

NEPAL WASH BUDGET BRIEF, 2024

UNICEF Nepal Country Office

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ABBREVIATIONS

- ADB** | Asian Development Bank
- COVID-19** | coronavirus 2019
- DFID** | Department for International Development
- EU** | European Union
- FCDO** | Foreign, Commonwealth & Development Office (formerly DFID)
- FY** | fiscal year
- GDP** | gross domestic product
- GoN** | Government of Nepal
- HH** | household
- IDA** | international development assistance
- IMF** | International Monetary Fund
- JFPR** | Japan Fund for Poverty Reduction
- JICA** | Japan International Cooperation Assistance
- JMP** | Joint Monitoring Programme (UNICEF/WHO)
- KTM/Ktm** | Kathmandu
- KUKL** | Kathmandu Upatyaka Khanepani Limited (Kathmandu Valley Drinking Water Ltd)
- MIS** | management information system
- NDHS** | Nepal Demographic and Health Survey (2022)
- NPR** | Nepalese rupees
- NWSC** | Nepal Water Supply Corporation
- PID** | Project Implementation Directorate
- R** | rural
- SDGs** | Sustainable Development Goals
- U** | urban
- UNICEF** | United Nations Children’s Fund
- USD** | United States dollar
- VIP** | ventilated improved pit
- W** | wealth quintile (W1–W5)
- WASH** | water, sanitation and hygiene
- WHO** | World Health Organization

FOREWORD

This budget brief is one of a series of budget briefs that UNICEF Nepal's Country Office plans to produce annually. This is the first of these annual briefs on the water, sanitation and hygiene (WASH) sector.

The Government of Nepal has made commendable progress on extending access to safe drinking water and sanitation. However, much remains to be done to achieve SDG 6 of ensuring water and sanitation for all by the year 2030, especially by further extending access to certain parts of the country and poorer households.

This brief examines the amounts allocated for WASH by Nepal's federal government in recent years to 2022/23 using information from government and other sources. It shows how these allocations have changed over time and the pattern of allocations across the country's ecological zones, provinces, urban and rural areas, household wealth quintiles and by the main two components of WASH, drinking water and sanitation. It focuses on the budgetary allocations made by the federal government that comprise the majority of funds available each year to develop the country's WASH sector and to fund progress towards meeting SDG 6. The brief then discusses the pattern of expenditure and goes into some detail on the impacts of WASH spending over the past two decades.

This brief is intended to inform Nepal's policy makers and development partners about the patterns of budgetary allocations for the drinking water and sanitation and hygiene sectors and their impacts. This should help them to direct future funding to the areas of most need.

Many people contributed to the production of this brief. It was co-funded by the European Union and produced by UNICEF Nepal's WASH team. The collaboration and support from colleagues in the WASH team, including Dandi Ram Bishwakarma, Siddhi Shrestha, and Surendra Babu Dhakal, were invaluable, while Dr Rajit Ojha, Chief of the National Water Supply, Sanitation and Hygiene Management Information System (N-WASH-MIS) at the Department of Water Supply and Sewerage Management (DWSSM) provided valuable insights. Thanks, are also due to Thakur Dhakal, Yendra Rai and other colleagues from UNICEF Nepal's Social Policy, Governance and Evidence section, who provided encouragement throughout the production of this document. Finally, thanks are due to Dr Aniruddha Bonnerjee as the lead author of this brief.

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1 INTRODUCTION

This budget brief provides information on the allocations made by Nepal's federal government for WASH in its annual budgets in recent years. The allocations presented here comprise the Government of Nepal (GoN) and development partner funds that are allocated to the federal government at the start of each fiscal year¹ (therefore excluding any deductions and additions made during the year to these budgets). The allocations are for recurrent expenditure, mainly staff costs, and capital expenditure on projects.

This brief presents the amounts and proportions allocated by fiscal years, to rural and urban areas, to drinking water and sanitation,² by budget line, and to sub-national governments. The figures include the amounts allocated for WASH expenditure by the federal government to provincial and local governments, but excludes funds of provincial and local governments allocated for WASH. This brief only examines public allocations and does not cover household spending on WASH and so precludes any analysis of out-of-pocket expenditure on WASH. There is also a brief section on actual expenditure of the allocated funds.

Chapter 2 describes the trends of WASH allocations and financing for the seven years from 2016/17 to 2022/23 to show the situation before, during and after the introduction of the federal system of government. Chapter 3 describes the trend in the past three years of WASH allocations to rural and urban areas and for drinking water and sanitation. Chapter 4 explains allocations by WASH budget lines in 2022/23 while Chapter 5 presents the federal WASH allocations to sub-national

governments in 2022/23. The allocations are broken down by ecological zone, province, rural and urban areas, and household wealth quintiles.

A brief section on the actual use of federal WASH allocations is presented in Chapter 6 for the five years from 2016/17 to 2020/21. The resulting progress made on extending and improving access to WASH is explained in Chapter 7 for the period from fiscal years 2000 to 2022. This includes an analysis of the main sources of drinking water and the presence of sanitation facilities at the district and local government levels. Chapter 8 compares the progress made on access to drinking water and sanitation between 2000 and 2022 while Chapter 9 presents the key findings and recommendations.

The information is from a mix of primary and secondary sources. Most of the information in Chapters 2–6 is based on data from the official record of government budgets at the start of fiscal years – the Government of Nepal's red books MoF (2016/17 to 2022/23), as contained in WaterAid's annual WASH financing fact sheets (WaterAid 2018-19 to 2022-23). The information in Chapter 7 is from the Joint Monitoring Programme (JMP) ladders of the annual situation of access to drinking water and sanitation services in Nepal (UNICEF and WHO, 2023a) supplemented with 2022 Nepal Demographic and Health Survey (NDHS) data and findings from Nepal's 2021 Housing and Population Census (NSO 2023) on access to WASH services. Chapter 7 also discusses the progress needed to achieve the SDG drinking water and sanitation targets by 2030. Chapter 8 briefly compares the progress made on drinking water and sanitation using JMP information.

1 Note: Nepali fiscal years run from mid-July to mid-July from the start of the Nepali month of Shrawan.

2 Note: No separate data is available on allocations for hygiene expenditure.

2 TRENDS IN FEDERAL WASH ALLOCATIONS, 2016/17–2022/23

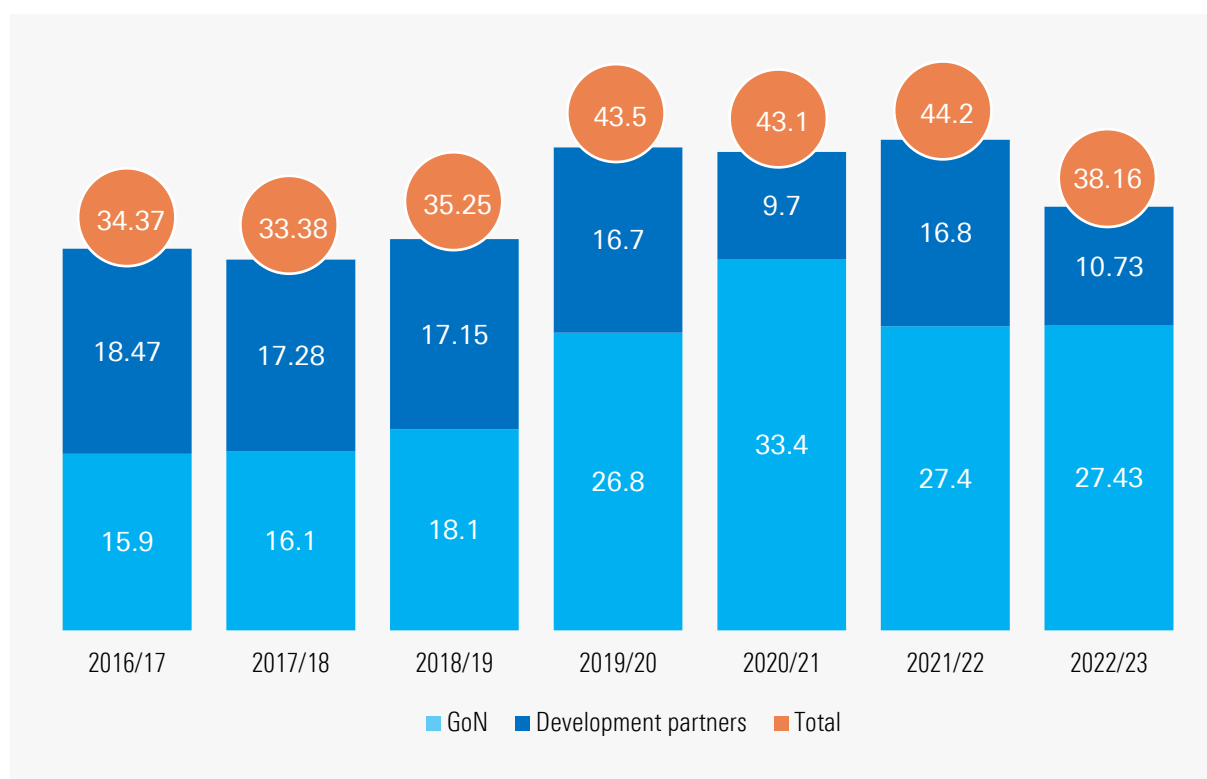
2.1 Trends in allocations

The red book data contained in WaterAid’s fact sheets show that the annual budget allocations made by Nepal’s federal government for water and sanitation declined in FY 2022/23 after peaking in the 2019/20 to 2021/22 period (Figure 1). The latter period included the COVID-19 pandemic (from early 2020). The total allocated dropped by 14 per cent from NPR 44.2 billion in FY 2021/22 to NPR billion 38.16 in FY 2022/23, which is,

however, more than the allocations in 2016/17 to 2018/19 of NPR 33–35 billion.

It is notable that the amounts allocated for WASH by the Government of Nepal considerably increased for FY 2020/21 even as the overall expenditure envelope for Nepal was constrained due to the crippling socio-economic impacts of the pandemic. However, the 14 per cent reversal of overall allocations in 2022/23 is a serious cause for concern in terms of sufficiency, effectiveness, and equity of impact.

FIGURE 1: WASH budget allocations from the federal tier of government, FYs 2016/17–2022/23



Source: GoN red book figures from WaterAid fact sheets – WaterAid (2017–2023)

As a share of gross domestic product, WASH allocations dropped from a high of 1.12 per cent (GDP) in 2019/20 to only 0.69 per cent of GDP in 2022/23 (Table 1). These allocations fall short of the funding needed for Nepal to achieve the water and sanitation SDG (SDG 6) of ensuring the availability and sustainable management of water and sanitation for all by 2030. The latest available estimate (MoWSS, 2018) reported a resource gap of about NPR 886 billion (USD 8 billion) for Nepal to achieve its water and sanitation SDGs.

The fall in allocations in FY 2022/23 was due to the steep fall in development partner support for WASH from NPR 16.8 billion in FY 2021/22 to NPR 10.7 billion in FY 2022/23. Note that development partner support had also substantially decreased two years previously in 2020/21

As a percentage of GDP, the amount allocated to all four of Nepal's main social sectors decreased in 2022/23 compared to the previous year (2021/22) with considerably larger decreases in the allocations to the health and WASH sectors (24%) than to social protection and education (6% and 4%) (Table 1). The allocations to the WASH sector have been decreasing since 2019/20, unlike for social protection and health, which increased from 2018/19 to 2021/22. Given the strong linkages between the sectors, this imbalance needs examining in more detail as

SDG WASH targets

SDG target 6.1:

- By 2030, achieve universal and equitable access to safe and affordable drinking water for all.
- Nepal target: 90 per cent of the population using safe drinking water

SDG target 6.2:

- By 2030, achieve access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations.
- Nepal target: 95 percent using improved sanitation facilities that are not shared.

Source: NPC 2017 and UNICEF (nd).

less funding to the WASH sector threatens Nepal's education, health, and social protection outcomes.

The decreased allocations for WASH for FY 2022/23 also marked a fall in real per capita allocations as the rate of inflation was high in FY 2022/23 at around 8 per cent (NRB 2023). In real per capita terms (USD), after accounting for inflation and exchange rate

TABLE 1: WASH allocations in comparison to allocations to other social sectors, as % GDP (2018–2022)

FY	Social Protection	Education	Health	WASH
2018/19	3.41	3.48	1.69	0.91
2019/20	3.22	4.02	1.96	1.12
2020/21	3.71	4.03	2.51	1.01
2021/22	3.91	3.71	2.92	0.91
2022/23	3.68	3.56	2.23	0.69

Source: MoF Redbook (various years), NRB (2022), and WaterAid (2023)

movements, the per capita allocations for WASH fell from a high of US\$ 12.75 in FY 2019/20 to only US\$ 10.04 in FY 2022/23 – the lowest observed since 2016/17.

Low public allocations for health inevitably result in households having to incur more out-of-pocket expenditure to access WASH services. This tends to foster inequitable outcomes based on wealth, or in the worst case scenario forces poor families to eschew basic WASH services altogether.

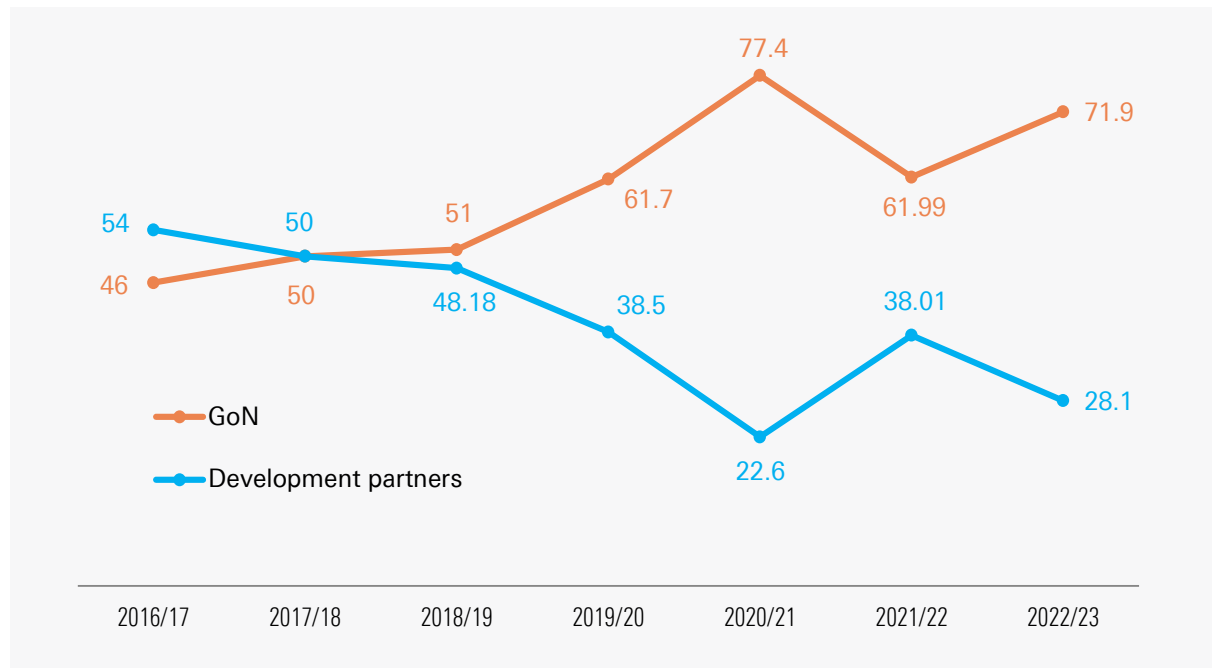
2.2 Trends in the financing of allocations

The Government of Nepal (GoN) has been the largest contributor to Nepal’s federal WASH budget since 2018/19 (Figure 2), with it providing 72 per cent of this budget in 2022/23 compared to the 28 per cent by the

development partners. The share provided by GoN stood at 77 per cent in 2020/21 (the peak year of the COVID pandemic), while it slightly decreased in the following two fiscal years.

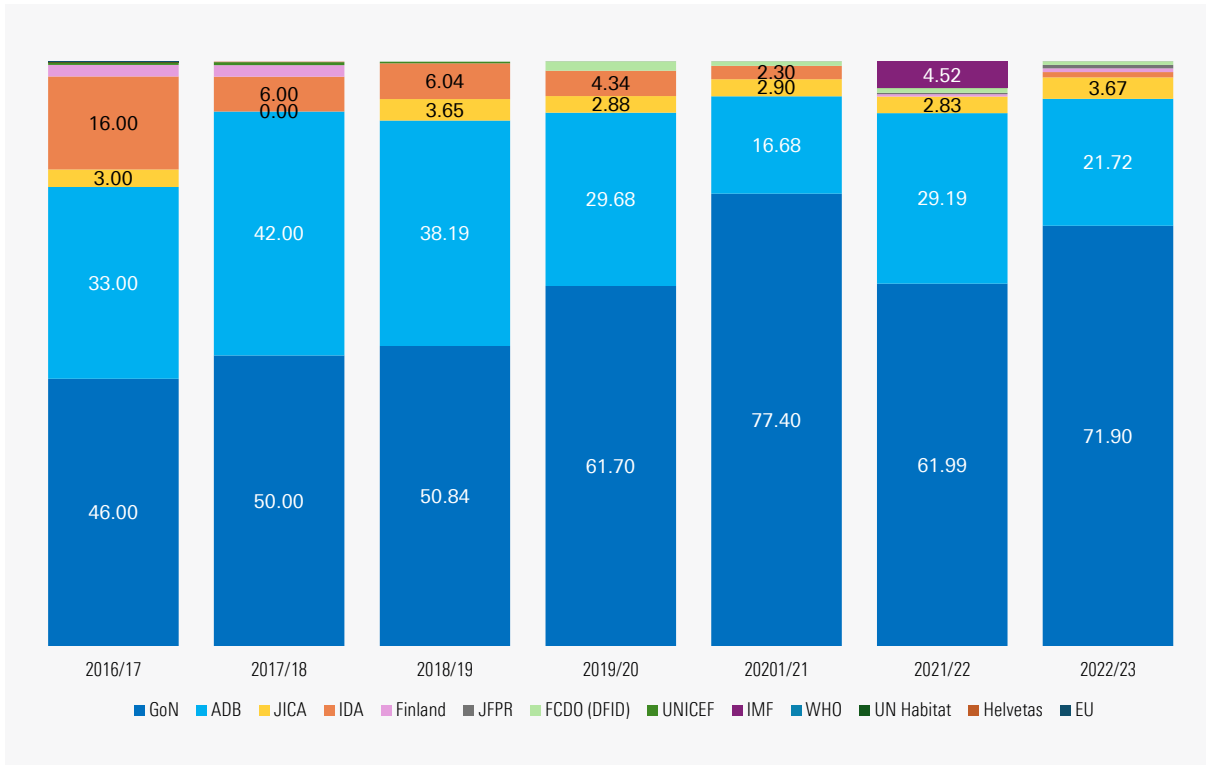
The Asian Development Bank (ADB) has been by far the largest donor among Nepal’s development partners (Figure 3) in every year since 2016/17, with its largest contribution being to the Melamchi Water Supply Project to supply water to the capital city. In percentage terms, the ADB’s contributions to the WASH allocations in this period have varied from 42 per cent of all federal WASH allocations in 2017/18 to 17 per cent in 2020/21. The generally decreasing share of the total is attributable to the Melamchi Project being almost complete. The second largest WASH donor in 2022/23 was Japan International Cooperation Assistance (JICA – 4%).

FIGURE 2: Sources of Nepal's federal-level budget allocations for WASH, 2016/17–2022/23



Source: WaterAid 2017–2023

FIGURE 3: Proportion of total federal WASH allocations by GoN and development partners, 2016/17–2022/23 (%)



Source: WaterAid 2017–2023



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3 WASH ALLOCATIONS FOR RURAL AND URBAN AREAS AND BY COMPONENT, 2020/21 TO 2022/23

3.1 Allocations to rural and urban areas

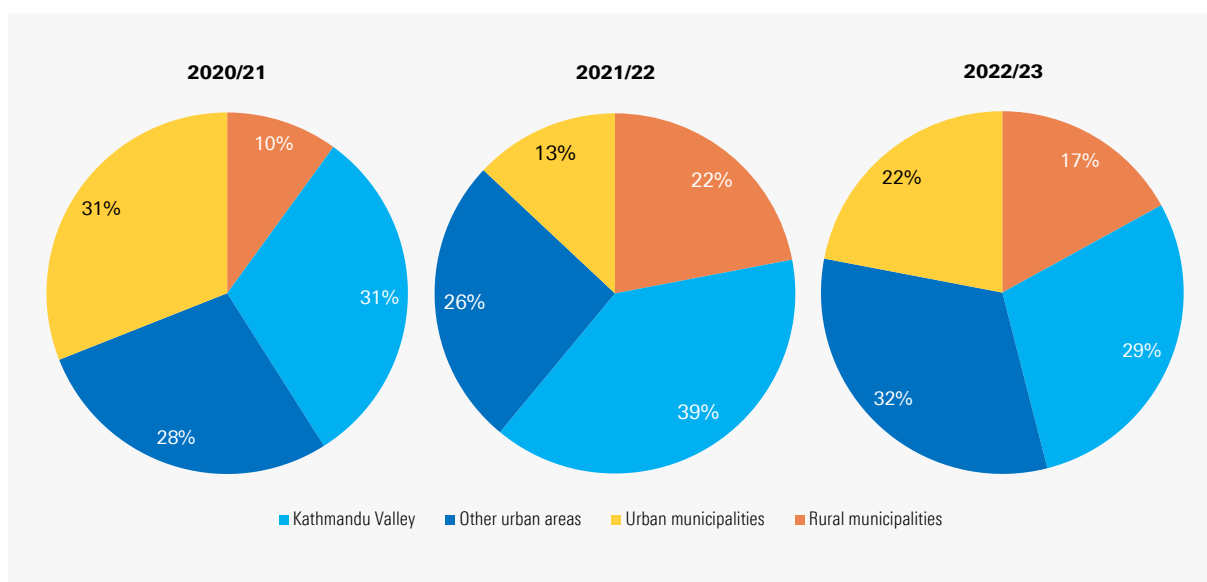
A full-fledged federal system of government was instituted in Nepal in 2018/19 with 1 federal, 7 provincial and 753 local governments. The local governments comprise 6 metropolitan cities, 11 sub-metropolitan cities, 276 urban municipalities (*nagarpalikas*) and 460 rural municipalities (*gaunpalikas*).

The WaterAid fact sheets show that in the last three years (2020/21 to 2022/23) the federal allocations for WASH have been concentrated in Nepal’s urban areas with 78 to 90 per cent of them going to the three types of urban areas:

- 29 to 39 percent to the Kathmandu Valley, which comprises the metropolitan cities and urban municipalities of the capital districts of Kathmandu, Lalitpur and Bhaktapur;
- 26 to 32 per cent to the other metropolitan and sub-metropolitan cities (Other urban areas); and
- 13 to 31 per cent to the urban municipalities (Figure 4).

Only 10 to 22 per cent of the budget was allocated to rural areas (rural municipalities). The 2021 census recorded 33.8 per cent of the population living in rural municipalities (NSO 2023). This shows that in 2022/23 83 per cent of the federal WASH budget was allocated to urban areas, although it must be recognised that large parts of urban municipalities are actually rural.

FIGURE 4: Proportion of total federal WASH allocations by GoN and development partners, 2016/17–2022/23



Source: WaterAid 2021–2023

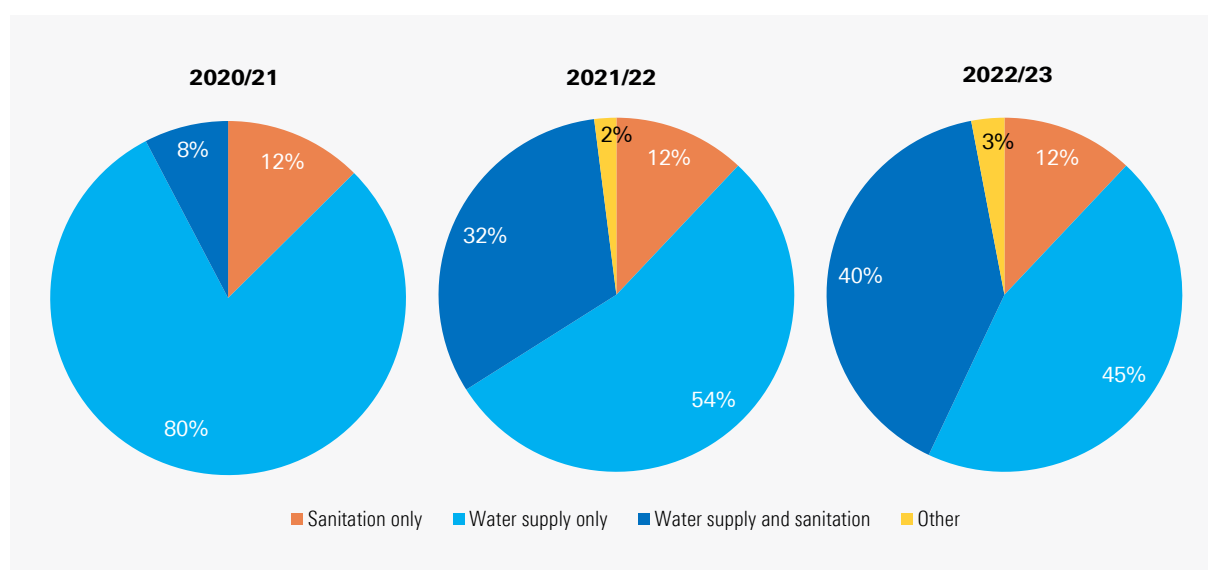
3.2 Allocations between drinking water and sanitation

The federal WASH budget is made up of funds allocated for water (i.e. drinking water supply) and sanitation with the budget classified into budgets for water supply, sanitation, water supply and sanitation, and other areas of expenditure. Note that there is no separate budget line for hygiene-related expenditure.

The Government of Nepal red book data show a five-fold increase in the proportion of the federal WASH budget allocated to integrated

water and sanitation expenditure in the three years from 8 per cent of it in 2020/21 to 40 per cent in 2022/23 (Figure 5). There was a concomitant reduction in the share of standalone water supply allocations, although such allocations still accounted for 45 per cent of WASH allocations in 2022/23. On the other hand standalone sanitation received a constant share of 12–13 per cent over the three years. The overall reduced allocation for WASH for FY 2022/23 translated into a lower allocated amount for standalone sanitation and water supply projects.

FIGURE 5: Proportions of federal WASH budget allocated to drinking water and sanitation (FY 2020/21–2022/23)



Source: WaterAid 2021–2023

4 ALLOCATIONS BY WASH BUDGET LINES, 2022/23

For budgeting purposes the government splits its WASH expenditure into large urban networks, large rural networks, large urban/rural networks, and basic rural/urban supply, with the other budget headings including administration and management and capacity building.

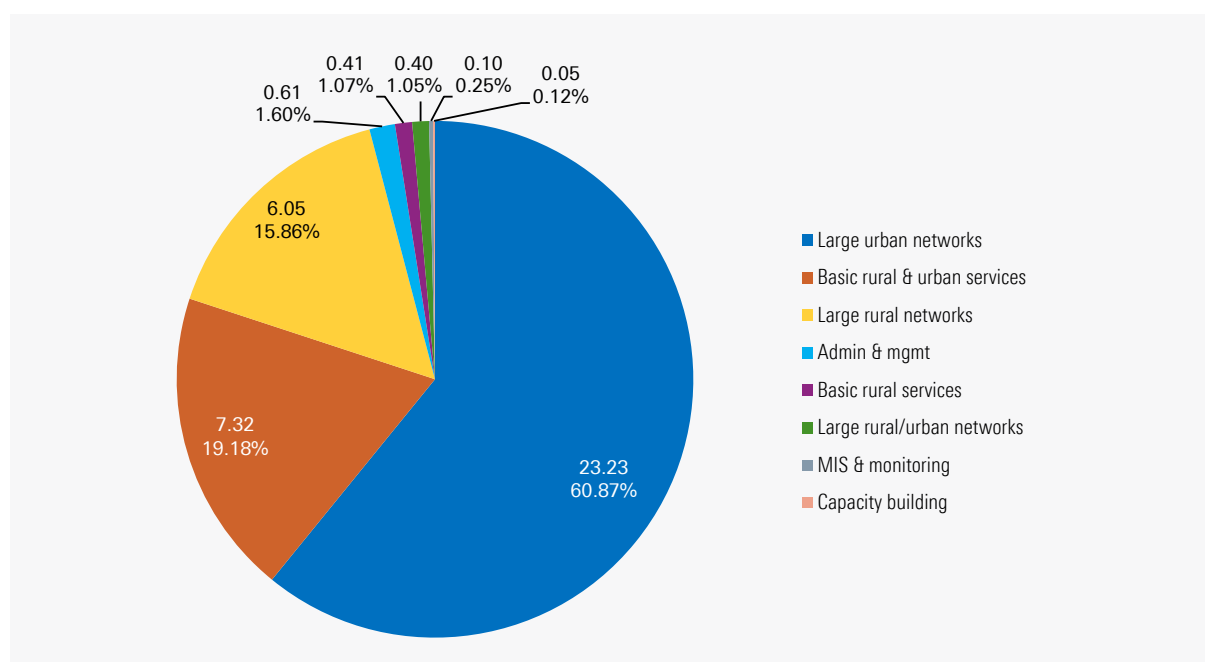
The largest share of the federal WASH budget for FY 2022/23 was for large drinking water and sanitation network projects in urban areas (NPR 23 billion, 61%), followed by federal allocations to provincial and local governments to provide basic water and sanitation services in rural and urban areas (NPR 7 billion), and large network projects in rural areas (NPR 6 billion) (Figure 6). The large network allocations in rural areas were mostly for two projects – the Climate Resilient Large Water Supply Project and the Central Drinking Water project. The large urban and rural

network projects made up 80 per cent of the total federal WASH allocations in the 2022/23 budget, which is, however, less than the 85 per cent they accounted for in the FY 2021/22 budget (WaterAid 2023 and 2022 fact sheets).

Sixteen large network WASH projects were under implementation in Nepal’s urban areas in 2022/23 (Figure 7). These projects were financed by a mix of domestic and external loans (NPR 10.7 billion), domestic resources (NPR 7.8 billion) and external grants (NPR 4.7 billion).

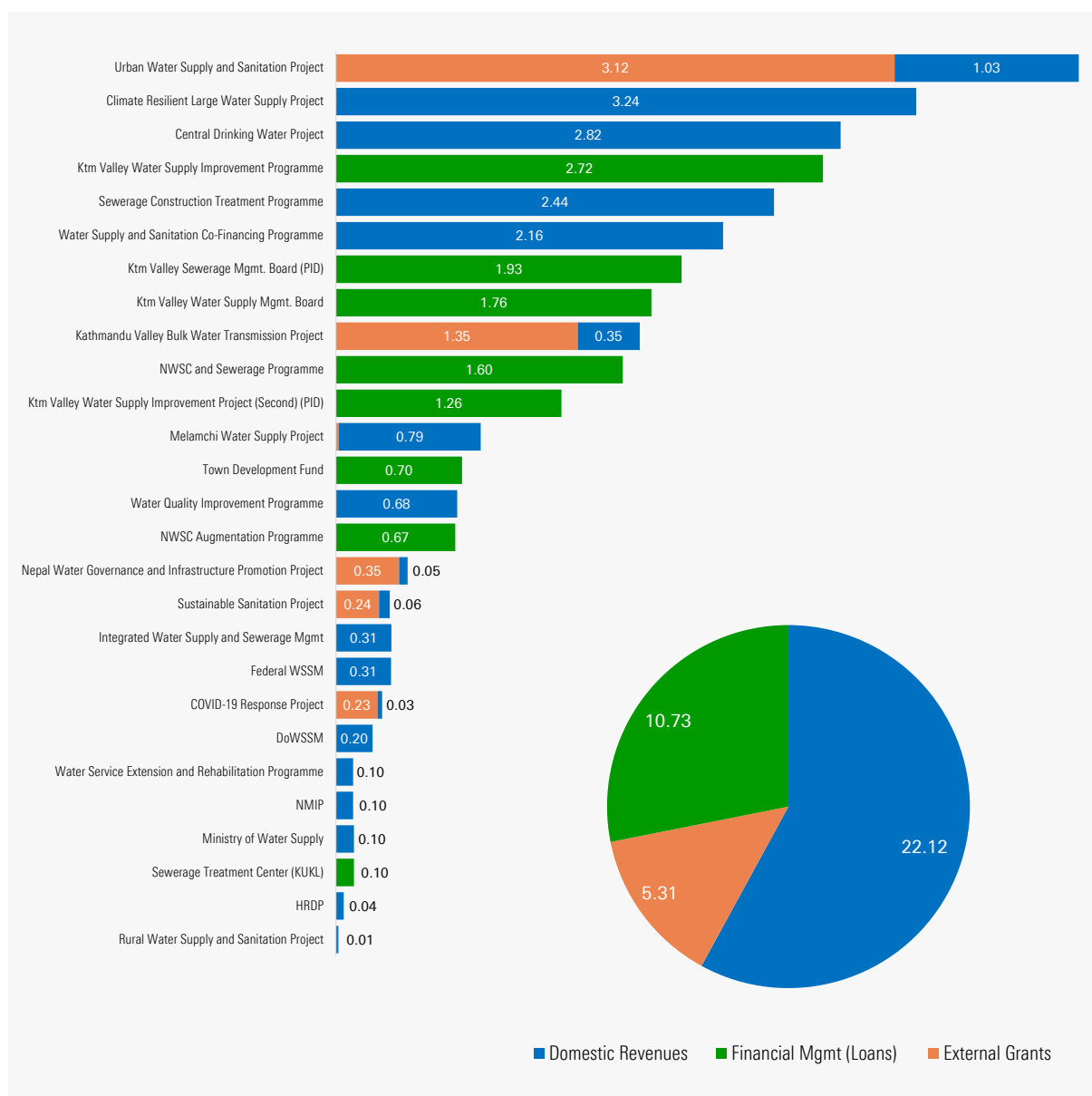
Note that two of the large WASH network projects were financed entirely through domestic revenues in 2022/23 – the Sewerage Construction Treatment Programme and the Water Supply and Sanitation Financing Programme.

FIGURE 6: Proportion of FY 2022/23 WASH budget allocated to main budget headings (NPR billion)



Source: WaterAid 2023

FIGURE 7: Amounts allocated to large WASH network projects in urban areas in FY 2022/23 (NPR billion)



Source: WaterAid 2023

5 FEDERAL WASH ALLOCATIONS TO SUB-NATIONAL GOVERNMENTS, 2022/23

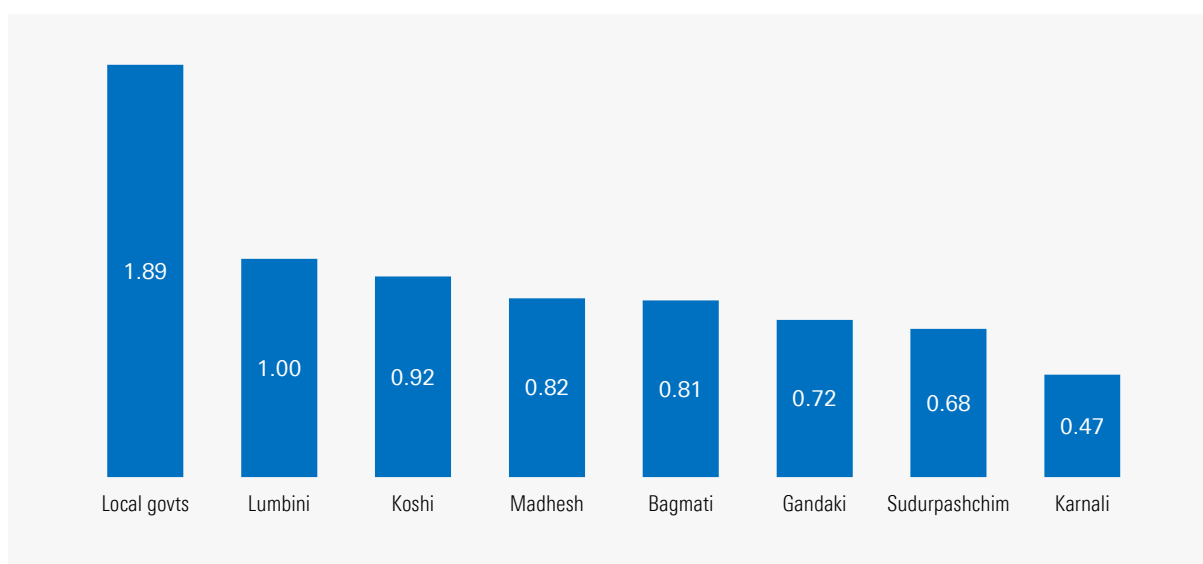
All three tiers of the government are responsible for providing WASH services in rural and urban areas. In FY 2022/23:

- 19 per cent of federal allocations for WASH (NPR 7.32 billion) went to provincial and local governments through fiscal grant transfers;
- the seven provincial governments were allocated NPR 5.43 billion (74% of these allocations or 14% of all federal WASH allocations); and
- the 753 local governments were allotted NPR 1.89 billion (26% of allocations to sub-national governments or 5% of all federal WASH allocations).

The allocations to the provincial governments ranged from NPR 1 billion to Lumbini to NPR 0.5 billion to Karnali (Figure 8).

It is not known if the allocations to sub-national governments were based on need assessments, which makes it difficult to analyse if the allocations were sufficient for them to fulfil their constitutional mandates of providing basic WASH services. However, in 2022 about 65 per cent of local government mayors surveyed by UNICEF said their WASH budget allocations were insufficient (UNICEF 2022). They also pointed to the web of challenges of the untimely release of funds, lack of awareness among households about WASH issues, problems with spending their budgets, the need for stronger community partnerships, the impacts of price increases and supply disruptions and geographic remoteness.

FIGURE 8: Federal WASH allocations to provincial and local governments in FY 2022/23 (NPR billion)



Source: WaterAid 2023

6 BUDGET UTILIZATION, 2016/17–2020/21

A major challenge to Nepal's WASH sector is that a large proportion of federal WASH allocations have remained unspent in recent years. The WaterAid fact sheets show that a large proportion has gone unused in the five recent years for which figures are available – FYs 2016/17 to 2020/21 (Figure 9). While about a fifth of the allocations went unused in 2016/17 and 2017/18; more than a half went unused in the subsequent three years (2018/19 to 2020/21) with only 37 to 49 per cent of the budgets being used (Figure 9). Although the COVID-19 pandemic may have presented problems in spending the budget in 2020/21, this is a long-standing problem of sectoral capital expenditure in Nepal'. There was a slight improvement in budget utilization from the low point of 2018/19, although more than a half of the allocations were unused in 2020/21.

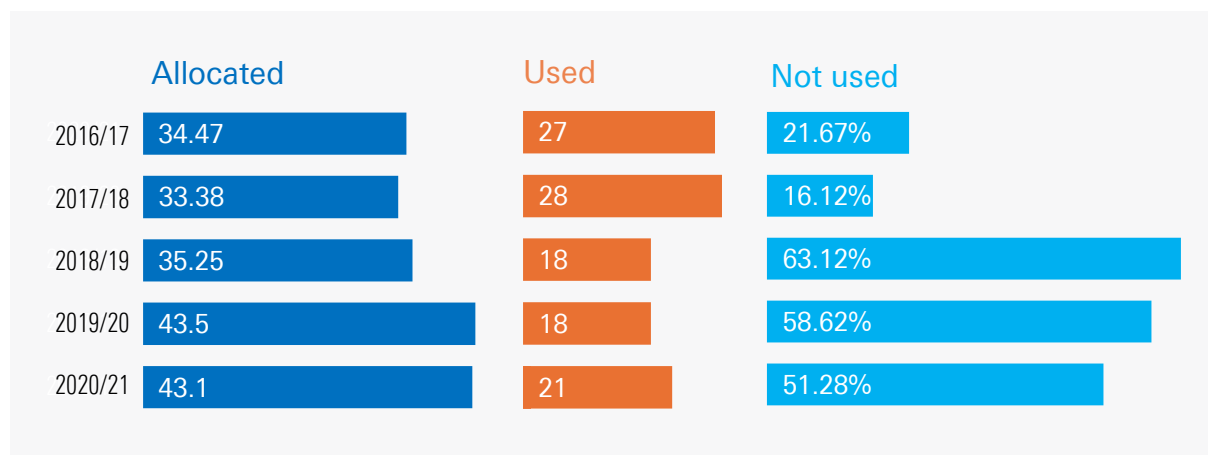
The large underutilisation of the WASH budget is a critical problem as it imposes opportunity costs as scarce allocated resources are not fully spent, and makes it difficult to argue for increased budgets to meet the SDGs. It is therefore critical to explore the reasons behind the underspending.

The WaterAid fact sheets show underspending on both capital and recurrent expenditure from FYs 2016/17 to 2020/21. Underspending was higher from development partner-funded allocations (only 46% expenditure of allocations), while expenditure from domestic sources was around 74 per cent of the allocated funds in the five years probably as a large part of this is fixed costs including staff salaries. This needs to be explored further.

As mentioned above, a disproportionate allocation of federal WASH budgets have gone to urban areas in recent years (WaterAid 2018-19 to 2022-23). At the same time, there has been a shift from standalone water supply projects to combined water supply and sanitation projects (although water supply-only projects still dominate as the transition to a federal system of governance continues).

These findings indicate the need for the Government of Nepal to strengthen expenditure tracking systems to show where the problems in budget execution are and at which level of government or programme operations underspending occurs the most.

FIGURE 9: Allocation and use of federal WASH budgets (in NPR billion), and proportion unused



Source: WaterAid 2017–2021

7 PROGRESS ON WASH IN NEPAL, 2000–2022

In spite of the generally low level of expenditure of WASH budgets, there has been good progress on increasing access to drinking water and sanitation over the past 20 years.

The analysis presented here mainly uses the service ladders of UNICEF and WHO's Joint Monitoring Programme (JMP) to map the progress made on improving access to drinking water and sanitation. The service ladders presented below are based on the findings of the periodic JMPs for Nepal, which use the most credible available sources of national data. The JMPs present annual scores for five categories for drinking water and sanitation. The JMP data is very useful to measure progress in the WASH sector including towards achieving the SDGs.

The JMP scores are supplemented in this chapter with progress-related information from the 2022 Nepal Demographic and Health Survey and the 2021 national census.

7.1 Measurements of progress on access to drinking water

What the JMP data shows

Figure 10 shows the five JMP drinking water ladders for Nepal for the 2000–2022 period with the annual scores for each of the five categories. Note that the top-most category of safely managed drinking water is the global indicator for SDG target 6.1.

The dark blue ladder shows that the provision of safely managed drinking water has reversed since 2012 (Figure 10). The percentage of households with access to safely managed drinking water increased from 27 per cent in 2000 to 30 per cent in 2012; but then declined to only 16 per cent of households in 2022. The

Definitions of the five JMP drinking water service ladders

- **Safely managed service** drinking water is from an improved source that is accessible on premises, available when needed and free from faecal and priority chemical contamination.
- **Basic service** drinking water is from an improved source (not available on premises), provided collection time is not more than 30 minutes for a round trip, including queuing.
- **Limited service** drinking water is from an improved source, for which collection time exceeds 30 minutes for a round trip, including queuing.
- **Unimproved** drinking water is from an unprotected dug well or unprotected spring.
- **Surface water** drinking water is directly from a river, dam, lake, pond, stream, canal or irrigation canal.

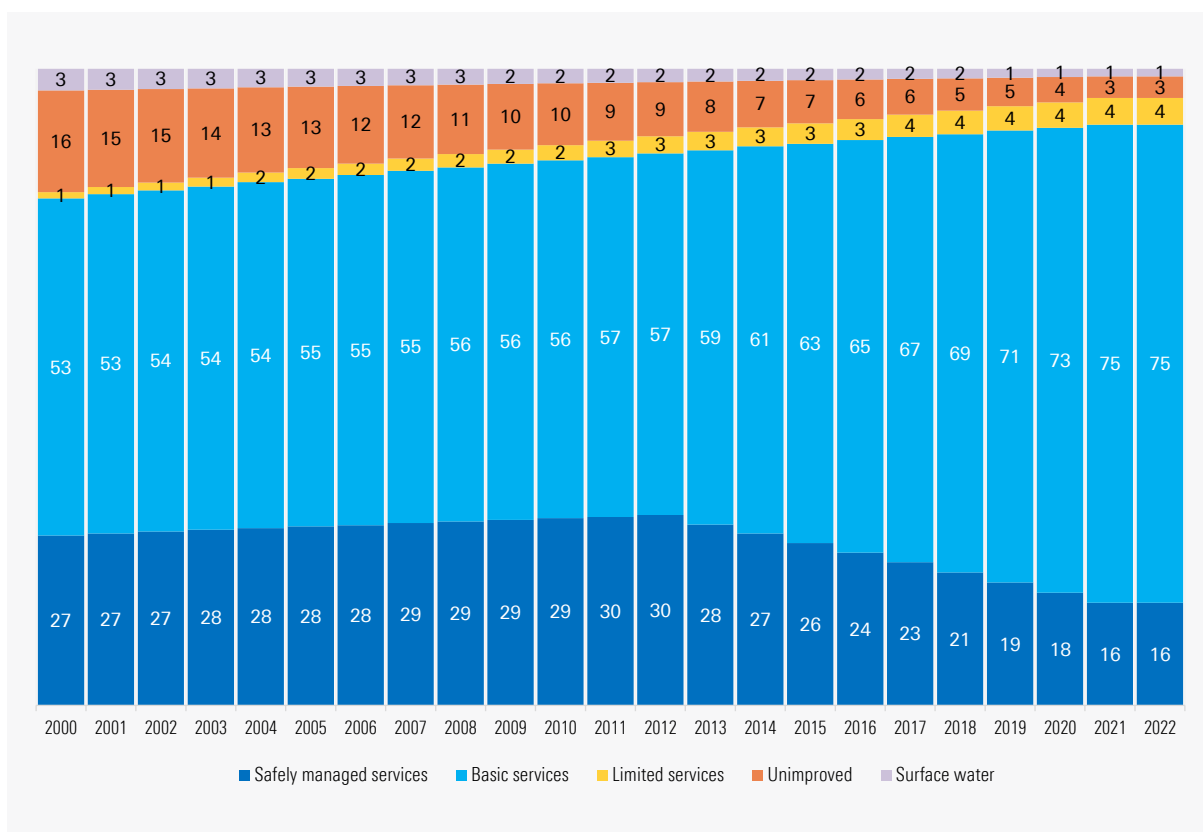
'Improved sources' are piped water, boreholes, tubewells, protected dug wells, protected springs, and rainwater, and packaged or delivered water.

Source: UNICEF and WHO (2023b) p. 12

SDG drinking water target for Nepal (target 6.1) is for 90 per cent of households to have access to safely managed drinking water by 2030. It is therefore highly unlikely that the target will be met as only 16 per cent of households had such access in 2022.

The light blue drinking water ladder for access to basic drinking water services (basic service) shows good progress with an improvement

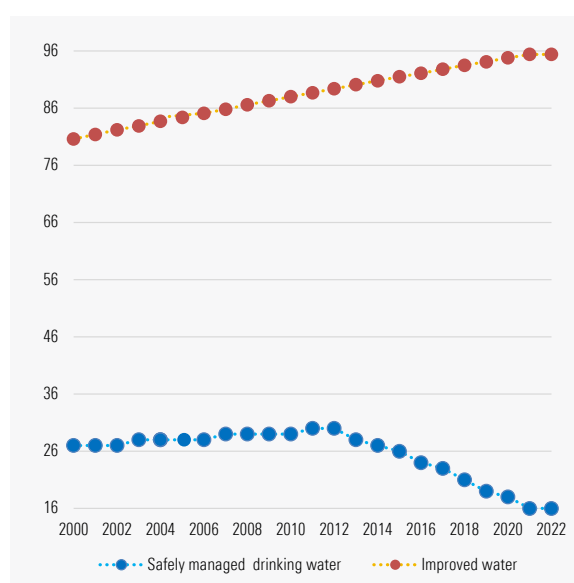
FIGURE 10: Nepal's five drinking water ladders for 2000–2022 (JMP data)



of 22 percentage points from only 53 percent of households having basic services in 2000 to 75 per cent of them in 2022. This progress needs to be maintained and accelerated for Nepal to meet the SDG target of 99 per cent of households having access to at least basic services. The strong progress on access to basic drinking water services means that the overall percentage of households with access to either safely managed or basic drinking water services has increased since the year 2000. This is reflected in the steady decline in the percentage of households with unimproved water sources or surface water (the orange and brown ladders).

So, although there has been a large increase in access to the improved sources (safely managed, basic and limited categories) there has been a decrease in access to safely managed drinking water since 2012 (Figure 11). Improving the quality of drinking

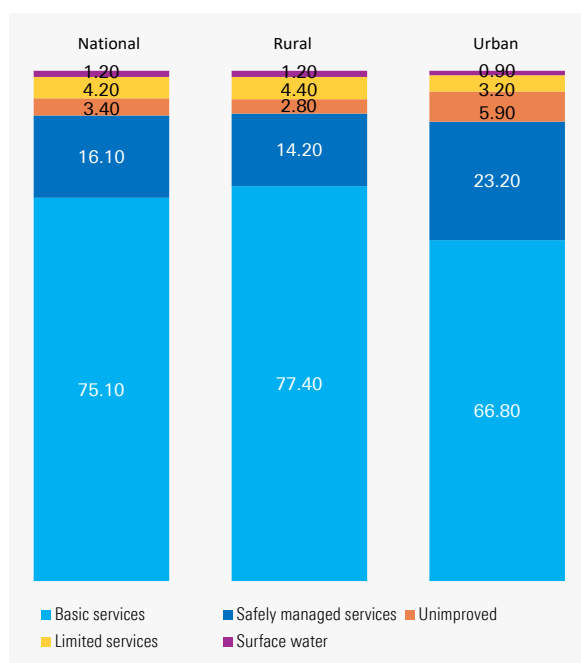
FIGURE 11: Proportion of households with access to improved drinking water (safely managed, basic and limited) and to safely managed drinking water, 2000–2021 (JMP data)



water and ensuring it is free from bacterial contamination remains a large challenge.

Some significant differences are evident from the JMP data between access to drinking water in rural and urban areas (Figure 12). The percentage of rural households with safely managed drinking water in 2022 was lower than in the urban areas (14% vs 23%), although the proportion of rural households with access to basic water services was higher in rural than urban areas (77% vs 67%). Consequently, there is no significant difference between urban and rural areas when taking these two categories together to indicate access to drinking water.

FIGURE 12: The five JMP drinking water ladders for Nepal’s rural and urban areas for 2022 (JMP data)



It is important to note the decreasing access to improved drinking water services in urban areas between 2012 and 2022 as indicated by the decline in access to ‘safely managed drinking water’:

- The percentage of urban households with access to safely managed sources of drinking water declined from 38 per cent in 2012 to only 23 per cent in 2022

– a 15 percentage points decrease. This decline was not fully compensated by an increase in urban households with basic water services, which rose by only 13 percentage points from 54 to 67 per cent.

- The percentage of rural households with access to safely managed drinking water declined from 25 per cent in 2012 to 11 per cent in 2022 – a 14 percentage points decline. This was, however, more than offset by the increase in the percentage of households in rural areas with access to basic water services, which rose by 24 percentage points from 53 per cent to 77 per cent of households.

What the NDHS and census data shows

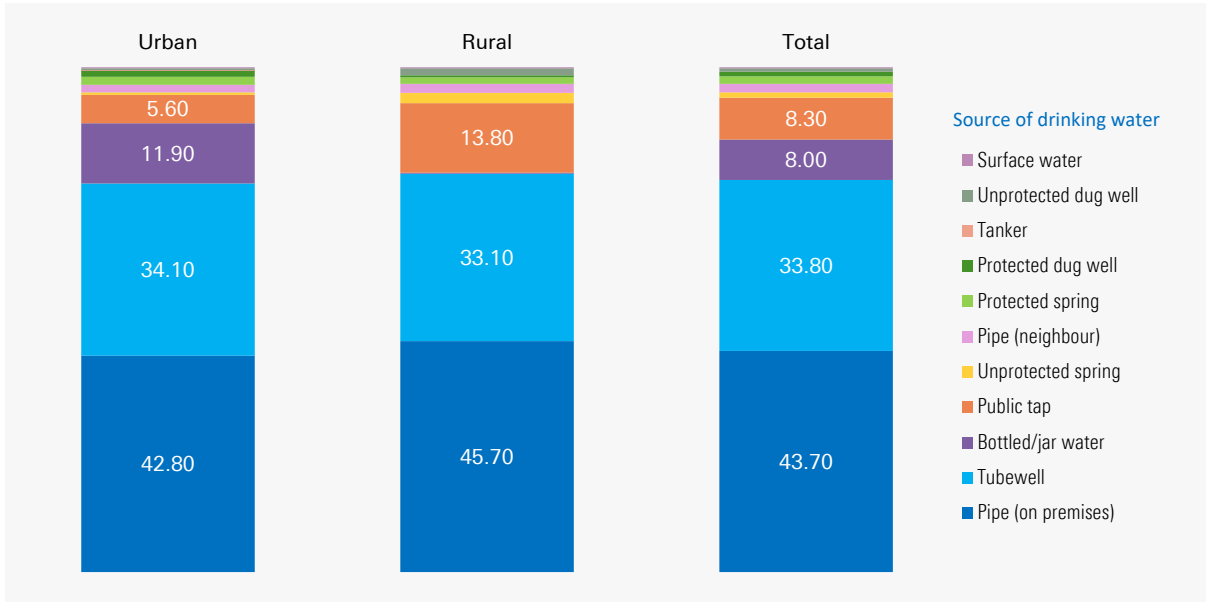
The 2022 Nepal Demographic and Health Survey (NDHS) provides a recent snapshot of the main sources of drinking water of Nepal’s households:

- 44 per cent of the surveyed households had access to piped water on their premises, with a slightly higher proportion in rural than urban areas (46% vs 43%).
- Tubewells were the second most common source of drinking water for all households (34%).
- Bottled/jar water was the third most important source of drinking water in urban areas (12%), whilst the third most important source in rural areas was public taps or spouts (13%) (Figure 13) (MoHP, New ERA and ICF 2023).

The NDHS found that 15 per cent of Nepal’s households lacked sources of drinking water ‘on their premises’, i.e. at their places of residence, with large variations by province and between urban and rural areas. More mountain households lacked sources of drinking water on their premises, especially in rural Karnali (46%).

The 2022 NDHS found that 95 per cent of surveyed households had access to piped water, tubewells or bottled water whilst 98 per cent had access to at least a basic source

FIGURE 13: Households' main sources of drinking water (2022 NDHS)



of drinking water. The challenge remains to reach the 2 per cent with unimproved or no drinking water services.

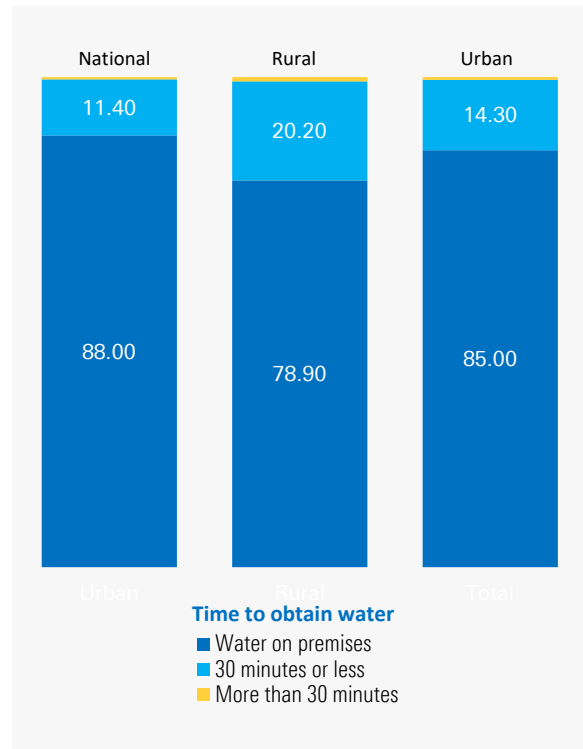
Water treatment – The 2022 NDHS also found that water treatment remains a major challenge as the majority of its households did not treat their drinking water (73%). Among those that did, the most preferred methods were ceramic or other kinds of filters (15%) and boiling it (13%).

Fetching water – A critical finding of the 2022 NDHS was that 14.5 per cent of the population did not have access to drinking water on their premises (11% of urban and 20% of rural households) (Figure 14). It found that 11 per cent of water bearers were children aged 15 years or under with most of them being girls, with more water bearers from this age group in rural than urban areas (13.2% vs 9.2%). This situation poses risks to young girls and boys when they spend up to 30 minutes a day fetching drinking water (NDHS 2022).

The NDHS found that the water carrier members of 20 per cent of rural households had to travel up to 30 minutes a day to fetch

their drinking water compared to only 11 per cent of urban respondent households. A few of the rural households had to travel more than 30 minutes to fetch their water (Figure 14).

FIGURE 14: Time taken by households each day to fetch drinking water (2022 NDHS)



Access on premises – The 2022 NDHS found large differences in access to drinking water on premises between provinces, rural and urban areas, geographic zone, and household wealth quintiles (Figure 15):

- Amongst all the categories, the households in rural Karnali had the least access to drinking water on their premises (46% lacked access) with Karnali as a whole and Sudurpashchim’s rural areas being the second most deprived areas (34% without access).
- Many households lacked drinking water on their premises comprising more than a fifth of rural respondent households in Madhesh and Gandaki, 20 per cent of all rural respondent households, 30 percent of respondent households in

the mountains, and 11 per cent of Terai households.

- 32 per cent of households in the lowest wealth quintile (W1) lacked access to drinking water on their premises compared to only 4 per cent of the top wealth quintile households (W5).

These data suggest that many children are still being exposed to risks related to lack of access to improved drinking water that puts their health at risk. Notably, nearly 40 per cent of the population of Karnali are children (under 18s), with 34 per cent of the total population lacking drinking water on their premises. Similarly, in rural Madhesh, where large numbers of children reside, more than a fifth of households lack access to drinking water on their premises.

FIGURE 15: Proportion of households without access to drinking water on their premises (2022 NDHS)

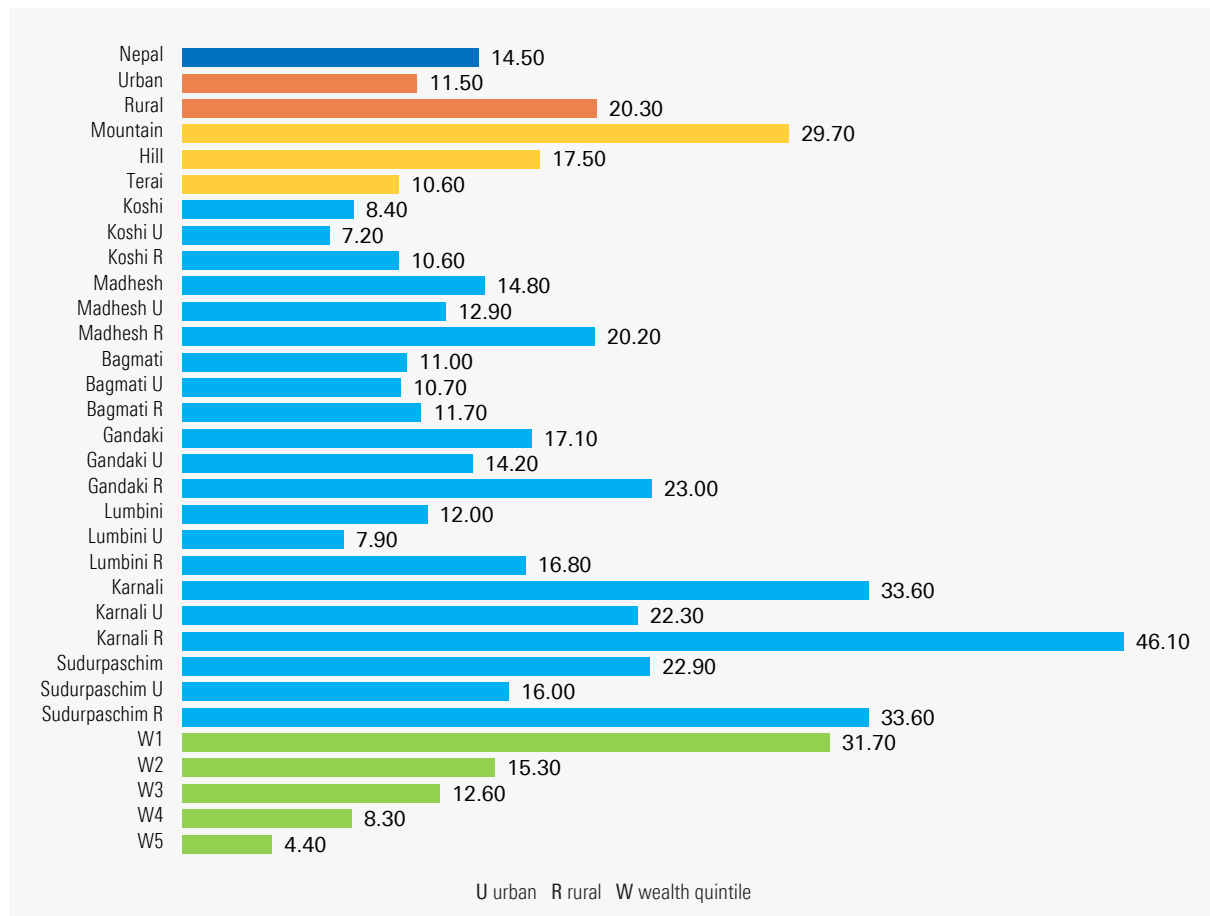
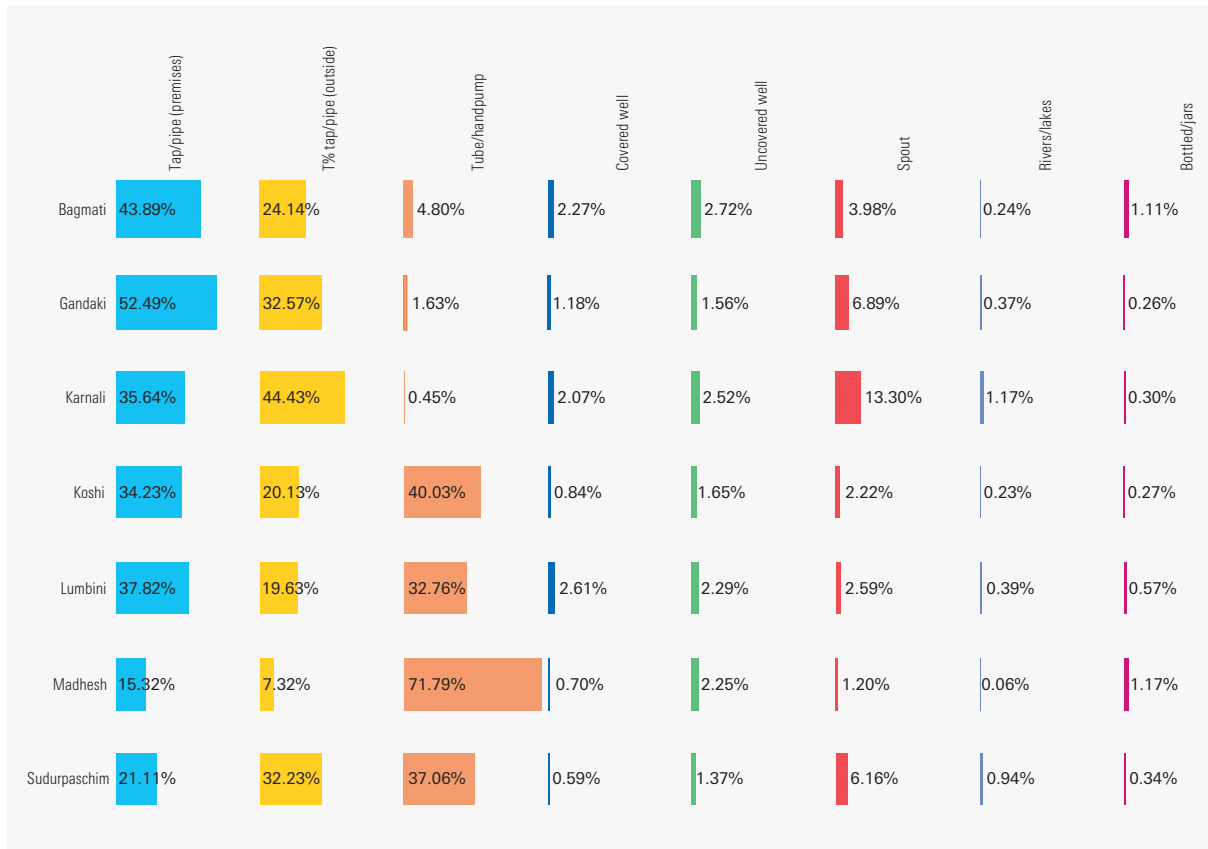


FIGURE 16: Households' main sources of drinking water, by provinces (2021 Nepal census)



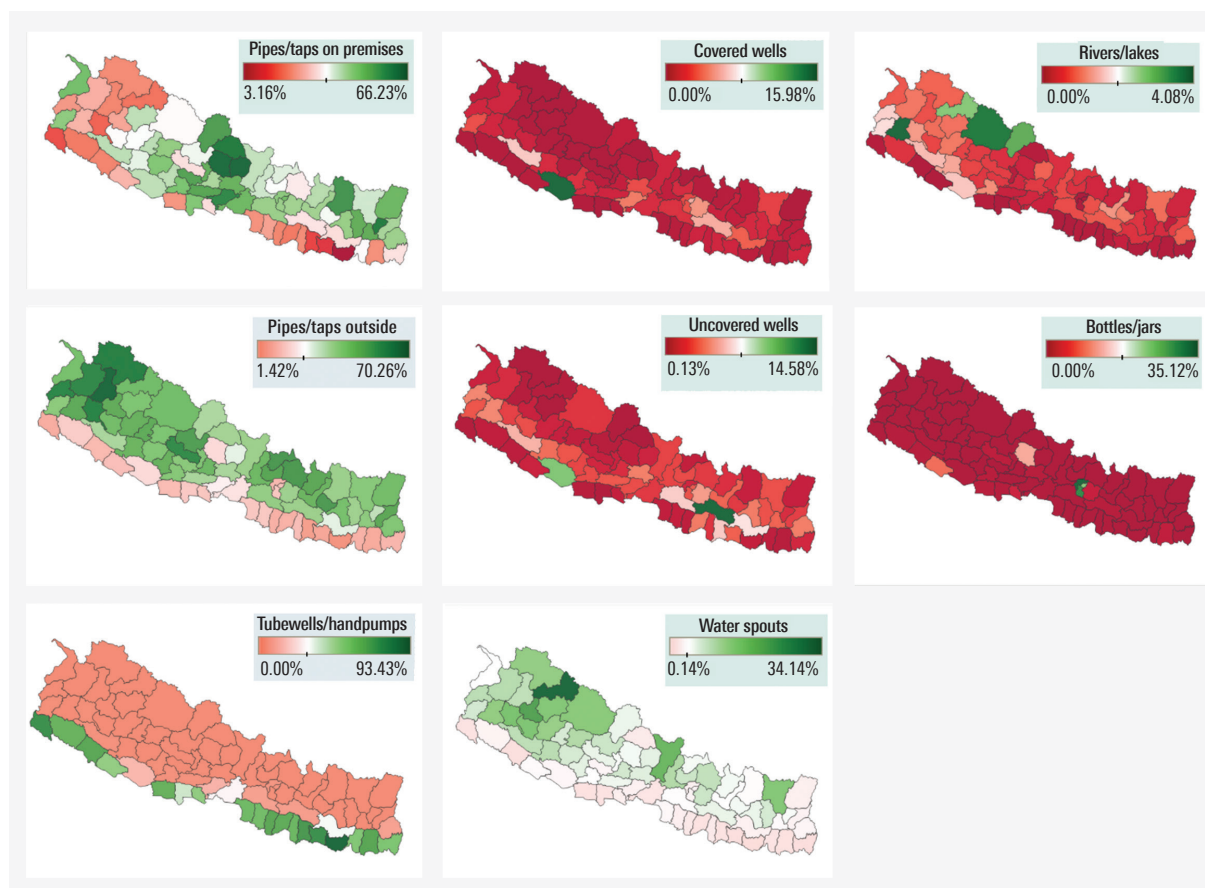
Nepal's 2021 census (NSO 2023) also collected data on households' main sources of drinking water. It found that almost 35 per cent of all enumerated households had access to piped water on their premises while another 22 per cent had access to piped water outside their premises. Tubewells or hand pumps were the main source of drinking water for 30 per cent of households while another 13 per cent relied on jar or bottled water (5%), public spouts (4%), uncovered wells (2%), covered wells (1.5%), and surface water (0.5%).

The results varied greatly by province and district (Figure 16). The main sources of drinking water in Madhesh were tubewells or hand pumps while in the other provinces the main sources were tubewells and piped water either in their own premises or neighbours' premises.

The 2021 census data shows that the variations in households' main sources of drinking water are even more pronounced across Nepal's 77 districts (Figure 17):

- Nepal's western and Madhesh province districts had the least access to piped or tap water on their premises.
- The Terai districts along the southern belt were most likely to have tubewells or hand pumps as their main sources of drinking water.
- The three Kathmandu Valley districts of Kathmandu, Lalitpur and Bhaktapur relied the most on jar and bottled water.
- Dang district in Lumbini had the highest percentage of households using covered and uncovered wells as their main sources of drinking water (26%).

FIGURE 17: Proportion of households' main sources of drinking water, by districts (2021 Nepal census)



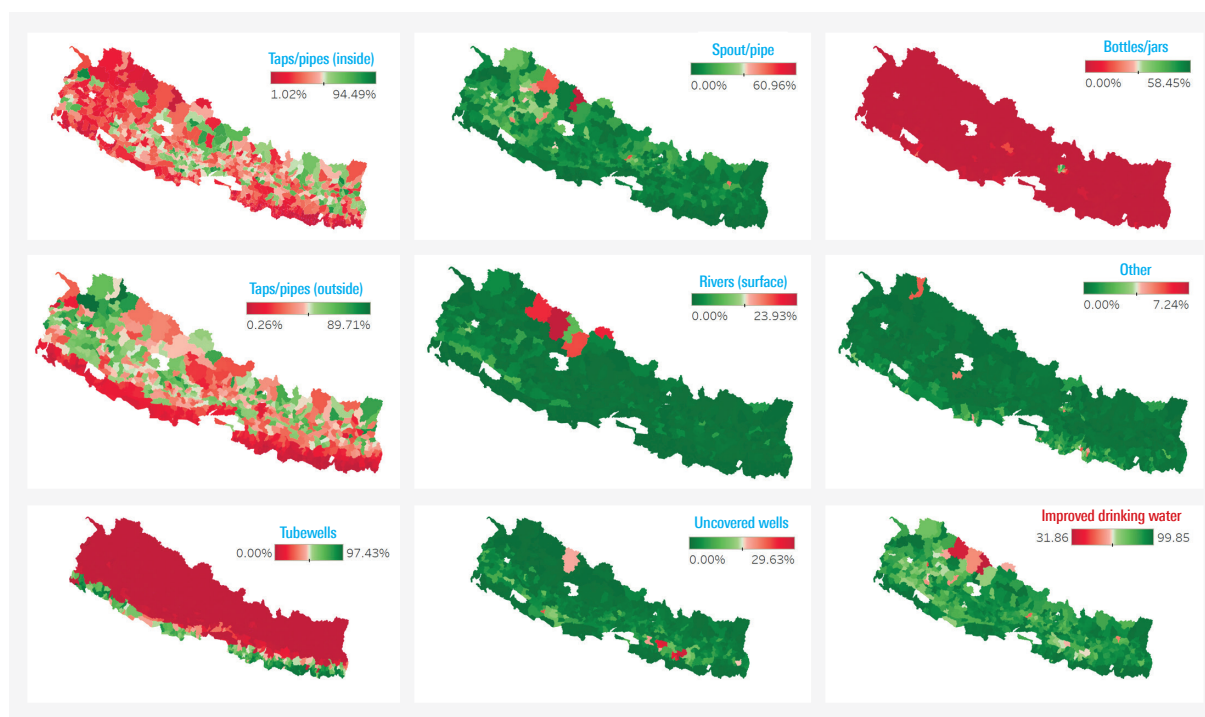
The 2021 census also found the following:

- The western mountain and hill districts were most likely to be using waterspouts or tap-piped water outside their premises.
- Mustang in Gandaki (3%), Dolpa (4%) and Mugu (3%) in Karnali, and Doti (4%) in Sudurpashchim were most likely to source their drinking water from rivers and lakes.

Note that the colouring of the maps in this and the following chapter ranges from a value of 100 per cent occurrence for dark green to no occurrence for maroon across the spectrum.

The patterns revealed by mapping the 2021 census data on the main source of drinking water of Nepal's 753 local governments amplify the patterns in the district level data. The maps in Figure 18 show that the households in the local governments in the Terai rely heavily on tubewells and handpumps while local governments with taps inside or outside are more widespread across the middle and northern areas of Nepal. Two local governments in Karnali – Mugum Karmarong rural municipality in Mugu and Dolpa Buddha rural municipality in Dolpa were the local governments with the lowest percentage of households with access to improved sources of drinking water.

FIGURE 18: Proportion of households' main sources of drinking water, by local governments (2021 Nepal census)



7.2 Measurements of progress and equity on access to sanitation

What the JMP data shows

Figure 19 shows the five JMP sanitation ladders for Nepal for the 2000–2022 period with the annual scores for each of the five categories. The categories range from safely managed sanitation to open defecation.

All five JMP datasets indicate large improvements in access to sanitation in Nepal in the 2000–2022 period (Figure 19). The percentage of households defecating in the open declined from 69 per cent in 2000 to only 7 per cent in 2022, while the proportion relying on unimproved sanitation declined from 6 per cent to 2 per cent in the same period. Reaching the 9 per cent of households that still lack access to toilets and use unimproved sanitation is critical to achieving the SDG sanitation target (target 6.2).

The JMP data (UNICEF and WHO 2023a) shows a large improvement in the proportion of households using improved sanitation, with the proportion using safely managed sanitation increasing from only 9 per cent in 2000 to 51 per cent in 2022; the proportion using basic sanitation increasing from 5 per cent in 2000 to 30 per cent in 2022; and the proportion using limited facilities at between 10 and 15 per cent (Figure 19). This data shows consistent progress on access to improved sanitation with the proportion of households in the top three access categories increasing from only 25 per cent in 2000 to 91 per cent of households in 2020.

The SDG targets related to sanitation requires 99 per cent of households to be using basic sanitation facilities and 95 per cent to be using improved sanitation facilities that are not shared (NPC 2017). This target should be achieved given the good rate of improvement since the year 2000 shown by the JMP data with 81 per cent of Nepal's households having

Definitions of the JMP sanitation service ladders

- **Safely managed sanitation** uses improved sanitation facilities that are not shared with other households and where excreta are safely disposed in situ or removed and treated off-site.
- **Basic sanitation** uses improved sanitation facilities that are not shared with other households.
- **Limited sanitation** uses improved sanitation facilities that are shared with other households.
- **Unimproved sanitation** uses pit latrines without slabs or platforms, hanging latrines or bucket latrines.
- **Open defecation** disposes human faeces in fields, forests, bushes, or other open places, or with solid waste.
- **Improved sanitation** facilities include flush/pour flush toilets connected to piped sewer systems, septic tanks or pit latrines; pit latrines with slabs; and composting toilets.

Source: UNICEF and WHO (2023b) p. 36

access to improved unshared sanitation facilities (51% + 30%). But there needs to be a clear roadmap with specific targets and performance indicators that identifies sources of additional funding to enable the reaching of the sanitation SDG targets.

The JMP data for 2000 to 2022 shows differences in access to sanitation facilities between rural and urban areas and by province, ecological zone, and household wealth quintile:

- The proportion of urban households with no toilet facilities (open defecation) has reduced from 20 to 4 per cent while the proportion in rural areas has reduced from 77 to 8 per cent (Figure 20).
- The proportion of households with safely managed sanitation facilities in 2022 was higher in rural than urban areas (52% vs 42%) indicating the higher rate of progress in rural areas.
- More urban households had access to improved sanitation in 2022 with 97 per cent having safely managed, basic or limited sanitation compared to the 84 per cent in rural areas.

FIGURE 19: Nepal's five sanitation ladders for 2000–2022 (JMP data)

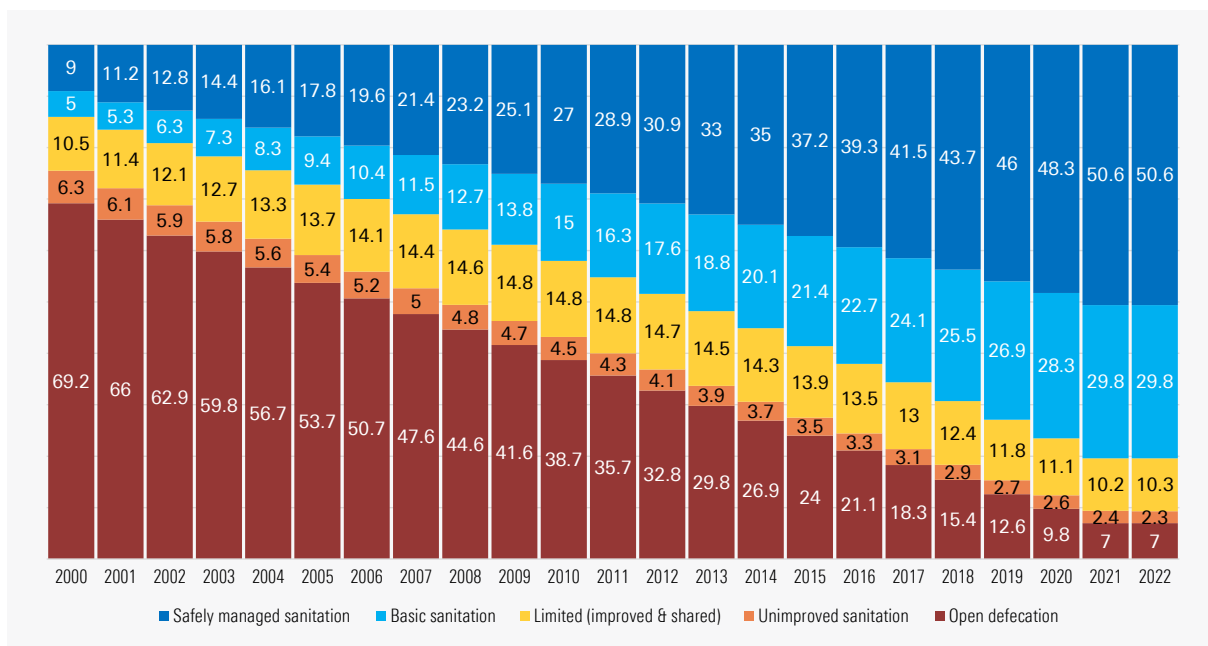
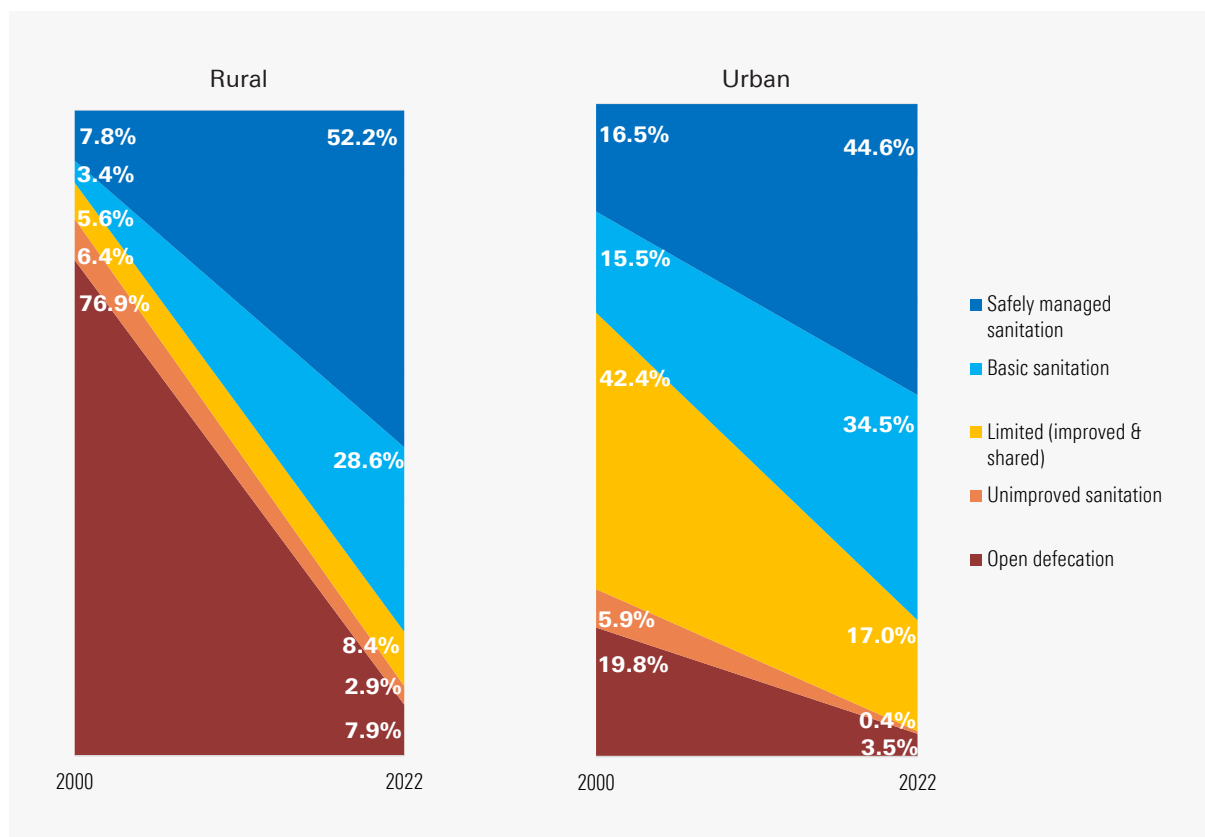


FIGURE 20: The status of the five JMP sanitation ladders in urban and rural areas in 2000 and 2022 (JMP data)



This shows that the proportion of households with safely managed sanitation in 2022 was higher in rural areas while more urban than rural households had access to basic and limited services (52% vs 37%). Despite the progress, the continued prevalence of open defecation and the use of unimproved sanitation facilities remain issues of concern.

The urban-rural differences are compounded by inequities in access to sanitation based on household wealth (Table 2).³ In the year 2000, almost all the households in the bottom two wealth quintiles (95% poorest, 94% poor) practised open defecation compared to only 15 per cent in the richest quintile. In comparison, 80 per cent of households in the

richest quintile had at least limited sanitation facilities compared to none of the poorest and poor households.

The data for 2020 shows large improvements among the households in the two lowest wealth quintiles although 13 per cent of them still rely on open defecation. It is notable that the open defecation rates are highest in rural areas for households from the middle and rich wealth quintiles (15% and 12%) while it is highest in urban areas for households in the poorest wealth quintile (11%). In 2020, almost no top wealth quintile households relied on unimproved sanitation facilities or defecating in the open.

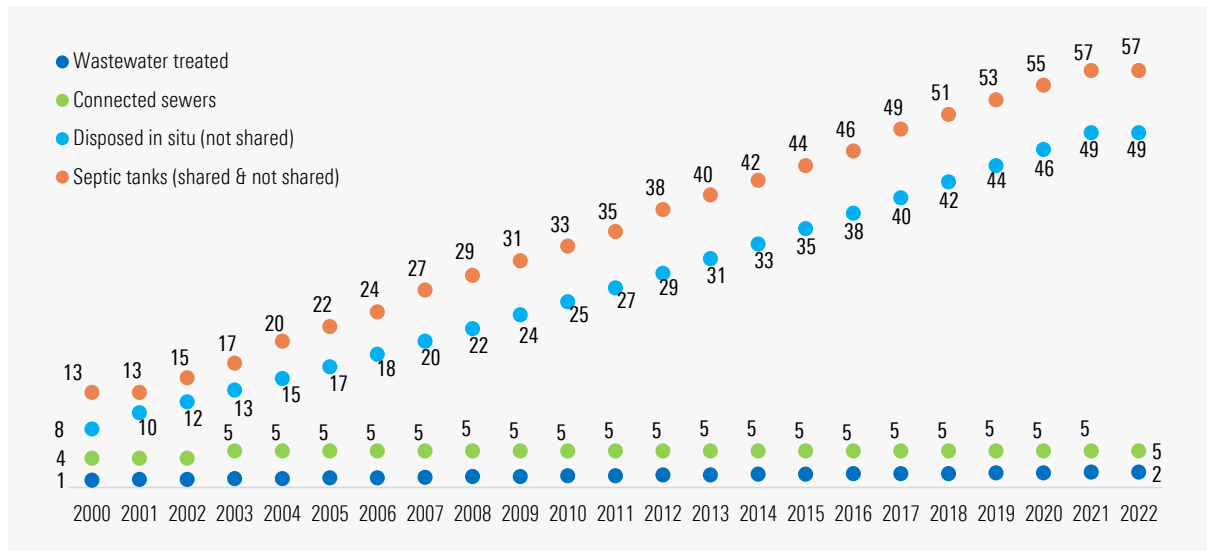
³ Note that the most recent JMP data for inequities in access to WASH have only been updated to 2020.

TABLE 2: Access to sanitation facilities by wealth quintile, in 2000 and 2020, Nepal (% households) (JMP data)

Geography	Quintile	2000					2020				
		At least basic sanitation	Limited sanitation	Unimproved sanitation	Open defecation	At least basic sanitation	Limited sanitation	Unimproved sanitation	Open defecation		
National	Poorest	0.00	0.00	4.92	95.08	82.32	11.79	2.32	3.56		
	Poor	0.00	0.00	5.89	94.11	74.23	13.61	2.95	9.21		
	Middle	9.99	3.07	14.12	72.83	72.58	20.08	0.00	7.34		
	Rich	16.20	5.30	13.69	64.81	75.33	24.67	0.00	0.00		
	Richest	58.26	21.38	5.73	14.63	73.16	26.84	0.00	0.00		
Rural	Poorest	0.00	0.00	4.07	95.93	84.25	11.29	2.46	2.00		
	Poor	0.00	0.00	3.50	96.50	80.61	13.06	3.34	2.99		
	Middle	4.63	0.96	12.01	82.42	70.02	14.57	0.37	15.04		
	Rich	7.44	1.52	1 1.95	79.10	73.15	14.89	0.00	1 1.96		
	Richest	44.55	10.60	12.31	32.54	80.78	19.22	0.00	0.00		
Urban	Poorest	17.35	5.71	13.24	63.70	66.47	21.86	0.30	1 1.38		
	Poor	48.03	21.95	12.27	17.75	61.90	28.29	0.00	9.82		
	Middle	56.52	36.56	4.29	2.64	59.35	38.40	0.1 1	2.15		
	Rich	58.68	36.61	4.35	0.35	61.16	38.16	0.11	0.57		
	Richest	85.52	14.22	0.26	0.00	85.35	14.19	0.42	0.05		

Note: At least basic sanitation = safely managed and basic sanitation

FIGURE 21: Disposal of sanitation waste by households, Nepal, 2000-2020 (JMP data)



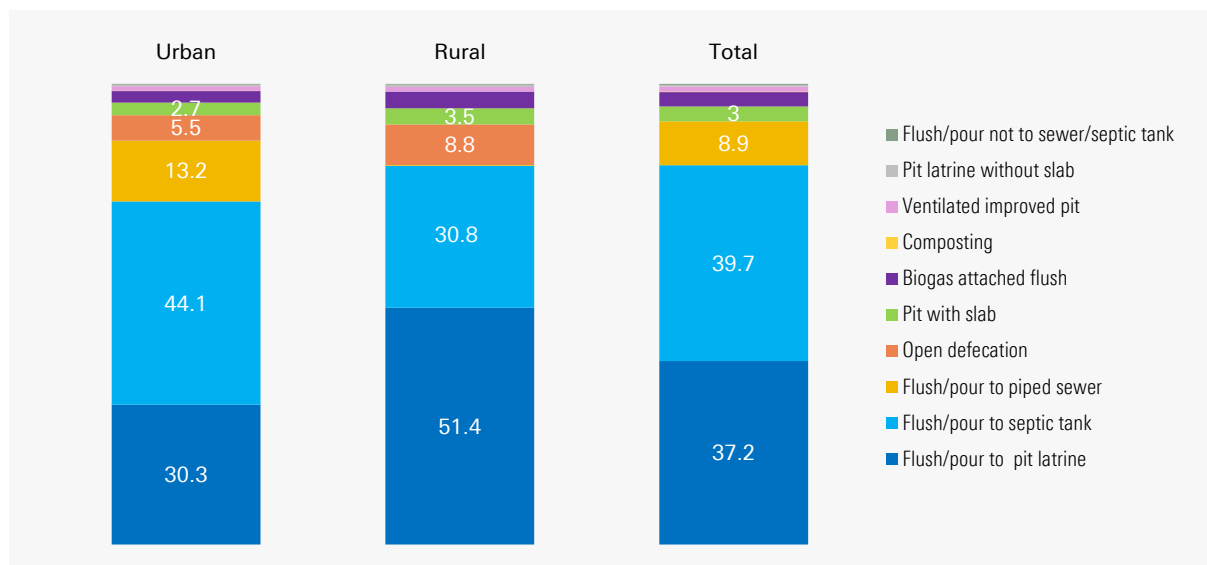
The JMP sanitation data shows improvements in the disposal of waste from sanitation facilities.

In situ disposal (excreta stored in pit latrines, septic tanks, or composting toilets) has increased from only 8 per cent of households in 2000 to 49 per cent of them in 2022 (Figure 21). However, disposal to sewers and the treatment of wastewater remained stagnant.

What the NDHS and census data shows

The 2022 NDHS found that the most common sanitation facilities were flush/pour into septic tanks (37%) and flush/pour to pit latrines (40%) while none of the rural households had flush/pour to sewerage systems (Figure 22). It also found that 6.6 per cent of its households had no toilet facilities and so were defecating in the open. The 2021 census similarly reported that 5 per cent of all households did not have toilets (NSO 2023).

FIGURE 22: Types of sanitation facilities in Nepal’s households (%) (2022 NDHS)



The 2022 NDHS data also shows considerable inequity in access to sanitation facilities (Figure 23). The most concerning situation is that 18.4 per cent of Madhesh province households were defecating in the open, which is more than twice the national average of 6.6 per cent. And even in rural Bagmati, nearly 1 in 10 households were defecating in the open. By ecological zone, 10.4 per cent of Terai households practised open defecation compared to only 2.8 per cent of hill households. The NDHS also found that more than 15 per cent of surveyed households in the poorest wealth quintile households (W1) defecated in the open compared to only 0.1 per cent of households from the highest wealth quintile (W5).

It is concerning that open defecation is still being practised in Nepal. Equally critical is that many children live in the lowest quintile households, which have the highest rates of open defecation and the concomitant personal and health risks.

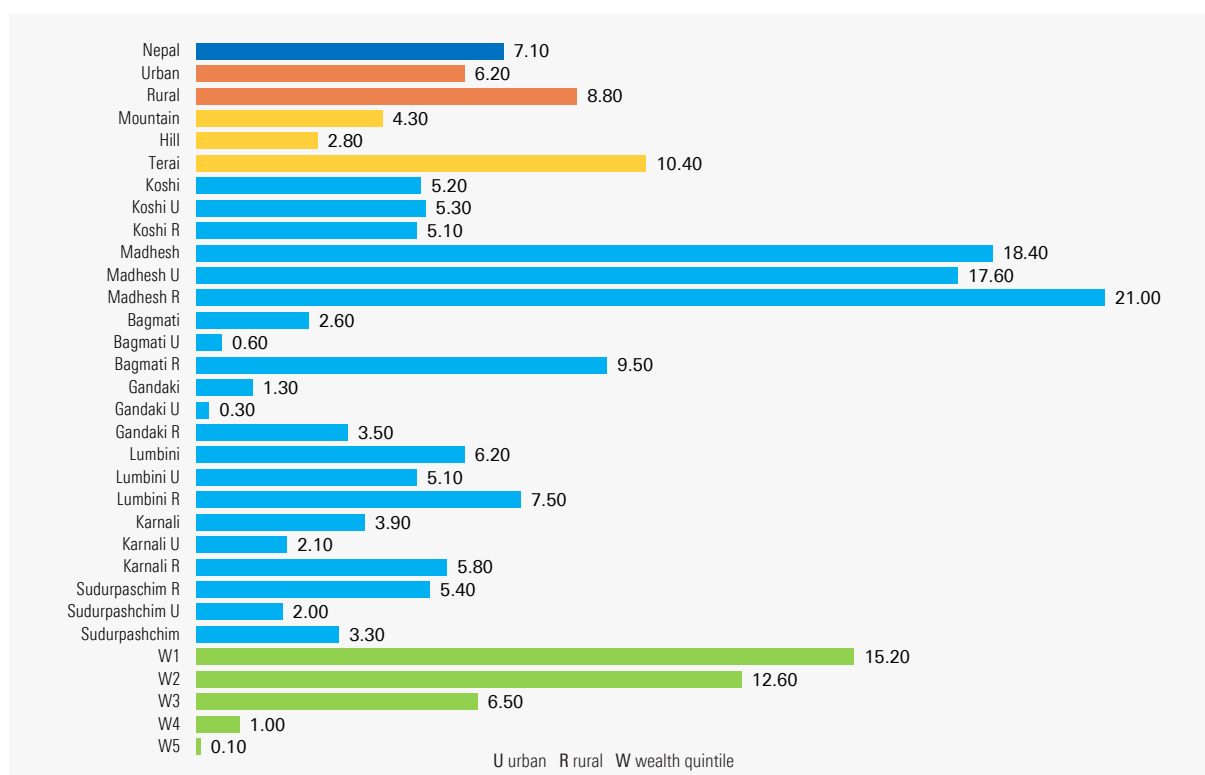
The 2022 NDHS data highlights the critical issue of the removal of waste from households with in-situ sanitation facilities (excreta stored in pit latrines, septic tanks, or composting toilets).

Overall, 80 per cent of the population with improved on-site sanitation facilities that were not connected to a sewer system safely disposed of their excreta in situ. A further 16 per cent of the population with on-site sanitation facilities had their excreta removed for treatment, while 4 per cent had their excreta disposed of unsafely.

The breakdown of the situation of waste removal in the 2022 NDHS data is that:

- 79 per cent of rural households with on-site facilities reported that the waste was never emptied compared to 71 per cent of such urban households;
- almost 90 per cent of mountain and hill households reported that their waste was never emptied;

FIGURE 23: Proportion of households practising open defecation, Nepal (2022 NDHS)



**TABLE 3: The disposal of toilet/latrine waste by Nepal's households
(2021 census, no. households)**

Provinces	Flush toilets (public sewerage)	Flush toilets (septic tank)	Pit latrines	Public toilets	Without toilet facilities	Totals
Koshi	26,542	726,577	394,698	5,362	37,576	1,190,755
Madhesh	31,159	414,032	561,660	10,322	139,210	1,156,383
Bagmati	512,026	777,874	253,515	5,031	19,471	1,567,917
Gandaki	18,456	501,855	132,898	2,131	6,292	661,632
Lumbini	45,867	668,730	357,955	4,763	64,030	1,141,345
Karnali	8,149	220,226	126,779	1,287	9,596	366,037
Sudurpashchim	11,511	358,486	177,975	3,485	25,315	576,772
Total	653,710	3,667,780	2,005,480	32,381	301,490	6,660,841

- Gandaki and Karnali provinces and the lowest wealth quintile had the highest percentages of households with on-site facilities who reported that the waste had never been emptied from their sanitation facilities.

The 2021 census also collected data on household sanitation facilities. Ten per cent of enumerated households had flush toilets connected to public sewerage systems (Table 3), mainly in the urban areas of the Kathmandu Valley (NSO 2023). Another 55 per cent of the households had flush toilets that empty to septic tanks, which is the most common type of sanitation facility in Nepal. Approximately 30 per cent used pit latrines. The rest of the households either used public toilets (0.5%) or did not have toilet facilities (4.5%).

Unfortunately, the 2021 census data is not classified to match and calculate JMP service ladders as it lacks information on the sharing of toilets, does not distinguish between improved and unimproved pit latrines, and does not have information on the extent of open defecation.

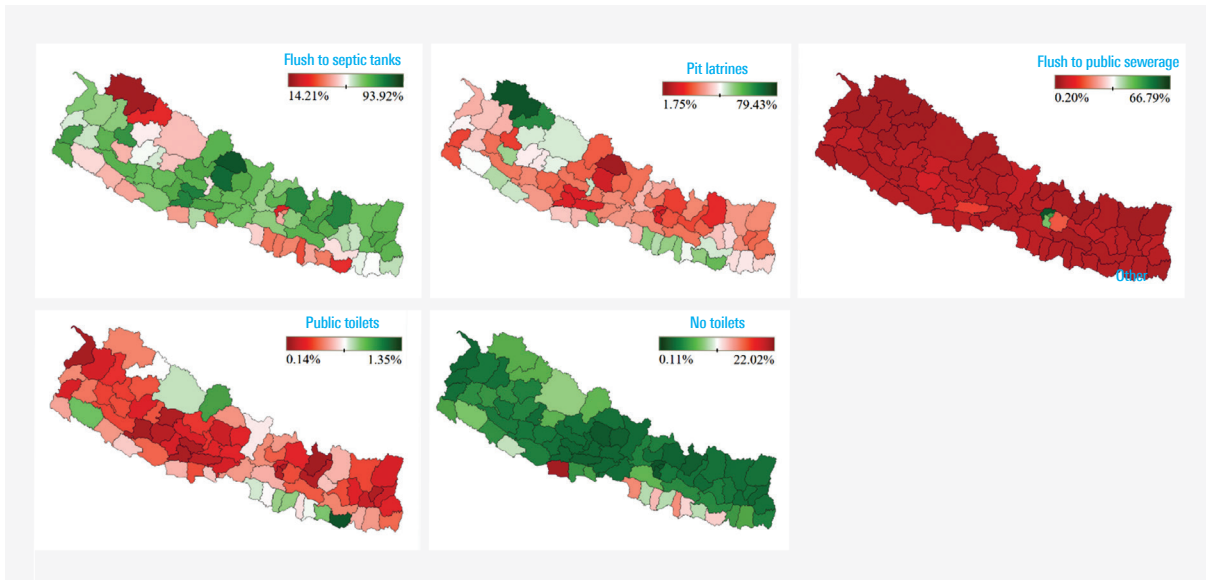
The challenge remains to extend sanitation services to the 4–5 per cent of the population who lack toilets or use public toilets.

The 2021 census data shows strong geospatial patterns for sanitation facilities across Nepal's 77 districts. The proportion of households with flush toilets connected to public sewerage was highest in the capital districts of Kathmandu and Lalitpur and negligible in the rest of the country (Figure 24). The data shows that households in districts in Madhesh and Lumbini provinces, and in the mountain areas of Karnali are the most likely to have been using pit latrines while the Madhesh households were the least likely to have flush toilets connected to septic tanks and the most likely to be using public toilet facilities. Subsequently, the proportion of households using public toilet facilities was highest in most districts in Madhesh and in some Karnali and Sudurpashchim districts.

Saptari district in Madhesh (1.35%), Dang in Gandaki (1.11%), and Kailali in Sudurpaschim (0.99%) were the districts with the highest level of reliance on public toilets. The percentage of households lacking access to any type of toilet facilities was high in some Madhesh districts and the highest in Kapilbastu in Lumbini (22%).

The findings are further elaborated in the 2021 census sanitation data for Nepal's 753 local governments (Figure 25). The households with

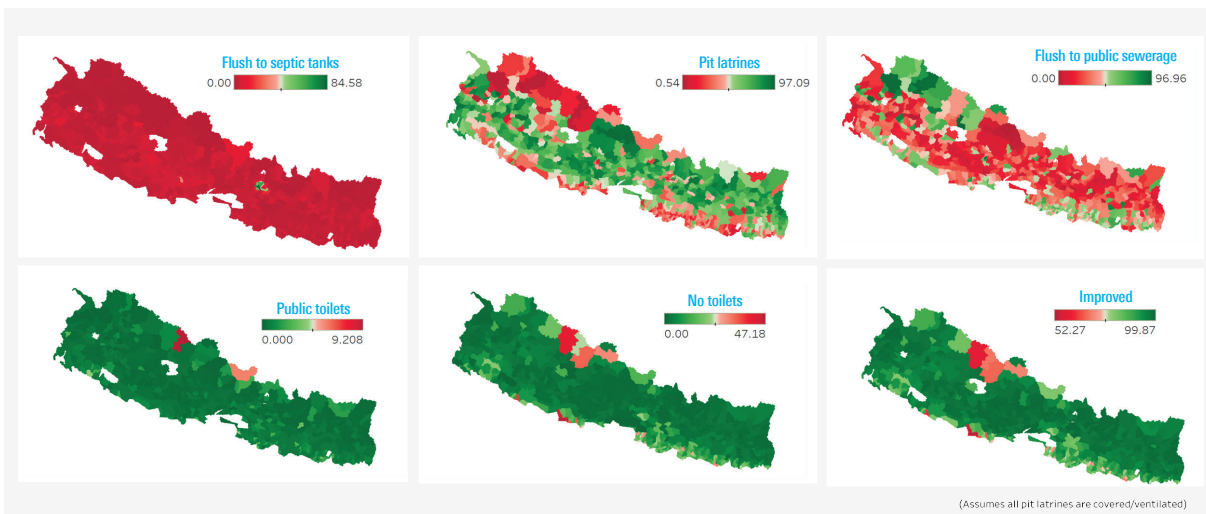
FIGURE 24: Household sanitation facilities in Nepal, by districts (2021 census)



toilets that flush into public sewerage were primarily in local governments in Kathmandu and Lalitpur districts. The highest proportion of local governments with high levels of households using pit latrine toilets were along the southern belt of Nepal, in some local governments in north-west Nepal and elsewhere. A number of local governments in the hills and upper parts of Nepal had relatively high levels of toilets flushing to septic tanks except for the pronounced absence in the north-west.

The local governments where a high proportion of households were using pit latrines and ones where a high level of households were using toilets flushed to septic tanks were geographically distinct. Krishnanagar urban municipality in Kapilbastu (Lumbini) had the highest proportion of households with no toilet facilities while Shey Phoksundo rural municipality in Dolpa district (Karnali) had very few households using improved toilet facilities and a high proportion not having toilet facilities.

FIGURE 25: Household sanitation facilities in Nepal, by local governments (2021 census)



8 COMPARISON OF PROGRESS IN DRINKING WATER AND SANITATION, 2020–2022

The annual JMP data for 2000 to 2020/22 shows consistent improvements in safely managed sanitation throughout the period (left to right on Figure 26), but a reversal in the progress on safely managed drinking

water since 2012. However, when considering improved services overall (and not just safely managed drinking water), there has also been consistent progress in access to improved drinking water services (Figure 27).

FIGURE 26: Trend of access to safely managed drinking water and safely managed sanitation, Nepal, 2000-2022 (JMP data)

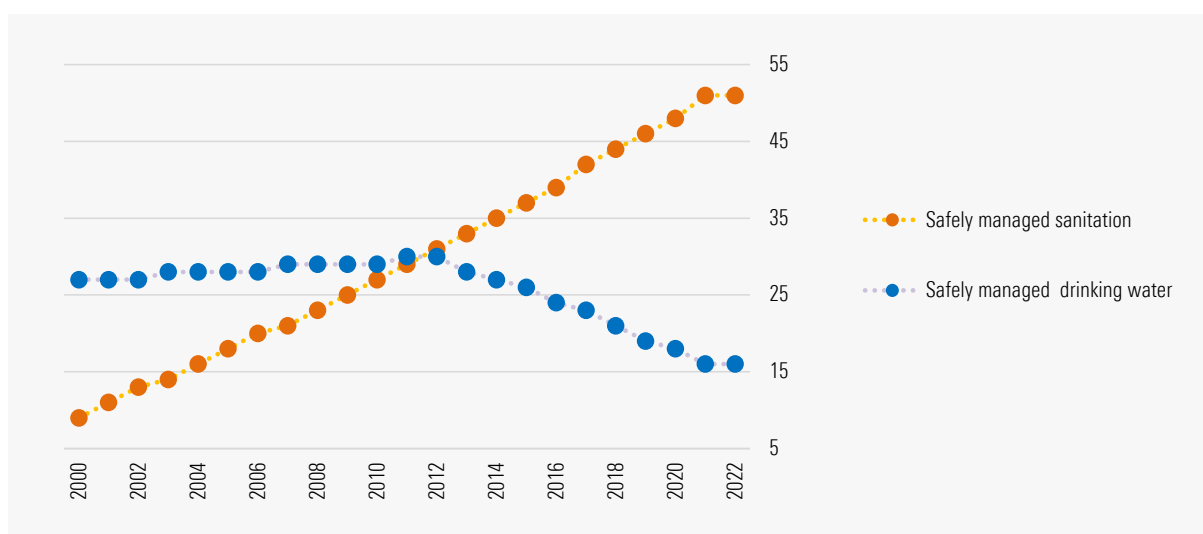
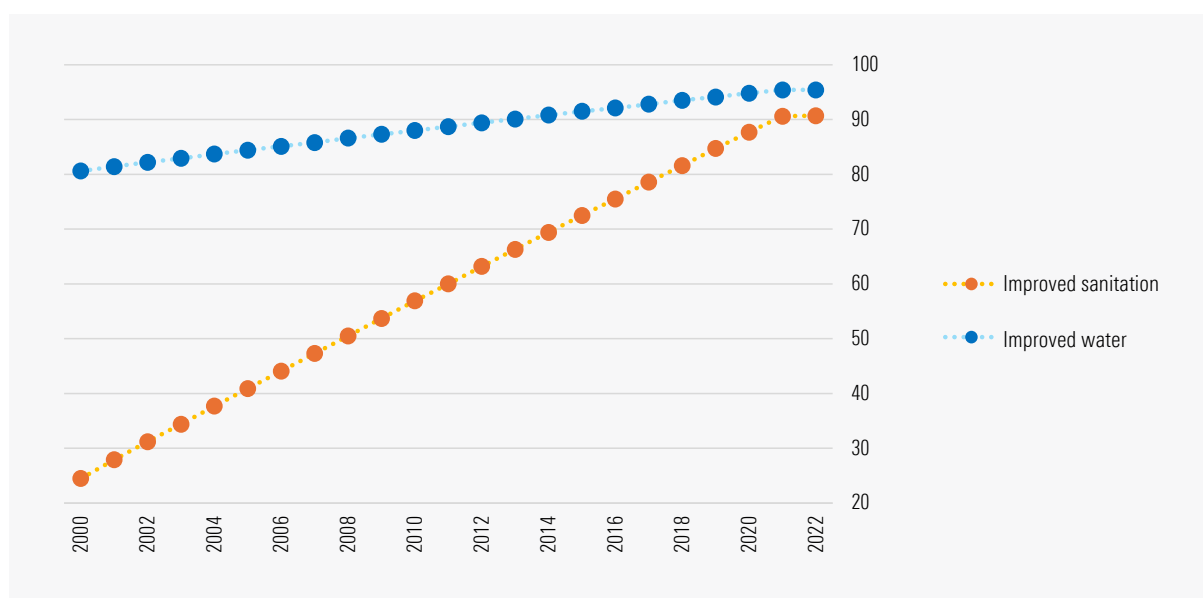


FIGURE 27: Trend of access to improved sanitation and improved drinking water, Nepal, 2000-2022 (JMP data)



9 KEY FINDINGS AND RECOMMENDATIONS

This budget brief has identified problems related to sufficiency of the budget, efficiency in executing the budget and in achieving more equitable outcomes for WASH.

In terms of the main federal level allocations, Nepal's WASH sector has lower budget allocations than health, education, and social protection with only 0.69 per cent of GDP allocated for WASH in FY 2022/23 compared to 2.26 per cent for health, 3.56 per cent for education and 3.68 per cent for social protection. At the same time, there has been a high level of underspending of the WASH budget with more than 50 per cent non-expenditure of the 2020/21 budget.

The federal level allocations for WASH reduced to NPR 38.1 billion in FY 2022/23 after having risen in the three years from 2019/20 to 2021/22 to more than NPR 40 billion. The drop in allocations for FY 2022/23 occurred mainly due to reduced support from the development partners, translating into the lower allocation per capita of about USD 10, which is grossly insufficient to meet household needs for water, sanitation, and hygiene when considering that Nepal's average per capita income is only about USD 1,500. Consequently, low levels of public spending force higher levels of private spending, which in turn creates inequitable outcomes – a fact that is verified by the JMP and 2022 NDHS data. In addition, although sub-national governments were allocated 19 per cent of the total budget in 2022/23, this is unlikely to be the entirety of WASH spending by sub-national governments as it does not include the spending from their own resources, although these amounts are limited.

A key issue with regards to federalism and further developments in the WASH sector is

the devolution of responsibilities for WASH service from the federal to the sub-national level, as has happened for education and health. This would need to be accompanied by large-scale institutional restructuring, human resources support (intensive training) and greatly increased financial resources.

However, it would be imprudent to advocate for increased allocations without addressing the large underspending, as the efficiency of budget execution has a strong impact on outcomes. More than 50 per cent of the budget has remained unspent in the last three fiscal years. The central recommendations of this brief concern setting up stronger expenditure monitoring and tracking systems and using other public financial management interventions, including participatory needs assessments, performance measures and clear targets with financing estimates, along the budget cycle to identify the main sources underspent and the reasons for underspending. At the same time, realistic and feasible budget allocations and expenditure targets need to be created to meet the WASH SDG targets. An important aspect here is to improve coordination between the Ministry of Water Supply and Sanitation and other ministries, including the education and health ministries that are responsible for WASH facilities in schools and health facilities to avoid overlapping mandates.

The JMP data shows strong progress in Nepal on many aspects of WASH; but this progress needs accelerating for Nepal to meet the WASH SDG by 2030. The percentage of households accessing their drinking water from unimproved sources or surface water decreased from 21 per cent of households in 2000 to 5 per cent in 2022. Most of this progress is due to improvements in access to basic and limited drinking water services

as the proportion of households with safely managed drinking water has declined since 2012. Water testing and quality remain major issues of concern. To reach the SDG the percentage of households with safely managed drinking water needs to increase from 16 per cent in 2022 to 90 per cent in 2030 (which is very unlikely), while the coverage of households with access to basic water services needs to increase from 75 per cent to 99 per cent. The achievement of the SDG drinking water targets therefore needs a large scale-up in financing and outreach for increasing access to safely managed drinking water and basic water services.

Data and evidence are essential to evaluate sectoral strategies and programmes and should form the basis for decision making and monitoring. In this respect, information and data systems need to be strengthened to track and monitor financial flows and progress in this sector. In particular, the N-WASH, which is the WASH sector's management information system, needs to be upgraded to track and report on financial allocations and expenditures at sub-national and central levels.

Since water runs through every SDG, the costs of not providing safe drinking water are bound to be significantly larger than the investment requirements to achieve the SDGs (OECD, 2018). Access to drinking water on households' premises remains a challenge for many people as 15 per cent of the population lack such access. The problem is particularly acute in Nepal's mountain areas where 30 per cent of the population lacks such access, in Karnali (46% lack access), in the rural areas of Gandaki (23% lack access), in Madhesh (20% lack access), and in the poorest households (31% lack access). This is problematic from a child welfare point of view as children are involved in carrying water in many of these households.

This budget brief also reports the large improvement in many aspects of sanitation,

although accelerated progress is needed to achieve the sanitation SDG targets. The percentage of households using improved sanitation facilities that are not shared increased from only 25 per cent of the population in 2000 to 81 per cent in 2022 with greatly increased access to safely managed and basic sanitation facilities. To meet the SDG targets, the proportion of households with access to non-shared improved sanitation services needs to increase from 81 per cent to 95 per cent of the population.

The JMP data shows that 7 per cent of households were defecating in the open and 2 per cent using unimproved sanitation facilities in 2022. Although the situation has greatly improved since 2000, efforts to eliminate open defecation need to be strengthened to make Nepal open defecation free. In addition, equity issues need to be addressed as the 2022 NDHS found that the incidence of open defecation differs greatly between the poorest and the wealthiest wealth quintiles (15.2% vs 1%); between rural and urban areas (9% vs 6%); among provinces (highest in Madhesh at 18%); and by ecological zone (highest in the Terai at 10%). Furthermore, efforts need strengthening to increase the safe disposal of sanitation waste for households that lack sanitation facilities on their premises as most such households reported that their sanitation facilities had never been emptied.

The data from the 2021 Nepal census on drinking water and sanitation highlights the great variation in access to improved drinking water and sanitation facilities and identifies areas where interventions are most needed.

The 2022 NDHS household data suggest that many children, especially those in low wealth quintile households most often lack access to WASH services. The fact that lower wealth quintile households typically have more children and the least access to safe drinking water on their premises and most-practice open defecation, means that large numbers of children are at risk from the consequences.

The key finding when examining progress in safely managed and improved drinking water and sanitation facilities in tandem is that access to safely managed drinking water has reduced while access to safely managed sanitation facilities has increased. However, there have been gains for both drinking water and sanitation when improved services are compared. Interestingly there is little correlation between having no drinking water services (using surface water) and having no sanitation facilities (open defecation) as the highest level of using surface water is in Karnali province, while the latter is most pronounced in Madhesh province.

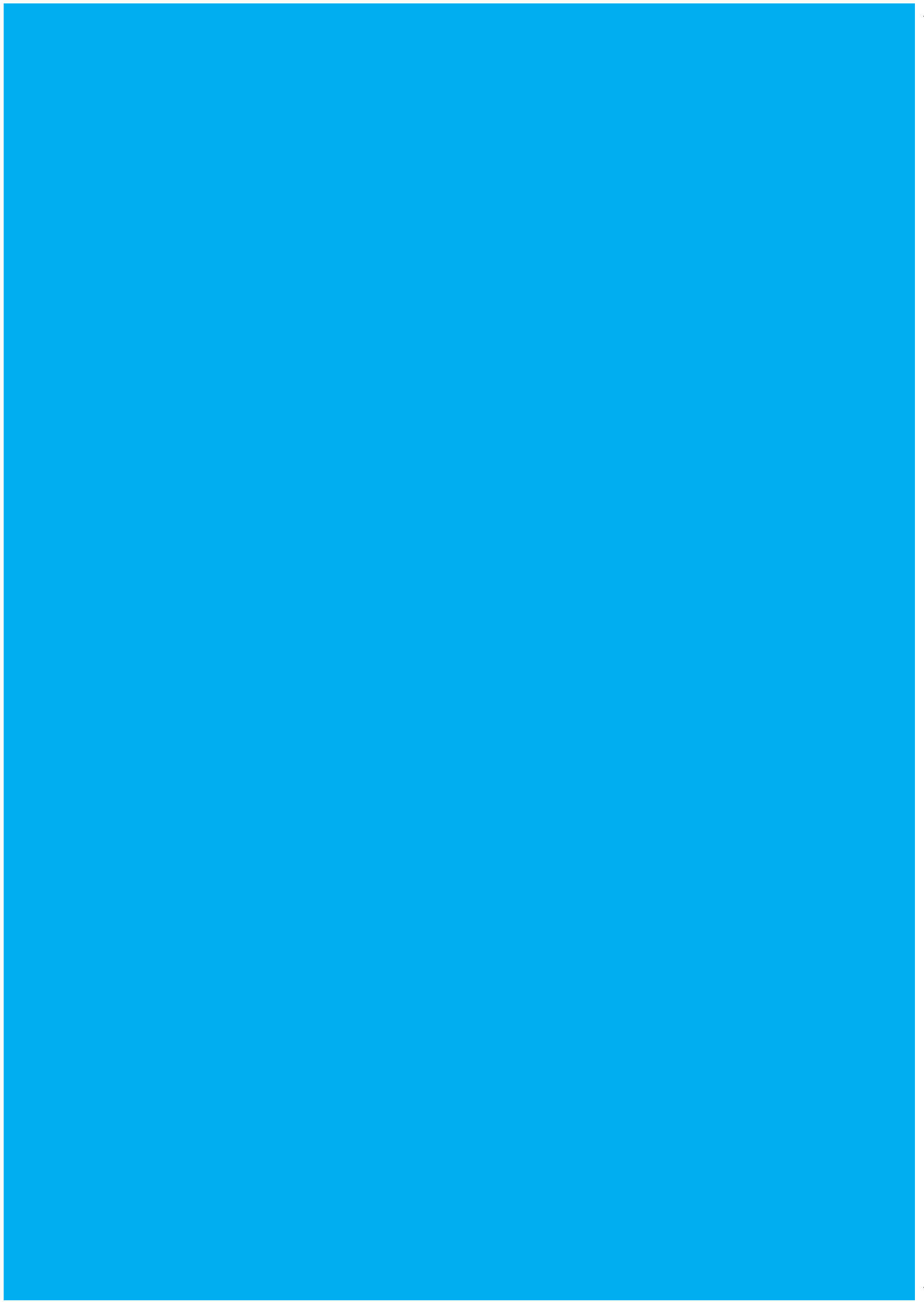
Low public spending on WASH forces households to spend out of their own pockets for WASH services, which leads to different outcomes based on wealth, place of residence and other factors. However, no estimates of out-of-pocket expenditure on WASH services were available to indicate the extent of this. Inequitable outcomes can also occur if there are inadequate consultations with communities and household stakeholders to prepare participatory needs assessments and performance measures. The lack of these was flagged as a major challenge by over 50 per cent of interviewed local government mayors, while the same consultation exercise found that more than 75 per cent of surveyed households had not participated in WASH-

related planning and programming related to their wards or local governments (UNICEF 2022). This outcome differed sharply by income, but it was low even among the highest income quintile households – with 65 per cent of them not having participated.

The data presented in this brief shows that Nepal's WASH sector has experienced profound changes over the past few years despite budgetary constraints and underspending. Nevertheless, WASH outcomes are inequitable by province, place of residence, wealth quintile and ecological zone. These findings suggest that the WASH sector must engage in public financial management interventions to address issues related to underspending and the sufficiency of the budget as well as to enable more equitable outcomes to meet the SDGs. There needs to be a strong focus on equity and producing and implementing a roadmap to reach the WASH SDG targets with clearly defined targets, performance indicators and financing mechanisms from a variety of sources (including blended financing, partnerships with the private sector, and increased efficiency in budget utilization). Another important finding is that budgetary data and household data for hygiene outcomes are not readily available, with the recommendation that this data gap needs urgently addressing.

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