Social accountability for safe and sustainable domestic water provision in Dar Es Salaam and Morogoro, 2018

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Data collection method

Survey target. This survey aimed to establish: a) levels of access to safe and sustainable water for domestic use; and b) capabilities to hold water governance institutions accountable for such provision. It focused on the four mainly residential districts of Dar es Salaam--Kinondoni, Ilala, Temeke and Ubungo—and, for comparison, the urban area of Morogoro, a town around 200 kilometres distant from Dar es Salaam. Kigamboni district in Dar es Salaam was excluded because of its low residential population and because it is not supplied with water by DAWASCO, instead relying mostly on dug wells. The surveyed area has a total population of about 5.888 million people. The initial target was to collect data from 2100 households, including 1750 households from Dar es Salaam and 350 households from Morogoro.

Developing the questionnaire. After several discussions involving all members of the project team, the PI (Munro) drafted a questionnaire in English, drawing on past surveys including those conducted by TWAWEZA in Tanzania, the Afrobarometer, Asia Barometer, Asian Barometer, European Social Survey and “Core questions on water, sanitation and hygiene for household surveys” by the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. The English questionnaire was translated into Swahili by the UDSM Co-I (Kweka), who also discussed the draft with her students and colleagues at the Centre for Population Studies and Research at UDSM.

Piloting the questionnaire. The UDSM Co-I and several enumerators then conducted a pilot in eight wards with 29 respondents residing in both urban and peri-urban and reliant on a mix of water sources in December 2017. The pilot focused on whether the questionnaire appeared relevant to the respondents, adequately covered the subject matter, flowed logically, and could be completed within 30-40 minutes.

Sampling procedures. Population was the first criterion for selection of wards to conduct the study. To get a mix of high population and low population wards for each district, the population average for all wards was calculated using data from the 2012 census (NBS, 2013a). In Dar es Salaam, the average for the four districts included in the study was 42,653. Therefore, all wards with population above 42,653 were categorized as having a high population, and all wards with population below 42,653 were categorized as low population wards. For Morogoro, the average was 10,770. Therefore, all wards with population above 10,770 were categorized as the high population wards and the wards with population below 10,770, categorized as low population wards.

Water source was the second criterion for selection of wards to conduct the study. Technically DAWASCO is expected to supply tap water in Dar es Salaam region and part of the coastal region, but there are variations in supply by households. In the case of Morogoro MOROWASA is the authority responsible for provision of water. However, many other sources of water are available and not all households are connected and use tap water and some households mix their sources for different domestic uses. After consulting with DAWASCO, and looking at the results from the pilot, areas dominated by either one of the three major water sources in the two urban areas were identified. These are the tap, well and other water sources (river, dams etc.). We categorized wards into three corresponding categories: those supplied by DAWASCO with tap water, those reliant mainly on wells and other areas. The enumerators were asked to confirm if a ward had many households using the water type it was sampled for before they proceeded with the questionnaire filling.

The final criterion was proximity to qualifying wards. We started with the ward with the lowest population for each main water type in the district, and the ward with the highest population for each main water type in the district, and then selected the next closest qualifying ward.

In the highly populated wards of Ilala, Kinondoni and Temeke the respondents visited every 10th household in a street and in low population wards they visited every 5th household. Where no one was at home, enumerators proceeded to the next house. At each household, an individual was selected for interview using a Kishtable. Fieldwork was hampered by the fact that the rainy season had started which made it difficult and expensive to conduct call backs. For that reason, if the person selected was not at home, a substitution was made, again using the Kish table. A 98.9 response rate was achieved. Fieldwork took place from March 7th to 29th 2018. A total of 2164 respondents were interviewed in 36 wards across the four districts of Dar es Salaam and Morogoro. A full list details of the wards are detailed in the Survey Report included with this collection.

Quality checks. The checking of the completed questionnaires for errors was conducted each day. Enumerators were told in advance to correct some common errors and questionnaires with excessive numbers of errors were excluded.

Post-stratification weighting. The fact that substitutions were allowed produced a sample biased towards women. Even when available, men frequently told the enumerators to speak to the women because of the perception that water issues are women’s issues. Women over thirty years old were more likely to take part than younger women. To correct this, we conducted post-stratification weighting in two stages. At the first stage, we sought to match the distribution of the population by five age groups and gender within each district. (Because there had been some boundary changes in Dar es Salaam, leading to the creation of two new districts, we used the three districts of Dar es Salaam existing at the time of the 2012 census (NBS 2013b). Because the Morogoro sample had very few young men, we used only three age groups: 18-39, 40-59 and 60+). At the second stage, we sought to match the 2017 distribution of the population by gender between the current districts of Dar es Salaam, as well as Morogoro, according to official projections (NBS 2013c). The weight variable, w, is thus designed to ensure that the data is representative of the adult population of the surveyed districts. (This weight is suitable when the focus of research is individual characteristics. Researchers interested in household characteristics should consider alternative weighting schemes). The results of the two-stage weighting procedure are shown in the Survey Report.

Data processing and preparation

The research involved human subjects in the form of respondents to a survey of residents of Dar es Salaam and Morogoro, Tanzania, on two issues: 1) levels of access to safe and sustainable water for domestic use; and 2) capabilities to hold water governance institutions to account for such provision. The fieldwork was conducted by the Population Studies Research Centre at University of Dar es Salaam (UDSM) under the direction of Dr Opportuna Kweka. We consulted closely with UDSM on ethical issues related to this proposal. Information about respondents was gathered using a questionnaire on attitudes, experiences and behaviour with particular reference to access to safe and sustainable water and capability to deal with water governance issues. Respondents were recruited by trained fieldworkers calling at their home who wrote down their replies in the course of a face-to-face interview. In line with established practices of UDSM and the Tanzanian Statistics Act (2015), all data was gathered on a confidential and voluntary basis. Respondents received an assurance of confidentiality of all their personal information, and were informed about the nature of the study in advance in plain language (see Participant Information Sheet attached). The information sheet made clear that they would be able to skip any question and end the interview at any time. No signature was required from respondents as a precondition for conducting the interview, as previous experience in developing countries has shown that many respondents find the obtaining of written consent to be intimidating. Instead, answering the survey was taken as implied consent. Respondents were provided with a telephone number of the main researcher in the field and contacts of the University of Dar es Salaam officials to call if they had any doubts concerning the identity of the interviewers. No inducements were offered for participation in the survey.

Completed questionnaires as well as a de-identified copy of the data set will remain in the care of UDSM after fieldwork for six years for the sole purpose of answering any queries about coding. The questionnaires and data set are stored securely, separate from any information that may be used to identify individuals. After six years, they will be destroyed securely. All responses were anonymized during the process of compiling a data file for sharing with University of Glasgow investigators. Only the anonymized data along with methodological reports and blank questionnaires were returned to the investigators for analysis and only the anonymized data will be shared with third parties including UK Data Archive. University of Glasgow investigators will share the anonymised data file and documentation with two categories of end users--first, the non-academic partners of our research project, Water Witness International (WWI) and Shahidi wa Maji. They will require access to the anonymised data and documentation for the purpose of informing their advocacy work for safe and sustainable water provision in Africa. The anonymised data file given to the NGO will contain no identifiers for individuals but only areas at the level of wards or streets where they can make interventions. WWI, based in Edinburgh, has been working since 2008 to promote research on and to advocate better water resources management (www.waterwitness.org). Shahidi wa Maji (SwM, www.shahidiwamaji.org) is a Tanzanian NGO working for sustainability and equity in water resources management; they are long term partners of WWI. Second, after the project is completed, we will offer the anonymized data and documentation to the UK Data Archive so that it can be permanently stored there and shared with other researchers under their policy for the handling of Safeguarded Data. We have undertaken with UDSM to ensure that the research will be carried out in accordance with UK and Scottish Government legislation including the Data Protection Act (1998) and the Freedom of Information (Scotland) Act 2002, as well as with the Tanzanian Statistics Act (2015). Official permission for the survey will be obtained in line with the Statistics Act.