c) the shortfall of water requirements.

Access to water: these indicators measure the average time spent and distance covered to access water on a daily basis per household and the ratio of improved water facilities and latrines to a given population.

User satisfaction: This group of indicators is used to assess the extent to which people are able to fulfil their daily maximum water needs and how this relates to the time spent, the distance covered and the volume of water collected (also in relation to the WHO standard).

Performance of watsan committees: this is a participatory indicator assessing the financial and technical management capacities of the committee as well as their overall trustworthiness, credibility and commitment and the degree to which the committee represents the different interest groups within the community.

Sources: APDO and WAG, 2004; APDO, not dated

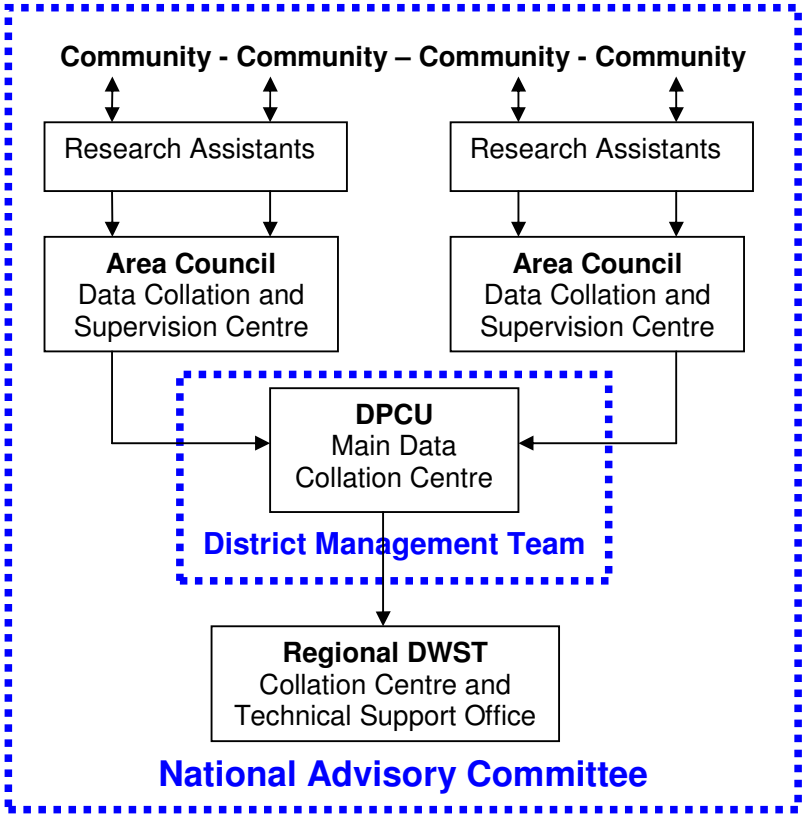
2.2.5 The mapping process

A distinct feature of the mapping process in the Afram Plains is the management structure put in place.

APDO has established a management structure that encourages the active participation of government officials from different sectors and at different administrative levels and of communities and civil society organisations in the mapping process. The organogram of this structure is displayed in Figure 1 below. At the national level (the outer dotted square), APDO set up an advisory committee consisting of UNICEF bringing along its experience with

school mapping, CWSA, the agency responsible for community water supply and sanitation in Ghana and WaterAid, which funded the mapping pilot phase. This committee provides technical and managerial advice. At the district level (the inner dotted square), a management team was established bringing together APDO and other CSOs, district representatives of various departments and ministries[2] and the district assembly. The management team overlooked the development of indicators and of the mapping process. It established a three-tiered structure for data collection and analysis with distinct responsibilities at each level, represented by the boxes in Figure 1. At the top are the research assistants who are drawn from all communities within the district. Indirectly, these data collectors therefore also represent the communities themselves. Next in the structure are the data collation and supervision centres at area council level. Their role in the mapping process is crucial because they are at the interface between communities and the district assembly. At district level, the District Planning and Coordination Unit acts as the main collation office.

Figure 1: Management structure guiding the mapping process in Afram Plains, Ghana



[2] The district representatives of the departments and ministries include the Ghana Education Service, the Ghana Health Service, the Environmental Health Department, the National Commission for Civic Education, the Ministry of Food and Agriculture and the District Water and Sanitation Team.

The mapping process itself can be divided into four different phases. It starts with the selection and training of surveyors, who carry out the socio-economic data collection in the communities. This is followed by a period dedicated to data input and analysis at area council and district level. Thereafter, meetings are held at these two levels to validate the results and to start forward planning. Finally the cycle starts again through various updating activities. How far this last step, which kicks of a new monitoring and planning cycle, is increasingly incorporated into existing government systems, determines the future sustainability of mapping. The last point therefore also analyses the degree of institutionalisation of mapping in Ghana.

Surveying: The area councils start off the mapping process by raising the awareness of all communities within their constituencies and by selecting research assistants from among all identified communities. The idea is that each research assistant is also a representative of his/her community, thus facilitating a process of community self-assessment and creating a link between the community and the wider research process and outputs. There is a two-way relationship between them. The research assistants provide each community with information about hygiene and about their water- and sanitation- related rights and entitlements while relying on the community's cooperation for data collection.

Before going into the field, research assistants and their supervisors undergo a 10-day training course by members of the district planning and coordination unit and APDO in participatory methods of data collection and basic hygiene promotion tools.

Equipped with these skills, the research assistants depart for hygiene awareness raising and data collection in pairs of two. Each data collector is ideally involved in no more than two communities. Area council members visit the data collectors at least once during the process so as to verify the accuracy of information and active involvement of communities. At the same time, area councils also update community lists to ensure that all villages are captured and population figures correctly assessed. This exercise also helps the area council to establish a formal link with all existing communities in their constituencies.

Research assistants use a combination of community meetings, household visits, focus group discussions and participatory assessment tools to collect data. They assemble information with regard to HH access to water and sanitation, type of water sources, water consumption rates and hygiene behaviour, and they carry out a capacity assessment of each watsan management committee. In addition, research assistants also facilitate the drawing of a water source and sanitation and hygiene community map. The maps are used to stimulate discussions around access to water and sanitation and the importance of hygienic behaviour to prevent diseases and to develop activity plans to improve the situation that are within the scope of the community.

Data coding and analysis: This is done in two phases. First, the area councils collate the raw data from their constituencies such as counting the number of water points and latrines with input and assistance from district personnel and APDO. Once all ACs have forwarded their data to the district level, the bulk of the analysis is carried out by the district management team and APDO using Excel and SPSS programmes according to the indicators developed during the pilot phase (see also Box 2).

Feedback sessions and prioritisation of activities: Once the analysis is completed, feed back sessions are held at area council level. All unit committees, opinion leaders, assembly members and watsan committees are invited to participate in this exercise. During the feedback sessions, the results are scrutinised and validated by the participants and hygiene and sanitation behaviour is once more discussed. In addition, the different area councils are ranked according to their performance in various aspects such as access to improved water points and latrines, which enables the different sub-districts to compare their situation across the district. Finally, area councils develop action plans, where they prioritise future activities under the broad headings of water supply, sanitation and hygiene behaviour change.
At district level, all area councils get an occasion to present their findings in addition to the presentation of the overall district figures. After scrutinising all findings, projections for future needs are developed and incorporated into the annual- and medium term- development plans. As a last step, district-wide activities are prioritised by the district assembly.

In May 2006, the regional collation centres had not yet been deeply involved in the mapping exercise except for providing technical input to the Afram Plains DA. The idea was that they act as regional collation centres in future.

Updating and institutionalisation of mapping: Updating of water and sanitation-related information is done in two ways. On a yearly basis, area councils update their lists of improved water points and latrines within their constituencies and forward them to the district planning and development unit. After the three-year pilot phase, the Afram Plains district assembly and APDO plan to carry out a second round of comprehensive socio-economic mapping in 2007 with the support from CERSGIS. Their intention is to expand the exercise to other sectors in order to adequately address the inter-sectoral challenges for planning at district level. Negotiations for the review were underway in May 2006. However, there was not yet an elaborate plan as to how and how often detailed updating would be carried out. Also, and more importantly, at the time of writing, funding for a comprehensive updating had not yet been secured.[3]

The institutionalisation of mapping relates to the incorporation of this process into sector-wide and/or cross-sectoral planning, monitoring and evaluation systems. In the case of the Afram Plains, mapping already feeds into the wider planning and monitoring cycle of the district assembly, though currently

[3] In mid-May, CERSGIS had verbally confirmed financial support for cross-sectoral mapping in the Afram Plains district.

driven by the DPCU rather than by the DWST. The district assembly was awaiting guidelines from the National Planning and Development Commission so as to make their mapping exercise compatible with the local-level GPRS updating in May 2006.

At the national level, the CWSA explores the potential to adapt the mapping process in the Afram Plains to its national sector monitoring and evaluation system. After a visit to the district in early 2006, the agency drafted Memorandum of Understanding that outlines their approach to scaling up mapping across the country.

2.3 Repercussions and use of water and sanitation mapping

Water and sanitation mapping of the Afram Plains DA started in 2003 with the main mapping process carried out in 2005. Because the process is relatively recent, it is difficult to directly attribute impacts. However, there are signs that mapping has had repercussions on WSS service delivery in the Afram Plains and that the data is being used by various stakeholders. The following examples serve to illustrate this for each group in turn, namely communities, area councils, the district assembly and APDO.

Communities are the entities that are most closely linked to the ultimate users of water supply and sanitation services but are generally least involved in decisions taken for them. The first **repercussions** emerging from the mapping exercise that have an impact on communities are therefore the updating of community lists and activation of lines of communication between area councils and unit committees. The fact that, in the Afram Plains, more than 20% of the communities did not exist on paper before mapping was undertaken, speaks for itself in this regard. Mapping also revealed people's own efforts and practices. One community, for example, had developed a low-cost latrine model without any external support, which APDO now adopted for its own interventions.

With regard to the **use** of mapping information, APDO reported that communities "do not let the big men sleep any more" (Interview with APDO). According to APDO, communities started for example to pressurise area councils, who, in turn, became active in seeking outside funding. APDO also reported that, in some cases, community members went as far as voicing their demands at district assembly meetings based on the information they obtained during the feed back sessions.

For the **area councils**, the mapping process had the most profound repercussions. Having previously remained largely inactive, they have now started to take on their responsibilities. For instance, ACs forward the problems reported by UCs to the district assembly and seek funding for development projects outside the district budget. The performance ranking of area councils also initiated a competition across the district. Ekye-Amanfrom area council, for instance, which has the lowest ratio of latrines across the 17 ACs, is now actively supporting its communities in constructing sanitation facilities in order to move up from this low position. The AC's chairman himself provides a positive example by excavating a new, improved pit latrine on his

compound. Furthermore, Ekye Amanfrom area council has been able to assist a number of communities in repairing broken down boreholes. Nevertheless, the area councils still face major work-related challenges. They do not receive a salary or other benefits and do not dispose of transport necessary to reach out to their communities (Interviews with ACs).

Mapping also had important repercussions for the Afram Plains **district assembly**. According to the District Coordinating Director, Mr. Thomas Ba-Innimayeh, the benefit of mapping is the pictorial view it provides of the situation on the ground. Mapping data also helped the DA to understand the inter-linkages between different sectors. For instance, the map clearly showed a close interrelationship between boreholes and the existing road network. Yet, according to Mr. Ba-Innimayeh, understanding the problem is easier than finding a solution to it. In the case of the least served area, Dwarf Island area council, alternatives to boreholes will have to be investigated since drilling rigs cannot be brought to the island. Another, more intangible, repercussion of the mapping process is the increased reputation of the district assembly. The DPCU now acts as a training unit for other districts in Ghana and representatives from the DA even travelled to Dakar, Senegal, under the LMDG-I to exchange their experiences with other local governments in West Africa.

The district assembly has used mapping data in various ways. Pushed by area councils and during assembly meetings, it allocated GHC 300 million (~ GBP 180) for the first time to sanitation in order to subsidise latrine construction. The assembly also changed the distribution of borehole allocations between different area councils based on new information concerning existing service levels. Furthermore, it used mapping evidence to demand additional resources under a specific grant allocated by the national government.[4]

Box 3: The case of Forifori area council

In the Afram Plains, figures produced by the socio-economic surveys have been instrumental in understanding the situation on the ground and in analysing reasons for poor service delivery.

A case in point is Forifori area council, which used to attract the majority of the boreholes within the district. The mapping survey revealed that Forifori AC had the highest ratio of boreholes across the district contrary to the prevailing assumption that the area was underserved. Further analysis of water point distribution across the area council also brought to light that, despite a high number of boreholes, their distribution remained poor thereby leaving out many communities in need. Although Forifori has a total of 81 boreholes, these only cover 45 of the 83 communities living in the area council. Worse still, when it comes to actual access, only 12,6 % of the 44,249 inhabitants of the area council were actually served.

[4] This refers to GHC 1,2 billion (~ GBP 7,400) allocated but not transferred to the district assembly under the capitation grant.

When following up on this case, the district assembly discovered that the weak targeting was partly due to a donor organisation intervening in the area. The donor, under pressure to fulfil yearly quantitative targets, decided to drill only in a particular part of the area council that showed high success rates in borehole drilling.

Source: Interview with APDO; APDO, 2006

Yet, within the district assembly, the data is not used equally across the local government. While the DPCU and the coordinating director make frequent use of the data, the District Water and Sanitation Team, whose budget is provided for by Danida, does not even know how to access mapping information from its computers. Furthermore, the DPCU, which is not used to being closely scrutinised and being held into account, feels uncomfortable under the mounting pressure to perform.

For the **Afram Plains Development Organisation** mapping has also had important repercussions. According to Ayo Modoc, the director of APDO, mapping has, first of all, improved APDO's own interventions. For example, the organisation realised that adhering to the national standard of providing one borehole per 300 people does not necessarily translate into adequate supply to support people's livelihoods. In one case, for example, people started using water for productive uses, which led to an increase in demand exceeding the yield of the borehole provided. In another case, the reduction of distance did not result in improved access because of long queues. The assessment of watsan committees taught APDO that its former approach to selecting and training management committees did not match with the needs and priorities of communities who, for example, prioritised honesty over literacy. The hydro-geological map developed by BGS also greatly improved APDO's interventions. By providing an indication of the water table across the district, it reduced the risk of not hitting water when drilling boreholes and thereby the costs of drilling by approximately 30% for APDO.

Furthermore, the mapping process improved APDO's relationship with the district assembly and helped to establish links with area councils, which now provide important support to APDO through their link to communities. Following the mapping, APDO also changed its way of providing support to the district. APDO now channels its funds directly to the district's budget and encourages communities to forward their requests to area councils rather then to APDO. In order to support equal service provision across the district, APDO now provides assembly members with easy-to-understand information about their areas based on mapping results.

3 Nigeria

With 130 million inhabitants, Nigeria has the largest population in sub-Saharan Africa and the ninth most populous country in the world (JMP, 2004). Being the sixth largest oil producer in the world, the country has an immense development potential (WANG, 2006a). Yet, 80 to 90 million Nigerians live in poverty today. According to the UNDP's Human Development Index, which measures the standard of living, of education and of life expectancy in a given country, Nigeria was ranked 158 out of 177 countries in 2005.[5]

Nigeria drew up its first poverty eradication strategy in 1999. In 2004, the country formulated the current National Economic Empowerment and Development Strategy (NEEDS). The programme provides the strategic framework for the fiscal Medium Term Development Strategy. Based on NEEDS, federal states and local government are supposed to develop their respective economic empowerment and development strategies (SEEDS and LEEDS) as the basis for receiving their yearly budgets (WANG 2006a: 7). With the 60% debt cancellation agreed between the Government of Nigeria and the major International Financial Institutions in 2005, a substantial amount of donor funding will now become available to the country's national budget. Donors are thus increasingly interested in finding new ways of improving the accountability of planning and monitoring processes in Nigeria.

3.1 The water sector

Official statistics indicate that 48% of the population had access to safe water and44% to sanitation in Nigeria in 2004 (JMP, 2004). In rural areas, this translates into 31% for water supply and 36% for sanitation. Yet, these figures remain highly speculative because there is no coherent system to monitor water supply and sanitation-related data across the country (Interview with FMWR).

3.1.1 The sector policy framework

Nigeria is a federal state organised into 36 states and 774 local governments. At the national level, the Federal Ministry of Water Resources (FMWR) is responsible for water supply and sanitation. Although the agency was established in 1976, a coherent policy framework assigning clear responsibilities to different actors only put in place in the year 2000 through the enactment of the National Water and Sanitation Policy (WANG, 2006a). In the same year, river basin authorities were set up throughout the country to develop and manage bulk water reservoirs for irrigation and human consumption (Abdu, 2005). Under the recent national sector policy framework, service delivery shifted from a supply-driven to a demand-based policy with an important role attributed to non-state providers. The role of the federal ministry is to act as the enabling and monitoring agency. Concrete responsibilities include data collection, sector coordination and the support for private sector participation, regulation, monitoring and evaluation of the sector

[5] See also: http://hdr.undp.org/statistics/data/countries.cfm?c=NGA

(WANG, 2006a). At state level, the state ministries of water resources overlook the state water agencies. In the urban and semi-urban areas, water boards are in charge of water supply and in rural areas, the rural water and sanitation agencies are responsible for licensing and monitoring the private sector. The state agencies also provide technical support to the Local Government Authorities. The direct responsibility for the establishment and management of rural water supply schemes lies with the Local Government Authorities in cooperation with the benefiting communities according to the new policy. Within the Local Government Authority, Water and Environmental Sanitation (WES) units are to execute these tasks.

In April 2006, no coherent policy framework for sanitation was in place that unifies the existing references to sanitation in various policy documents. A main problem was the lack of coordination between different ministries in developing and implementing existing policies. (Abdu, 2005: 21; WANG, 2006a, Interview with WANG).

In theory, sector planning and budgeting in Nigeria starts at the local government level. Water supply budgets are incorporated into the local development plans, which feed via SEEDS into NEEDS at the national level. The national policy determines that the costs of water supply provision and of O&M are to be shared between national, state and local government and the beneficiary communities in accordance with different formula for rural areas, small towns and urban areas (WANG, 2006a). The capital funds for this cost-sharing arrangement are supposed to be channelled through the treasury to joint state – local government accounts. However, water sector budget allocations made to these joint accounts are not disaggregated from funds for other sectors. As a result, it is difficult to track funding for implementation at the local level.

For sanitation, no separate budget line had been established in April 2006 (WANG, 2006a).

3.1.2 Obstacles to decentralised WSS service delivery

In Nigeria, the implementation of decentralised water and sanitation service delivery remained fairly limited in April 2006. This is not surprising given that a national level implementation plan was only finalised in 2004 whereas state and Local Government Authority level implementation strategies were still pending in 2006 (WANG, 2006a).

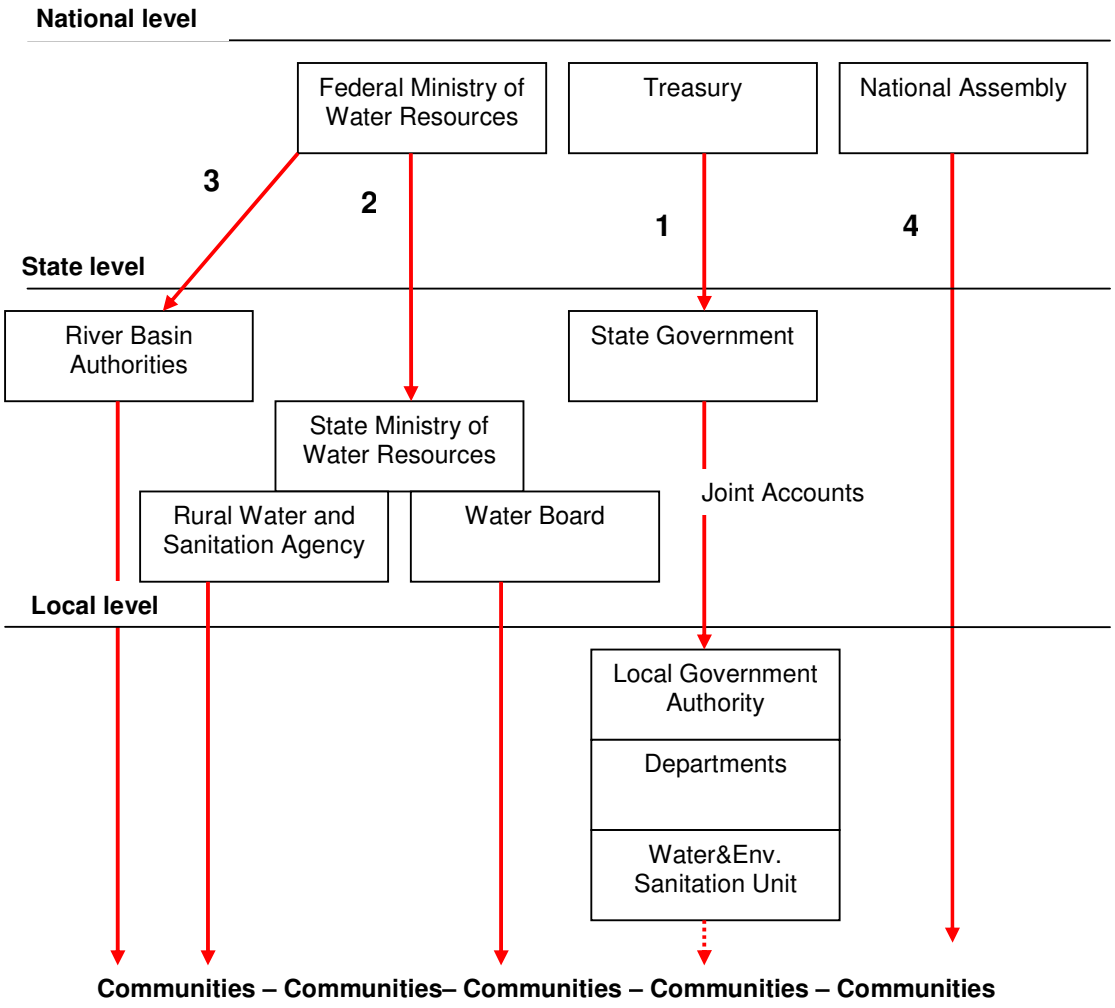
In the mean time, sector budgeting remains incoherent and largely opaque barely involving Local Government Authorities, although, according to the new policy, they are the main agents responsible for decentralised WSS service delivery. Figure 2 serves to illustrate this situation. It depicts four existing parallel budget lines for water supply, only one of which is coherent with the new policy. Funding line No 1 refers to the state – Local Government Authority common funds. Under this line, local government rarely receive budget allocations (Interviews with Local Government Authorities in Dass, Kanke and WANG). If they do, budgets often arrive late, in some cases even in the last quarter of the financial year when judicious spending is not possible

any more (WANG, 2006a). In addition, Local Government Authorities lack internal revenue required to match federal and state allocations for WSS implementation. Funding lines No 2 and 3 refer to funding that the federal ministry still channels to state agencies and river basin authorities for direct project implementation, although this is at odds with the current national policy (Interviews with WANG). Funding line No 4 refers to the approval of rural water projects by the national assembly, chosen directly from a list of the FMWR by members of parliament (WANG, 2006a).

Apart from the incoherent budgeting process, structural deficiencies hamper an effective implementation of sector policies. WES Departments have not yet established in all Local Government Authority.[6] Those departments that have been put in place remain weak because they have no separate budget line allocated for their activities and are generally short of skilled staff, transport and materials (Interviews with Local Government Authorities). At state level, only 23 out of 36 states have established Rural Water Supply and Sanitation Agencies and coordination between different tiers of government remains weak (WANG, 2006a).

[6] The policy establishes departments which can have budget lines but in most LGAs where WES units exist they are placed within other departments and as such might not have budgets allocated to them.

Figure 2: Government channels of financial resources in the Nigerian water sector



3.1.3 Data for sector monitoring

The Federal Ministry of Water Resources is responsible for monitoring of water supply and sanitation according to the national policy. However, in 2006 no coherent monitoring system existed and the reliability of sector data was recognised as being very low by government officials at national and state level.[7] In essence, the collection of data depends on the initiative of a particular state and local government authority. This means that, in practice, M&E remains a neglected activity. At the time of the visit, in April 2006, the development of a national monitoring information system (MIS) with the objective to monitor and track progress against the MDGs was under preparation. According to the FMWR, the country's 12 river basin authorities will become the main entities responsible for the collection, analysis and

[7] Previously, a monitoring system had been put in place with the assistance of UNICEF but, according to officials, this had not been updated in recent years and was not used widely any more (Interview with FMWR).

updating of information (Interview with FMWR; FMWR, 2006). Yet, no detailed implementation plan had been worked out.

Overall, the implementation of water sector policies and of wider poverty reduction strategies remained marginal in 2006. Water supply budgeting and implementation followed practices that preceded the national sector policy and were not transparent while sanitation did not have a separate budget line. Local Government Authorities had little leverage over the allocation of sector funding and no or scattered data to inform planning processes. The lack of information and unpredictability of funding discouraged local level planning processes and, in fact, in the three visited Local Government Authorities, interviews suggested that sector planning and budgeting had been based on a wish-list rather than on the situation on the ground.

3.2 Water and sanitation mapping

WaterAid started to work in Nigeria in 1995. Since then it has established partnerships with state agencies, Local Government Authorities and with local civil society organisations for the implementation of water and sanitation projects (WANG, 2006b).

In 2003, WaterAid in Nigeria carried out a comprehensive impact assessment to evaluate its first eight years of engagement in Nigeria. The exercise revealed a lack of strategic direction in the country programme's activities in building the capacity of local actors. Based on the assessment, WaterAid in Nigeria decided to move from a project-based to a programme-based approach with an emphasis on supporting informed planning processes at local government level. Localising the Millennium Development Goals, which had just emerged as an initiative across WaterAid in West Africa, was seen as a good starting point to focus attention of local governments away from 'simply' requesting funding to assessing and planning for meeting actual needs. At the same time, APDO in Ghana had started experimenting with water and sanitation mapping in the Afram Plains district and WaterAid in Nigeria decided to adapt APDO's methodology to its activities in Nigeria (Interviews with WANG).

3.2.1 The history of WaterAid water and sanitation mapping

In Nigeria, water and sanitation mapping forms part of the Local MDGs Initiative (LMDG-I). Mapping is used in order to carry out a comprehensive baseline survey at the Local Government Authority level. The results flow into a local development plan and form the basis for future monitoring and evaluation at Local Government Authority level.
WaterAid in Nigeria officially launched the LMDG-I in May 2004. Four months later, the country programme tested the methodology in Oju local government in a common effort, in which local partners as well as other West African country programmes participated. In the beginning, the data collection process put the emphasis on socio-economic data collection rather than on mapping itself. However, APDO's methodology proved to be too time-

consuming in the Nigerian context.[8] WaterAid in Nigeria therefore amended the methodology by putting an increased emphasis on GIS-based mapping while scaling down the component of socio-economic data collection.

In 2005, WaterAid started the LMDG-I based on the revised methodology in three additional local government areas, namely in Gwer West, Benue State, and in Kanke and Pankshin, Plateau State. Meanwhile, one of its local partners, Dass Women Multipurpose cooperative Union (DWMCU), took the initiative to carry out its own LMDG process in Dass, Bauchi State without the support of WaterAid. Then, in October 2005, WaterAid in Nigeria held a national conference on partnering with local authorities and the MDGs. The aim of this major event was to share the outputs and experiences from piloting the LMDG-I in the four Local Government Authorities and to encourage the replication of the initiative in other parts of the country (WANG et al, 2005). The conference reportedly created a momentum among all stakeholders involved. This is also reflected in the Conference Communiqué, in which all thirty Local Government Authorities present at the conference dedicated themselves to commit at least 0.5% of their revenues to water supply and sanitation in the future (WANG and GoNG, 2005). As a next step, WaterAid in Nigeria plans to expand the LMDG-I to all other local authorities that receive its support and to other Local Government Authorities that have shown interest.

3.2.2 Objectives and target groups

The **objective** for using mapping under the LMDG-I in Nigeria is to provide a tool to support planning, monitoring and evaluation and fundraising at the local government level. Mapping is thus seen as a tool that helps to strengthen the capacity and leadership of local governments to deliver the MDGs related to water supply and sanitation. Rather than challenging the legitimacy of previous interventions of Local Government Authorities, WaterAid in Nigeria intends to use mapping as a "confidence-building measure" (Interview with WANG). More widely, mapping under the LMDG-I is conceptualised as a support for the process of decentralisation. The country programme hopes that by developing an instrument that is easy to replicate, its approach will be taken up more widely including outside the Local Government Authorities that it currently supports.

WaterAid in Nigeria intends to reach a wide number of **target groups** through mapping under the LMDG-I. Given the objective to improve, planning, M&E and fundraising, the first target group is the Local Government Authority itself. Within the authority, WaterAid aims to strengthen the position of water and sanitation but also to influence and inform other departments that are related to water supply and sanitation. Apart from that, WaterAid also intends to directly reach communities and traditional authorities with mapping. Through awareness raising and community level-planning as part of the mapping

[8] APDO's methodology was judged to be too time consuming in Nigeria because of the higher population numbers and spread of communities and land mass within districts in Nigeria compared to Ghana according to WANG.

process, WaterAid aims to create demand on the ground for improved services. On the regional level, it targets the state water agencies with the intention to make them more responsive to the needs of local governments in accordance with the national water supply and sanitation policy.

3.2.3 Inputs

There are two main types of **costs** related to water and sanitation mapping in Nigeria: set-up costs and process-related costs. Initially, the country programme invested around GBP 500 in a plotter and ~GBP 4,200 in 15 geographical positioning system (GPS) receivers (Interviews with WANG).[9] The process costs involved in carrying out mapping within one local authority amount to GBP 7,000 on average but vary depending on the size of the local government and the contribution of the individual local administration in terms of staff time and per diems. This lump sum covers all costs incurred throughout the process such as fuel, allowances, expenses for holding feedback sessions and workshops and for the production of maps.

At the national level, WaterAid in Nigeria possesses all the **technical inputs** needed to produce a spatial map namely GPS receivers, GIS software and the plotter for the printing of large maps. Yet, at the local government level, where data entry and analysis is supposed to take place, there is a lack of PCs, which have to be hired in order to enable government staff to input survey data.

Mapping requires a large **human resources** input from WaterAid and its partner organisations but also from the participating local government. WaterAid employed a policy and research officer with GIS-skills to support the LMDG-I process throughout the country programme. At regional level, all WaterAid state programme officers spend a significant amount of their time engaging with the LMDG-I. In each local government between 20 and 40 local government staff are involved in data collection, analysis and the organisation of feed back sessions.

The **time** required to carry out mapping in one local authority is three to four months on average from the sensitisation of stakeholders to organisation of feedback sessions. The most intense period is the data collection, data entry and analysis, which takes four to six weeks (Interview with WANG).

3.2.4 The mapping methodology

Broadly, WaterAid in Nigeria's mapping methodology builds on APDO's methodology described in section 2.2.4. As in Ghana, the methodology consists of two broad components, GIS-based mapping and a socio-economic survey complementing the spatial data set. This notwithstanding, the type of data and method of collecting it differ from APDO's methodology.

[9] The investment in ARCGIS 9.0, a software used to analyse data based on the geographical information system (GIS), was shared between the four West African WaterAid country programmes.

For the GIS-based survey, not only improved water facilities but also unimproved water sources are mapped including streams, ponds etc. In addition, the spatial survey covers all forms of latrines, improved and traditional, and health and education facilities. An example of the different types of maps produced based on this data is given in Annex 1 for Kanke Local Government Authority.

The socio-economic data, in contrast, is less detailed. It includes demographic, socio-economic and health-related information such as the level of poverty and prevalence of diseases, and socio-economic infrastructure and amenities including access to electricity and road networks. In addition, access to water in terms of distance, time and quality are assessed. Annex 2 gives a summary of the type of data collected under this baseline survey. An additional part of the socio-economic survey is the drawing and discussion of community maps which depcits the major village infrastructure and location of water points but no sanitation facilities.

In Nigeria, both, GIS-based mapping and socio-economic data collection are carried out by local government officials from different departments in close cooperation with traditional authorities. Data collectors are not drawn directly from villages because of the high average population size and geographical space per local government, which would make the exercise more time-consuming. Furthermore, the socio-economic survey covers only two thirds of all villages per district.

The mapping process described below is based on the example of Gwer West local government, which forms the basis for carrying out future mapping exercises in Nigeria. But, reference will also be made to differences in the process in other local governments where this is relevant.

3.2.5 The mapping process

WaterAid in Nigeria cooperates with local partners for the implementation of the mapping process at Local Government Authority level. Where possible, WaterAid works through its existing local CSO partners who it sees as process facilitators rather than implementers of WaterAid projects. In those areas where WaterAid cannot rely on existing partners, it seeks collaboration with the state sector agencies or sub-agencies. In the case of Kanke and Pankshin Local Government Authorities, though, the WaterAid state programme officer felt that Local Government Authority personnel did not have sufficient skills to deal with GIS-based data and therefore hired young graduates to deal with this part of the data collection, input and analysis. For reaching out to communities within local governments, WaterAid relies on traditional councils, which hold strategic ‘gateway’ positions at the local level in Nigeria.

Similarly to APDO in Ghana, the Nigerian country programme also set up a national steering committee that overlooks the mapping process at each level of political administration in Nigeria (WANG, 2004). The steering committee

comprises the representatives of the Nigerian states participating in the LMDG-I.

WaterAid in Nigeria distinguishes eight steps under the LMDG-I process. These activities are summarised under the following headings.

Awareness raising: At the beginning of the mapping process, WaterAid holds meetings in order to inform and get the support of different stakeholders for the exercise. At state level, WaterAid initially meets with the Ministry of Water Resources and tries to secure the collaboration of the respective rural water supply and sanitation agency. At the local government level, the concept is shared with the political leadership i.e. the Executive Chairman and Deputy Chairman and with the administrative side of the Local Government Authority, the various departments. From then on, all activities to ensure the sensitisation and collaboration of the traditional councils and communities are taken on by the Local Government Authority. The process of awareness creation is combined with the compilation and/or updating of existing community lists since obtaining accurate population figures is seen as crucial for the validity of mapping results.

Training and surveying: The data collectors and data entry personnel are recruited from among local government staff. WaterAid staff and/or its local partner hold a one-week training course in order to clarify, discuss and field-trial the different aspects of the data collection process. The data collectors are organised into teams of two for participatory socio-economic data collection while GIS data collectors usually went out alone.

In the beginning of the socio-economic survey, the data collectors inform the community about hygiene practices and their entitlements with regard to water supply and sanitation according to the national water policy. The exercise also contains the drawing up of a community map and the discussion of local action plans based on the individual situation. In order to ensure accuracy of information, supervisors double-check that the data is correctly recorded and handed over to data coding personnel. The process of socio-economic data collection and GIS-surveying takes six to eight days on average.

Data coding and analysis: Once the raw data is returned from the field, Local Government Authority personnel (with the help of WaterAid and its partners) inputs GIS-data into excel spreadsheets and socio-economic data into SPSS. In all cases, extra computers had to be hired to carry out this exercise.

The responsibility for data analysis and report writing lies ideally also with the local government. But, in reality, closely involving local governments proved to be a time consuming and challenging task. It was only followed through in Dass local government, where no GIS data was collected. For Gwer West, WaterAid carried out most of the analysis and report writing and in Kanke and

Pankshin, the data analysis was outsourced to the private sector and WaterAid's partner COWAN formulated the report.

Feedback and the Local Development Plan: The draft report is circulated to the local government chairman and to the traditional council who study the results and then convene a feedback meeting at local government level to share them with the wider public. During this session, all stakeholders are asked to validate the data and a broad vision and mission for the sector is discussed. Then, a planning team, appointed by the local government chairman, produces a local development plan based on the preliminary outputs. This plan identifies and prioritises actions for the local government to meet the Millennium Development Goals for water supply and sanitation in its area.

Updating and Institutionalisation: At the time of the visit, mapping under the LMDG-I was still in a pilot phase in Nigeria. Three out of five local authorities had completed their local development plans and WaterAid's focus was therefore on the further development and refinement of the pending processes rather than on sustainability aspects. Questions with regard to follow up and updating of mapping information remained open in April 2006. For example, it was not clear which information would be updated at what time intervals and which financial resources could be tapped for this purpose.

The LMDG-I embodies WaterAid in Nigeria's move from project to programme assistance. Institutionalising the process within the Nigerian context is therefore an important issue for the country programme. WaterAid works at different levels in order to encourage the uptake of the LMDG-I and, with this, of decentralised service delivery. At the local government level, for instance, WaterAid in Nigeria endeavours to upgrade the currently weak WES units to the status of departments with separate budget lines. At the regional level, WaterAid in Nigeria's intention is to involve the state water agencies (as and where they exist) more closely into the mapping process. At the national level the organisation seeks cooperation with the federal ministry which is in the process of setting up an instrument to monitor progress against the MDGs. Through national events like the LMDG-I conference in October 2005, WaterAid also promotes the initiative beyond the local governments in which it currently operates. Bringing the major sector donors on board is another important strategy to reach out to local governments across the country. With UNICEF, a partnership agreement was under preparation at the time of the visit. The draft agreement would enable WaterAid to take the LMDG-I to four further states (Interview with UNICEF).

3.3 Repercussions and use of water and sanitation mapping

In Nigeria, the LMDG-I was still a fairly recent activity in April 2006. Apart from Dass Local Government Authority, where the first results were presented in autumn 2004, feedback meetings at district level had taken place only a few months prior to the visit. The following observations about repercussions and uses of mapping are therefore only of a preliminary nature and should be read in this context.

WaterAid in Nigeria's main target group is the Local Government Authority itself. The local government is therefore also the focus for the description of repercussions and uses of mapping. Some of the observations apply to all three visited Local Government Authorities. But, especially when it comes to the use of mapping information, some stark differences arise. These will be described for each Local Government Authority in turn.

In **all three local governments,** the process of data collection left a strong impression with those officials who had participated in it. Various officers stated that the degree of poverty that they had been confronted with in the villages had shaken them. With regard to the results of the exercise, low sanitation coverage was cited as the most surprising result rather than poor distribution of water supply within Local Government Authorities. In one case, the GIS-mapping also revealed that approximately 10% of the communities are situated outside the official Local Government Authority boundaries.

As a first action upon the findings under the LMDG-I, all three local governments established or strengthened the WES units within their Local Government Authorities. Yet, further actions on the ground to improve WSS differed between the three local governments.

In Dass local government, in Bauchi State, the LMDG-I was driven by WaterAid's local partner, DWMCU, which already had a long-standing cooperation arrangement with the Local Government Authority at the time. As part of this collaboration, the Local Government Authority had regularly seconded a number of WES-unit officers to the CSO for the implementation of WSS projects. When the LMDG-I was launched in May 2004, DWMCU decided to start a data collection process right away instead of waiting for WaterAid's assistance. This exercise, which was concluded without a spatial dataset, produced first results in October 2004.

Based on the mapping data, the Local Government Authority introduced a number of changes. First, the authority allocated a separate budget line for water supply and sanitation. Under this budget line, the local government funded the construction of 14 boreholes. The location of these boreholes was not, as in previous years, distributed evenly between the different councillor's constituencies, but was instead based on mapping information that had identified the most vulnerable communities. Mapping data also informed the implementation of a rehabilitation project in the area. Rather than simply going for the most accessible boreholes, the Local Government Authority listed the most deprived communities for borehole reparation. The Local Government Authority also took action with regard to sanitation. It provided 300 sacks of cement to subsidise the construction of latrines in Dass.

However, it is important to notice that all these actions were undertaken in close cooperation with DWMCU, which continued to remind Dass local government of its deliberations spelled out in the LDP. According to the NGO, having an activity plan did not automatically translate into action at the local government. It therefore conducted training for local government staff in order

to illustrate the importance of strategic planning and monitoring for reaching specific goals. This notwithstanding, the Local Government Authority continued to refer to the LDP as "DWMCU's plan". Another important constraint is the lack of funding at Local Government Authority level. According to DWMCU, only staff salaries are a secured budget item in Dass Local Government Authority.

Mapping also had repercussions at ward and community level in Dass. Ward heads, for example, had requested the sections of the report relevant to their area and some communities submitted written requests for boreholes. DWMCU, for its part, has become a highly respected organisation with the local government. According to one official, "they now listen to Musa [DWMCU's Programme Officer] whenever he enters the local government" (Interview with local government staff).

In Kanke, Plateau State, the mapping process was undertaken in collaboration with WaterAid's local partner COWAN. The results were publicly presented in December 2005, an event that the chairman turned into a televised celebration. At the time of the visit, the presentation of results had not yet been followed up by an LDP. As all other Local Government Authorities present at the national conference, Kanke local government had promised to support its recently formed WES unit with a monthly allocation for development expenses. Yet, in April 2006, the WES unit was still based on an informal arrangement and had not received any financial allocations. The chairman valued the outputs of the LMDG-I mainly as a good source of statistics to attract donor funding rather than in for internal planning purposes. At COWAN, the person, who had originally led the mapping process, had recently left the organisation and follow-up activities with the administration from the part of the NGO appeared to remain marginal.

In Gwer West, Benue State, mapping was carried out with the support of the Small Town Unit, responsible for WSS in small towns at state level. The process was enthusiastically supported by the former chairman, who was closely involved in the entire process. He presented initial results to his Local Government Authority in August 2005 and ensured that, by September, a LDP was finalised prioritising actions. As a first activity to improve the WSS situation, the local government seconded three additional staff from other departments to the WES existing coordinator and provided the team with an office. Back in October 2005, the Local Government Authority also committed itself to provide ~ GBP 2,000 on a monthly basis to make the office operational. Shortly after, however, the chairman's council was dissolved by the governor and, at the time of the visit, the new chairman had not taken the local development plan any further. In April 2006, the WES office still had no electricity and the WES staff no budget. Apart from a lack of commitment, the WaterAid State officer was also doubtful about the Local Government Authorities capacity to analyse and act upon the local development plan without further support. Similarly, the Small Town Unit, which facilitated the LMDG-I process in Gwer West, did not make a relation between the LDP and any specific WSS activities they supported in Gwer West.

4. Analysis

The LMDG-I launched in the West African WaterAid country programmes fundamentally changes WaterAid's mode of working. It moves from implementing projects through local partner organisations to a programmatic approach where local governments are supported in planning, implementing and monitoring the delivery of water supply and sanitation for their respective constituencies. This is a demanding activity in that it seeks to vitalise and support decentralisation and sector reform processes that have only partly been operationalised in country. In so doing, the LMDG-I responds to challenges that WaterAid encountered in its previous operations such as the limited scale of its interventions and the lack of sustainability.

As the major tool to implement the LMDG-I, mapping is at the centre of the initiative. The impact of the LMDG-I largely depends on the successful execution of mapping itself. The Ghana and Nigeria case studies show that the use of mapping information differs between local government areas and tends to materialise only slowly. Bearing in mind that, in all case studies, mapping results have only been available for a short period of time, the above cases hold a number of lessons to be learned for the future of the initiative.

When analysing what impedes the use of mapping information, the framework developed by the Research and Practice in Development (RAPID) Programme at ODI will serve as a point of reference. The RAPID framework was developed to better understand how Civil Society Organisations use evidence to influence policy processes. It argues that there are three main areas that impact on policy processes: the evidence base itself, the links that are established between the researchers and their target groups and the broader policy context in which the interaction takes place. The following analysis will be broken down in accordance with these broad headings.[10] In addition, it will make reference to internal organisational learning, another important factor for using evidence to influence policies, which is not captured under the above framework.

4.1 Evidence

Evidence provides the basis for change. Who collects evidence, what type of evidence is put together and how this process is carried out determines whether and how effectively this information will later be used. A number of factors may hinder or support this process.

Are objectives and target groups clearly defined? The clear definition of objectives and target groups is an important starting point for mapping because this influences the mapping content and process. For example, there is a crucial difference between assisting the local government in planning, implementation and monitoring of service delivery on the one hand and supporting accountability and transparency and citizens' participation in local level service delivery on the other hand. Depending on where the emphasis lies, different tools and processes are needed. APDO's participatory mapping

[10] See also: http://www.odi.org.uk/RAPID/Publications/Documents/rapid_bp1_web.pdf

approach is well suited to support citizen's voices because it actively involves community members in the data collection and analysis process. The process in Nigeria, for its part, puts a strong emphasis on bringing the different departments of the local government on board so as to enhance their planning and monitoring capacities. Having clear objectives and target groups also helps in judging the impact of bringing other stakeholders on board. For example, the Federal Ministry of Water Resources in Nigeria envisioned a top-down approach to monitoring WSS delivery, which is not necessarily compatible with WaterAid in Nigeria's approach.

Who maps is important. The persons who are directly involved in designing and carrying out data collection effectively act as gatekeepers, who decide which information is collected and made public. For local governments, mapping information is a potential challenge to established practices e.g. the utilisation of funds outside the sector or the selection of project sites based on vested interests rather than an assessment of needs. Throughout the four West African country programmes local governments felt challenged by the increased pressure to act upon the mapping results they had helped to produce. This indicates the importance to directly involve those actors in mapping that can hold the local administration into account.

Are tools compatible with the capacity of the target groups? The importance of keeping tools simple cannot be overestimated. GIS-based mapping, i.e. the analysing mapping is often a challenge at the local government level where computer skills remain scarce. Dev-Info, a software developed by UNICEF, which produces a simple map based on the inputting of GPS coordinates is a promising alternative to using ArcView/ArcGIS software. Furthermore, the mapping process in the Ghanaian Afram Plains district shows that 'simple' figures can, by themselves, be a powerful device for lobbying at the local level. The stark comparison between 80 boreholes in one area council and nil boreholes in another area council within the district, for example, did not require a map to illustrate inequality in distribution. At the same time, the low-tech methodology used ensured that the area councils, who do not have computers or even offices in some cases, could participate in data collation and simple analysis.

Are maps showing the 'true picture? In Ghana and Nigeria (as well as in other countries) maps are generally referred to as the 'true picture'. But, on the contrary, maps can easily paint a one-sided picture of a particular information, especially if not much detail is displayed such as the road and river network elevations etc. Thus, it is important to cautiously weigh up which information is displayed in which manner on a map. In this context, the question also arises, which information has added value if displayed on a map. For example, is the GPS-surveying of all sanitation facilities worth the effort or would it be sufficient to obtain the figures?

How to marry accuracy with official statistics? In both, Ghana and Nigeria, mapping involved the updating of community lists and population figures as part of the mapping exercise. This had the clear advantage of obtaining realistic population figures for measuring access and distribution of services at

the local level. In the case of the Afram Plains, this exercise also provided an important basis for activating area councils, which had previously been out of touch with their constituencies. At the same time, this dataset is not compatible with official statistics and may therefore create hurdles when lobbying at regional and national level and for updating official sector information.

Furthermore, weak national GIS-data sets can also create problems for GIS-based mapping at the local level. In the case of Nigeria, sub- Local Government Authority borders are not yet officially demarcated. This makes it difficult to compare water supply coverage levels below the local government level.

4.2 Links

Although one is inclined to believe that a strong evidence base automatically leads to changes in policy, this is often not the case. In fact, the links that are being established between different stakeholders during and after the process of producing evidence strongly influence its degree of acceptance, take up and use.

Encourage 'buy in' from important stakeholders. Getting 'buy-in' from the major sector stakeholders for mapping is a crucial step for spreading the use of the instrument. Rather than confronting mapping target groups with results of mapping after the completion of the process, involving them from the start can be a good way of getting important stakeholders on board. APDO did this by creating a management structure involving CWSA, the major sector agency at national level, as an advisor to the process and the local government as a partner in designing and carrying out mapping at district level. As part of the advisory group, the agency undertook a visit to the Afram Plains to study the methodology more closely. This formed the basis for a Memorandum of Understanding for using the present methodology as the basis for its own sector monitoring framework. Similarly, at the district level, the local government feels that it has a stake in the process. Yet, this does not apply across the board in any of the local governments visited in Ghana and Nigeria. Often, it is just one person, department, or the planning section, who embraces the process. Here, the question is how the process can be institutionalised more firmly within the local government in the future?

Seeing is not believing. Maps and related data are often described as an eye-opener by local government officials. Nevertheless, the experience from the case studies in Nigeria and Ghana indicates that this does not directly translate into action. Important reasons for this are the limited capacity of citizens, sub-district officials and Local Government Authority officials to handle mapping information and the lack of incentives to demand or adhere to transparent and accountable decision-making. In Dass local government, Nigeria, for example, where funds for water supply only arrive on an ad hoc basis, the local government did not, itself, act upon the local development plan because it did not know how to go through a planning cycle. On a similar note, in Gwer West, Nigeria, the organisation that assisted in mapping

including the formulation of a local development plan, did not understand that its own interventions formed part of this framework. In the Afram Plains, Ghana, district council members did generally not take the initiative to quote from the mapping report but rather relied on APDO providing them with easy-to-use extracts of the report prior to assembly meetings.

The importance of 'independent brokers'. Following up on mapping results by an independent broker such as WaterAid or a local civil society organisation is thus key to ensure that mapping information is actually used. An independent actor can, as explained above, provide additional capacity building. But, apart from that, it also plays a crucial role in encouraging downward accountabilities by, for example, guaranteeing the continued participation of citizens in data collection in the case of the Afram Plains or, at least, direct access to information. From the experiences in Nigeria and Ghana, it appears unlikely that local governments would voluntarily take on that role. Until citizens have developed capacities and structures to fulfil this role by themselves, there is a continued need for an independent broker like WaterAid or its civil society partners to uphold checks and balances. This, of course, has also implications for the sustainability of mapping and the LMDG-I at large. The incorporation of WaterAid's local accountability initiative under the LMDG-I as agreed in the regional LMDG-I conference in May is a step in the right direction.

How to institutionalise the LMDG-I? At the moment, mapping is conceptualised as an activity that rests predominantly on the shoulders of the local government. In reality, there is much leeway for involving other government institutions in mapping. Apart from supporting the local government, involving institutions at different levels could also facilitate the institutionalisation of mapping within the wider government framework. Obviously, opportunities depend on the respective institutional set-up of the country but a few generic potentials come to mind. The regional sector agencies, generally GIS-skilled, could provide technical back-up support for the GIS-component of mapping. Such a role could also be undertaken by universities, as is currently happening in Ghana and Burkina Faso. The national bureau of statistics is another natural ally and river basin authorities could provide hydro-geological information as and where available.

4.3 Political context

The wider political context determines the overall scope that evidence can have on a political process. For example, political processes are referred to as being 'open' or 'closed' for civil society engagement. Also depending on the progress of reforms, the political environment can either be conducive or hindering.

Is there a budget to plan for? The general objective of mapping is to improve planning, implementation and monitoring of WSS service delivery at the local level. This endeavour presupposes the existence of a decentralised planning and budgeting cycle. In Ghana, as described in section 2.1, local governments receive budgets with pre-allocations for water supply and

sanitation, even if these tend to arrive late. In Nigeria, on the contrary, Local Government Authorities do frequently not receive capital budgets for service delivery and their official role in service delivery continues to be undermined by parallel budget allocations to the sector outside their control. This is a much more challenging context for carrying out and using mapping information than the one that presents itself in Ghana, and one that can only be partially influenced by mapping.

How to retain capacity at the local level: Capacity building is central to the LMDG-I. However, a typical problem encountered at the local level is the difficulty to retain trained government officials and skilled personnel in partner organisations? In Nigeria as well as in Ghana, staffs at local government level are frequently transferred from one Local Government Authority to another and skilled staff of partner CSOs regularly leave for more lucrative positions with larger organisations. This is a serious hurdle for institutionalising mapping in a particular local government.

Structural deficits: In both countries, water and sanitation units at the local level are structurally weak. This is especially critical in Nigeria, where budgets are not disaggregated at the Local Government Authority level, and WES Departments are not yet established in all Local Government Authorities. This poses a problem when it comes to the following up of local development plans through concrete actions. In Gwer West and Kanke Local Government Authority, for example, the newly established WES units were still based on an informal arrangement with no budget and concrete tasks and therefore not entitled to take initiative at the time of the visit. WaterAid is currently advocating for upgrading WES units to legal entities in those areas where it works.

4.4 Challenges and opportunities

Challenges
In the context of the LMDG-I the overall challenges are related to sustainability issues. As stated in the beginning of this chapter, the initiative has set itself high stakes by basing the main future interventions of WaterAid in West Africa on supporting local governments in providing and sustaining decentralised service delivery.

On the one hand, the degree to which the structural, contextual challenges mentioned above – i.e. the frequent transfer of staff, the structural weakness of water and sanitation units within local governments and the uncertainty of obtaining development budgets will remain – will be critical for the future of the LMDG-I.

On the other hand, open questions remain with regard to the sustainability the initiative itself. One concrete example is the updating of information. Neither in Ghana nor in Nigeria is it clear how future repetitions of the mapping process will be paid for. The current costs are, with GBP 5,000 to 7,000 per local government, relatively expensive. Also, technical issues around updating are

not resolved in either country. Yet, mapping information is only valuable as long as it is up-to-date. How will this issue be resolved on the long run? The case studies from Ghana and Nigeria indicate that most changes occurred where an independent organisation, which had the trust of the local government, was able to follow up on the Local Government Authority's commitments on a regular basis. Furthermore, there are clear indications that the success of a mapping process is not achieved through a mechanistic exercise but rather through an intensive engagement that allows all actors involved to go through a learning process. But, will WaterAid be able to ensure such an intensive and continued engagement in all cases? This question is particularly relevant as WaterAid country programmes are under strong pressure to scale up the LMDG-I across local governments and countries. Mapping is a time consuming activity, which can easily overstretch staff and there is a danger in compromising quality over quantity as a result.

Opportunities

The LMDG-I is a reaction to the political reality in those countries where WaterAid operates. Under the new aid agenda, the emphasis of development cooperation is on programme approaches in the form of Poverty Reduction Strategy Papers at the national level and on Sector-wide Approaches at sector level. Under harmonisation and alignment, donors and recipient governments work towards reducing the transaction costs of development cooperation and towards streamlining donor interventions with the priorities and systems of the partner country. These developments have tended to reinforce upward accountabilities between donors and partner governments. With the focus on national-level engagement, support to the implementation of reforms has generally been neglected. The LMDG-I provides a lot of potential to fill this gap. Its focus on decentralised service delivery and its inter-linkages with supporting citizen's voices on the ground presents opportunities to support downward accountabilities between local governments and their constituencies. The LMDG-I's capacity building component also enables local governments to carry out strategic and output-based planning. Furthermore, mapping is a potentially powerful tool for increasing transparency and accountability of water and sanitation service delivery at the local level.
The visits to Nigeria and Ghana have also shown that there is a high potential at local government level to extend mapping under the LMDG-I beyond the water sector. The interrelationship between water supply, hygiene, health, education and the productive sectors is generally recognised. Nevertheless, a tunnel-thinking predominates in all sectors. By including other facilities in mapping such as schools and health centres and by referring to multiple uses of water in socio-economic surveys, there is a lot of potential cross-fertilisation between sectors at the local level. Initial steps in this direction have already been made in both countries. In Nigeria, mapping already includes health and education facilities and involves staff across different departments and in the Afram Plains, Ghana, the local government now plans to expand the next round of mapping to all sectors.

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5.3 Persons consulted for Ghana case study

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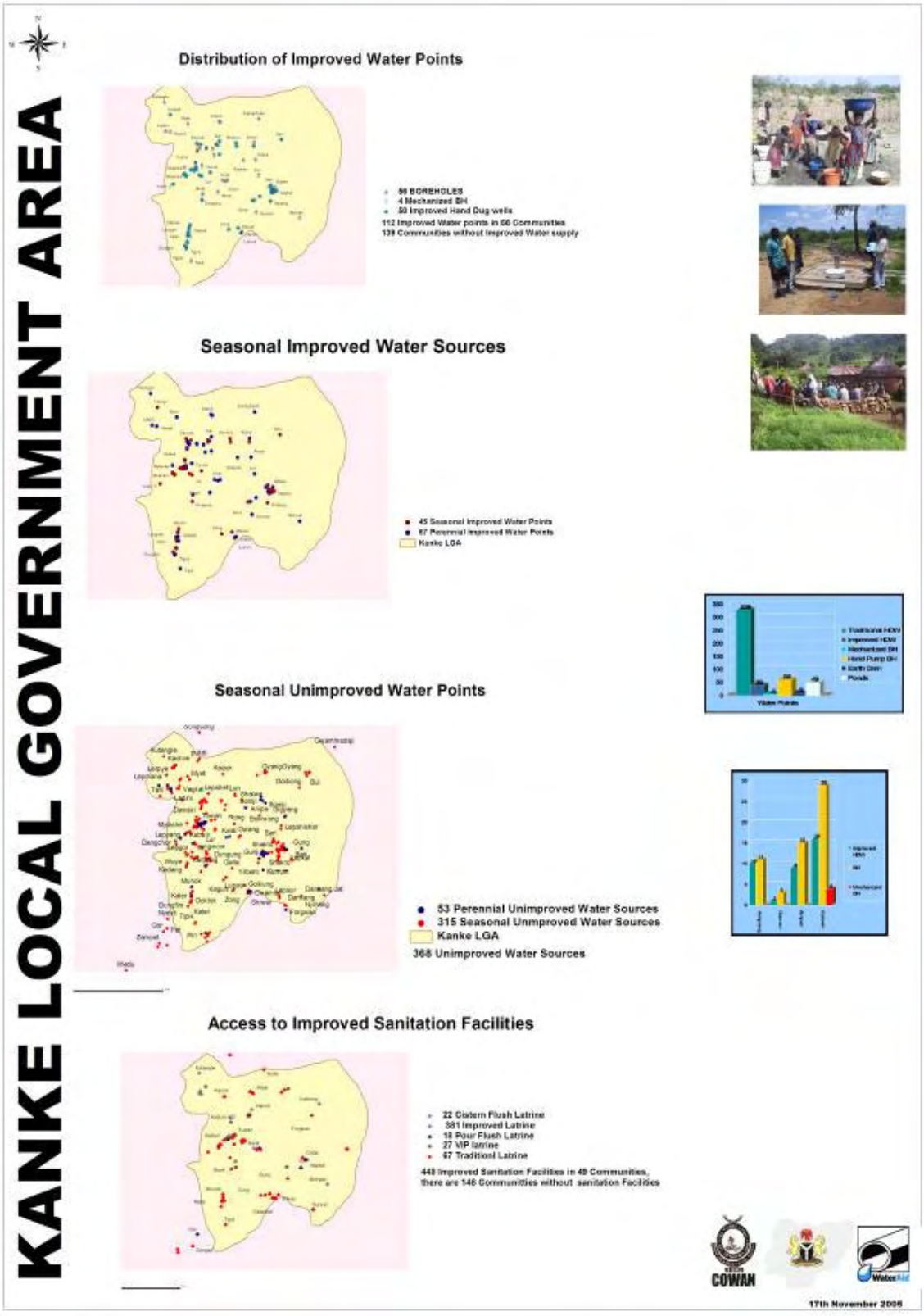
Annex 1: Set of maps for Kanke LGA, Nigeria



Annex 2: Information for baseline survey in Nigeria

1. Demographic Information
- Name of community
- Total pop: No of women, no of men, no of children

2. Socio-economic Information
- Poverty: rich, poor, very poor
- Occupation of men/women
- Types and structure of traditional institutions: name of village head, opinion leaders, clan heads, women and youth leaders

3. Social Infrastructure
- No of religious institutions
- Types and number of educational institutions
- Types and number of health facilities
- Presence and structure of WASCOM in the community

4. Social Amenities
- Type and number of water supply facilities: function, date of construction and source
- Type and number of latrines: function, date of construction and source
- Availability and frequency of electrical supply
- Availability and types of road network
- Availability and function of hand washing facilities

5. Health Information
- Prevalence of water borne diseases: diarrhoeal diseases, cholera, typhoid fever, guinea worm, schistosomiasis, dracunculiasis (river blindness), etc

6. Access
- Distance to safe water points
- Distance to safe latrines

7. Geographical Information: Spatial representation of information on
- Location and distribution of educational institutions
- Location and distribution of health facilities
- Location and distribution of water supply facilities
- Location and distribution of latrines

WaterAid's mission is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education.

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