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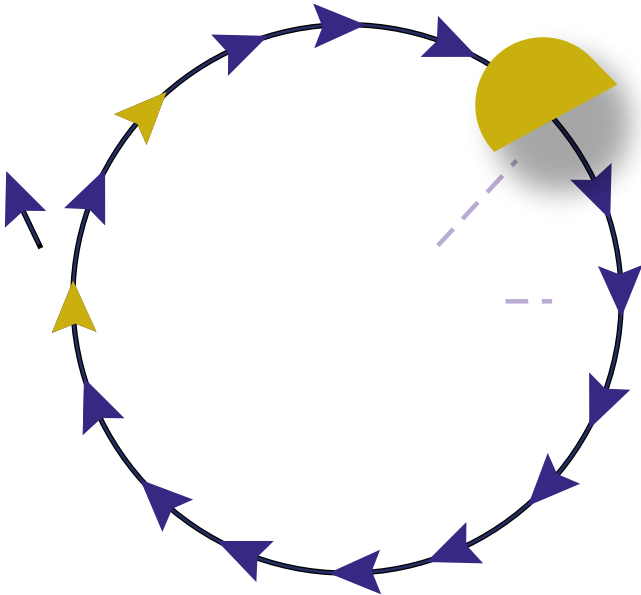
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## Different steps in the monitoring process cycle

Monitoring is not a stand-alone activity but **a tool** used to feed information into other activities. It can be divided into different steps as shown in Figure 1. The first of these steps is seen as the central part of monitoring: step 1 (analyse), uses statistical formulae. Steps 2, 3, and 4 follow the data analysis and feed back to the need (Why Measure?) for a future round of data collection.

The rest of this document will cover the various steps of Figure 1 in more detail.



Collecting water coverage information without any clear purpose or failing to use collected data is a waste of resources, money and staff time as well as the other people's time, including the target population.

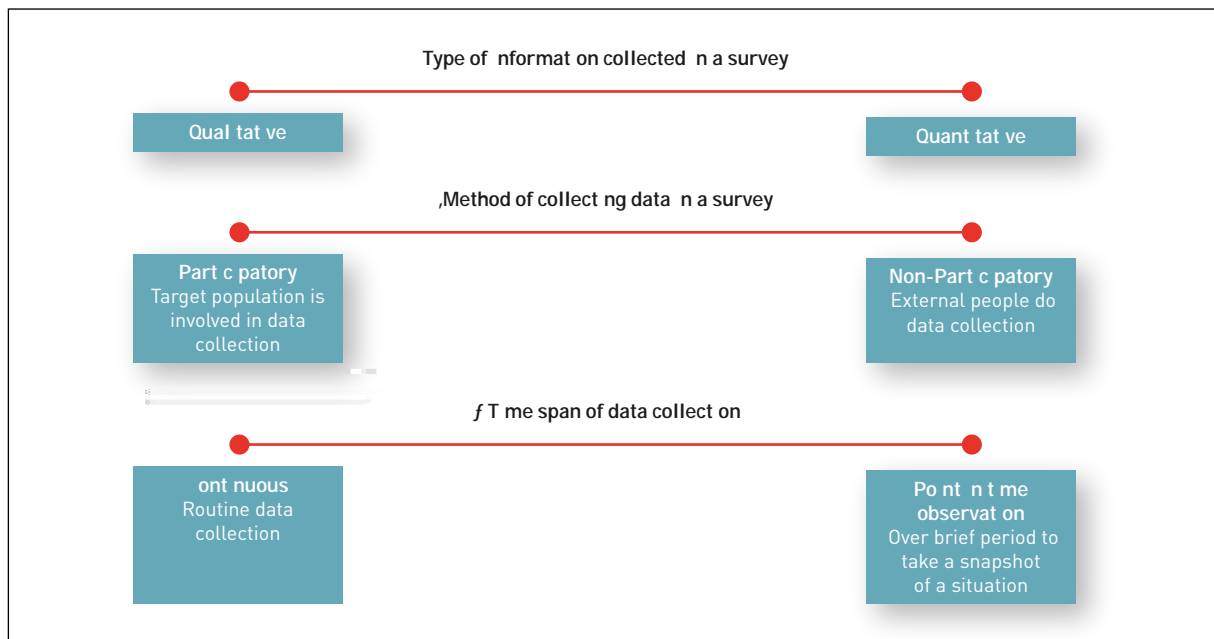
Despite the importance of collecting information it is surprising how little measuring actually happens and how often monitoring is used only for reporting.

## 2. What do we want to measure?

First of all we need to **define** clearly what to measure. In terms of water coverage, possible definitions could be:

Water in **adequate quantity** for hygiene purposes and of **adequate quality** for human consumption.

Benefits from water supply can only be achieved if water sources are used. In measuring coverage there is often discussion about whether **use** (which is practice) should be measured, or **access** (Which is more theoretical, but for which providers can more easily be accountable).



**Figure 2.** Aspects of data collection for water coverage monitoring in a survey

### 3. How to measure water coverage

There are different ways of collecting water-related data and the methodology will depend largely on the purpose of the monitoring work and the resources available for it. No single data collection method will be able to provide all the information needed for projects as different types of information will be collected in different ways.

There are two main and complementary methodologies in data collection; qualitative and quantitative methods. **Quantitative** methods aim to measure a small number of quantitative indicators and characterise these in figures. **Quantitative** data such as water coverage are often expressed in percentages of people or households having or not having access. Qualitative methods are more exploratory and analytic, seeking a diagnosis or description of a problem. They are also better able to discover information that was unexpected and therefore not explicitly asked for in the survey.

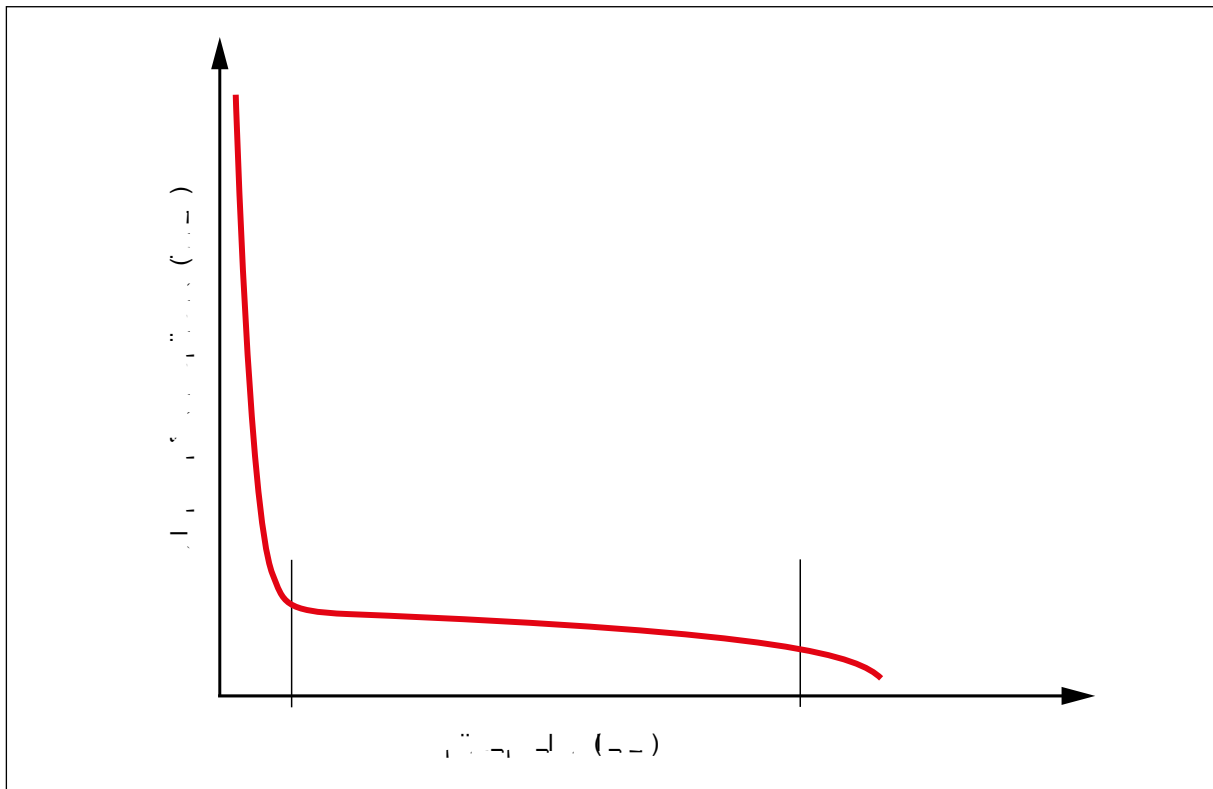
- Typical *Quantitative* information could be: 35% of people have access to 'improved' water

Other aspects of data collection are:

Participatory methods aim for a high involvement of the target population in the process of data collection, while non-participatory methods use mainly professional 'external' people for data collection.

Continuous or **routine** data collection is a continuous process of collecting and updating information, which is in contrast with **point in time** activities such as **surveys** which aim to collect information over a short period.

Survey methodologies often use a mix of approaches to collect data and the way each factor will be used can vary on a scale between the extremes shown in Figure 2. Often coverage data will be collected over a short period to obtain a point estimate. They generally are quantitative, non-participatory cross-sectional survey (as illustrated in the right column of the scale in Figure 2.). This is also the focus of this fact sheet, but it is not the only or pref.6 (e)2d6 (h)-4.3 (e s)-11.4 (c)-8. (n)-0.7 (l)1.ef tbtain ng a



**Figure 3.** Water quantity and collection time

## 5. Representative sampling

The basic sampling unit is the unit on which the data are collected. A practical **basic sampling unit** for water coverage can be 'the **household**' because all people in the household are likely to use the same water source at home. However for some aspects such as 'sustainability of water source' or 'number of beneficiaries per source' the **water source** can be a more suitable basic sampling unit.

Collecting data from every household is often impossible or impractical, so a sample of households is taken from the target population. The conclusion based on the sample can apply to the total **population** if the sample was representative.

To take a representative sample it will be essential to:

- Clearly define the target **population** from which the sample is collected;
- Clearly define the basic sampling unit;
- Make sure each basic sampling unit has an equal or known chance of being included in the sample.

### Practical implementation

Although practical implementation of a survey will be crucial to the validity of the collected data, it does not always get the attention it deserves. Practical implementation starts with the decision to do a survey until the data are analysed and made available. At each level the convenience of implementation and the level of training received for the task ahead will determine how valid the outcome will be. Three particular points can be identified:

- If it is difficult to identify each household included in the sample, the interviewer might select an alternative household which can make the sample unrepresentative
- Data that are difficult for the surveyor to collect or which are not properly and promptly noted down can make this information unreliable
- Coding the work from a paper to an electronic format for analysis can be tedious work which can introduce errors in the data and into the analysis

### 6. Analyse

Before any data are collected or even any pilot survey is done, it is important to think how the collected data will be used, what assumptions have to be made (possibly checked) and what analysis will be done. Necessary information is often found to be .1 (e)-1Fmi(e)--1.9 (n fo)-3.n fon fon fotean alty 94.1 (o249 (n

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## 8. Conclude 9. Action

There is a difference between analysing sample data (statistical work) and the analysing of results (a managerial responsibility). The conclusions drawn from the statistical results will feed into step 'action'. One action will be to define the information for the next round of data collection which will feed back into step 'why?'. An additional need in a consequent round of data collection could be to make the collected data comparable with data

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## Remarks

The subject – **Monitoring of coverage** – discussed in this fact sheet is just a small part in the monitoring efforts of the water 'sector', which also includes other factors such as user demand, and satisfaction, institutional capacity and responsibilities, operation and maintenance as well as environmentally sustained services.

The challenge ... "is getting the best possible information to the people who need it – and then getting those people to actually use the information in appropriate ways for the intended purpose."

Source: Patton 1990

Further information on assessing hygiene improvements can be found on the Website of the former USAID Environmental Health Project:

[http://www.ehproject.org/PDF/Strategic\\_papers/SR-8-HISGPaperVersion.pdf](http://www.ehproject.org/PDF/Strategic_papers/SR-8-HISGPaperVersion.pdf)

Draft documents on the WaSH survey are available:

[http://www.lshtm.ac.uk/dcvbu/hygiencentre/documentation/QForms\\_full.pdf](http://www.lshtm.ac.uk/dcvbu/hygiencentre/documentation/QForms_full.pdf) is a draft questionnaire while

<http://www.lshtm.ac.uk/dcvbu/hygiencentre/documentation/KDiscussion.pdf> is a discussion document on indicator. Updated documents in the form of a survey manual are expected by mid 2005.

## Bibliography

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WHO/UNICEF (2004). Meeting the MDG drinking water and sanitation target, a mid-term assessment of progress [www.unicef.org/publications/index\\_23223.html](http://www.unicef.org/publications/index_23223.html)



## Box 1. CWSA Definitions for monitoring

### Definition of access

Access to water facilities is the number of people with:

- All-year-round potable water supply of 20 litres per capita per day for point source services and 45 litres per day for small towns (piped schemes)
- The facility should be within 500 metres walking distance from the farthest house in the community and should serve 300 persons per borehole/standpipe and 150 for hand dug wells

### Coverage

Coverage measures the adequacy of community-based facilities using the standard number of people a facility can serve as shown in the table below.

Population range	Facility
75 - 300	Hand-dug wells
301 - 2000	Borehole
2001 - 5000	Pipe system
Over 5000	Pipe system

The NMS provides data for the annual national coverage reporting. In addition to the NMS, there is the **CWSA InfoSys at the regional level**. This system is intended to be a standard Regional database for CWSA, for capturing detailed data on daily operations/activities e.g. Borehole drilling, Small towns' water supply system, capacity building, O & M activities. Data for the monitoring systems originates from the districts and communities and is assembled by sector staff of the district assembly- the District Water and Sanitation Teams (DWSTs) and presented in district summary reports to Regional Water and Sanitation Teams (RWSTs) of the CWSA. RWST aggregates the district report to obtain a cumulative report for the region and submits the cumulative report to the Management Information System (MIS) Officer within the CWSA Head office. The regional inputs are compiled to obtain national reports and coverage rates at the various levels. CWSA monitoring information is disaggregated from the national to the regional, district and even community levels. This enables the data to be usable in lower level planning activities.

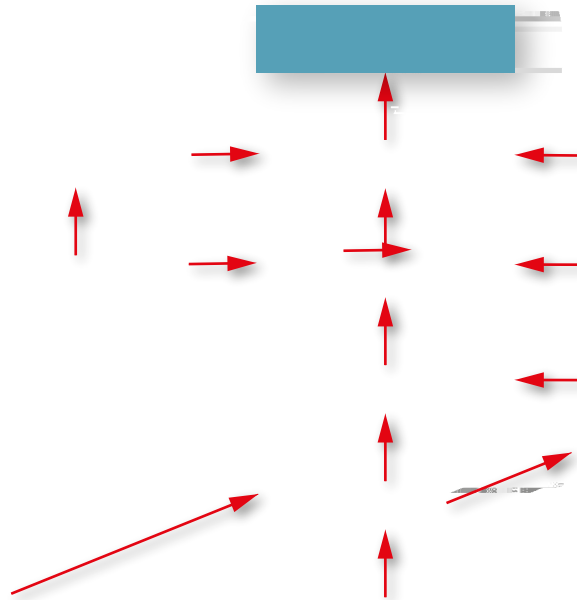
The key problem within the process is limited capacity of the CWSA to monitor the process at the district and sub-district levels. The reliability of the information generated has often been

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### NDPC monitoring system

In the case of the NDPC, MDG reporting is carried out as part of the general effort to monitor progress of the Ghana Poverty Reduction Strategy (GPRS). Monitoring of the progress in the water and sanitation sector relies heavily on data from the National Monitoring system of the CWSA. The outcomes thus depend on the strengths and weaknesses of the CWSA system.





**Lack of nation wide framework for monitoring**

The Water Directorate at the Ministry of Water Resources, Works and Housing is the sector ministry for water and sanitation. They recognise the need to collaborate with data gathering institutions such as the Ghana Statistical Service, CWSA, GWCL, databases of the various projects in the sector to harmonise various M&E systems into a comprehensive national system to be managed by the Water Directorate of the Ministry to serve as one stop centre for information on water and sanitation.

**Limited community involvement and feedback**

There is little room for community involvement in monitoring. According to Shordt et al (2000) this contravenes a key monitoring principle that requires monitoring information be collected by those with a vested interest in the information and be acted upon at the lowest level possible with the opportunity to refer to higher management levels. Even though the degree to which communities should be involved in monitoring could differ according to the purpose of the monitoring, third party monitoring is an important principle to avoid biases which can occur through self reporting because of vested interests. . There is also limited feedback on monitoring to the communities for taking corrective actions. A lot of the monitoring information is unlikely to be acted upon at the local level..

**Limited involvement of Civil society and NGOs**

Civil society organisations are important stakeholders for validation and quality assurance of data. However, their involvement so far has been minimal and there is no elaborate process in place to involve them. This, associated with wide variations in coverage figures, may in part account for the discrepancies within the present coverage figures.

**Other key capacity issues**

- for the establishment of a technical committee at the national level to review existing good practices at the project level and the harmonisation of definitions of the national monitoring system with existing survey efforts for the purpose of monitoring. This will make it easier to validate data from the various sources and for the JMP data to be used as a validation of national efforts;
- for education and capacity building especially at the district level and sub-district levels. This

## Conclusion

It is important that the present focus of monitoring on the collection of implementation data gives way to a more comprehensive system involving the collection of data on sustainability issues such as water quality and functionality among others. Emphasis must also be placed on the use of monitoring information at all levels to ensure that sound and reliable strategies are formulated to address the challenges in meeting the MDGs.

## References

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2. Powerpoint presentation by CONIWAS (Coalition of Non Governmental Organisations in Water and Sanitation) on [www.trend.watsan.net/page/413](http://www.trend.watsan.net/page/413)
3. Powerpoint presentation by DANIDA on MOM in Volta region on [www.trend.watsan.net/page/415](http://www.trend.watsan.net/page/415)
4. Post construction summary report prepared by TREND for the World Bank [www.trend.watsan.net/page/434](http://www.trend.watsan.net/page/434)
5. Kathleen Shordt and Bernard Akanbang (2004). Ghana Country Position on Improving the Quality and Utilisation of MDGs Monitoring Data for sub-National Planning on [www.trend.watsan.net/page/299](http://www.trend.watsan.net/page/299)

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