Afghanistan Research and Evaluation Unit

Discussion Paper

Household Water Insecurity:
Changing Paradigm for Better Framing the Realities of Sustainable Access to Drinking Water in Afghanistan

Vincent Thomas

December 2015

AREU Research for a Better Afghanistan

14 YEARS OF HIGH-QUALITY RESEARCH

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About the Author

Vincent Thomas worked as a research officer at AREU between 2011 and 2014. He has primarily worked on the social and institutional aspects of water management in Afghanistan, including water rights, water conflicts and decision-making on water allocation. He has also looked at the implications of importing models of so-called "good" water governance in traditional Afghan water management systems. Previously he has worked for the Aga Khan Foundation between 2005 and 2010 as a research officer and project coordinator on the Participatory Management of Irrigation Systems (PMIS) project in Takhar and Baghlan. He also contributed to the 2011 Afghanistan Human Development Report. More recently he has taken a focus on issues of domestic water supply and sanitation services, and water security at household level.

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Table of Contents

Acronyms

AHDR	Afghanistan Human Development Report
ANDS	Afghanistan National Directorate of Security
AMICS	Afghanistan Multiple Indicator Cluster Survey
AUWSSC	Afghanistan Urban Water Supply and Sewer Corporation
CSO	Central Statistics Organisation
DACAAR	Danish Committee for Aid to Afghan Refugees
EPA	Environmental Protection Agency
GLAAS	Global Analysis and Assessment of Sanitation and Drinking-Water
HWII	Household Water Insecurity Index
JMP	Joint Monitoring Program
KAP	Knowledge Attitude and Practices
MDG	Millennium Development Goal
MRRD	Ministry of Rural Rehabilitation and Development
NRVA	National Risk and Vulnerability Assessment
NSP	National Solidarity Program
SEARO	South-East Asia Regional Office
UNICEF	United Nations International Children's Emergency Fund
WHO	World Health Organisation
GIRoA	Government of Islamic Republic of Afghanistan
WATSAN	Water and Sanitation
UN	United Nations

Glossary

arhad	The *arhad* system lifts groundwater from shallow wells with the help of a Persian wheel (the *arhad*) to supply water to field.
kandas	*Kandas* are open depressions or excavations in which surface water, snow, or rainwater is collected for livestock or, during dry periods, domestic uses.
karezes	Similar to infiltration galleries, *karezes* are sloping channels or tunnels dug nearly horizontally into an alluvial fan that connects to a water source, layer, or other geological formation.
shura	Community council; normally involved in governance roles and possessing a standing membership.

Executive Summary

This paper provides a critical analysis of the status of and progress on access to drinking water in Afghanistan. It shows that the claim that Afghanistan has met or is about to meet its Millennium Development Goal (MDG) on access to safe water should be taken with great caution. This is due to a combination of issues, including inflated data (as found in influential reports from the World Health Organisation (WHO)/United Nations Children's Fund (UNICEF)), methodological discrepancies between different national surveys, biased trend assessments and unrealistic assumptions about the long-term sustainability of existing water systems. The paper also shows how the existing MDG indicator of "improved water sources" is limited in capturing the realities of access to safe water at a household level. To provide a more comprehensive and meaningful picture of the status of water access for Afghan households, this paper proposes the more comprehensive framework of "household water insecurity." On this basis, it proposes a household water insecurity index (HWII) based on five five water-related factors: "quantity," "quality," "accessibility," "reliability/resilience" and "affordability." The index could serve as a guideline for programme design and for shaping policies in the Afghan water and sanitation sector.

1. Introduction

It is well known that access to safe water is an essential step towards improving living standards. It has been shown that communities with inadequate water supply services are also the most vulnerable, and that improving access to safe drinking water is central to any poverty alleviation strategy for developing countries. In Afghanistan, the "lack of access to clean drinking water in all provinces, for both domestic use and throughout institutions such as schools and clinics" has been identified as one of the key issues to address as part of the country's latest Poverty Reduction Strategy[1]. This is perhaps not surprising given that Afghanistan is among the countries with the highest percentage of deaths (above 15 percent) attributable to inadequate water and sanitation.[2]

There is no doubt that substantial progress has been made in providing safe drinking water to Afghan households since the fall of the Taliban regime almost 15 years ago. Some recent WHO/UNICEF reports have even announced that the MDG for access to safe drinking water has been achieved in the country, far ahead of schedule.

But is access to safe drinking water in Afghanistan really such a success story? To date, there have been very limited studies taking an in-depth look at the data and what they say about access to safe drinking water in Afghanistan.

Thus, the first objective of this discussion paper is to provide a critical analysis of the status of and progress on access to drinking water in Afghanistan, in order to inform and stimulate discussion around this central issue for poverty reduction. The second objective is to provide information on how the existing "improved water sources" MDG indicator is limited when it comes to capturing the realities of access to safe water at a household level, and to propose instead the more ambitious and more appropriate conceptual framework of "household water (in)security" as a guide to monitoring as well as policy and programme development in the water sector.

The next section provides a summary of the figures and progress on access to improved water sources in Afghanistan over the past 12 years, and presents the different claims by WHO/UNICEF and the Central Statistics Organisation (CSO) for Afghanistan regarding the achievement of the MDG on "access to safe drinking water." Section 3 provides a critical analysis of these figures and claims. Several issues will be highlighted, including inflated data, methodological discrepancies, biased interpretations and unsound assumptions about the sustainability of drinking water systems. The section concludes that caution should be exercised before endorsing confident statements about achieving the MDG target on safe drinking water in Afghanistan. Section 4 discusses the more fundamental issue of the limited validity and usefulness of the existing MDG indicator for capturing the realities of access to safe water, reminding that "improved" water sources does not mean "safe drinking water." On this basis, in Section 5 it will be suggested that Afghan decision-makers should adopt the more ambitious and more appropriate concept of "household water (in)security" to help to frame agenda, policies and development programmes for access to drinking water services in Afghanistan over the next 15 years. After defining "household water (in)security" and presenting its multiple dimensions, a set of indicators (and one index) to help to monitor progress on the path to water security will be suggested. The concluding section makes policy recommendations.

1. Government of the Islamic Republic of Afghanistan (GIRoA), "Afghanistan National Development Strategy" (Kabul: GIRoA, 2008), 21.
2. Prüss-Üstün, Annette, Robert Bos, Fiona Gore and Jamie Bartram, "Safer water, better health: Costs, benefits, and sustainability of interventions to protect and promote health" (Geneva: World Health Organisation, 2008).

2. How does Afghanistan fare on the track towards the MDG for "access to safe drinking water"?

Although global MDG targets have been set for 2015, the deadline for Afghanistan has been extended to 2020 "so as to have a realistic chance of meeting the targets."[3] The baseline for the proportion of people with access to improved water sources was set at 23 percent in 2003 (based on a UNICEF estimate[4]), and the target for 2020 was thus calculated at 61.5 percent.

In 2012, the WHO and UNICEF announced in their Joint Monitoring Program (JMP) update report that "the MDG drinking water target [worldwide], which calls for halving the proportion of the population without sustainable access to safe drinking water between 1990 and 2015, was met in 2010, five years ahead of schedule."[5]

Although Afghanistan was not yet one of the countries that had met their target, the JMP 2012 update report was eloquent about the "stunning progress in the country," highlighting that, based on the 2010 figures, Afghanistan had "provided almost half its population [i.e., 46 percent] with access to improved water sources during a turbulent 15-year period, far surpassing the Southern Asian regional average of 30.9 percent."[6]

According to the WHO/UNICEF 2014 report, Afghanistan has met (since 2012) its MDG target for drinking water.

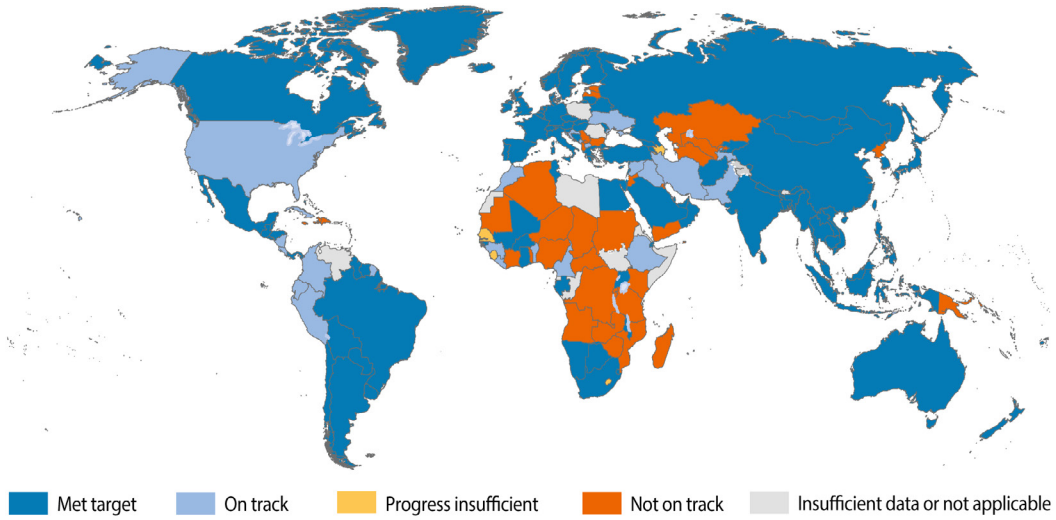


Figure 1: Progress towards the MDG drinking water target, 2012.
Source: WHO/UNICEF 2014 report update (2014, p.5)

3. Government of the Islamic Republic of Afghanistan (GIRoA), "Vision 2020 – Afghanistan Millennium Development Goals – Progress Report 2008" (Kabul: GIRoA, 2008), 1.
4. GIRoA, "Vision 2020," 21.
5. World Health Organisation (WHO) / United Nations Childrens Fund (UNICEF), "Progress on Drinking Water and Sanitation - 2014 Update" (WHO & UNICEF, 2014), 45.
6. World Health Organisation (WHO) / United Nations Childrens Fund (UNICEF), "Progress on Drinking Water and Sanitation - 2012 Update" (WHO & UNICEF, 2012), 11. The figure of 46 percent is provided in the table page 39.

The Afghanistan Multi-Cluster Survey (AMICS) 2010/11,[7] endorsed by the WHO/UNICEF and the Joint Monitoring Program, established that in 2011, it was 57 percent[8] of the population that had access to protected water sources.

The National Risk and Vulnerability Assessment (NRVA) 2011-12,[9] also endorsed by WHO/UNICEF, found a lower coverage, however, with 45.5 percent[10] of the Afghan population having access to improved water sources. Nonetheless, the report concluded that a "significant advance [had] been achieved with respect to access to safe drinking water,"[11] given that the NRVA 2007-08 survey indicated that only 27 percent of Afghans had access to improved water sources. The NRVA 2011-12 report added that "if this rate of improvement is continued, the ANDS target [i.e., MDG target]of 61.5 percent in 2020 will easily be achieved."[12]

Later in 2014, the WHO/UNICEF announced that Afghanistan had met its target, eight years ahead of schedule, considering that, based on its 2012 estimates, 64 percent of the population had access to protected water sources.[13] (Figure 2)

There is no denying that substantial efforts have been made and much progress achieved over more than a decade in providing safe drinking water to the Afghan population. Whether the achievements are as substantial as announced, including reaching the MDG target way ahead of schedule, might be a different story. To provide a more refined understanding on this matter, it is worth stepping back and taking a critical look at the figures, how they were calculated and analysed, and what methodology has been applied, before reflecting on the extent of the achievements.

Photo: UNHCR

7. The Afghanistan Multiple Indicator Cluster Survey (AMICS) is a nationally representative sample survey that presents data on the social, health, and educational status of women and children in Afghanistan. The survey is based on the need to monitor progress towards goals and targets emanating from recent international agreements such as the Millennium Declaration. These surveys were conducted in 2003 and 2010/11. The latest survey was conducted between October 2010 and May 2011 by the Central Statistics Organisation (CSO) of the Government of the Islamic Republic of Afghanistan, with the technical and financial support of UNICEF. A stratified two-stage sample design was used for the selection of the survey sample. There were 13,314 households visited, across eight regions of Afghanistan, with a household response rate of 98.5 percent. The average number of households selected per cluster was determined as 30 households.
8. The confidence level was 95 percent and the confidence limits were 53.3 percent and 59.7 percent; Central Statistics Organisation and United Nations Children's Fund, "Afghanistan Multiple Indicator Cluster Survey 2010-2011: Final Report" (Kabul: CSO and UNICEF, 2012), 165.
9. The National Risk and Vulnerability Assessment (NRVA) is a nationally representative sample survey conducted by the CSO. It covers a wide range of development themes and indicators, which were agreed upon by government departments, donors and international organisations. NRVAs were conducted in 2005, 2007/08 and 2011/12. The NRVA 2011-12 covered 20,828 households, selected through a stratified two-stage sample design, with a cluster size of 10 households.
10. The confidence level was 95 percent and the confidence limits were 43.4 percent and 47.7 percent; Central Statistics Organisation (CSO), "National Risk and Vulnerability Assessment 2011-12. Afghanistan Living Condition Survey" (Kabul: Central Statistics Organisation, 2014), 186; WHO/UNICEF, "Progress on Drinking Water...2012," 11.
11. CSO, "National Risk and Vulnerability Assessment 2011-12," 83.
12. Ibid., 99.
13. WHO/UNICEF, "Progress on Drinking Water...2012," 11.

3. Taking a critical look at what has been achieved

3.1 Inflated WHO/UNICEF data

As mentioned earlier, the WHO/UNICEF JMP relies on two types of data for monitoring MDGs in Afghanistan, namely the AMICS and the NRVA, which are both endorsed by the Central Statistic Organization (CSO) in Afghanistan.

In 2005 and 2007/08, the JMP used the NRVA's database but recalculated the results concerning the proportion of the population with access to improved water sources by modifying the list of sources in the "improved" category.[14] For example, some traditional water sources such as *karezes*, *arhads* and *kandas*[15] were considered to be "improved" by the JMP, while this was not the case for the NRVA. As a result, although the NRVA 2005 found that, for example, 31 percent of the Afghan population had access to protected water sources, the JMP reported 41 percent after its own recalculation. Similarly, while the NRVA 2007-08 found that only 27 percent of the population had access to improved water sources, the WHO/UNICEF report published a figure of 48 percent.[16] In this regard, the AHDR 2011 warned that the WHO/UNICEF statistics were inflated and thus understated the scale of the challenge in drinking water access.[17]

Thus, in light of this argument, the claim made by the WHO/UNICEF that the target of 61.5 percent has been surpassed since 2012 should be viewed with extreme caution and scepticism. The AMICS and NRVA data should be used instead. But even then, one should be aware of some methodological issues and remain critical of the data and their interpretation.

3.2 Methodological discrepancies between the NRVA and AMIC surveys

Because of methodological changes from 2005 to 2008, the figures of the different NRVAs may not be strictly comparable.[18] For instance, the NRVA 2005 included water supply from water tankers and from bottled water in the "protected sources" category, which is not in line with international guidelines. Thus, the figures would need to be adjusted to ensure valid comparisons. But in Afghanistan, these sources did not represent more than 1 percent of the water sources at the time. Thus, the impact of the methodological discrepancies on the accuracy of the figures is limited.

The AMICS 2010/11 — published in 2012 — claims that "while less extensive, the AMICS provides updated, complementary and comparative data to the NRVA."[19] However, in the AMICS methodology, the water sources that qualify as "improved" still differ from those of the NRVA 2007/08. For example, while the NRVA excluded all *karezes* from the category of "improved" water sources, the AMICS 2010/11 made a distinction between "protected *karezes*" (i.e., "improved") and "unprotected *karezes*" (i.e., "unimproved"). Thus again, the figures published would need to be adjusted in order to make valid comparisons. Although this may not lead to a substantial change in the figures, the fact that there are methodological differences does mean that direct comparisons are not possible. And therefore it makes trend calculations somewhat unreliable.

14. Alim, Abdul Kabir, Atal Ahmadzai and Joelle Rizk, "Water for human consumption and water for sanitation," in "Afghanistan Human Development Report 2011 — The Forgotten Front: Water Security and the Crisis in Sanitation" (Kabul: Center for Policy and Human Development, 2011).
15. Definitions based on the Afghanistan Human Development Report 2011:
    - *Karezes*: Similar to infiltration galleries, *karezes* are sloping channels or tunnels dug nearly horizontally into an alluvial fan that connects to a water source, layer, or other geological formation.
    - *Arhads*: The arhad system lifts groundwater from shallow wells with the help of a Persian wheel (the arhad) to supply water to field.
    - *Kandas*: *Kandas* are open depressions or excavations in which surface water, snow, or rainwater is collected for livestock or, during dry periods, domestic uses.
16. WHO/UNICEF, 2010, 38.
17. Alim et al., "Water for human consumption."
18. CSO/MRRD, 2009, 95.
19. CSO and UNICEF, 2012, 3.

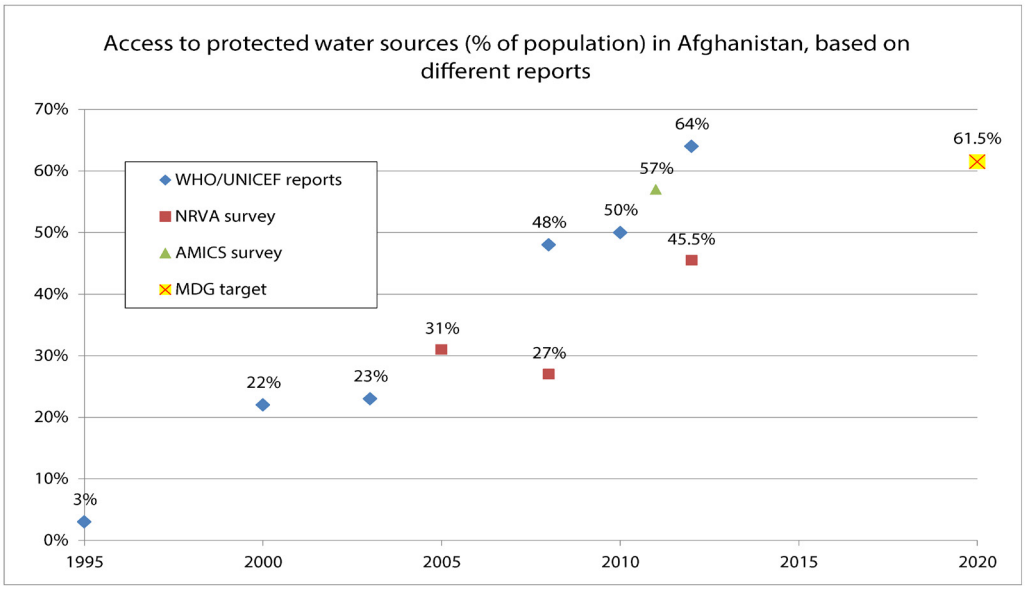


Figure 2: Access to improved water sources in Afghanistan.
Source: Author's work based on AMICS, NRVA and WHO/UNICEF reports.

3.3 Biased interpretations of trends

But what is more questionable is the choice made by the CSO when deriving the rate of improvement in coverage and subsequently concluding that the MDG target should easily be met before 2020.

The CSO chose to compare the NRVA 2007-08 (27 percent) and the NRVA 2011-12 (45.5 percent) figures to establish a trend, and estimated that the MDG target would subsequently be reached by 2016. Here, the CSO implicitly assumed that the rate of improvement in coverage between 2007-08 and 2011-12 would remain stable in the future. In the context of relative and progressive disengagement by the international community in Afghanistan, this assumption is risky and likely to lead to misguided optimism.

Another way could have been to calculate the trend between the 2003 baseline and the 2011-12 NRVA estimates. In this case, the MDG target would be met in 2019, which would mean that reaching the target on time would be a much closer call.

But what is most problematic is that the CSO did not include the results of the AMICS 2010-11 (published two years before the results of the NRVA 2011-12) in their trend analysis. Thus, it failed to comment on the substantial drop in access to protected sources from 57 percent (from the AMICS 2010-11) to 45.5 percent (from the NRVA 2011-12). Yet, as noted earlier, the CSO explicitly said that the AMICS and the NRVA figures were fully comparative.

Thus, the combination of the inflated figures of the WHO/UNICEF, methodological discrepancies between national surveys and biased trend assessments should suggest caution when it comes to endorsing statements about achieving the MDG target on access to safe drinking water for Afghanistan.

3.4. Questioning assumptions about the sustainability and reliability of "improved sources"

There is an additional issue when it comes to future projections on the percentage of coverage regarding access to protected water sources. For the trend to be reliable, one needs to be assured that the sources that are currently improved will remain so in the future. This depends to some extent on the quality of the construction of water systems but also to a larger extent on the capacity of the community, government and service providers to adequately maintain

the water infrastructure and protect the resource. In this regard, the Danish Committee for Aid to Afghan Refugees' (DACAAR) recent study suggests that it is not safe to assume that existing "improved" water points will remain functional. The survey shows that 35 percent of the water points in Afghanistan are not working. The report adds that "many water points have been made relatively recently and therefore the problem might become more severe in the years to come."[20] The DACAAR study highlights issues of "bad quality workmanship"[21] and warns that "in many cases the supervision [was] not sufficient and…the contractors have for the majority not sufficient knowledge or interest to do a quality job."[22] But the main factor identified by the study is the "community mobilization [that] appears to have been done poorly in many cases."[23] "Community problems" were mentioned in more than 32 percent of all water points surveyed (including the functional ones), while vandalism was recorded in almost 10 percent of all cases.[24] The report warns that, as a result, communities whose water systems become dysfunctional will revert to accessing an unimproved source.

These problems of poor community management translating into conflict and water point failure are usually less apparent in the early years following the completion of a water supply project. But they typically increase as the years pass. Thus, as the issue of poor sustainability of water points is likely to increasingly become a challenge in the near future, any anticipation of a smooth and positive trend based on past figures of the proportion of households with access to improved water sources should be warned against.

3.5 Trying to make sense of the claimed "stunning progress": did Afghanistan benefit from a surge in financing the WATSAN sector?

Another way of questioning the apparent trend towards reaching the target of the MDG for safe drinking water would be to explore possible causes for the evolution of access to improved water sources over the past ten years. Indeed, the explanations for the evolution of access to improved water sources need to be plausible in the first place.

For the sake of argument, the issue of the drop in the figures between the AMICS 2010-11 (57 percent) and the NRVA 2011-12 survey (45.5 percent) (which the CSO chose to ignore) is left aside, and the focus is put instead on NRVA surveys (as CSO did).

In 2011, the AHDR used the official 2003 baseline (23 percent) and the NRVA 2007-08 results (27 percent) to estimate the likelihood of achieving the MDGs.[25] The authors caused alarm when they estimated that the MDG target would be achieved only by 2042, more than two decades after the set objective.[26] Three years later, based on a new figure (45.5 percent) from the NRVA 2011-12, the new trend (between 2007-08 and 2011-12) suggested that the MDGs would be achieved by 2016, four years ahead of schedule.

How do we make sense of a 4 percent improvement in coverage over the four-year period between 2003 and 2007/08 and the "stunning progress" of the 19 percent improvement in coverage during the four year period of 2007/08-2011/12?

Since 2003, the development of drinking water supply has been almost entirely due to international aid. Thus, to explain the substantial improvement in coverage between 2008 and 2011, one would expect a significant increase in funding for the WATSAN sector in Afghanistan. The UN-Water

20. DACAAR, "National Study on Water Point Functionality in Afghanistan" (Kabul: DACAAR, 2014), 4.
21. Ibid., 9.
22. Ibid., 10.
23. Ibid., 9.
24. Ibid., 10.
25. Note that the authors of the AHDR and the CSO did not use the 2005 NRVA as a refrence survey for trend calculation. This is understandable as the NRVA 2005 did not cover all Afghan provinces, in contrast with the NRVA 2007-8 and 2011-12.
26. Alim et al., "Water for human consumption," 112.

"Global Analysis and Assessment of Sanitation and Drinking-Water (GLAAS)" 2012 report indicates that during the period 2008-2011 (average), Afghanistan was one of the countries that combined low water access with low donor aid commitment per capita for water and sanitation — at an average of about $2 per capita, much lower than the median level worldwide of $2.8 (Figure 3).[27]

Based on its own investigation, the AHDR 2011 talked about $3.3 per capita for the period 2005-06,[28] while the GLAAS report of 2010 provided a range figure of $2 to $5 per capita for the period 2006-2008.[29] Thus, the available data do not provide evidence that there has been an increase in funding to the WATSAN sector during the period that followed the 2007-08 NRVA results. They in fact suggest that funding has remained similar, at best, during both periods.Furthermore, the GLAAS 2012 report (endorsed by the WHO) also indicated that Afghanistan did not receive adequate funds to meet the MDG for drinking water.[30] It in fact reported that Afghanistan was among the countries that received less than 50 percent of what was required. This figure — which was validated through a national workshop involving a range of different Afghan stakeholders[31] — tends to confirm the idea that no substantial increase in funding has been provided for the drinking water sector during the post-2007-08 period. This casts some doubt on the plausibility of such drastic changes in access to improved water sources from the 2003-2008 period to the 2008-2012 period. The contradictions between statements made in the WHO/UN-Water GLAAS report 2012 (which explains that Afghanistan did not have adequate funds to reach the MDG) and the WHO/UNICEF JMP report (which claims that Afghanistan reached the MDG target in the same year, 2012) cast further doubt on whether Afghanistan has indeed reached the MDG (see earlier discussion).

Thus, once again, caution should be exercised when reading the figures reported, when analysing trends, and before endorsing conclusions with regards to achieving the MDG on access to safe water.

The GLAAS Report shows that Afghanistan is one of the countries with low levels of water and sanitation donor commitment per capita for the 2008-2010 period. Afghanistan features below the median level for aid per capita in donor aid commitments.

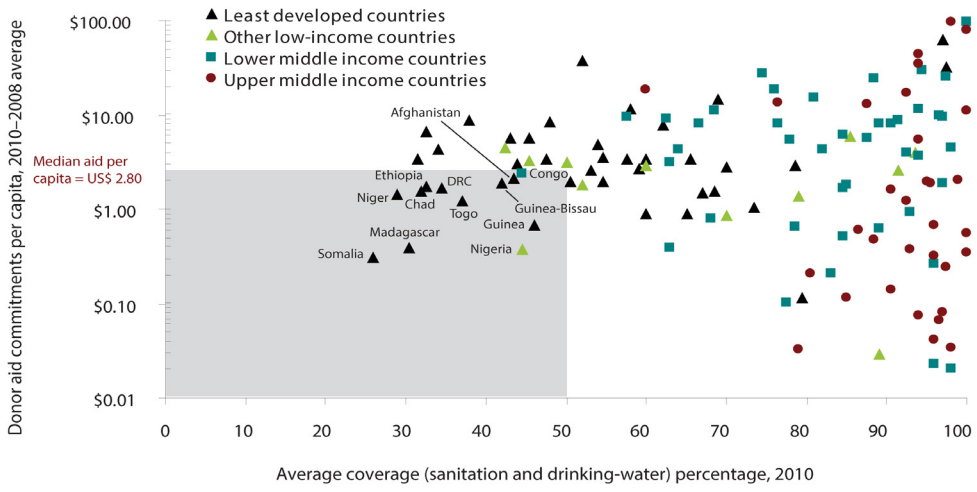


Figure 3: Donor aid (average annual commitment, 2008–2010, constant 2009 $US) per capita versus average coverage in countries.
Source: WHO "UN-WATER – GLAAS 2012 report", 2012, p. 55.

27. Note that it seems that the calculations of GLAAS 2012 and AHDR 2011 did not account for the drinking water projects implemented under NSP as they are not labelled directly under the water and sanitation sector. If it had been the case, the donor aid commitment for WATSAN during the 2008-2011 period would have reached the median level of 2.8 USD per capita.
28. Amarkhail and Kakar, 2011, 184.
29. WHO, 2010, 18.
30. Ibid., 35.
31. Ibid., 72.

4. "Improved" does not mean "safe"

Beyond the concerns with the reliability and credibility of the figures and trends, there is a more fundamental issue with the validity and usefulness of the "improved water source" MDG indicator in terms of assessing "access to safe water." Indeed, as explained below, "improved" does not necessarily means "safe."

Bain et al. (2012) conducted a study in Ethiopia, Nicaragua, Jordan, Nigeria and Tajikistan in which they analysed the water quality of improved water sources in order to estimate the proportion of improved water sources that could be considered safe for drinking. After testing the improved sources for water quality compliance, they found that the proportion of the population that had access to a "safe" water source (i.e., not just improved) fell by 11 percent, 16 percent, 15 percent and 7 percent in Ethiopia, Nicaragua, Nigeria and Tajikistan respectively.[32] Thus, they showed that using only access to "protected water sources" as a criterion can lead to substantial overestimation of the proportion of people with access to safe water. The study added that adjustments were likely to be significantly higher in countries in which a large proportion of improved water sources are poorly maintained. The DACAAR study discussed earlier suggests that this situation may well apply to Afghanistan.

Although no systematic study has been done in Afghanistan to evaluate the extent to which protected sources are contaminated and are unsafe for consumption, several studies on the underground water quality in the Kabul basin have found a substantial number of water points with faecal contamination. Broshears et al. (2005) found that in 2004, more than 22 percent of protected wells in the Kabul river basin had faecal contamination, when using the US Environmental Protection Agency (EPA) standards (i.e., E. coli counts above 1 col/100 ml). A DACAAR study from 2009 found faecal contamination in 59 percent of their groundwater samples in the Kabul basin.[33] Of course, the Kabul basin may not be representative of all the basins in Afghanistan. Nonetheless, the very high level of contamination in the province with the highest level of access to "improved water resources" (i.e., 56 percent in 2007-08 and 77 percent in 2011-12) underlines the risky assumption of equating "protected" with "safe."

Significantly, the study of Bain et al. (2012) did not take into account the contamination that may also occur between the water source and the point of use (e.g., at home). Based on a meta-analysis of 57 studies, Wright et al. (2004) show that the bacteriological quality of drinking water significantly declines after collection at the source, especially in the case of protected sources. In a case study in Bolivia, Rufener et al. (2010) found that even in cases in which households used boiling and solar disinfection (SODIS) methods, recontamination of drinking water in the drinking cup was observed in 35 percent of the participating households. This was due to low hygiene practices and/or improper use of household water treatment methods. Thus, one should not assume that water is safe from contamination even when household water treatment is applied. And although there are cases in which proper household water treatment practices make contaminated water from an unprotected (or protected source) safe to drink, the extent of this is highly variable depending on the context, the type of technology, and whether it is used properly and consistently. In Afghanistan, only 20 percent of the total population uses household level water treatment (among which boiling is predominant at 13

32. For Jordan, which uses mainly piped supply, the adjustments for percentage of overall compliance led to a minor decrease in the proportion of the population with access to safe water.

33. There is also a BGR (2004) study that found that 13 percent of supplies are contaminated, but they warned that their data "tended to underestimate the bacterial contamination because of difficulties with the analysis method" (page 59).

34. CSO and UNICEF, 2012, 73.

percent) and only 15 percent of households that access unimproved sources do treat their water.[34] Considering the limited occurrences of the practice and the difficulties in assessing their effectiveness on improving water quality in the cup, it is unlikely that they compensate for all the other factors that contribute to overestimating the proportion of households with access to safe water.

Thus, it is safe to assume that in Afghanistan, the proportion of safe household drinking water is significantly lower than the proportion of households with access to protected sources. This underlines the limitations of the "protected water sources" MDG indicator. It also re-enforces the point that it may be presumptuous to claim that Afghanistan has already achieved (or is close to achieving) its target for "access to safe drinking water" (see the CSO statement quoted earlier).

Photo: UNHCR

5. Household water (in)security: A more meaningful concept for framing the realities of drinking water access in Afghanistan

If Afghanistan is committed to providing its population with sustainable and adequate access to safe drinking water, it needs to adopt the much more ambitious and more meaningful concept of "household water (in)security," together with a new set of associated indicators to monitor progress. This new conceptual framework would also be useful in framing agendas, policies and development programmes in the drinking water sector over the next 15 years. The concept is discussed in detail below.

5.1 Defining household water (in)security

The general concept of "water security" has become increasingly important in academia and among policy-makers in recent years. Its proponents present it as a framework for guiding analysis and policy-making in the water sector. There is a general consensus that "water security" is "essential for human access for health, well being, economic and political stability" (BIPSS, 2009). UN-Water (2013) advocates "investment in water security" as a "long-term pay-off for human development and economic growth, with immediate visible short-term gains."[35]

The UN has given a general definition of "water security" as the "capacity of a population to safeguard sustainable access to adequate quantities of acceptable quality water for sustaining livelihoods, human well-being, and socio-economic development, for ensuring protection against water-borne pollution and water-related disasters, and for preserving ecosystems in a climate of peace and political stability."[36]

There are other definitions, but most start from the recognition that any analysis of water security must combine the notions of quantity, quality and limited exposure to water-related risks to people, their environment and their economies (Grey and Sadoff, 2007). [36] Gutierrez (1999) advocates for an approach to water security that embraces the notion of "access." This implies bringing "individual rights," "equity and justice" (Boelens, 2013; Leb and Wouters, 2013) and "affordability" to the forefront. Abrams (2003) underlines the importance of incorporating the aspect of "reliability" and "predictability" of water access, including for periods of drought.

In a study on water insecurity in squatter settlements, Wutich and Ragsdale (2008) define "water insecurity" as "a lack of access by all people, at all time, to adequate water for an active and healthy lifestyle."[37] They put forward the dimensions of "quantity," "quality" and "accessibility" (see also Gleick (1998), Sattherthwaite (2003), and Hadley and Wutich (2009)). They also argue that water insecurity is characterised by "emotional distress," which includes "a number of negative experiences and emotions"[38] such as "fear" or "worry" (e.g., that the water source may run out); "annoyance" or "bother" (e.g., the burden associated with fetching water); and "anger" (e.g., with someone from outside the community regarding access to water).

Overall, the concept of water (in)security takes a somewhat different meaning depending on the scale at which it is applied (from the individual/household to the transboundary river basin, up to the global level). Chenoweth et al. (2013) provide a very basic definition of "household water security" that is "ensuring a household has a sufficient quantity of water of sufficient quality to maintain the health of the household members."[39] The authors also suggest that household water security is tied to the concern of a human right to water since human rights deal with the maintenance of individual health and well-being.

35. UN-Water, 2013, 12.
36. UN-Water, 2013, 1.
37. Wutich and Ragsdale, 2008, 2117.
38. Wutich and Ragsdale, 2008, 17.
39. Chenoweth et al. (2013).

The main point that all these different definitions underline is that there are several dimensions to water (in)security. Thus, taking a household water (in)security approach means going beyond "improved water sources." Perhaps the most telling illustration of the limitation of the indicator of "access to improved water sources" and how misleading it can be is provided by the results of the NRVA survey on *shura* development priorities. Despite the NRVA estimates that "access to improved water sources" has increased from 27 percent to 45.5 percent between 2007-08 and 2011-12, the proportion of male and female *shuras* that have ranked drinking water (both in terms of "improved quantity" and "improved quality") as a priority has also increased from 2007-08 to 2011-12 (Table 1). This means that for communities, access to drinking water is about much more than access to "protected sources." The dimensions of "quantity," "quality," "affordability," "reliability/resilience," and "accessibility," which are not properly captured in the MDG indicator of "protected sources," are also considered to be critical. Taking a water (in) security perspective would help to get a better grasp of such a reality.

Table 1: Proportion of *shura* selecting "improved drinking water" (quantity and quality) as 1st development priority		
	2007-08	2011-12
Female shura	< 20 %[40]	31%
Male shura	< 22 %	26%
Sources: NRVA 2007-08 and NRVA 2011-08		

For this paper, household water security is defined as: "Reliable and affordable access to water in sufficient quantity and quality to satisfy a household's basic needs, including in times of climate shock such as a drought. Water access should happen in proximity to the place of living while not being prone to conflicts and not characterised by emotional distress."

5.2 Household water security: Dimensions and operationalisation of the concept

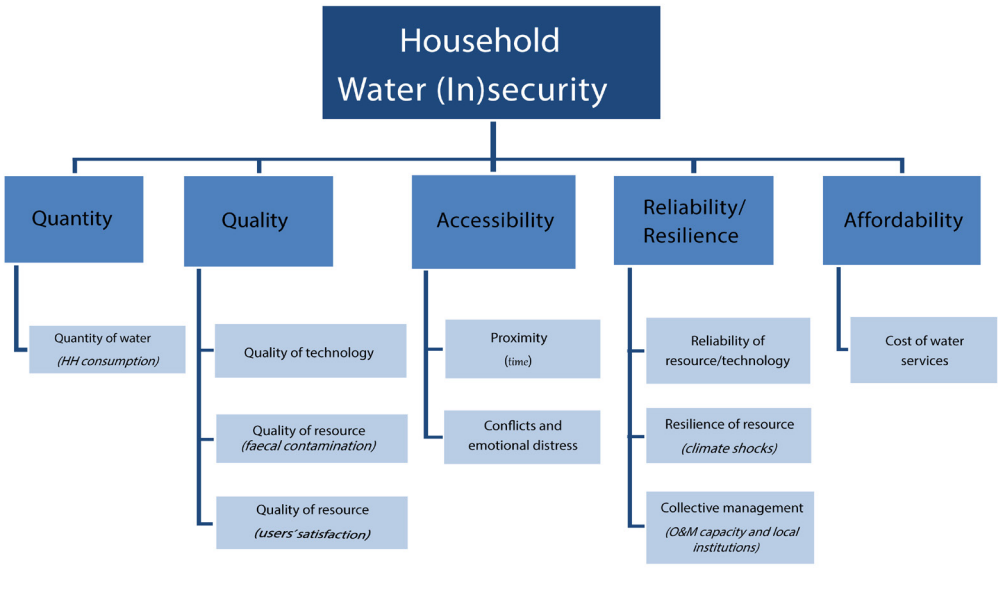
One of the limits of the literature on water (in)security quoted above is that it usually fails to provide clues about how to operationalise and measure water (in)security, including at a household level, and very rarely suggests indicators that could help to identify whether a household (or a community, a river-basin or a country) could be considered water secure or insecure.[41] This problem is addressed in this section.

In order to operationalise the definition provided above, ten measurable indicators grouped into five categories —"quantity," "quality," "accessibility," "reliability/resilience" and "affordability" (Figure 4) — are presented below. For each indicator, a definition is provided as to what it means for the household to be "water insecure." Note that it is easier to define a threshold for "household water insecurity" than it is for "household water security." A threshold for water insecurity is the measurable level that corresponds to the lowest limit of what is considered acceptable in terms of "quantity," "quality," "accessibility," "reliability/resilience" and "affordability." There is, in fact, abundant literature that defines such minimum thresholds for "quantity," "quality" or "proximity." It is often more complicated and less clear — from the literature — to define a threshold (i.e., upper limit) for "household water security." Just as with poverty, it is relatively intuitive that below a certain threshold one may be considered to be "poor" (or "multi-dimensionally poor"); it is less clear how to define a person above that threshold. These issues are discussed in more details for each indicator.

40. In the NRVA 2007-08, the percentage of *shuras* that mentioned "improved water quality" as first priority is not given as it did not rank in the top five priorities. However, based on the score of the fifth priority, it is possible to deduce what would be the maximum proportion of *shuras* that selected "improved drinking water" (quantity and quality) as their first development priority.

41. One exception is Wutich and Ragsdale (2008).

Figure 4: The dimensions Household Water Security



Source: Author's work

After discussing what it means for a household to be "water insecure" in relation to each of the ten indicators, an overall "household water insecurity index" will be introduced. Such an index would allow comparative analysis at national or provincial levels, and would help to monitor progress over time.

Quantity

- Quantity of water consumed (at household level).

The minimum humanitarian standards (as defined in the SPHERE manual) are set to 15 l/c/da, mostly for emergency settings.

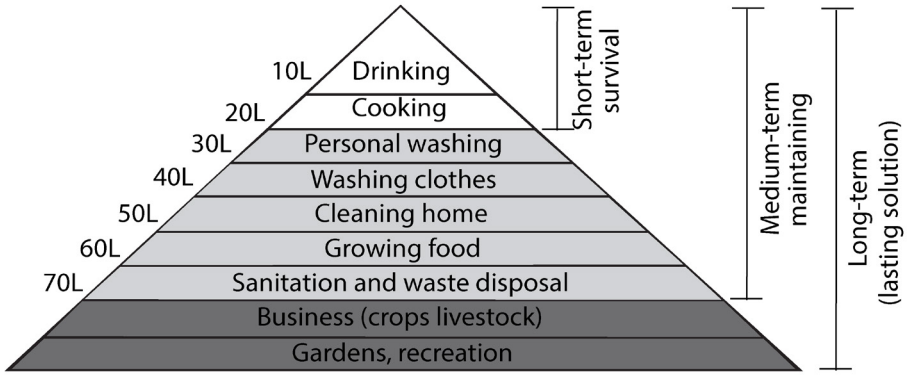
The World Health Organisation defines a minimum of 20 l/c/day which corresponds to "short-term survival needs," which covers mainly drinking and cooking. With 40 l/c/day, a household receives sufficient water to cover additional needs such as personal washing and washing clothes. A household that can use 60 l/c/day may also be able to use water for cleaning the house and growing food for domestic use (Figure 5). In Afghanistan, the MRRD policy defines a quantity of 25 l/c/day as the national standard for rural water supply.[42]

We suggest that, for this indicator, a household that has less than 25 l/c/day should be considered to be water insecure.[43]

Although there are no estimates of the quantity of drinking water available at the household level in Afghanistan, there are indications that a substantial proportion of Afghan households consider the quantity of water they can access to be too limited. "Improved drinking water quantity" has been ranked first in community development priorities among female *shuras* already in 2007-08 (17 percent of *shuras*) and again in 2011-12 (19 percent of *shuras*). Similar figures and trends are found for male *shuras*.

42. MRRD, 2013, 4.
43. Water quantity is a typical indicator for which it is relatively simple to define a threshold below which a household can be considered as water insecure, but for which there is no clear threshold above which a household could be considered as water secure. Considering that a household with more than 25 l/c/d is water secure may not be acceptable.

Figure 5: Hierarchy of water requirements



Source: WHO/SEARO (undated)

Quality

The "quality" dimension is broken into three sub-dimensions. Water insecurity conditions for each sub-dimension are defined as follows:

- Quality of the technology (improved vs. unimproved).

The limitations of the "improved/unimproved water source" indicator when used as the sole indicator of "access to safe water" has been highlighted previously. Nonetheless, for the purpose of an assessment of household water security, it is relevant as an indicator of the quality of the technology (but not as an indicator of sustainable access to safe water).

For this indicator, a household in which the primary water source is unimproved is considered to be water insecure.

- Quality of the resource (faecal contamination).

No significant health risk should arise from consuming drinking water. Thus, contaminant levels should not exceed the accepted water quality standards set by the WHO. Although physical, chemical and bacteriological parameters should ideally be measured, it may not be realistic for a national survey in Afghanistan. However, the measurement of faecal contamination[44] at the water source is feasible in the field.

For this indicator, a household would be considered to be water insecure if E.coli > 0 count/100 ml (as per the WHO guidelines)

- Quality of the resource (users' satisfaction).

Besides being free of microbiological contaminants, the water should be acceptable to users in appearance, taste and odour. Otherwise there is a risk that a household would revert to other sources that are potentially of lesser quality.

44. Faecal contamination is responsible for diarrheal diseases.

For this indicator, the household is considered to be water insecure if it is unsatisfied with at least two of the following characteristics: appearance, taste and/or odour.[45]

Accessibility

- Time.

Even if water availability at a water point is not a constraint, there may be other limits to its use, such as the time taken and efforts required for people to fetch it.

The minimum humanitarian standards (as defined in the SPHERE manual) are a maximum of 500 metres and a queuing time of 30 minutes maximum, which would translate into a round trip of less than 60 minutes. It seems that MRRD standards are barely meeting minimum humanitarian standards. Although the national policy calls for safe access to water within 250 metres of a residence, it sets the maximum time for a round-trip at 60 minutes.[46]

It is important to note that the time taken to fetch water — which is often related to distance to the water point — also has an impact on the quantity of water collected. Cairncross & Feachem (1993) have shown that if it takes people more than 30 minutes to collect water, the amount that they collect is likely to be below 15 l/c/day. This is in addition to the fact that the time spent fetching water is not spent on more productive activities, such as educating children.

For the purpose of this paper, accessibility should meet higher standards than those set for humanitarian responses. Thus, for this indicator, a household is considered to be water insecure if the time taken to fetch water (including travel time and queuing) is more than than 30 minutes. According to the NRVA 2011-12, some 12 percent of Afghan households spend more than 30 minutes on the round-trip walking from the household to the water point and back again. But there is no information on the additional time taken (if any) to queue and collect water.

- Conflicts and emotional distress.

Secure access to water also implies that the area is not prone to regular conflicts. The DACAAR survey mentioned earlier provides some evidence of vandalism at water points. More generally, secure access implies that the household should not feel emotional distress over access to drinking water (see Wutich and Ragsdale (2008) and earlier discussion on the definition of water insecurity).

We use here the water-related experience and emotional responses described in Wutich (2006) to define water insecurity at a household level. Thus, for this indicator, a household would be considered "water insecure" if any member of the household has felt one (or more) of the following emotions during the past week:

- Got angry with someone inside or outside the community about access to drinking water.
- Argued with someone inside or outside the community about access to drinking water.
- Felt worried about accessing drinking water.
- Been afraid about accessing drinking water.

Note that self-reported emotional distress over drinking water access in terms of "being angry" and "arguing" over water (see above) includes instances of conflict.

45. For a more strict approach, a household could be considered as water insecure (for this indicator) if the household is unsatisfied with any of the three characteristics. is unsatisfied with any of the three characteristics.
46. MRRD, 2013, 4. It is assumed that the round-trip also includes the time spent on queuing at the water point and collecting water.

Reliability/Resilience

Reliability and resilience form a critical dimension of household water security and relate directly to the sustainability aspect discussed earlier. Three sub-dimensions of reliability and resilience are proposed.

- Reliability of the source/technology.

Considering the primary importance of water on a daily basis, dysfunctional water sources and technology that fails to provide water throughout the year puts immense stress on the household. The DACAAR 2014 study on the reliability of water points (discussed earlier) shows the importance of ensuring the robustness and reliability of technologies (most often hand-pumps) for water supply.

It is important to note that a water point may occasionally stop functioning because of (for example) wear and tear on the materials. However, the community (or a service provider) should be trained to repair water points with only minor delays. For this indicator, a household is considered to be water insecure if its primary water point/source has become dysfunctional for a period longer than two weeks[47] over the past year.

- Resilience of water access.

Secure water supply should ensure sustained access throughout the year, and should also be designed to sustain drought periods. Most surveys and assessments of resilience and the adaptive capacity of a household or community to climate shocks include "access to drinking water supply" during drought events as an indicator.[48]

For this indicator, a household is considered to be water insecure if during the past year it has been negatively affected by either a reduction in drinking water quality or drinking water quantity.

For this indicator, the NRVA 2011-12 provides relevant information. It indicates that for the year 2010-11, no less that 47 percent of Afghan households have been negatively affected by a reduction in either drinking water quantity or quality (or both).[49] This means that 47 percent of Afghan households have been considered to be water insecure, according to this indicator. In 2007-08, the proportion of households that faced a "drinking water shock" was 18 percent. One can hypothesise that the substantial increase in the proportion of households experiencing a "drinking water shock" from 2007-08 to 2011-12 was likely due to climate shocks (e.g., a dry year). It is important to note that even among the households that had access to improved water sources, more than one-third (34 percent) were negatively affected by a reduction in either drinking water quantity or quality (or both) (Figure 6). Although this proportion is less than the number of households that did not have access to improved water sources (58 percent), it still indicates that a substantial number of drinking water systems in Afghanistan have not been designed to cope with dry years. This is worrying, given that such climate shocks are common in arid and semi-arid countries such as Afghanistan, and are expected to rise because of climate change.

Table 2: What types of drinking water shocks did the HH experience over the past year

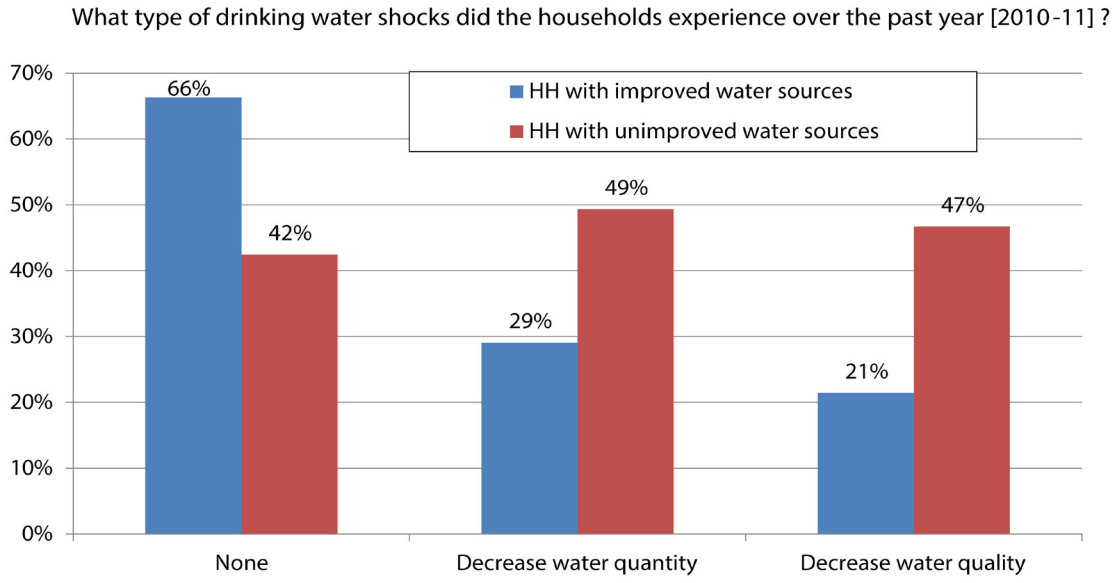
	None	Decrease water quantity	Decrease water quality
HH with improved water sources	66.3%	29.1%	21.4%
HH with unimproved water sources	42.4%	49.3%	46.7%

47. The duration may be adjusted empirically or based on expert judgment.

48. See, for example, Daanish et al. (2010).

49. Forty percent experienced a decrease in water quantity, 35 percent a decrease in water quantity (Figure 6) (with 29 percent experiencing both). Thus, for this sub-dimension, one would have to consider that close to half of the Afghan population would be water insecure.

Figure 6: Drinking water shocks experienced by Afghan households during the year 2010-11.



Source: based on NRVA 2011-12.

These figures also illustrate clearly that an "improved water source" approach is too limited compared with a water security approach when accounting for the issues surrounding household drinking water access. Indeed, communities cannot be satisfied with "improved" sources that are not resilient.

- Collective management and maintenance.

Resilient water supply at household level is also dependent on the ability of the community to manage its water system and work with local service providers who support in maintaining the system. Water systems, particularly those that are improved, are only viable if they are operated and maintained by trained individuals, either from the community or professionals within the vicinity of the community who can be mobilised.

Secure water supply also implies that each household pays fees to a local committee (or service provider) to maintain and repair the system. Note that there can be an exception whereby the absence of fee contribution is acceptable and should not be considered a criterion for water insecurity. This exception applies when the household formally benefits from a social policy (either local or national) that exempts it from payment. Such policies exist in some countries, particularly in the case of municipal water systems. In such cases, poor households or households that consume less than a stipulated volume of water are exempt from fees, and are indirectly subsidised by better-off households. Another option is a very low fee or charge for minimum basic volumes consumed and comparatively higher charges for larger volumes (often consumed by better-off households).

For this indicator, a household is considered to be water insecure if the following conditions are not met:[50]

- The community has at least one member who is trained in the maintenance of the communal water system, or the community knows an organisation or a professional individual within the district that is specialised in the construction, maintenance and repair of water supply systems.

50. Note that for the case of households that get water from tankers or consume bottled water, these households would not be considered to be water insecure as the payments for water include de facto payment for operation and maintenance undertaken by the water sellers.

AND

- The household regularly pays fees to a community committee (or service provider) for the maintenance of its water supply system, unless it formally benefits from a local or national social policy that explicitly exempts it from fees payment.

Affordability

Regular financial contribution is necessary to ensure sustained and secure water access. At the same time, this contribution must remain affordable to the household.

For this indicator, a household is considered to be water insecure if the amount of money that it is paying for operation and maintenance of its water point exceeds the equivalent of 5 percent of its monthly income.[51]

Note that a household that does not contribute anything for operation and maintenance of its water system each month would be considered as insecure for this indicator, unless it formally benefits from a local or national social policy that explicitly exempts it from fees payment (see discussion earlier). Indeed, affordability does entail that there is some financial contribution.

5.3. An index for household water insecurity When is a household considered to be "water insecure"?

It is important to emphasise that when it comes to household water insecurity, in all its dimensions, there can be no compromises. Thus, if the household is insecure in any single dimension (as defined above), the household is considered to be "water insecure."

It is therefore to be expected that the first assessments will most probably show a very high proportion of "water insecure" households.

Photo: EPA-BGNES

Occurrence of water insecurity: O

One can define the factor O as the overall "proportion of households that are water insecure." This can be a useful indicator for comparisons between villages, districts, provinces, etc.

Intensity of household water insecurity: I

One can define the factor I as the "intensity of household water insecurity." The factor I corresponds to the average number of indicators that qualify as "water insecure" within the households that are considered overall as water insecure. It can be calculated for each household and then averaged at a higher level (e.g., provincial, national). By default, each indicator has a weight of 1, but this can be adjusted empirically or based on expert opinion. It is, however, recommended to keep the weight as 1 to ensure comparability across different studies. For instance, taking the default weighting, a household that is water insecure for the quantity indicator but is not water insecure for all the other nine indicators would have a factor I equal to 0.1 (i.e., 1/10). A household that is not water insecure for the proximity indicator but water insecure for all the others would have a factor I equal to 0.9. Both households are water insecure,

51. In cases in which the household consumes bottled water, gets water from the municipal pipe system or gets water from a tanker, the question can be rephrased in terms of payment for water rather than payment for operation of maintenance. Note that the suggested threshold of 10 percent can be adjusted empirically or based on expert opinion.

but the intensity of the insecurity is very different. Measuring insecurity status for the indicators and dimensions described above is useful as it allows one to identify where the priorities are. This may be useful when it comes to deciding on which interventions to prioritise.

Defining a household water insecurity index: HWII

On the basis of the Occurrence (O) and the Intensity (I) of water insecurity, a household water insecurity index (HWII) can be derived as being simply the product of both factors: HWII = O x I.

5.4 Limitations of the HWII

The focus on these categories does not mean that the other concepts and themes associated with definitions of water (in)security that are presented above are less relevant:

- The issue of access to safe water as a fundamental human right, for example, is an important policy issue. But our purpose here is to measure the status of household water security rather than to analyse the policy context that may influence the status of household water insecurity. Furthermore, if there is to be a debate on the human right to water that advocacy groups will use to impose duties on their government, there first needs to be a comprehensive picture of the comparative status of household water insecurity in Afghanistan.

- The dimension of equity will not be measured directly at household level, but the indicator and index of household water insecurity can be used for comparative analysis between households, communities, districts and provinces, and thus bring the issue of equity to the forefront. Furthermore, measurements of household water insecurity according to the five dimensions mentioned earlier can be analysed in relation to other socioeconomic indicators. One can always look at correlations between household water security and other socioeconomic factors (e.g., poverty) in order to look into the issue of equity in water access.

- The issue of limiting environmental degradation is usually much more relevant to higher scales of water management (e.g., river basins) that involve large scale irrigation and/or industrial water use, rather than drinking water supply.

The dimensions of the HWII should not be considered as exhaustive on aspects of water insecurity. In order to keep the calculation of the index manageable, certain dimensions that contribute to limiting water insecurity were not included. For example, adequate personal hygiene knowledge and practice is critical for safe drinking water at point of consumption. “Knowledge Attitudes and Practices” (KAP) surveys provide a useful tool for assessing the need for (and effectiveness of) hygiene-related programmes at a household level. KAP surveys could be targeted at households that are most water insecure (according to the HWII) in order to further refine diagnosis of safe water access at a household level.

A quantitative tool to be supported by context-based qualitative research

The HWII is a useful quantitative tool that can help in assessing the extent to which households are water insecure, and in providing a detailed assessment of the dimensions for which households are most insecure. This can thus support the shaping of policies and programmes in the water, sanitation and hygiene (WASH) sector. But as with all quantitative tools, it has its limitations. First, it is not an adequate tool for looking at how and why household water insecurity occurs. The HWII can describe the status of households, but it will not provide a diagnosis of the root causes of household water insecurity. It is not designed to look at the social, physical and political processes that interact at various scales (from households to international basins on to global level) to create water insecurity.

These complex and critical questions can only be addressed with the support of more context-based qualitative studies.

6. Conclusion and recommendations

6.1. Conclusion

Although substantial progress has been made to ensure that the population of Afghanistan has access to protected water sources, this paper has shown that the claim that Afghanistan has met or is about to meet the MDG on access to safe water should be taken with great caution. This is due to a combination of issues, including:

- inflated data (as found in influential reports from the WHO/UNICEF);
- methodological discrepancies between different national surveys;
- biased trend assessments;
- unrealistic assumptions about the long-term sustainability of existing water systems.

Recent reports on the under-funding of the WATSAN sector in Afghanistan add to the scepticism. This is a problem that needs to be attended to, given how critical it is to have accurate, reliable and comparative data. Indeed, as the AMICS 2010-11 report highlights, these "data should […] inform the work of all stakeholders to Afghanistan's humanitarian and development assistance efforts, including donor governments, multilateral agencies, international non-governmental organizations (NGOs), and Afghan civil society."[52] These data are often used by international donors to justify their commitment to, or disengagement from, development support. This paper demonstrates that progress may not be as "stunning" as has been announced, and that much remains to be done to ensure that Afghan households are provided with sustainable access to safe water, let alone to eradicate household water insecurity.

This paper has also shown that the MDG indicator of "improved water sources" was poorly adapted to monitor and capture the realities of drinking water access at household level in Afghanistan. This is partly due to its limited validity as an indicator of "safe" water. But it is also due to the fact that it fails to capture many other dimensions that matter greatly to Afghan households with regards to their water systems. The concept of "household water insecurity" provides a more adapted framework for assessing the status of access to drinking water in Afghanistan. The evaluation of household water insecurity via the five dimensions of water "quantity," "quality," "accessibility," "reliability/resilience" and "affordability" can provide a much more comprehensive and meaningful picture of the status of water access for Afghan households. The monitoring of the ten indicators associated with these five dimensions would help to identify precisely in which areas and to what extent progress has been made. And it would subsequently provide guidance for targeting and prioritising the areas for which future efforts have to be provided. In that regard, it would directly support the MRRD in fulfilling its responsibility to "establish an effective monitoring and evaluation system [in the Rural Water Supply and Sanitation sector] that will direct sector-wide implementation."[53] Furthermore, the framework could serve as a guideline for programme design and to shape policies in the WATSAN sector.

52. ICSO and UNICEF, 2012, p.3.
53. MRRD, 2013, p. 6.

6.2. Recommendations

Based on the key points brought to light by this paper, the following recommendations are suggested:

- The WHO/UNICEF figures on "access to safe drinking water" for Afghanistan should be considered with great caution as they are systematically inflated when compared with national surveys.

- The Afghan government and the international donor community should recognise that the current monitoring indicators on access to safe drinking water at the household level are inadequate. Instead, the Afghan government should endorse and adopt the Household Water Insecurity Index (HWII) for monitoring progress and to ensure that data are made publicly available. This can be done through a participatory process that would include national and international experts on drinking water access in Afghanistan, civil society and water users' representatives. The index proposed in this paper can form a basis for discussion and be fine-tuned or adapted through such a process, before being endorsed.

- The Ministry of Rural Rehabilitation and Development (MRRD), as well as the Afghanistan Urban Water Supply and Sewer Corporation (AUWSSC) should include all dimensions and indicators of the HWII in its guidelines for rural water systems.

- The MRRD should ensure that national monitoring on "household water insecurity" is undertaken on a regular basis (e.g., every four years).

- The international donor community should provide technical and financial support for national monitoring of "household water insecurity," given how central this issue is to poverty reduction, and the fact that it remains the first community development priority for both female and male community *shuras*.

- The Central Statistics Organisation should standardise data collection methods between the NRVA and the AMICS in order to make comparisons feasible.

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