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Changing Sources of Drinking Water in Myanmar (2014 - 2019)

a MIMU Analytical Brief

February 2021

MIMU Analytical Briefs shine a light on topical, emerging and under-explored issues relevant to humanitarian and development support in Myanmar based on analysis of available information.

Each Brief includes a short narrative document and accompanying infographic.

This MIMU Analytical Brief focuses on access to drinking water in Myanmar as a topic on which little information is available. It compares, for the first time, measurements of different levels of drinking water services between 2014 and 2019.

Summary

- Over the last five years, many households in Myanmar have switched toward improved water sources – such as piped and bottled water, however this does not mean it is safe to drink.
- The 2019 Intercensal Survey provides the first large-scale review of the safety of drinking water through testing for faecal contaminants. There are still many unknowns however, including the presence of heavy metal contaminants such as arsenic in households' drinking water in some areas of the country.
- For all of Myanmar's people to access safer drinking water, a targeted approach is needed that considers the wide diversity of drinking water sources; Rakhine and Ayeyarwady are especially vulnerable and in need of support, being highly reliant on surface water and particularly exposed to the impacts of climate change.
- Further information will be needed to provide a more nuanced and gendered understanding of the impact of households' use of different drinking water sources, including in urban and rural areas and by different population groups.

Our thanks to UNICEF for their valuable support in developing this Analytical Brief.

Introduction

Access to safe drinking water is not only essential for human life but also an internationally recognized basic human right. The use of contaminated water can be damaging to people's health and is among the leading causes for the transmission of diseases such as diarrhoea, cholera and dysentery, contributing to undernutrition and long-term health consequences. Unsafe water is responsible for an estimated 842,000 of the deaths caused by diarrhoea worldwide annually.[1] Availability and accessibility of sufficient safe water are essential to protect people from water-borne diseases.

Access to safe drinking water is a priority for the United Nations and Myanmar's government. It is recognized in the Sustainable Development Goals (SDG 6 – Target 6.1) and in Myanmar's Sustainable Development Plan (MSDP – Strategy 5.3). Both the SDGs and the MSDP seek to measure the *"proportion of population using safely managed drinking water services"*, along with access to safe drinking water by households, schools and health care facilities. Safely managed drinking water will be referenced as "safe drinking water" in the rest of this Analytical Brief.

Measurement of Myanmar households' access to safe drinking water has been undertaken on a large scale for the first time in the 2019 Intercensal Survey. Prior to this 2019 survey, access to safe drinking water was measured only through small-scale studies. Drinking water services are defined according to accessibility, availability and quality of households' main drinking water source. The resulting scale describes a range of household-level drinking water services – services which are safe, basic or limited refer to the use of improved water sources, whereas services with unimproved and surface sources are the least safe options (see *Figure 1*).

This MIMU Analytical Brief provides a unique perspective by comparing, for the first time, households' use of drinking water services between 2014 and 2019.[3] The 2014 Population and Housing Census measured households' use of drinking water from improved,[4] unimproved and surface sources at the township and village tract/ward levels in Myanmar for the first time. The Myanmar Demographic and Health Survey (2015 - 16) and the Myanmar Living Conditions Survey (2017) reviewed these same indicators at the state/region level, in addition to measuring households' access to limited and basic drinking water services. The 2019 Intercensal Survey measures all these indicators at the state/region and district levels in addition to testing for the presence of a common faecal contaminant (E.coli) as a measure of the safety of households' drinking water. This is the first time this aspect of drinking water safety has been measured at the national scale in Myanmar, though it does not measure chemical contamination. This was, at the time of publication, the largest known national survey to measure the presence/absence of E.coli, covering 19,077 households. In its use of an inexpensive, easy-to-use test at such a large scale, this approach provides a model for future water quality monitoring surveys.

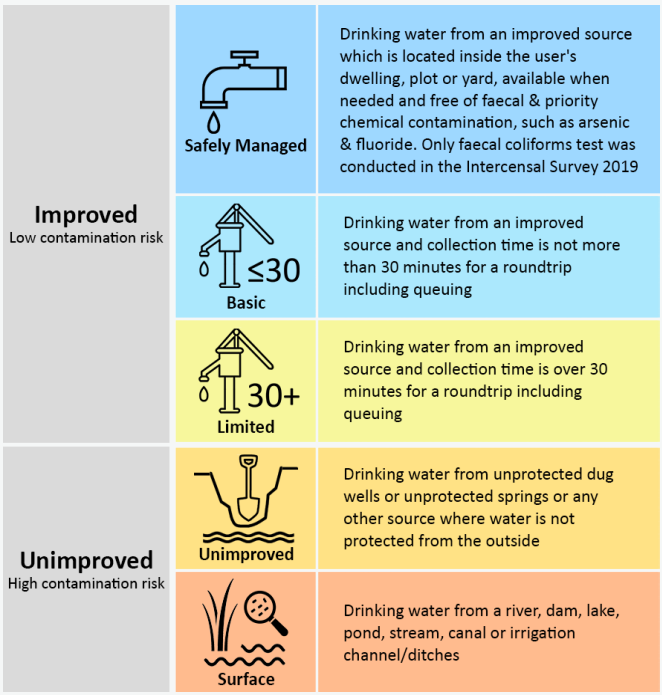

Figure 1. *Scale of different drinking water services*[2]

This Analytical Brief highlights households' use of surface water as the unimproved source with the highest risk of contamination.

In 2019, 82% of households countrywide were using drinking water from improved sources, and 12% used surface water (rivers, lakes, ponds, etc.), with significant differences between urban and rural areas. Rural households in Myanmar were more likely to use surface water (16% in rural areas compared to 4% in urban areas), with lower use of drinking water from improved sources (78% in rural areas and 92% in urban areas). Water access, infrastructure and quality control are the main impediments to rural areas' access to safe and affordable water supply services.

"Improved sources" vs "safe" drinking water

Improved drinking water sources present a low risk of contamination for households; however, this does not necessarily mean that the water is safe to drink. "Improved sources" of drinking water are defined as those that have the potential to deliver water with low risk of contamination due to their design and construction. This does not consider the microbial safety of the water due to water storage, unsafe delivery systems or water management practices.[5] Despite the very widespread use of bottled and piped water in Myanmar, there is limited published scientific data on the safety of water from these sources, however a study of bottled water in 2019 found that of the 19 brands tested, 37% were contaminated and unsafe to drink.[6]

"Safe" drinking water on the other hand, refers to the households' use of drinking water coming from improved sources which are located within the household's dwelling, plot or yard and tested as safe to drink (free from faecal and key chemical contaminants).[7] The 2019 Intercensal Survey results provide information on the use of safe drinking water from a representative sample of households across the country in December 2019.

[1] *World Health Organization, Protecting surface water for health (Geneva: World Health Organization, 2016), https://www.who.int/water_sanitation_health/publications/pswh/en/*
[2] *Myanmar's 2019 Intercensal Survey indicators are similar to those used globally by the WHO/UNICEF Joint Monitoring Programme: https://washdata.org/*
[3] *All results presented in this Analytical Brief are from four national level surveys/census exercises conducted between 2014 and 2019 which used different calculation methodologies. MIMU has adjusted these using the calculation methodology of the 2019 Intercensal Survey to enable the measurements to be compared. All values presented are based on the enumerated population and may not fully reflect non-enumerated groups or certain areas, particularly Rakhine.*
[4] *According to the definition used by the WHO/UNICEF Joint Monitoring Programme, drinking water from improved sources refers to drinking water from piped water into dwellings/ yards/compounds, public taps or standpipes, tube wells/boreholes, protected dug wells, protected springs, rainwater collection and water purifier/bottled water.*
[5] *Ameer Shaheed, Jennifer Orgill, Maggie A Montgomery, Marc A Jeuland, and Joe Brown, "Why 'improved' water sources are not always safe," Bulletin of the World Health Organization, http://dx.doi.org/10.2471/BLT.13.119594.*
[6] *Seinn Sandar May Phyo, San San Yu, Khin Maung Saing, "Bacteriological Examination of Bottled Drinking Water by MPN Method," The Saudi Journal of Biological Sciences, 6 pages, https://dx.doi.org/10.21276/haya.2019.4.7.2.*
[7] *Priority chemical contaminants vary by country and are not currently defined for Myanmar, but at a global level priority is placed on arsenic and fluoride.*

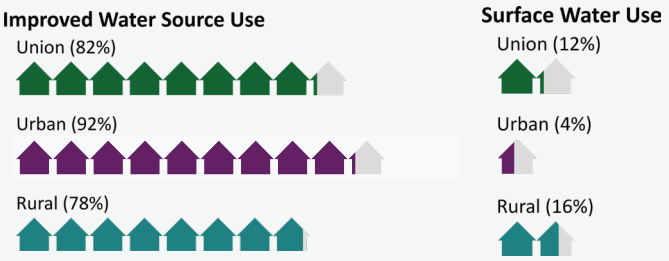

Figure 2. *Households' use of drinking water from improved and surface sources at the union, urban and rural level, 2019 (%)*

This marks an improvement since 2014 when approximately 73% of households were using drinking water from improved sources. At the township level, half of Myanmar's townships had over 80% of households using drinking water from improved sources. Most of these townships were concentrated around the Ayeyarwady River as represented in green in *Figure 3*. An additional 95 (30%) townships had fairly high levels of use of drinking water from improved sources (60-79% of households, marked in yellow). The areas with the lowest use of drinking water from improved sources (marked in red) are found mainly in the coastal areas of Rakhine, Ayeyarwady, Yangon and Bago. These townships tend to be highly reliant on surface water which has a greater risk of contamination. In Kayan township in Yangon Region for example, 99% of households use surface water as their main source of drinking water. Conversely, the majority of townships in Chin State had high levels of drinking water from improved sources, though its safety is uncertain as piped water can come from unsafe water sources.

There is little gendered data on this topic. One nationwide survey in 2017 showed more female-headed households to be using drinking water from improved sources, with less surface water than male-headed households.[8] Improved water sources were used by 82% of female-headed households, compared to 79% of male-headed households, while surface water was used by 14% of female-headed households and 17% of male-headed households. The reasons for these differences were not clear. In 2019, among the surveyed households without drinking water on the premises, both males and females engaged in water collection in the majority of the households. This was the case at the national (44%), urban (37%) and rural (45%) levels. Households with only females having sole responsibility for water collection is disproportionately high compared to households with only males (31% and 24% of households respectively). These differences vary between urban and rural areas; in rural areas, the responsibility of fetching water is disproportionally borne by females as the sole water collectors in 32% of households, compared to households where it is collected only by males (23%). In urban areas the disparity is reversed, with 34% of households in which males are solely responsible for water collection, compared to 29% of households with females allocated this responsibility.[9] The reason for this difference is unclear, requiring further gender analysis.

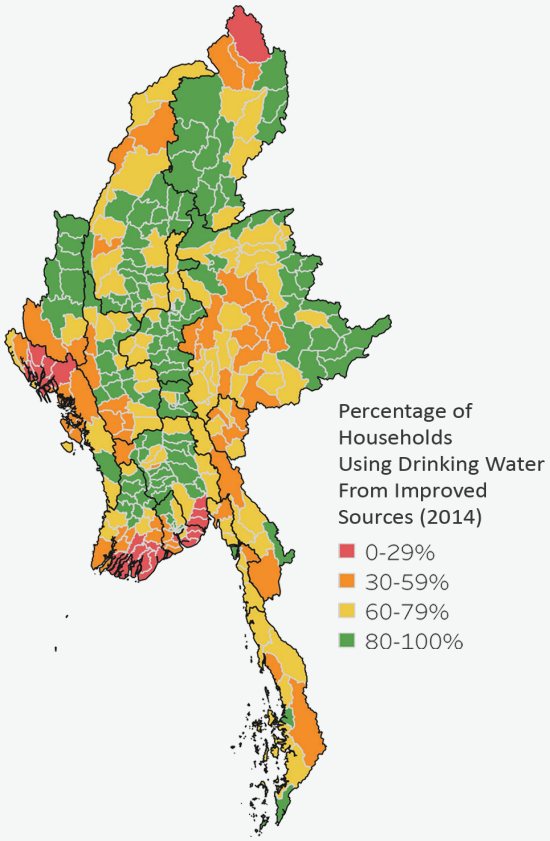

Figure 3*. Households' use of drinking water from improved sources by township, 2014 (%)*

Piped and bottled water are replacing unprotected water supplies

Households in Myanmar are increasingly using improved drinking water sources, especially in rural areas, as a means of accessing safer water. Between 2014 and 2019, households' use of drinking water from improved sources has increased by 9%. This improvement occurred in all states and regions except Chin State where the use of drinking water from improved sources remained steady (75% of households in 2014 and 73% in 2019). In 2019, more than 80% of the populations of all states/regions other than Chin, Ayeyarwady and Rakhine were consuming drinking water from improved sources. By contrast, only four states/regions in 2014 had more than 80% of their population consuming drinking water from improved sources. The level of improvement differs between urban and rural areas: rural areas' use of improved sources increased significantly in the period 2014 - 2019, whereas by 2014 urban areas in most states/regions already had relatively high use of improved water sources. The exception is Rakhine where topography, higher levels of poverty and climate change shocks are constraints to improvements in drinking water quality.

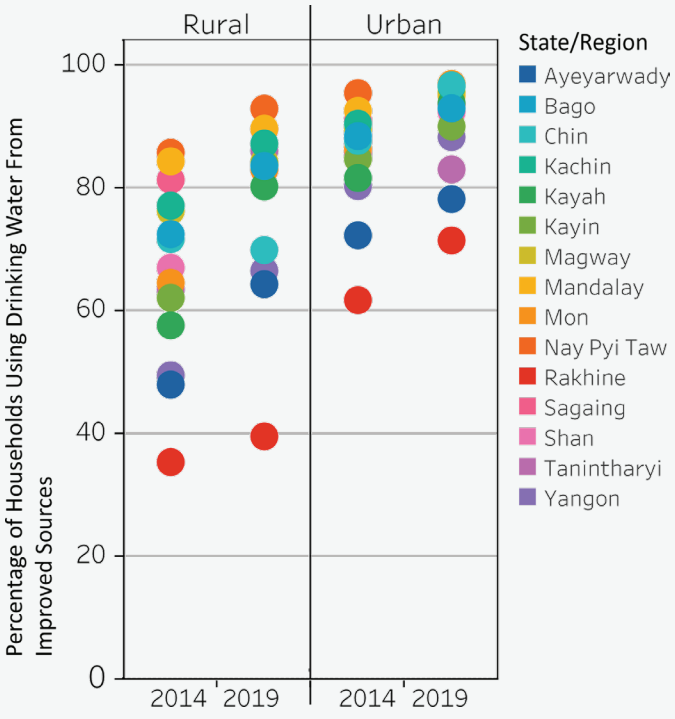

Figure 4*. Households' use of drinking water from improved sources in urban/rural areas, by state/region, 2014 - 2019 (%)*

[8] *World Bank, Myanmar Living Conditions Survey 2017 - Poverty Report (Washington, DC: World Bank, June, 2019), https://documents.worldbank.org/curated/en/921021561058201854/pdf/Myanmar-Living-Condition-Survey-2017-Report-3-Poverty-Report.pdf.*
[9] *Intercensal Survey 2019 (Myanmar Department of Population), accessed on December 30, 2020, https://www.dop.gov.mm/en/publication-category/2019-inter-censal-survey.*

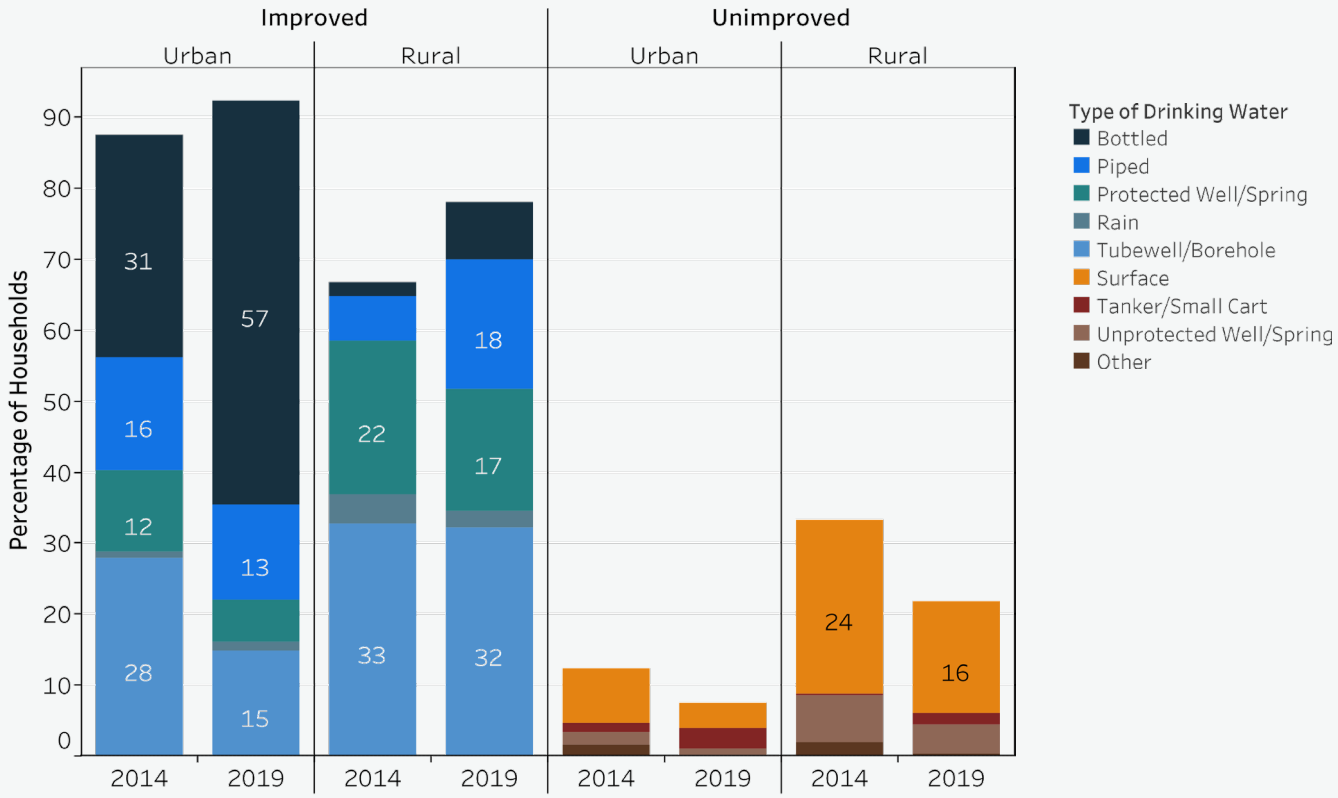

Figure 5. *Households' use of drinking water by source in urban/rural areas, 2014 - 2019 (%)*

The widespread increase in the use of improved drinking water sources between 2014 and 2019 is due to higher use of piped water, especially in rural areas, and of bottled water in urban areas. This same period saw a slight decrease in the use of piped water in urban areas (3% decrease) as a consequence of the higher use of bottled water (26% increase). The increase in the use of piped water in rural areas possibly represents infrastructure improvements – nevertheless, the use of piped water is not a simple proxy for development.

Higher use of piped and bottled water has reduced households' risk of exposure to unprotected, hence contaminated, water supplies primarily through reducing their reliance on surface water. Use of surface water for drinking has high health risks, being easily contaminated by human, animal or livestock microorganisms and by chemicals from industrial, agricultural and other sources. The use of surface water presents higher risks of serious diseases including cholera, diarrhoea, dysentery, typhoid and polio than drinking water which is free from faecal and key chemical contaminants. Countrywide, the use of surface water as a drinking water source decreased by 7% between 2014 and 2019, with a decrease in all states/regions other than Kachin where groundwater sources such as wells and springs were already used more frequently in 2014. Rakhine and Ayeyarwady had the highest levels of use of surface water in 2019 with an estimated 3.4 million people drinking from surface water sources in these two states/regions alone (50% and 29% of households respectively).[10] While Chin and Ayeyarwady have significantly decreased their households' use of surface water between 2014 and 2019 (decreased by 18% and 15% respectively), other states/regions had a less than 10% decrease in surface water use in this same period.

The use of unprotected water supplies such as surface water presents many health risks, yet the increased use of piped and bottled water is not necessarily an improvement. A reliance on surface water increases the risks of immediate biological, viral, helminthic and protozoa-borne diseases, however, piped and bottled water may be drawn from the same contaminated sources and are likely to be poorly treated. This illustrates the importance of testing drinking water quality as done in Myanmar's 2019 Intercensal Survey, though ideally for chemical as well as faecal contaminants.

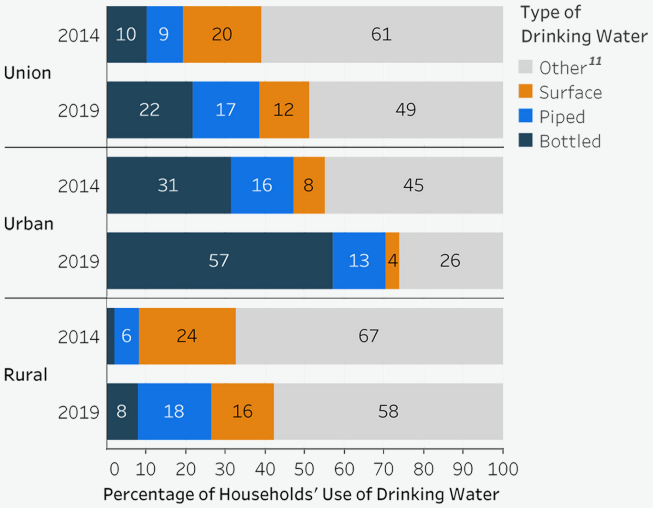

Figure 6. *Change in households' drinking water sources at union, urban and rural levels, 2014 - 2019 (%)*

[10] *Estimated from the Intercensal Survey 2019 (Myanmar Department of Population), accessed on December 30, 2020, https://www.dop.gov.mm/en/publication-category/2019-inter-censal-survey.*

[11] *The category "Others" includes protected well/spring, rain, tube well/borehole, tanker/small cart and unprotected well/spring.*

Myanmar's use of safe drinking water in 2019 was below the global level

The safety of Myanmar's drinking water, measured countrywide for the first time in 2019, was found to be lower than that globally. Only 41% of Myanmar households used safe drinking water in 2019 compared to 71% of the global population in 2017.[12] Yangon and Mandalay were the states/regions with the highest percentages of households using safe drinking water (56% and 50% of households respectively) while the lowest percentages of households using safe drinking water were in Rakhine, Chin and Ayeyarwady (16%, 22% and 27% of households respectively).

The use of safe drinking water in rural households was behind that of urban areas in 2019 (33% rural compared to 64% urban). Rural areas of Rakhine, Chin and Ayeyarwady had the lowest use of safe drinking water, whereas households in rural areas of Mandalay had among the highest use of safe drinking water among rural areas countrywide (41% of households). Conversely, households in rural Yangon Region are not among the highest users of safe drinking water (36% of households). When comparing urban areas, households in Chin had the lowest use of safe drinking water (22% of households), with low levels also found in Kachin (38%), Rakhine (39%) and Ayeyarwady (51%). Urban households in Tanintharyi, Kayin and Kayah had the highest use of safe drinking water (75 - 80% of households), ahead of Mandalay and Yangon (69% and 66% respectively).

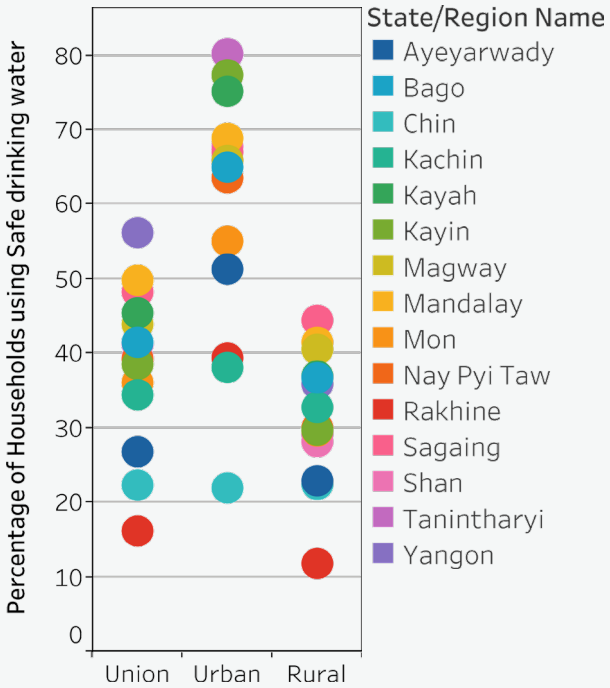

Figure 7. *Household's use of safe drinking water at union, urban and rural levels, by state/region, 2019 (%)*

At the district level, only two districts – Mandalay and west Yangon – had levels of use of safe drinking water close to the global level (73% and 79%). The majority of districts countrywide had between 20% and 60% of households using safe drinking water in 2019 (marked in yellow and orange in *Figure 8*). At one extreme, 11% of districts (8 of the 71 enumerated districts) had 60% to 79% of households using safe drinking water in 2019 (marked in green) – located in Yangon, Mandalay, Sagaing, Magway and Shan states/regions. At the other extreme, 10% of districts had less than 20% of households using safe drinking water in 2019 (marked in red) – located in Chin, Rakhine, Ayeyarwady and Kayin.

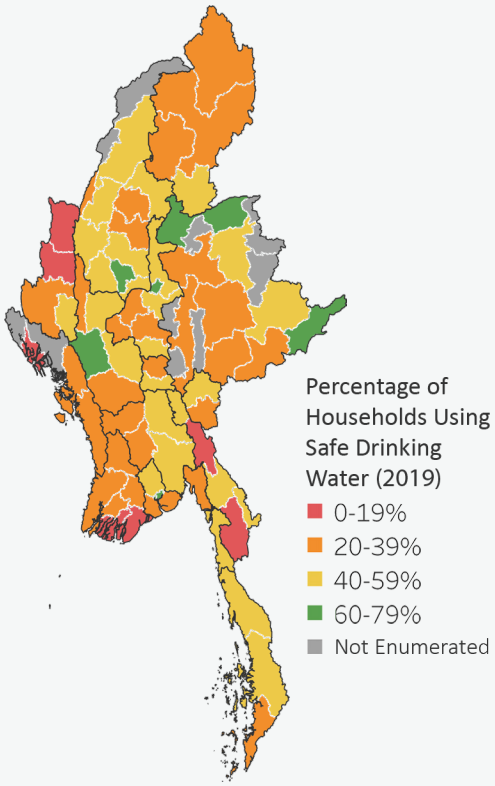

Figure 8. *Households' use of safe drinking water by district, 2019 (%)*

Piped water does not prevent contaminated drinking water in Chin

In 2019, Chin State had one of the lowest percentages of households using safe drinking water (22% of households) along with Rakhine and Ayeyarwady. This is the case in both urban and rural areas (22% of households for both in 2019). The use of safe drinking water is particularly low in two districts – Falam and Hakha (3% and 14% of households respectively). As previously mentioned, the increase in piped water usage is not necessarily a proxy for development; Chin State has the highest poverty rate in Myanmar (58%)[13] while its use of piped water is the highest in the country and has remained relatively stable over this five-year period (68% of households in 2014 and 65% in 2019). The high number of households using contaminated water in Chin indicates either that the piped water used is coming from unsafe water sources, or that the water is becoming contaminated during transportation or storage. This finding emphasizes the importance of testing the safety of drinking water in households, including when the use of piped water seems to be an improvement. More peer-reviewed work on the quality of drinking water in Chin is needed and would prove useful.

Highest use of contaminated drinking water in Rakhine and Ayeyarwady

Access to safer drinking water is a particular issue in Rakhine and Ayeyarwady due to their topography, weak infrastructure, poverty, and exposure to climate change shocks. Together they represent 18% of the country's population, or an estimated 9.3 million people.[14] Both are in coastal and low-lying areas with a high risk of natural disasters; however, Ayeyarwady's flat, riverine topography adds to its vulnerability. Rakhine and Ayeyarwady both have weak infrastructure which undermines connectivity and increases

[12] *Progress on household drinking water, sanitation and hygiene 2000 - 2017. Special focus on inequalities. (New York: United Nations Children's Fund (UNICEF) and World Health Organization (WHO), 2019); https://www.who.int/water_sanitation_health/publications/jmp-report-2019/en/.*
[13] *World Bank, Ibid.*
[14] *Department of Population, Ibid.*

transportation costs which could impact the availability and accessibility of bottled and piped water. They are amongst the poorest states/regions in Myanmar with poverty reaching 32% in Ayeyarwady Region and 42% in Rakhine State,[15] reducing their resilience to climate change-related shocks still further. Ongoing conflict in Rakhine state exacerbates these challenges.

Households in Rakhine and Ayeyarwady continue to have the highest reliance on surface water and the lowest use of improved drinking water sources. Rakhine households' use of surface water in 2019 was the highest in the country at 50%, compared to 29% in Ayeyarwady. The low-lying topography in these areas limits the use of groundwater sources (tube wells, boreholes, wells, springs, etc.), due to risk of saline sea water intrusion and ponds remain the main source of drinking water. Between 2014 and 2019, the reliance of households in Ayeyarwady on surface sources of drinking water decreased by 15% while use of improved water sources increased by 15%. In Rakhine by contrast, households' use of surface water decreased by just 4% with a 5% increase in the use of improved water sources. Overall, the differences remain stark – as of 2019, 66% of households in Ayeyarwady were found to be consuming drinking water from improved sources compared to 45% of households in Rakhine and 82% nationally.

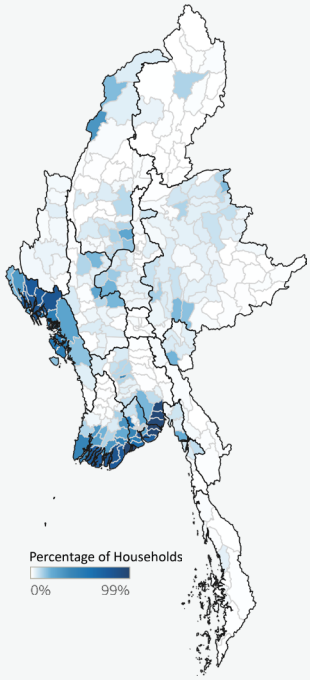

***Figure 9**. Percentage of households using drinking water from pools, ponds, lakes by township, 2014*

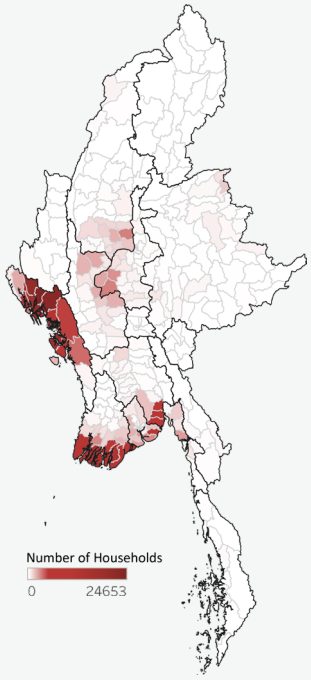

***Figure 10.** Number of households using drinking water from pools, ponds, lakes and open defecating by township, 2014*

Rakhine and Ayeyarwady had the highest levels of population drinking from ponds and using open defecation in 2014. These two elements are key factors increasing the risk of water contamination and subsequent health issues, especially when there are few alternative drinking water sources. The lack of data after this period highlights the need for more information on the extent to which the combination of the use of ponds and open defecation is an issue.

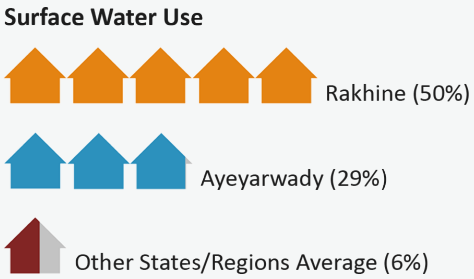

***Figure 11.** Households' use of surface water for Rakhine, Ayeyarwady and other states/regions, 2019 (%)*

In addition to having the highest reliance on surface water, the 2019 Intercensal Survey indicates that Rakhine and Ayeyarwady are among the states/regions with the lowest levels of use of safe drinking water (16% and 27% of households respectively). This applies in both urban and rural areas. All districts in Rakhine and Ayeyarwady have households' use of safe drinking water levels below 39% (marked in red and orange in *Figure 8*).

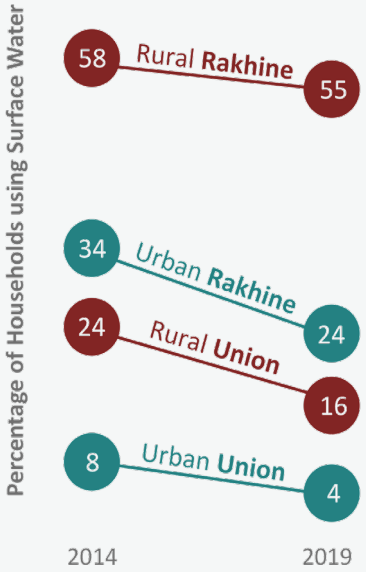

***Figure 12.** Households' use of surface water nationally and in Rakhine, 2014 - 2019 (%)*

Rakhine remains far behind other states and regions in the use of safer drinking water sources, with rural areas particularly vulnerable.[16] Rakhine has the highest levels of households' use of surface water as their primary drinking water source in both urban and rural areas (24% and 55% respectively in 2019) and the lowest level of households' use of safe drinking water in rural areas (12% of households in 2019). Rural areas in Rakhine are the most reliant on surface water in the country, with barely any improvement between 2014 and 2019 and have the lowest level of households' use of drinking water from improved sources (40% use compared to 78% nationally). By contrast, the use of surface water in urban areas in Rakhine has decreased at a fast pace (10% decrease between 2014 and 2019). In addition, urban areas in Rakhine significantly increased their use of bottled water from 4% to 27% between 2014 and 2019 while rural areas in Rakhine are among the few with the smallest rise in the use of bottled water (2% increase). Published peer-reviewed analysis of the health implications of drinking water consumption in Rakhine State is lacking however and further analysis on the health implications of the use of drinking water in Rakhine is needed.

[15] *World Bank,Ibid.*
[16] *The 2014 Population and Housing Census and 2019 Intercensal survey did not include all residents of Rakhine State. As such, the statistics provided only refer to the people enumerated in these surveys.*

Drinking water in Rakhine and Ayeyarwady remains vulnerable to contamination due to more frequent natural disasters. Climate change is expected to increase their populations' exposure to climate-related disasters such as cyclones and storms, while heavier rainfall over a shorter rainy season can lead to more flooding, increasing the risk of contaminated surface water. Climate change and higher temperatures will also exacerbate water shortages as longer and hotter dry seasons evaporate water from ponds. The low-quality infrastructure and near-total deforestation of mangroves which have historically stabilized shorelines (52% loss of the net national mangrove cover in 20 years between 1996 and 2016)[17], means that these cyclones and storms will further stress populations' access to safer water with longer-term impacts compounding the more immediate destruction and loss of life. In addition to the other risks of reliance on surface water in these circumstances, these water sources are frequently destroyed by saltwater contamination during floods and storm events.

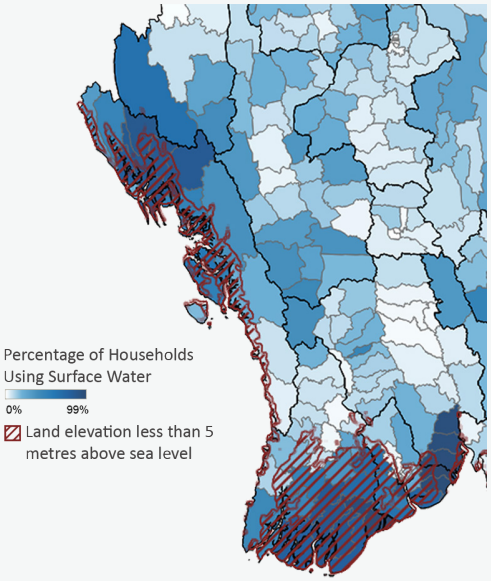

Figure 13. *Households' using surface water in low-lying areas, 2014 (%)*

Rakhine and Ayeyarwady's reliance on surface water exposes households to decreasing water availability through salt water infiltration and evaporation. Located in some of the most low-lying coastal lands in South East Asia, these areas are already more likely to experience saltwater infiltrating underground sources such as wells and springs, particularly as sea levels rise due to climate change. In underground sources, fresh water is lighter than salt water and tends to float on top of the saltwater layer. Consequently, as sea levels rise, extracting deeper water from those sources is problematic due to the higher likelihood of reaching salt water, leading to a reliance on ponds which tend to be wider and shallower than in other areas. These wide ponds are more likely to face evaporation, further limiting water availability and deepening tensions over land and water resources.

Sustainable solutions to access safer drinking water in such environments do exist but are essential though they may be expensive to implement and maintain, limiting possible uptake in Rakhine and Ayeyarwady. Examples of solutions include remote reservoirs and piped water systems; ponds lined with local clays and rocks; covered ponds, connecting ponds to overhead water tanks, solar pumps and distribution systems; deep boreholes with the help of hydrogeological surveys to find deeper pure aquifers; managing aquifer recharge and solar desalinization. These solutions are likely to be difficult for local communities to afford, and events such as natural disasters and conflict will amplify these challenges still further. While change may be costly, the needs are great. For a large share of Rakhine and Ayeyarwady's populations, climate change is increasing the risks of reliance on surface sources of drinking water – undermining health and potentially leading people to migrate to areas with safer drinking water options.

The dangers of arsenic contamination

While the reliance on surface water is falling, arsenic contamination is a threat to certain drinking water sources in some areas of Myanmar. Arsenic, a naturally occurring geological element, can be a threat to human health when it leaches into drinking water sources; chronic exposure to high concentrations of arsenic is associated with increased risk of cardiovascular disease, diabetes, cancer and neurological effects, particularly in children.[18] In South East Asia, hundreds of millions of people are exposed to higher than recommended levels of arsenic in their water supplies (over 10 µg/L as per the WHO guideline), including an estimated 3.4 million people in Myanmar.[19] While many areas are affected, the populations most at risk are those reliant on drinking water supplies drawn from groundwater sources such as tubewells in areas with high levels of naturally occurring arsenic. As can be seen in UNICEF's Arsenic Population Risk map, areas of Myanmar with higher potential risk of arsenic contamination correspond to those where populations are particularly dependent on drinking water from groundwater sources, ranging from the Dry Zone to the Ayeyarwady delta and parts of Rakhine. To date there has been no large-scale testing of drinking water supplies in Myanmar for heavy metal contaminants such as arsenic, and information is available from only a few localized studies.

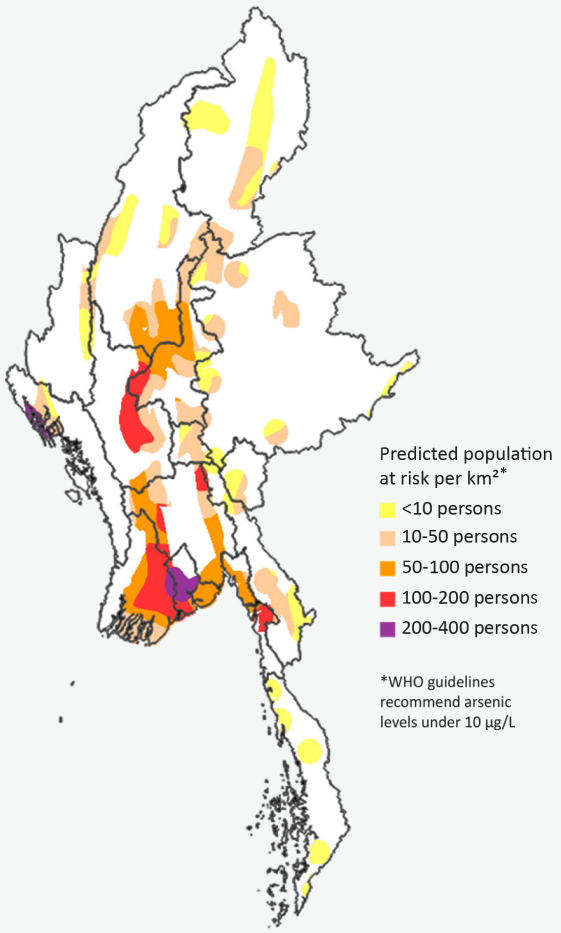

Figure 14. *Predicted population at risk of consuming arsenic from groundwater exceeding WHO guideline, 2007*[20]

[17] *Jose Don T De Alban et al, 2020 Environ. Res. Lett. 15, 034034.*
[18] *World Health Organisation, Arsenic Fact Sheet (2018), accessed on December 12, 2020, https://www.who.int/news-room/fact-sheets/detail/arsenic*
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The patchy distribution of arsenic means that villagers in affected areas may be within walking distance of areas with low arsenic contamination. This reinforces the importance of measuring arsenic levels at the local level in ground water sources. Nevertheless, levels of arsenic may still increase in aquifers with low concentrations due to hydrological changes. Addressing this problem requires sustained testing and monitoring of wells using appropriate field kits along with geological data to target zones which are low in arsenic for installation of community wells. Care is also needed with mechanized pumps in rural piped-water supply systems which can draw in arsenic water from shallower aquifers. Deep aquifers should be protected for drinking water use rather than used for irrigation.

Conclusion

The last five years have seen a switch by households in Myanmar toward improved water sources – such as piped and bottled water, over unprotected water supplies such as surface water with its higher risks of contamination. As of 2019, 82% of households countrywide were using improved drinking water sources, including 39% using piped and bottled water as their primary source of drinking water. It remains unclear however whether this has improved access to safe drinking water.

The 2019 Intercensal Survey showed that 41% of households used safe drinking water countrywide which is behind global use (71% of the population). For the very first time in Myanmar, access to safe drinking water has been measured, at scale, and aligned with indicators used in the Sustainable Development Goals and Myanmar's Sustainable Development Plan – these results will allow for more clearly-targeted support and investment by the government and development partners. Further information will be needed to provide a more nuanced and gendered understanding of the impact of household's use of different drinking water sources, including in urban and rural areas and by different population groups.

As highlighted in this MIMU Analytical Brief, a targeted approach that considers the wide diversity of drinking water sources will be needed to allow all of Myanmar's people access safer drinking water. Some areas remain especially vulnerable and need support to rapidly improve current drinking water options – most notably Rakhine and Ayeyarwady which are highly reliant on surface water, have the lowest use of safe drinking water and are particularly exposed to the impacts of climate change. With long-term solutions beyond the financial reach of many communities, large and consistent blended financial support will be needed from Myanmar's government, development partners and financial institutions to fund and support cost-effective solutions. The 2019 Intercensal Survey has collected important information on the safety of drinking water around the country, however there are still many unknowns, including the presence of heavy metal contaminants such as arsenic in households' drinking water in some areas of the country.

For further information on the data and methodology used in preparation of this Analytical Brief, as well as other relevant products to support information and analysis (dataset, infographic and dashboard), please see https://themimu.info/mimu-analysis.