

# Ethiopia National WASH Inventory: lessons learned and maximising value

Summary of a seminar held on 8 April 2013, Addis Ababa, Ethiopia

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## Introduction

In 2010/11 the Ethiopian Ministry of Water and Energy (MoWE) carried out a National Water Supply, Sanitation and Hygiene (WASH) Inventory (NWI). This was the first time a national effort had been made to inventorise water and sanitation-related data across the country.<sup>1</sup> The NWI combines WASH related data from 12 million households with scheme inventories of communal water supplies and WASH facilities at health institutions and schools for rural and urban areas (Butterworth *et al.*, 2013). The combination of an inventory of schemes - (provision of service) and household survey - (use of service) based data makes the NWI a unique exercise. The NWI mobilised a vast amount of human (70,000 enumerators) and financial resources (over 100 million Ethiopian Birr – which equals more than 5 million US Dollars) (see Box 1 for details).

### Box 1: The National WASH Inventory – a huge effort

Some facts highlighting the magnitude of the Ethiopian NWI:

70,000 enumerators inventorised:

- 92,588 rural water supply schemes,
- 1,605 town water supply schemes,
- 30,000 schools, and
- 20,000 health institutions, and visited
- 12 million households

Total cost: more than 100 million Ethiopian Birr (which equalled 5.3 million US Dollar in 2013)

*Source: Debela (2013)*

The NWI has resulted in substantial downward revisions of water and sanitation access figures for Ethiopia. Access to water supply fell from an estimate of 79% in 2012 based on internal routine monitoring reports of the MoWE, to 52% in 2013 (based on inventory data collected in 2010/11). Access to sanitation stood at 63% according to results of the NWI (based on the NWI household survey).

On 8<sup>th</sup> April 2013, the MoWE and the IRC International Water and Sanitation Centre organised a National WASH Inventory seminar to reflect on ‘the lessons learned and to maximise its value’. The seminar was attended by over 100 sector stakeholders.<sup>2</sup> This paper summarises the main points of discussion. The discussions revolved around three main issues: the implications of the NWI findings, the lessons learned, and the prospects for maximising the use of the NWI data and keeping it up-to-date.

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<sup>1</sup> The NWI was carried out in two phases. Phase 1 (October 2010) covered Afar, Dire Dawa and Harar, phase 2 (May 2011) covered the rest of the country, except Somali Region where data collection had to be postponed due to a drought that required immediate emergency response. In July 2013, the MoWE was expecting to finish data collection in Somali by September 2013.

<sup>2</sup> Attendees included water, health and education government representatives from federal, regional and zonal levels, representatives of the WHO and UNICEF’s Joint Monitoring Programme (JMP) and representatives from multi- and bi-lateral donors and NGOs, from research organisations and the national media.

**Figure 1: Workshop participants discussing the NWI results in smaller groups**



### **Implications of NWI results**

Tamene Hailu Debela from the MoWE presented a summary of the NWI process and results. Figure 2 shows the results for rural, urban and total water access based on three parallel calculation methods used for water supply:

- Proportion of population served living within a certain distance to an improved water point or scheme (1.5km for rural and 0.5km for urban areas), based on the scheme inventory (52% in 2011). This corresponds to national ‘water access’ and is the figure used by the MoWE to report against sector targets based on the NWI results;
- Proportion of the population served by improved water schemes irrespectively of the distance walked to the source and the volume of water collected, also based on the scheme inventory (64% in 2011); this corresponds to ‘water usage’ in the presentation of the MoWE;
- Proportion of population using improved schemes irrespectively of the distance walked to the source and the volume of water collected (50%), based on the NWI’s household survey.

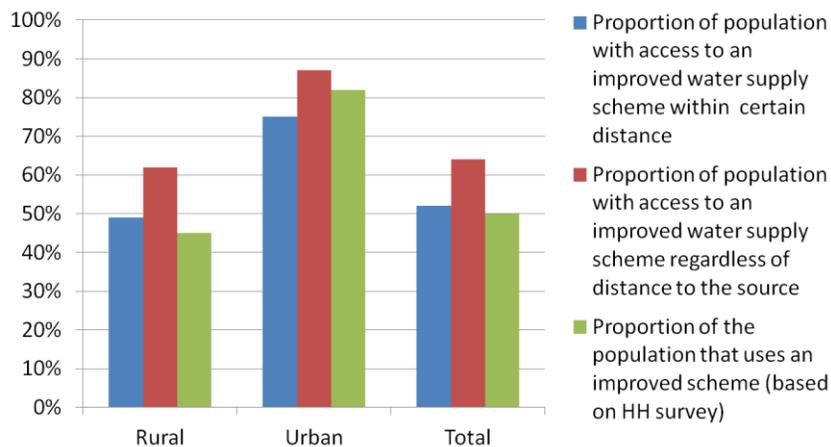
The proportion of households using a latrine according to the NWI household survey was 63%, where 80% of the urban population and 60% of the rural population were using a latrine. The NWI’s household survey did not distinguish between improved and basic latrines.

The important changes in water supply access figures are not only the result of the comprehensive national data set (except Somali Region), but also because of the new method used for calculating access to water supply in Ethiopia (see Box 2 for more detail).

#### **Box 2: Water access calculation method used under the NWI**

The NWI uses a different calculation method to determine access to rural water supply from the method previously used to measure progress against the Universal Access Programme (UAP). Until 2012, the method to calculate water access under the UAP used average beneficiary estimates served by a certain scheme type (for instance a hand dug well was assumed, on average, to serve 270 people), irrespectively of functionality. The new calculation method for measuring water access uses additional data available from the NWI, namely the reported scheme users who reside within 1.5km of the facility in rural areas and within 0.5km in urban areas.

**Figure 2: NWI results showing water access and use based on scheme inventory, and water access based on household data (related percentage figures are given in the appendix)**



Source: *Debela 2013*

In his opening remarks, the State Minister highlighted the important achievement of successfully completing the NWI. Conducting an inventory and a WASH-related household survey that comes close to a census, inputting data – including 12 million completed household data collection sheets – and analysing the data, represented a huge undertaking that stretched the human resource capacity of the WASH-related sector offices. The successful completion of the NWI was thus recognised by all participants as a cause for celebration.

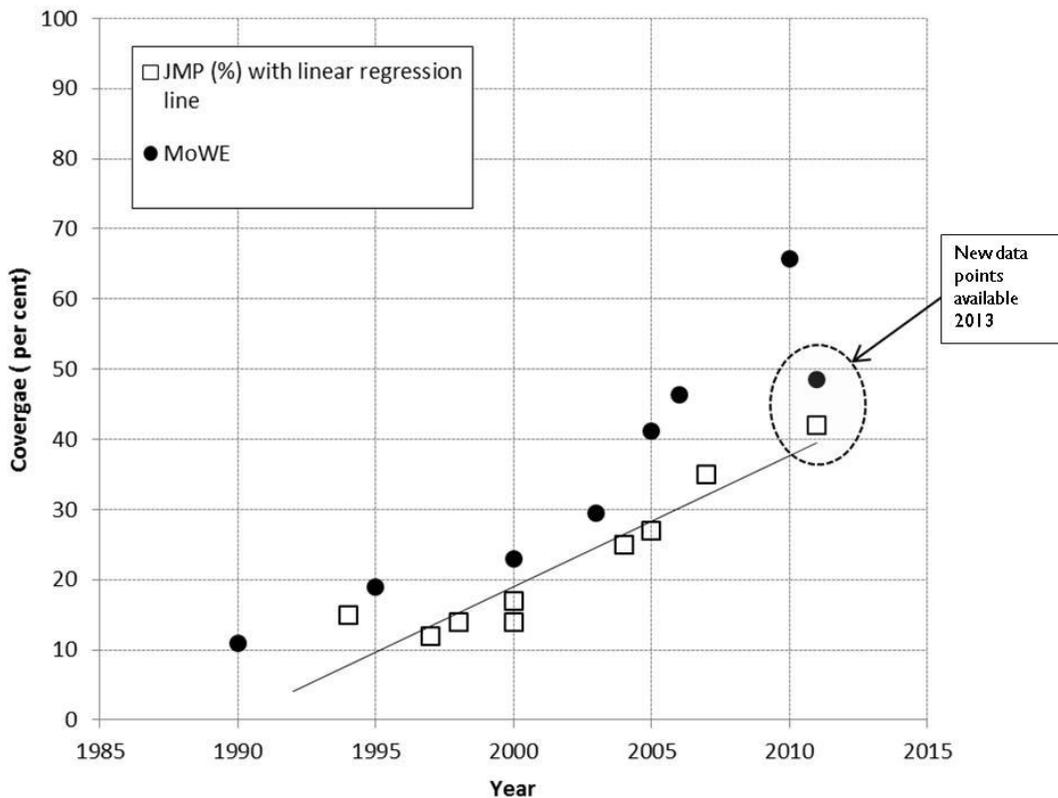
Many workshop participants saw the substantially lower access figures for water supply and sanitation as a wake-up call for the significant gap remaining in the sector to achieve universal access. People felt that the results called for better integration of the WASH-related sectors and highlighted the need to address the financial and human resource gaps. The dominance of water sector government stakeholders compared to their colleagues from health and other sectors indicated the important integration task that still lies ahead. At the same time, reaching 52% water supply access was, in itself, seen as an important achievement against the baseline of 14% in 1990 (WHO and UNICEF, 2012). Steady progress is being made.

Workshop participants also acknowledged the importance of a national WASH dataset that is based on a single, consistent methodology. Yet, many participants voiced their concerns regarding the still outstanding approval of the NWI’s results by the Central Statistical Agency (CSA) to make the figures ‘truly national’ and called for a closer collaboration with the statistical agency. Various participants wondered: ‘what are the next steps towards securing CSA approval?’ Some participants worried that the NWI project office still called the NWI results ‘preliminary’ even two years after the data collection had been completed. They urged that the WASH sector’s attention needed to turn towards releasing and using the data for consolidated WASH planning and implementation, a point discussed further below.

### Greater consistency between national and JMP figures

A very positive implication of the revised national access figures is the greater consistency between national sector and JMP figures (which are based on household surveys from the CSA). A MoWE employee highlighted this point in his comment that “figures used to be discussed hotly in the sector but we are cool now” because national and international figures are in much greater agreement with each other.<sup>3</sup> The recent convergence of data from MoWE and JMP figures is depicted in Figure 3, which shows estimated access to rural water supply based on MoWE and JMP estimates between 1990 and 2011.

Figure 3: JMP and MoWE rural water access data points between 1990 and 2011



Source: Butterworth (2013)

Didier Allély-Fermé, who presented the latest JMP data for Ethiopia confirmed that the NWI and JMP latest estimates were now relatively close. For instance, while NWI household survey estimates usage at 50% and access (provision) at 52%, the JMP estimates for 2011 are at 49%. For rural water supply data from the household survey differed only by six percentage points between the NWI usage (45%) and JMP estimates (39%).

<sup>3</sup> In a previous national symposium in 2010 attended by the JMP, the ‘true’ access figures for the sector were the subject of lively debate, partly provoked by the divergence between the MoWE’s and JMP’s access estimates (for rural water supply, the MoWE estimated 68.5% access compared to the JMP estimate of 34%). See Butterworth *et al.* (2010) for a summary of this symposium.

In his presentation, Didier highlighted the importance of understanding why access figures differ sometimes between national sector ministries and the JMP. Possible reasons he identified for Ethiopia included differences in the definitions of access, in classifications for improved and unimproved sources, in categorisations of infrastructure and the different criteria included to measure access in calculation methods used (for instance, the MoWE measures access based on estimates of population served by a scheme no further than 1.5km distance whereas the JMP measures the proportion of the population using improved facilities based on household surveys with no additional criteria of distance or quantity used).<sup>4</sup> Didier highlighted that at the heart of convergence between JMP and national sector figures lie an increased harmonisation at national level; in Ethiopia, this involved the reconciliation of infrastructure classifications between the CSA and WASH-related sector ministries according to him. He strongly encouraged to further develop the collaboration between the different institutions in order to fully ensure harmonisation of definitions at national level and alignment with the JMP, particularly for sanitation.

### **Maximising the NWI's value**

Regarding maximising the NWI's value, the discussions at the seminar touched on two interrelated issues: how to make the NWI results publicly available and how to keep the data up-to-date in order to encourage its use. A concern from a WaterAid representative on how to disseminate the data to the *woreda* (district) level was echoed by many participants. In April 2013, the NWI was available to 58 out of more than 731 *woredas*<sup>5</sup>. According to the MoWE, the bottleneck in making data available at *woreda* level lies in the procurement of computers and database training to enable *woreda* staff to use the ACCESS database where the NWI data is stored. Meanwhile, without being able to access the data, *woreda* governments cannot use the NWI results for planning, and donors and NGOs are unable to make use of the data for their interventions. A representative from UNICEF, for example, explained that his organisation would like to use the NWI data to identify intervention areas for emergency operations. In order to inform targeting, UNICEF would need access to *kebele* (sub-district) level functionality data of water schemes. A representative from CoWASH, a national funding mechanism that supports community-led water, sanitation and hygiene interventions under Ethiopia's WASH Programme, explained that he was only able to access limited (*woreda* level average) data from a computer located at the MoWE. A key worry is thus that access to the NWI data remains limited largely to the federal level and to summary results while growing more outdated by the day. The chief obstacle towards making NWI data accessible to the relevant stakeholders - whether in raw or summary formats – appears to be capacity.

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<sup>4</sup> For access to urban water supply, where NWI results (access: 75%, use 87%, HH survey: 82%) differ more substantially from JMP results (97%), he suggested that the difference may arise from the fact that the JMP data sources also consider non-piped schemes such as hand dug wells, boreholes and protected springs for the calculation of access. In urban sanitation, where the differences between NWI (80%) and JMP (27%) were greatest, he suggested, that this discrepancy might have arisen because of differences in the classification of improved latrine facilities. He supported his argument by highlighting the relative closeness of open defecation estimates of 10% by NWI and 18% by the JMP.

<sup>5</sup> The 2007 Census (2012) recorded 731 *woredas*. Since then, the total number of *woredas* may have increased.

The updating of NWI data is inherently linked to the dissemination of the data. At the time of the seminar, many sector experts highlighted that the ownership of the NWI was limited to the level of the Federal Ministry. They argued that as long as dataset and its analysis were not incorporated as core tasks at *woreda* level, updating would remain unrealistic. Some participants were of the opinion that for updating to happen, the WASH sector needed to address questions of basic logistics such as human resources, dedicated budgets, and the designation of clear reporting responsibilities. Others were confident that innovations in Information and Communication Technologies (ICTs) provided promising entry points for overcoming updating challenges. The MoWE highlighted the Tigray Region as an example for the successful trialling of mobile phone technology for data collection and updating (see Box 3).

### Box 3: Using ICTs to support water scheme inventory and updating in Tigray Region

An example of successful ICT use to support data collection and updating of water schemes is the support of the International Committee of the Red Cross (ICRC) in Tigray. ICRC piloted mobile-phone based data collection and reporting of water supply schemes in Tigray Region using a software called Majella. The software, a US-based commercial system, is able to generate basic maps (on Google Earth and ArcGIS-based) and reports and has a link to a cloud system that can be accessed by all *woreda* offices with internet connection. As part of the exercise, ICRC together with a regional focal person in the Tigrayan Bureau of Water Resources trained one or two sector staff at *woreda* level on the software provided. Out of the 34 *woredas* where data was collected, 17 have access to the internet and can add new data and update the status of existing water schemes. According to ICRC, *woreda* offices had already managed to add 400 additional water points to the 10,000 water points previously inventorised between January and April 2013.

Keeping data up-to-date is a key concern for the MoWE. The Ministry is keen to capture the substantial progress made since 2010/11 when the NWI data collection was completed for reporting against the Ministry's 2015 UAP target.

### Lessons learned and emerging pathways forward

A key realisation from the NWI process is the challenge related to the sheer scale of undertaking a national WASH-related inventory and household census in a country like Ethiopia that has a vast territory and more than 80 million inhabitants. While there was a real sense of achievement among the seminar participants, people were also confronted with a certain disillusionment about the lack of a concrete strategy for updating the NWI results, and about the still outstanding dissemination of existing data. On a positive note, the successful NWI completion was a combined effort between the WASH-related sector ministries, sector donors and numerous NGOs who supported data collection exercises across the country. This willingness to come together to improve the availability of WASH-data was seen as an important asset for the sector.

Concerning future pathways for post-MDG monitoring in Ethiopia, the UNICEF WASH Chief put forward the need to monitor equity issues (for instance, between different geographic and administrative entities, and in relation to marginalised and vulnerable groups and individuals), water quality aspects

and the sustainability of water supply sources throughout the year. A concrete step to address water quality aspects is a planned rapid water quality assessment in Ethiopia.

For the MoWE, a further immediate concern is the completion of the NWI in Somali Region. To this end, the monitoring expert in the Ministry has held discussions with development partners in order to explore the scope of using ICTs to support data collection, input and analysis in the future. The hope is that this mobile-monitoring would substantially increase the speed and ease of administering survey formats. However, while mobile-phone based data collection may facilitate the availability of WASH data at the federal level, it does not, in itself, provide a solution for making data available at the decentralised levels, i.e. at the *woreda* where data is required to inform planning. There is also an open question as to how many *woreda* sector offices will realistically be in a position to carry out electronic, internet-based data entry and updating in the immediate future? If the answer to this is tentative, the question also arises whether a solely electronic data entry would actually take away information from *woreda*-level offices? Mobile-phone based monitoring may thus be in tension with the need expressed by many seminar participants of extending ownership of WASH data to the *woreda* level. In the meantime, CoWASH, which puts the community at the centre of water supply interventions, would like to see communities at the centre of future WASH monitoring. In which direction WASH sector monitoring will develop in Ethiopia over the coming years remains an exciting question.

## References

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## Appendix

Key water supply figures based on the National WASH Inventory

	Water supply access (within 1.5/0.5km)	Water supply access (irrespective of distance)	Water supply use based on HH survey	Household latrines (improved and basic)
Rural	49%	62%	45%	60%
Urban	75%	87%	82%	88%
Total	52%	64%	50%	63%

Key water and sanitation figures for schools and health institutions based on the National WASH Inventory

	Water supply	Basic latrine	Improved latrine
Schools	31%	81%	33%
Health institutions	32%	85%	Not available