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# Incorporating the life cycle approach into WASH policies and programmes

## A systematic review

March 2017

Systematic Review 35

Water and sanitation

3ie International Initiative for Impact Evaluation

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## About this review

3ie accepted*, Incorporating the life cycle approach into WASH policies and programmes: A systematic review* in partial fulfilment of the requirements of grant SR8.1010 issued under Systematic Review Window 8. 3ie will be publishing a summary report and brief of this full review later in the year.

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# Incorporating the life cycle approach into WASH policies and programmes: A systematic review

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# Summary

## Systematic Review Question

"To what extent have the Water, Sanitation, and Hygiene sub-sectors incorporated the life-cycle approach into policy, programmes, and projects during the MDG period?"

## Background

The paradigm for identifying the beneficiaries and understanding their needs and requirements for delivery of WASH services has evolved over time. Initially, governments started with the overarching objective of providing universal access to WASH services. During the MDG period, there was increased thrust to understand the specific needs and requirements of different population segments, in order to ensure equitable access. By addressing the access needs of different population segments, the objective of universal coverage to WASH services can be achieved.

Population could be segmented using two broad paradigms: Geographic and Social segmentation (GSS) and the Life-Cycle Segments (LCS). The formal would involve classifying the population on the basis of geography and social status such as rural, urban, caste and so on. The latter would involve classifying population segments on along the human lifecycle such as gender, age, and disability.

In this review, we studied the extent to which policies and P&P in WASH sectors during the MDG period have incorporated LCS and contrast it with the trends seen in the incorporation of GSS. By incorporation of LCS or GSS we mean the following: (i) the number of different LCS and GSS that could be explicitly identified in the policies and P&P documents included in the review; (ii) the identification of the barriers (i.e., obstacles to access) specific to the different population segments; (iii) the strategies used to address the needs and requirements of different LCS and GSS; and (iv) the nature of benefits envisaged for the different segments.

## Method

- **Document type:** Policy documents and Programme and Project (P&P) documents pertaining to WASH sector were included in the review.
- **Document search:** Documents for the review were obtained from a systematic search of websites of government agencies and departments and websites of multilateral and bi-lateral agencies and INGOs. In addition, all the institutions mentioned above were contacted by email with a request to send documents pertaining to policy/ P&P implemented or supported by them during the MDG period. Apart from the above, 4 knowledge databases, Google, and Google scholar were also searched.
- **Countries:** A total of 11 countries from South Asia and sub-Saharan Africa were included in the review. The countries from Asia were India, Nepal, Pakistan and Bangladesh. The countries from sub-Saharan Africa were Tanzania, Kenya, Ethiopia, Madagascar, Nigeria, Malawi and Uganda.
- **Documents included in the review:** The total number of policy documents included in the review was 59, of which 33 were national policies and 26 were state policies. Of the 59 policies, 45 pertained to the water sector, 32 related to sanitation and 10

policies covered hygiene. The total number of P&P documents included were 131 of which 105 pertained to programmes and 26 were projects.

- **Synthesis method:** The evidence from the above documents was synthesized using numerical summary techniques and qualitative comparative analysis.

## Results

*Population Segments*

WASH policies initially focused on providing universal access to facilities with no specific population segmentation. However, as the MDGs progressed, there was more focus on identifying the population segments. At a policy level, GSS were more widely included than LCS. The average number of LCS population segments identified in WASH policies in Asia and Africa was 2.85 and 2.77 respectively. The average number of GSS population segments identified in Asia and Africa was 3.20 and 2.77 respectively. Among the LCS segments, women were the focus of relatively large number of policies. This was followed by children and the disabled segments.

The average number of LCS population segments identified in WASH P&P documents for Asia and Africa was 2.44 and 2 respectively. The average number of GSS population segments for WASH P&P for Asia and Africa was 2.08 and 1.80 respectively. In the case of P&Ps too women and children were the most commonly identified LCS. Among the various GSS segments, rural and urban segments received more attention. It was further observed that the number of population segments in P&P across all the WASH sectors increased with time.

*Barriers*

Adequacy, environmental and attitudinal barriers were the most commonly identified barriers across both LCS and GSS segments in WASH policies. Similar trend was observed for the P&Ps across both LCS and GSS segments. Further, the most frequently identified barriers differed across Asia and Africa. Policies in Asia frequently identified adequacy and environmental barriers when using the LCS, whereas environmental barriers were the most frequently identified under the GSS. In contrast, policies in Africa identified attitudinal barriers most frequently in LCS, whereas it was adequacy and environmental barriers in GSS. However, when it came to P&P, both Asian and African countries followed similar patterns in identifying the barriers across LCS and GSS. Among the various LCS, barriers were most frequently identified for children.

*Strategies*

The contrast between LCS and GSS paradigm in policies was also observed in the strategies identified. In LCS segments, beneficiary participation and IEC strategies were the more commonly adopted strategies whereas project management, financing, and provision of services were more frequently adopted for GSS. Similar pattern was observed in the case of P&P as well. Further, the trend was similar across both Asia and Africa.

This contrast between the LCS and GSS paradigms provides interesting perspectives on the methods adopted to improve WASH services. While the GSS perspective made the policy makers aim more at efficiency and provision related strategies, the LCS perspective made them focus on more inclusion and empowerment based strategies.

Adopting LCS approach would bring about more de-centralized and demand based approaches to achieve WASH objectives as compared to centralized, supply driven approaches when adopting a GSS approach.

*Benefits*

Availability was the most common benefit identified across LCS and GSS in policies as well as P&P. However, there was a greater focus on benefits related to affordability while adopting GSS, whereas it was physical accessibility when adopting LCS. Thus affordability can be considered to have a higher priority when population is segmented on GSS. On the other hand, physical accessibility seemed to have a higher priority in a LCS approach. Hence, segmentation by LCS and GSS may help policy makers to obtain diverse perspectives on improving different dimensions of access.

*Policy and P&P robustness*

A robustness index was developed to indicate the comprehensiveness of WASH policies and P&P documents. The robustness index for policies from an LCS perspective was 4.5 whereas for GSS it was 6.8. For P&P, the robustness index for LCS and GSS was 4.3 and 6.1. It can thus be seen that the overall robustness index was higher for GSS as compared to that of LCS. Between Asia and Africa, the latter had higher index values for both policies and P&P. Analysis of sector level robustness index showed that sanitation had the highest index values and hygiene sub-sector the least. The robustness index of P&P documents were lower than the levels of policies, indicating that policies were more comprehensive in capturing the pathway of barriers, strategies, and benefits.

*Conditions leading to the adoption of LCS and GSS*

The following conditions played an important role in the incorporation of LCS in policies and P&P: (i) drafting/implementing agency and (ii) the WASH sub-sector. Between the three sectors, WASH benefits for LCS were more often included in policies related to sanitation and hygiene sectors. At a programme level, projects funded by multilateral agencies and implemented by government in sanitation sector usually incorporated LCS. However, when they were not funded by multilateral agencies, community partnerships usually ensured the incorporation of LCS. Therefore, community and NGO participation became important when funding by a multilateral agency was absent.

## Implications

**WASH policies can create an enabling framework by specifically mentioning the different LCS in order to facilitate adoption and percolation of life-cycle approach in P&Ps:** Findings from this review indicate that adoption of LCS needs more strengthening both at the policy and P&P level. However a lot needs to be done to mainstream this approach and include all population segments in implementation. One way to do this would be for policies to take the lead and specify the different population segments, articulate the barriers to access, strategies to address the barriers and detail the benefits that each segment receives. When policies set the tone for adoption of LCS, it would be more likely that the P&Ps could follow suit.

**Life-cycle approach shows greater applicability in the sanitation sector:** Amongst the three WASH sub-sectors, the sanitation sector shows greater use and applicability of the life-cycle approach. This has been mainly due to the challenges faced in the provision of sanitation vis-a-vis water or hygiene services. Notwithstanding this fact,

policymakers and practitioners should consider incorporating the values of the LCS in water and hygiene sectors as well in order to ensure that the linkages between all the WASH sub-sectors are addressed in the design and development of WASH policies or programmes.

**Incorporating life-cycle approach within the current GSS paradigm can help achieve inclusiveness:** WASH policies have been traditionally conceptualized population segments from a GSS approach such as poor and low income, rural, urban, and so on. In comparison, the LCS paradigm has been slowly evolving, and requires consolidation and focus in design of WASH policies. Apart from segments like women and children, the remaining LCS had very limited mention in WASH policies. Also, there are wide variations in the extent of coverage of different LCS as compared to that of different GSS. It is well known from the reports of JMP that the benefits of the MDGs on water and sanitation services can be realized by all sections of society, only when the needs of marginalized persons are addressed. In this context, policy makers should take systematic steps to incorporate the principles of the LCS even within the current GSS paradigm in order to ensure maximum benefit across population segments and improve effectiveness of WASH interventions.

**Greater level of effort required towards understanding barriers faced by LCS and devising strategies to overcome them:** Identification of barriers to WASH for the GSS has been better than that what was observed for the LCS. This may be a reflection of current state of policy making and project implementation that shows a limited understanding of the barriers faced by LCS in accessing WASH services.

The evidence on WASH strategies indicated preference to “bottom up approaches” or “grass root mobilization” to overcome barriers faced by LCS. The most common strategies adopted for LCS has been beneficiary participation, decentralization, demand management, equity in WASH provision, and IEC activities. Efforts to involve the community and the users in the development of WASH facilities would help to understand the needs and requirements of different segments of the population and address them appropriately.

**Benefits for LCS should be expanded:** Our findings indicated that the number of benefits mentioned for GSS were higher compared to LCS. Also, there were wide variations between types of benefits envisaged for LCS when compared to those seen for GSS. This could be an indication of the experience among policy makers about benefits to be envisaged for GSS. Policy makers must be mindful of articulating not only immediate benefits such as availability and physical accessibility but also rather challenging benefits of affordability and quality and safety in WASH policies. The existing WASH policies have envisaged benefits primarily for LCS categorized by age (children, adolescent boys and girls, adults) and provided very little importance to categories like gender, disability and people with HIV / AIDS. There is a need for policy makers to expand the spectrum of benefits to all categories within LCS in WASH policies.

**Need for improvement of robustness among WASH policies and projects:** The evidence base indicated that robustness index for policies and P&P among LCS was not high or strong as compared to that of GSS. Also, there were large variations on both policy and P&P robustness index between different population segments. There is a

need to improve policy and P&P design to ensure robustness for different population segments, as it ensures not only quality and content of WASH policies and programmes but also their effectiveness. There is also need to ensure that robustness percolates from policies to P&P as our study shows a decline in robustness index as we from policies to P&P.

## Contents

## List of figures and tables

## Abbreviations and acronyms

| | |
|---|---|
| 3ie | International Initiative for Impact Evaluation |
| ADB | Asian Development Bank |
| AfDB | African Development Bank |
| AusAid | Australian Agency for International Development |
| BoH | Bureau of Health |
| CEPT | Centre for Environment Planning and Technology University |
| CIDA | Canadian International Development Agency |
| CLTS | Community Led Total Sanitation |
| Danida | Danish International Development Agency |
| DfID | Department for International Development |
| EEA | Ethiopian Economic Association |
| FANSA | Fresh Water Action Network South Asia |
| GSF | Global Sanitation Fund |
| GSS | Geographic and Social Segments |
| HDI | Human Development Index |
| HIV/AIDS | Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome |
| IITM | Indian Institute of Technology Madras |
| INGO | International Non-Government Organisations |
| JMP | Joint Monitoring Programme |
| LCA | Life Cycle Approach |
| LCS | Life-Cycle Segments |
| LMICs | Low and Middle Income Countries |
| MDG | Millennium Development Goals |
| MHM | Menstrual Hygiene Management |
| NGO | Non-Government Organisations |
| PLHIV | People living with HIV/AIDS |
| PPP | Public Private Partnership |
| P&P | Programme(s) and project(s) |
| SDG | Sustainable Development Goals |
| SECP | Stakeholder Engagement and Communication Plan |
| SHARE | Sanitation and Hygiene Applied Research for Equity |
| SNNPR | Southern Nations Region |
| UN | United Nations |
| UNDP | United Nations Development Programme |
| UNICEF | United Nation’s Children’s Emergency Fund |
| USAID | United States Agency for International Development |
| USD | United States Dollar |
| WASH | Water, Sanitation and Hygiene |
| WEDC | Water, Engineering and Development Center |
| WHO | World Health Organisation |
| WSP | Water and Sanitation Program |
| WSSCC | Water Supply and Sanitation Collaborative Council |
| WSUP | Water and Sanitation for the Urban Poor |

# 1. Introduction

## 1.1 Global Water, Sanitation and Hygiene (WASH) scenario

The WASH triumvirate consisting of access to safe and sufficient drinking water, adequate sanitation and hygiene have implications on several health, social and economic indicators of well-being such as eradicating poverty and hunger, reducing child mortality, improving maternal health, combating infectious diseases, increasing school attendance and ensuring environmental sustainability (Biran et.al., 2012, WHO 2014).The Millennium Declaration adopted by the member countries of the UN General Assembly in 2000 (General Assembly Resolution 55/2),operationalized as the Millennium Development Goals (MDGs), aimed to address the inadequacies in water and sanitation through Goal 7 which was *"to reduce the proportion of people without sustainable access to safe drinking water and basic sanitation*" (United Nations, 2015). The use of improved drinking water sources and the use of improved sanitation facilities were used as indicators to monitor the progress of this goal.

From the year 2000, substantial progress has been made in improving access to water and sanitation in several countries. However, the desired outcomes fall short on two fronts. First, there was still a need to improve access to WASH facilities. More than 650 million people, mostly in sub -Saharan Africa, lacked access to safe water and two and half billion people lacked access to adequate sanitation (WHO and UNICEF, 2014: p 4). Of this, 784 million people used a public or shared facility, 732 million used a facility that did not meet minimum hygiene standards and the remaining one billion practiced open defecation (WHO and UNICEF, 2014: p8). Second, the progress on the MDG`s was not uniform globally; in some countries or regions there was an improvement in access while in some others the overall effort towards improving access to WASH had declined. For instance, open defecation decreased from 24 per cent to 14 per cent globally with the largest decline in Asia from 65 per cent to 38 per cent. However, countries like Ethiopia have experienced a decline in 'efforts' to reduce open defecation, from 92 per cent to 37 per cent. Cambodia and Nepal have also experienced similar decline (WHO and UNICEF, 2014).

Since there were no indicators or targets for hygiene promotion in the MDGs, the hygiene sector was considered to have been neglected (Biran et al. 2012). Data from GLAAS (WHO 2014) shows that out of 94 countries studied, only eleven countries had hygiene promotion expenditure that could be separated from WASH and health budgets. Out of the eleven countries, only seven countries had expenditure on hygiene that exceeded US$ 1 million.

Despite the progress made since 2000 and increase in aid commitment for water and sanitation by 30% (US$ 10.9 billion) from 2010 to 2012, much needs to be done to change the focus from infrastructure provisioning to equitable and sustainable service delivery (WHO 2014). The interpretations presented in various UN reports on the MDG on water and sanitation highlighted the lack of attention to addressing inequalities across regions as the main cause for disparities in achieving the MDG targets (WHO and UNICEF, 2014; WSSCC and WHO, 2005; WHO and UNICEF, 2013; WHO and UNICEF, 2015). The WHO/UNICEF Joint Monitoring Programme (JMP) working group on Equity and Non-discrimination stated that, *"although there have been important gains for many*

*around the world during the MDG period, these gains have eluded the marginalised including the poorest of the poor*" (Satterthwaite and Winkler 2012). Notwithstanding the progress in terms of targets and improvements in access to WASH, the poor continued to be marginalised based on several factors such as age, gender, ethnicity, physical limitations, regional disparities and so on. It was also interesting to note that amongst the three WASH subsectors, sanitation and hygiene efforts were lagging behind due to the low priority accorded to the needs of the disabled, adolescent girls and women, children and the elderly (WHO and UNICEF, 2015).

Such observations led us to the question: why do such inequalities in accessing WASH facilities persist and what can be done to overcome these in order to achieve universal access? The JMP background note on MDGs, Non-discrimination and Indicators in Water and Sanitation, admitted that although the JMP had quantitative data that pointed to socio-economic segments of population that experience obstacles in accessing WASH facilities, global monitoring had not paid sufficient attention to the differences within societies which hindered access, such as race, gender, ethnicity or disability (Satterthwaite, 2012). The report further added that,

> "*axes of difference such as race, ethnicity, religion, and gender, are often avenues of discrimination and understanding them better could help reveal the dynamics leading to differential outcomes in access to water and sanitation within and across countries* (Satterthwaite, 2012)".

The post-2015 Sustainable Development Goals also emphasised a fundamental change in the approach towards achieving universal access where the indicators must be designed to measure discrimination and inequalities across populations (WaterAid, 2015a, Satterthwaite, 2012). A pre-requisite to promote universal access to water and sanitation and address the present deficits was to gather and analyse existing data surrounding dimensions like inequality, discrimination and inclusion and their relationship to WASH indicators across the world (Satterthwaite, 2012).

While the MDGs aspired for universal access to WASH, ground realities showed that universal access depends on multiple factors such as availability of WASH facility, user experience, maintenance of infrastructure, social and cultural norms such as gender and ethnicity, and so on (WaterAid and EEA, 2011).

Policy makers, researchers and communities are faced with this daunting challenge of providing universal access to WASH in Low and Middle Income Countries (LMICs) with very little evidence on how the difference between different population segments can be addressed in WASH projects (Satterthwaite, 2012).With the Sustainable Development Goals 2030 expanding the horizons of the MDG agenda, an urgent need is felt to understand (i) the extent to which WASH policies and programmes are geared towards promoting universal access and (ii) if these initiatives have considered the needs of different segments of population during initiation, design, implementation and maintenance of WASH programmes. Such an exercise would aid in decision making related to the avenues of investment and the strategic prioritization of certain groups to improve universal access to WASH facilities.

## 1.2 Life-cycle Approach (LCA) and WASH interventions

Following the MDGs, several policies and programmes across developing countries have imbibed the goals of achieving universal access. However, initiatives focused on universal access may or may not be conscious of the differences in the needs across population segments, often following one-size-fits all approach. For example, Uganda's Joint Water and Environment Sector Programme – 2013 or Madagascar's Water Supply, Sanitation and Hygiene Bilateral Project: Ranon'ala - 2010, are designed to target either rural or urban segments as a whole. However, both urban and rural areas are composite constructs that are made up of children, adolescents, women, men and disabled and so on. The needs of these different segments are seldom presented in a policy or programme targeting universal access as is shown by the findings of this study.

One of the approaches to addressing the way different populations' access WASH facilities and the socio-cultural barriers to access is by adopting a "human life-cycle approach". Human life- cycle approach or life-course approach (LCA) has been successfully used in several disciplines such as health, social work, psychiatry, adolescent and child behaviour, violence and criminology to understand the challenges and disabilities faced by people across their life-span in achieving their desired goals (Hutchinson, 2001).

Espoused by the Water Supply and Sanitation Collaborative Council (WSSCC), the human life-cycle approach believes that "*all humans experience different phases in their own lifecycle, from infancy, through puberty, parenthood, illness and old age. The sanitation and hygiene needs for everyone, at all times, need to be considered if programmes and policies are to be equitable for all"*. The LCA is considered to be a useful tool to identify the social, economic and environmental factors underlying persistent inequalities such as lack of privacy, distance to facility, affordability, ethnic differences, safety and inadequate access for the disabled (U.S. Department of Health, 2010; Satterthwaite, 2012).The adoption of LCA in WASH policies and programmes can also help address the challenges of inequity and exclusion. Policies and programmes designed using the LCA may help reduce discrimination and promote the delivery of sustainable, adequate and equitable WASH services.

Recent report by Fresh Water Action Network South Asia (FANSA) and WSSCC (2015) highlighted the relative absence of LCA in WASH. For instance, the lack of participation from women and girls in the decision making processes related to the design, location, finance and maintenance of WASH was a finding that causes concern as women and girls are de-facto water and sanitation mangers at household and community levels. Such concerns were exacerbated with further nuances in the life-cycle segments like age, illness, disability and/or sexual orientations. Often the "special needs" of various groups were overlooked by the practitioners and service providers who worked on provision of such services to perceived majority segments of the population (FANSA and WSSCC, 2015). Few of the difficulties faced by some of the life-cycle segments in accessing WASH facilities as well as the consequences of inadequate WASH have been described below:

### *1.2.1 Children*

According to UNICEF (2006), unsafe water, poor sanitation and unhygienic practices impact millions of children in developing countries. Such non-provision results in unhealthy conditions leading to various diseases like diarrhoea which is the main threat to children worldwide. Such diseases either prove fatal to children or have permanent significant impact on the physical and mental health of children in developing countries. Illnesses due to water-borne diseases also impacts attendance of children in schools as well as their performance.

### *1.2.2 Adolescent girls and women*

WASH facilities (in schools, home and workplaces) or the lack of them significantly impact women and adolescent girls. The lack of separate and decent sanitation and washing facilities in schools discourages girls from attending school full time and increases drop outs. Hence, a distant water source would translate to much greater effort in terms of time spent in bringing water to the household which can further lead to drop-outs from schooling. A rural water supply and sanitation project funded by the World Bank in Morocco between 1997 and 2001, found that reducing the time spent by girls in fetching water improved their school attendance by 20 per cent (World Bank, 2003).

Non-provision of sanitation facilities particularly impact women and adolescent girls in a significant way. Apart from the physical dangers like snake/insect bites, open defecation instills fear of physical and sexual assault in these segments (Kulkarni et.al., 2013). This is further compounded by the humiliation of being watched. Such problems are further exacerbated with the special needs for such population segments during menstruation, pregnancy and post-delivery periods.

Sahoo et al. (2015) studied the psychological, social and health stresses faced by reproductive women in accessing sanitation facilities across their life course in three different geographical settings (urban slum, rural village and tribal village) in Odisha, India. By interviewing women in four life stages – adolescent, newly married, pregnant and established adult women, they found that sanitation practices not only include defecation but also include carrying water, bathing, menstrual management and changing clothes. During these processes, women face various social, sexual and environmental stresses which affected them in different ways depending on their life stage. The newly married women were found to be the most vulnerable as they lived highly regulated lives with strict societal rules making it difficult to manage sanitation related activities with privacy and dignity. The geographical setting also influenced the type of stresses experienced by women with social stresses being highly salient in rural areas contrasted with increased sexual and environmental stresses in urban areas.

### *1.2.3 Disabled and the elderly*

The aged segment of population faces different challenges with access to WASH facilities. Such challenges often related to assistance not only in accessing but also in the use of the facility. A study in Rajasthan, India, illustrated how often distances travelled by elderly persons to defecate in private can be up to 2kms from their houses. This could take up to two to three hours in a day. In addition to the physical stress of travelling this distance, this activity reduces the time spent on income earning activities. This often resulted in people defecating inside their own house to the embarrassment of other family members (Jones, 2013). The FANSA and WSSCC (2015) conclude that the

access to WASH facilities for the elderly across eight countries included in their study as inappropriate, inadequate and inaccessible. The report also highlights the special needs of the elderly and the disabled in seeking help of their family members for bathing and sanitation hygiene. The inaccessibility of WASH facilities even within the households compounds the problems faced by the elderly and the disabled.

Disabled persons face similar problems to the extent that they need assistance to defecate. According to Collender et. al (2011), specific barriers faced by disabled can be categorized as “institutional (such as a lack of information from authorities and exclusion from consultative procedures), environmental (such as steps and narrow doors) and attitudinal (such as prejudicial attitudes from the community and service providers).” Lack of access to WASH facilities can lead to serious health related consequences in disabled segments. It should be noted that such segments are generally poorer on one hand and require additional WASH services to maintain dignity and hygiene on the other. However, they are less likely to receive medical care because of the associated stigma and prejudice (Collender et al., 2011).

Erhard et al., (2013) examines the impact of school WASH facilities on access to education for disabled children in low income areas in Uganda and Malawi. They find that children with disabilities have to be assisted by teachers or classmates in accessing WASH facilities as these were not designed to cater to their needs, often forcing them to crawl across unclean floors to access drinking water and sanitation facilities. Lack of maintenance and unsanitary conditions to access WASH facilities results in severe health impacts such as diarrhea from exposure to pathogens and dehydration (by waiting for assistance to access facilities) ultimately discouraging disabled children from attending school.

### *1.2.4 Groups marginalised based on social inequalities*

Caste, ethnicity and spatial inequities also hinder access to WASH facilities. Water is often used as a weapon for social suppression (Khurana and Mahapatra, 2008). In India, there have been several incidents of caste based discrimination and violence over the sharing of drinking water. Often, the so called upper caste prevents the lower caste from drawing water from common standpipes. The distribution of resources is also unequal. In a WaterAid report by Khurana and Mahapatra (2008) in Bundelkhand region of central India, the authors witnessed 35 lower caste households sharing one tube well while 50 upper caste households shared 15 tube wells. Similarly in Nepal, access to resources is distributed unevenly between religious groups. While 37% of the majority Hindu population practiced open defecation, 70% of the Muslim population practiced open defecation (Albuquerque, 2014c).

In addition to some of the vulnerable groups described above, men and adolescent boys also constitute life-cycle segments that were included in this study. While women, children and girls face the water and sanitation burden as well as dangers of sexual harassment, men are often the decision-makers in the construction and use of WASH infrastructure. Additionally, in situations where the toilets lack maintenance, men and boys prefer to urinate or defecate in the open, thereby contributing to the poor sanitation and hygiene of the community as a whole. Therefore these two groups become important life-cycle segments from a gender as well as universal access perspective. However, in order to limit the boundaries of this study to manageable proportions, very

specific and nuanced vulnerable segments such as lesbians, gays, bi-sexuals, widows, pre-menopausal women, and sex workers have not been included in this review.

## 1.3 Brief description of WASH sectors

WASH covers three main sub-sectors – Water, Sanitation and Hygiene. It should be noted that there are a number of dependencies and overlaps in the provision of facilities to each of these sub-sectors. This section lays down a brief definition of interventions in each of these sub-sectors as considered by the present study. Detailed definitions and descriptions of these sub-sectors are further discussed in section 3.1.2.

**Water:** Interventions that are targeted at improving access to both drinking water as well as water for personal hygiene and sanitation. These interventions may be aimed at improving access either for a specific target population or commit to universal access.

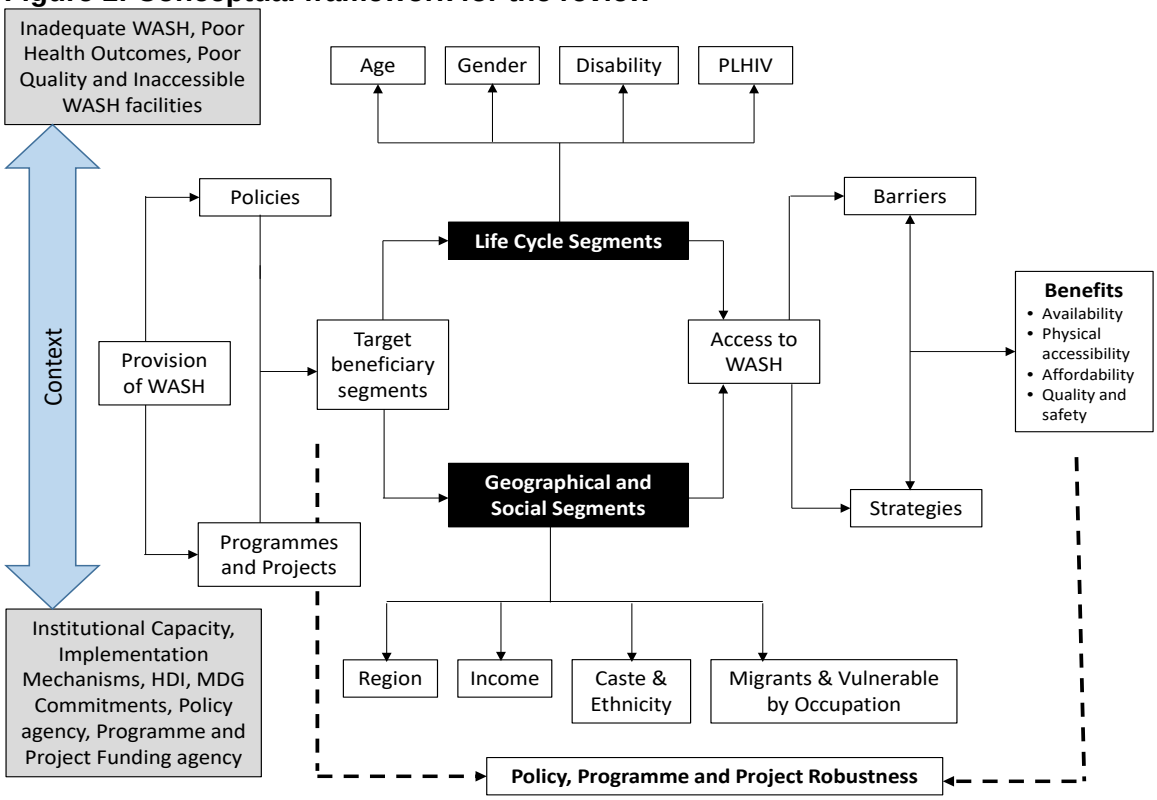
**Sanitation:** Interventions that aims to improve access to sanitation. Such interventions may include provision of toilets, piped sewers, septic tanks, and pit latrines and/or the collection and disposal of human excreta.

**Hygiene:** This sub-sector comprises of interventions that are aimed at hand washing with soap and menstrual hygiene management (MHM) which have been identified as a “priority for improving health, welfare and dignity of women and girls” (UNICEF and WHO 2015). Hygiene sub-sector also includes handling and storage of drinking water, disposal of fecal and menstrual waste.

WASH interventions include a combination of sub-sectors such as water and sanitation or sanitation and hygiene and can cover a wide range of activities such as construction of water pipelines and sanitation blocks, capacity building programmes, behavior change campaigns and hygiene promotion programmes in schools and so on.

## 1.4 Rationale and importance of this review

**Figure 1: Conceptual framework for the review**




Goals of universal access to WASH have not been realized in several developing countries, with many still lacking access to safe water, improved sanitation and hygiene (UNICEF and WHO, 2015). Several factors contribute to this inadequate access to WASH such as the implementation mechanisms, economic and political context, implementation capacity and so on that may, to a greater or lesser extent, influence the access to WASH. For instance the very existence of a WASH policy or guideline, agencies with institutional capacity, extent of community participation, involvement of stakeholders all play an important role in WASH implementation. The overall socio-economic status of countries and the commitments made towards attaining the MDGs also exert influence in providing WASH access. An important factor that can help in the cause of improving access is the clear identification of different population segments, the barriers that these segments face in accessing WASH services, identifying strategies that can help in overcoming these barriers, and categorizing the type of benefit to the population segment. The objective of this review is to understand the extent of prevalence of the above pathway in the WASH policies and Projects and Programmes (P&P) during the MDG period. Figure 1 depicts the conceptual framework for this review as well as describes the various components used in the analysis.

In this review, provision of WASH encompassed WASH policies formulated by various governments as well as WASH P&Ps implemented by governments, bi-lateral and multi-lateral agencies as well as international aid agencies. The main data sources in order to understand the beneficiary segments that have received the most and least attention and if they take a life-cycle approach in service delivery were WASH policies and programmes.

The target beneficiary segments were categorized into two broad categories: (i) Life-Cycle Segments (LCS) that were identified by age, gender, and disabilities and so on and (ii) Geographical and Social Segments (GSS) that comprise regional, social and income classifications such as rural, urban, poor, caste and ethnically marginalized groups and so on. WASH policies and P&Ps largely identified segments that could be grouped into either one or both of these categories.

However, merely identifying the population segments did not lend much value in furthering our understanding of the research question. Therefore, this review also considers the various barriers faced by each of these segments, the strategies used to overcome the barriers, and the resultant benefits derived by different population segments. For the purpose of analysis, the barriers, strategies, and benefits were classified in to different categories for a better understanding of the underlying trends. The presence or absence of each of barriers, strategies, and benefits were used to create a robustness index of WASH policies and P&Ps. It was assumed that more robust a policy or P&P, more effective it would be in achieving the outcome. It was also hypothesized in this study that by understanding the barriers and discrimination faced by different population segments, WASH services would become more nuanced and sustainable. This is because the needs and obstacles faced by human beings in accessing WASH services vary at different stages. For instance, children are constrained by accessibility of WASH facilities as they require smaller toilet pans or water taps at a lower height. Barriers for women and adolescent girls include the lack of privacy or safety to meet their hygiene needs which are very different from those of men or adolescent boys. On the other hand, these requirements are different from those of the disabled or senior citizens who require ramps and hand railings.

Findings from this study also showed that WASH barriers are varied across population segments and therefore a “one-size-fits all” approach or “universal access” may not succeed in addressing all these barriers. However, it should be noted that the extent of life-cycle coverage is not straightforward in WASH interventions. By examining the WASH interventions using the life-cycle lens, this study contributes evidences on factors that led to greater presence of life-cycle segments and the extent of percolation of LCS in WASH interventions. The hypothesis is that increased adoption of LCS would help in furthering the cause of improving access to WASH services. Insights from this review could also be useful to policy makers in improving policies, strategies, plans, P&Ps during the Sustainable Development Goals 2030. With the universality of the SDG targets, this review is of relevance for reaching the most marginalized and hard to reach. Although there are several systematic reviews measuring the impact of WASH on health outcomes, maternal and child care, education and drop-outs in school and so on (Waddington et.al, 2009; Guiteras et al, 2015; DFID 2011; DFID, 2012; and Hulland et al, 2015), this review is the first of its kind to employ the LCA lens to systematically review the WASH portfolio.

## 1.5 Structure of the report

This report is organized in five chapters. This section presented an introduction to the WASH scenario within the context of the MDGs as well as the rationale for use of a life-cycle approach in WASH. Details of the remaining chapters are as follows:

*CHAPTER 2*: details the main objectives of the review with brief descriptions explaining each research question.
*CHAPTER 3*: pertains to the methods used. This chapter provides the descriptions of the key concepts, the inclusion and exclusion criteria used, sourcing and search strategy employed, data extraction and management and the methods used for data analysis.
*CHAPTER 4*: provides the results of the in-depth review of the documents identified in chapter 3. By doing so, this section seeks to answer the research questions set out in Chapter 2.
*CHAPTER 5*: concludes the report and summarises the implications as well as the limitations of this review.

## 2. Objectives of the review

The objective of the systematic review was to gather evidence on the question, "To what extent have the Water, Sanitation and Hygiene sub-sectors incorporated the life-cycle approach into policy, programmes and projects during the MDG period?" The above objective was operationalised through the following research questions:

- *Which segments of the population have been addressed in WASH initiatives during the MDG period? Did it vary between sectors, regions, policy domain and implementing agency?*
  This question referred to the coverage of different population segments in National/State WASH policies and P&P during the MDG period. It also attempted to understand if the coverage of population segments differed within the three WASH sectors, Asian and African region and among the implementing agency.
- *Have the barriers been identified for each of the segments in policies, P&P? What were the common barriers described? Did it vary between sectors and regions?*
  The above question pertained to the different barriers faced by population segments in accessing WASH services or facilities. The scope of WASH policies and P&P in identifying the common barriers faced by both LCS and GSS were analysed by sector and region.
- *Have the strategies been identified for each of the segments in policies and P&P? What were the common strategies proposed? Did it vary between sectors and regions?*
  The different WASH policy and P&P strategies proposed for population segments were identified through this question and the common strategies were analyzed to capture the variations between sectors regions.
- *Have the WASH benefits been identified for each of the segments in policies, P&P? What were the common WASH benefits suggested? Did it vary between sectors and regions?*
  This question aimed to describe the WASH benefits proposed in WASH policies and P&P for population segments and how it varied sector and region wise.
- *What was the extent of robustness between barriers, strategies and WASH benefits for each population segment mentioned within policies and P&P? Did it vary between sectors and regions?*
  This question on robustness provided an in-depth perspective on the extent to which barriers, strategies and WASH benefits were proposed for population segments.

- *What conditions lead to the inclusion of population segments in WASH policies and P&P? Does it vary between sectors and regions?*
  The above question analysed whether external indicators such as Human Development Index (HDI) and achievement of MDG targets were correlated with the inclusion of population segments in different WASH policies and P&P.
- *What conditions lead to the inclusion of population segments in WASH benefits in policies and P&P? Does it vary between sectors and regions?*
  This question tried to understand the whether there is any association between different factors seen in policy and P&P documents vis a vis the identification of population segments in WASH benefits.

# 3. Methods

**Overview:** In this chapter, we provide the descriptions of the following: definitions, criteria used for selecting the documents, sourcing and search strategy employed, data extraction and management and analysis methods. This systematic review is a review of policies, and P&P in the WASH sector. Given the nature of this systematic review we have used descriptive analysis and Qualitative Comparative Analysis (QCA) to present our findings. However, since this is a systematic review the entire process of study identification, data extraction and management were clearly documented.

## 3.1 Definitions

### *3.1.1 Sectors considered for the review*

**a. Water:** The definition of water according to the human right to water "entitles everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic use (Albuquerque, 2014b)". Interventions that were of interest to this review are those that targeted at improving access to drinking water and water for personal hygiene and sanitation. These included policies, P&P in LMICs that aim to improve access to water for a specific target population or commit to universal access. Water for domestic use excludes small scale agriculture, home-based animal rearing and so on. Water supply augmentation programmes or water improvement programmes that aimed to remove contamination in water such as arsenic mitigation programme or fluorosis prevention programme were also excluded.

**b. Sanitation:** The human right to sanitation has also been adapted from Albuquerque (2014b) as, "*a system for collection, transportation, treatment and disposal or reuse of human excreta, and associated hygiene. The human right to sanitation entitles everyone to sanitation services that provides privacy and ensures dignity and that are physically accessible, affordable, safe, hygienic, secure, and socially and culturally acceptable*". Sanitation interventions included those policies, P&P that aim to improve the access to sanitation which may include provision of toilets, piped sewers, septic tanks, and pit latrines and also the collection and disposal of human excreta.

**c. Hygiene:** WHO defines hygiene as conditions and practices that help maintain health and prevent the spread of diseases (WHO 2016) and in reference to WASH, good hygiene plays a key role in realising the full benefits of water and sanitation services. Hand washing with soap and menstrual hygiene management has been identified as the top priority areas in hygiene (UNICEF and WHO, 2015) and the scope of this review was

restricted to these interventions. Hygienic handling and storage of drinking water as well as disposal of faecal and menstrual waste were included in the review and interventions pertaining to food hygiene were excluded.

### *3.1.2 Target Population*

The population groups were identified based on the different stages of the human life-cycle. Age, gender, physical disabilities and marginalisation were the primary markers used to draw the boundaries of the human life-cycle. Age included childhood, adolescence, adults and senior citizens (aged). Gender included women, men and transgender whereas the vulnerable and marginalized include the disabled and people living with HIV/AIDS (PLHIV). Disabled included beneficiaries who have any form of physical or mental disability. These groups of population segments were classified as life-cycle segments (LCS).

Population groups were also classified further by caste, ethnicity, income, and occupation which are all grounds for marginalization and discrimination. The geographical context i.e., urban and rural areas and income i.e., poor and low income were also included in order to understand spatial and income based discrepancies in accessing WASH facilities. These groups of population segments were identified as geographic and social segments (GSS).

Combinations of the life-cycle segment and geographical context have also been included in the policy and P&P dataset. For example, rural children, women, men and the poor and urban children, women, men and poor are some of the combination segments that were identified. These segments were also included in the LCS. Although there are several sub-groups of population, only those vulnerable and marginalized groups described above were included in this review. Wherever available, details regarding the intended or targeted population segments and the actual beneficiary segments were also captured.

### *3.1.3 Types of documents*

Evidence for this review was obtained from two types of documents – (i) policy documents and (ii) P&P documents. It was observed during our pilot search that governments and various agencies use the terms ‘project’ and ‘programmes’ fairly interchangeably to describe their sector based activities at the National, State and District and/or village level. For example, the Maharashtra Rural Water Supply and Sanitation Programme funded by ADB and the Kerala Rural Water Supply and Sanitation Project funded by World Bank, though similar in its scope and objective, one is termed as a project document and the other as a programme document. In an effort to overcome this ambiguity, the following description of a policy document, programme document and project document was developed for use in this review.

**Policy Document:** A policy is a broad and comprehensive concept document on a specific sector that outlines the vision, goals, target groups, strategies and intentions of the government, for the development of a sector. An example of a policy document is the National Hygiene and Sanitation Strategy of the Ministry of Health, Government of Ethiopia (2015). Policy documents were in the nature of goal setting - provided clear objectives and roadmap to implementation of P&P. Policy documents also refer to international standards or convention, for example, the Millennium Development Goals

and Sustainable Development Goals. Policy documents include policy notes, strategies, and mission and plan documents.

**Programme Document:** A programme document is an assemblage of projects or activities in line with a public policy. Programmes may be delivered by governments, multilateral/bi-lateral agencies, international non-government organisations and local NGOs. Programme document comprises of the broad objectives and the action plan of the programme including target beneficiaries, budget and implementation strategy. It also includes a wide range of departments and ministries working together for planning and implementing the programme. The life span of a programme is usually for a longer period of time at the end of which the intended outcomes are achieved. A distinct feature of a programme is the geographical coverage and is commonly designed at the National or State level. Examples of programme documents include the Nepal Water Supply and Sanitation in Small Towns Programme,  (2000), funded by ADB or the National Rural Drinking Water Programme of the Ministry of Drinking Water and Sanitation, Government of India, 2013 (Ministry of Drinking Water and Sanitation, 2013).

**Project Document:** A project is a fundamental unit of a programme and is limited in scope and time. It works under clear deadlines and often targets a particular beneficiary group or a sector in a well-defined geographical area, for example, the Water Supply and Sanitation in Small Towns Programme, Nepal, funded by ADB encompasses several projects such as the First Small Towns Water Supply and Sanitation Sector Project (ADB 2000), Second Small Towns Water Supply and Sanitation Sector Project, and so on (ADB 2009).

WASH programme and project evaluation documents of governments, multilaterals/bi-laterals, and INGOs were also included in the review as they provided insights into programme implementation.

### *3.1.4 Description of Barriers*

The difficulties faced by the users in accessing WASH facilities faced by the different population groups were termed as barriers. The policy and P&P documents included for the study were multifarious and not all documents detailed the barriers faced by the population segments. While some documents had a clear description of the barriers faced by specific segments in accessing WASH services and facilities, few others provided very sketchy descriptions. Nevertheless, the data captured formed a strong point of inquiry for the descriptive analysis.

Considering the textual data collected, it was imperative that a systematic approach was followed to identify and classify the barriers. The first step involved the compilation of barriers as described in the document by population group and sector. If the barriers identified were applicable for more than population group or sector, then it was accounted for in each of the population group and sector. For example, the following description – "*Inadequate water supply, sanitation and hygiene results in high incidence of water and sanitation related diseases which increased morbidity and pose a threat to the survival"* was included and coded for all the sectors - water, sanitation and hygiene. The same was followed when a description spelt out a barrier that was relevant to two or more population segments.

To facilitate analysis, the barriers were grouped under seven categories. These categories are described in Table 1.

**Table 1: Description of barrier categories**

| Sl. No | Barriers | Description |
|---|---|---|
| 1 | Adequacy barrier | It refers to insufficient or lack of adequate WASH services and facilities available to the use of different population segments. For example, *"Girls are often forced to miss school or even drop out of schools due to the lack of sanitation facilities in schools"* |
| 2 | Attitudinal barrier | It pertains to lack of knowledge or awareness on the availability of WASH services and facilities thus, resulting in poor sanitation and hygiene practices such as open defecation. For example, *"Benefits of good and adequate sanitation are not directly perceivable by most Kenyans communities and therefore there is no felt need for services"*. In addition, the presence of traditional and social taboos also prevents a particular target group to avail WASH services or participate in decision-making. For example, *"Although people have access to toilets, usage is poor due to the lack of behaviour change"*. |
| 3 | Demand side barrier | It refers to the limited demand and use of WASH services by the people even though WASH services are available. Moreover, people cannot afford or are unwilling to pay for WASH services and infrastructure considering their poor economic situation. For example, *"Low population density and nomadic life style of communities of pastoral lands create little demand for environmental sanitation facilities"* |
| 4 | Environmental barrier | It includes the limitations to access WASH services and facilities based on geographical locations such as distance and time. For example, *"Women can't earn an income due to unavailability of water in a simple way as they have to spend several hours a day to fetch water faraway"* |
| 5 | Inclusion barrier | When the preferences and needs of different users for affordability, socio-cultural aspects are not considered, it is termed as inclusion barrier. For example, *"Little regard for demands and preferences of households as customers of sanitation services"* |
| 6 | Physical barrier | It refers mainly to the design of WASH facilities, services or technology that may be ill-suited to the social-cultural context. Facilities may be available close by yet inaccessible to the user. This would be considered as a physical barrier. Therefore, physical barrier includes the physical structure/design of the WASH facility that is inaccessible or unsafe for the user. For example, *"No design features for paraplegic, HIV/AIDS, pastoralists and nomadic groups".* |
| 7 | Policy & institutional barrier | The lack of political will and budgetary priority where governments give very little or no attention to WASH issues is termed as policy or institutional barriers. This results in a weak WASH policy with no specific consideration to the needs and preferences of population segments. For example, *"Lack of specific guidelines resulted in not reaching poorest of poor"* |

### *3.1.5 Description of strategies*

Strategies refer to the plan of action described in policy documents to address the WASH problems faced by different population groups. For example, a strategy proposed for the poor and marginalized included, "*Poor and marginalized will be mainstreamed as valid customers for service delivery through defining pro-poor strategies for connections and use of services*". Few examples of strategies include, 'conducting hand washing sessions before mid-day meals in school to deliver messages on hygiene, sanitation and drinking water safety' and 'provision of institutional support to local governments'.

Similar to barriers, strategies specified in the policy and P&P documents were extracted into the coding tool subsequent to which they were grouped into dominant themes. P&P documents contained a wider range of strategies than policy documents. A total of 10 strategy categories were identified for polices and 12 for P&P. Some of these categories were common for both policies and P&P like project management, IEC, beneficiary participation, and so on. On the other hand, a few that were exclusively identified for P&P included institutional strengthening and capacity building, skill development for communities, and sanitation marketing. Table 2 provides a description of the different strategy categories.

**Table 2: Strategy categories for Policies and P&P**

| S. No. | Strategy | Policies | P&P |
|---|---|---|---|
| 1 | **Beneficiary participation** | Beneficiary participation refers to involvement of end users as beneficiaries in planning, implementation and maintenance of WASH services and facilities. It includes consultations/participation of beneficiaries in the planning and construction of WASH facilities. This strategy also involves beneficiary contribution to P&P costs. For example, "*involvement of beneficiaries and other stakeholders in planning and implementation of the project".* | |
| 2 | **Decentralisation of service delivery** | This strategy refers to a decentralised approach to service delivery which aims at increasing power and responsibilities at the lowest level of implementation. | |
| | | It includes creation of new structures such as user groups or village associations to plan, implement and maintain WASH facilities. For example, "*creation of village level committees for O&M of WASH facilities.*" | It includes the use of existing decentralised structures, creation of new structures such as formation of user groups or village associations to plan, implement and maintain WASH facilities, creation of a local fund for WASH and participation of beneficiaries in local village/WASH committees. For example, "*formation of village water and sanitation committees".* |
| 3 | **Demand management** | This strategy refers to activities that encourage communities to adopt and sustain hygienic WASH practices. It includes activities such as promotion of WASH designs and technology to create/increase demand and provision of incentives in the form of awards and accolades for best practices. It also includes sanitation marketing. For example, "*promote locally available substitutes instead of soap when availability is an issue.*" | - |
| 4 | **Equity in WASH service provision** | This strategy consists of activities that ensure equal access to all in provision of WASH services, decision making and coverage. Safeguarding the WASH needs of vulnerable population (i.e. population facing caste based discrimination, indigenous tribes, those vulnerable by occupation, elderly and the disabled), gender mainstreaming and involvement of vulnerable population in existing WASH/ local level committees are included in this category. For example, "*promotion of equal access to potable water by poor women headed households, youth, elderly, disabled*." | |

| S. No. | Strategy | Policies | P&P |
|---|---|---|---|
| **5** | **Improving demand** | - | This strategy refers to activities that encourage communities to adopt and sustain hygienic WASH practices. It includes activities such as encouraging households to use their own resources to build WASH facilities and provision of incentives in the form of awards and accolades for best practices. Adopting a demand-responsive approach and use of CLTS or similar approaches were also categorised under demand management. For example, "*CLTS and demand led approach implemented focussing on collective behaviour change*". |
| **6** | **Information, education and communication (IEC)** | IEC for policy documents refers to activities intended to improve and enhance communities' attitude, practice and behaviour regarding WASH such as sensitization campaigns and setting up of WASH clubs. IEC also includes training of users to maintain WASH facilities, training of community members to conduct WASH campaigns and in O&M, skill development of local artisans, building institutional capacity and inclusion of WASH in school curriculum. For example, "*capacity building of Union Parishad and ward level WATSAN committees to increase awareness about the importance of safe water*." | This strategy includes programmes/ project activities that are intended to improve and enhance communities' attitude, practice and behaviour regarding WASH such as sensitization campaigns and setting up of WASH clubs. IEC also includes training of users to maintain WASH facilities, training of members of the community to conduct WASH campaigns, construction of demonstration WASH facilities and inclusion of WASH in school curriculum. For example, "*hygiene messages to be integrated into textbook curriculum and supplementary reading material, morning assembly".* |
| **7** | **Institutional strengthening and capacity building** | - | This strategy refers to mechanisms to improve efficiency of institutions and strengthen institutional practices. It includes activities such as introduction of metering and reduction of unaccounted for water (UFW) to improve efficiency. Capacity building of institutions through training programmes for staff is also included in the component. For example, "*providing institutional support to local utilities*". |
| **8** | **Legal and regulatory framework** | Activities that develop or establish environment or sanitation laws/by laws and enforce legislation to ensure complete WASH practices are included under this strategy. It also ensures compliance to existing WASH policies, strategies and legal instruments. For example, "*create legislation* | - |

| S. No. | Strategy | Policies | P&P |
|---|---|---|---|
| | | *that allows citizens to have access to water based on rules*." | |
| **9** | **Project management** | It refers to activities that pertain to planning and implementation of WASH interventions at the institutional level and operation and maintenance (O&M) at the project level. It includes conducting monthly meetings for the staff, research and development and strengthening of institutional set-ups and mechanisms that provide WASH services. For example, *"settingup of new institutions of water supply and sewerage services."* | It consists of those activities which aid in service delivery and in meeting project requirements efficiently. This component includes creation of new agencies, policies and frameworks and development of legal provisions such as environmental or WASH laws/by laws. It also includes activities related to operation and maintenance at the institutional or government level and provision of financial support to governments and institutions for WASH. For example, "*preparing and introducing WASH O&M framework".* |
| **10** | **Provision of financial incentives** | - | This strategy includes provision of any kind of financial incentives such as subsidies and loans to the community for construction and maintenance of WASH facilities. Subsidies can be in the form of cash or materials for construction. Concessions on water tariff rates and encouraging communities to pay for WASH services by providing incentives are included in this component. For example, "*provision of micro finance for communities to construct or upgrade their latrines."* |
| **11** | **Provision of subsidies/ tariffs/ loans/ micro credit/ grant** | This strategy refers to the provision of subsidies (cash or kind), loans and so on to weaker sections of the community for construction of WASH facilities. It also comprises of activities such as provision of concessions on water tariff and encouraging communities to pay for WASH services by providing incentives. For example, "*subsidies (cost) for poor, interest free or low interest micro credit facilities*." | |
| **12** | **Provision of WASH facilities** | Policies and P&P activities which refer to construction or renovation of WASH services/infrastructure were considered under this component. It includes a) provision of new water supply, sanitation and hygiene facilities and services and b) rehabilitation, repair and up-gradation of existing WASH facilities and services. For example, "*construction and rehabilitation of piped water systems, institutional latrines*". | |
| **13** | **Sanitation marketing** | - | Sanitation marketing identifies beneficiaries as customers and focuses on the development of markets for low cost sanitation |

| S. No. | Strategy | Policies | P&P |
|---|---|---|---|
| | | | services and products. It includes provision of necessary hardware for construction and maintenance of WASH facilities and provision of after sales services by setting up shops. For example, "establishment *of sanitation marts and linking entrepreneurs to manufacture sanitation products*." |
| **14** | **Skill development for communities** | - | Skill development of communities encompasses strategies which target training of community members to construct, repair and replace WASH facilities. For example, "*training masons to construct low cost latrines".* |
| **15** | **Stakeholder participation** | Stakeholder participation consists of activities which describe inclusion of stakeholders (other than beneficiaries) such as NGOs, CBOs and private sector. The involvement of stakeholders could be in improving WASH service delivery, build and manage WASH facilities and promote WASH technologies. It also includes promoting Public Private Partnerships (PPPs) to promote WASH facilities and services and involvement of private sector in planning, operation and maintenance (O&M). For example, "*encouraging private sector to contribute through CSR activities.*" | |

### *3.1.6 Description of Benefits*

WASH benefits referred to qualitative indicators that lead to improvement in access such as availability, physical accessibility, affordability and quality & safety. An example that best describes the relationship between LCA segment and WASH benefits is a WASH project that provides sanitation and hygiene facilities for adolescent girls in schools which leads to the improvement of safety, availability, and physical accessibility. Definitions of these accessibility indicators have been adapted from the UN Handbook on Realising the Human Rights to Water and Sanitation by UN Special rapporteur (Albuquerque, 2014a). Table 3 provides a description of the different accessibility indicators.

**Table 3: Benefits for policies, P&P**

| S. No. | Benefit | Description for policies, P&P |
|---|---|---|
| **1** | **Availability** | Availability of WASH facilities, for current and future use, in sufficient quantity and continuity not only at households but also in public places (e.g. schools, health care centers) where people spend significant amounts of time. For example, "*Public toilets to be constructed in low income areas*." |
| **2** | **Physical Accessibility** | It denoted the location and design of the WASH infrastructure in such a way that it is genuinely accessible and acceptable, with consideration given to people who face physical barriers, such as children, older persons, persons with disabilities and chronically ill people and those who face cultural barriers such as women and specific ethnic or caste groups. Physical accessibility is measured in terms of design of the facility i.e., should be physically accessible to all users and must be culturally appropriate/ sensitive to gender, lifecycle and privacy requirements. Physically accessibility also includes the effort and time taken to access the WASH facility which must also be easily reachable via safe paths and well lit at night. For example, "*separate toilets for boys and girls with child friendly, well-lit, disabled friendly toilets."* |

| | | |
|---|---|---|
| **3** | **Affordability** | WASH facilities must be affordable for all and the price paid for these services must not limit people's capacity to buy other basic goods and services, including food, housing, health and education, guaranteed by other human rights. In this review, affordability was measured in terms of WASH costs. For example, "*providing microfinance for construction of latrines, sanitation and hygiene facilities*." |
| **4** | **Quality and Safety** | Water must be free of microbial contamination and of a quality that is of an acceptable colour, odour and taste for human consumption (drinking) and for personal hygiene. Sanitation facilities must be safe to use and must effectively prevent human contact with human excreta to protect the health of users. Toilets must be regularly cleaned and facilities should provide dustbins for the safe disposal of menstrual waste. For example, "*people in water stressed areas to have access to safe drinking water sources."* |

While the policies or P&P documents themselves did not provide the information in clear compartments as barriers, strategies and benefits, the research team developed comprehensive classifications using the data set and existing literature as a guide.

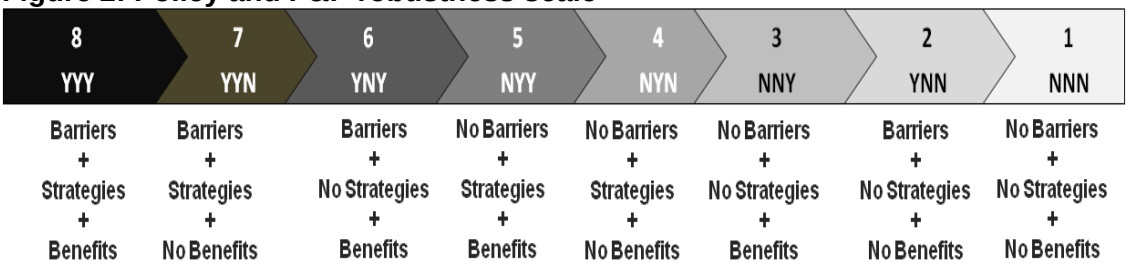
### *3.1.7. Robustness in policies and P&P*

We created a Robustness Index to measure the comprehensiveness of WASH policy and P&P documents. Specifically, it indicates the explicit identification or absence of three indicators namely, barriers, strategies and benefits within these documents. The policies and P&P reviewed commonly encompassed three indicators, barriers faced by different populations in accessing WASH services or facilities, strategies proposed or identified to overcome the barriers, and subsequent WASH benefits that the beneficiaries were intended to gain. We hypothesized that when all the three indicators are mentioned for a population segment it provided a wider perspective of the population segments' status in the WASH sector thus resulting in better WASH service delivery.

A systematic approach was followed to calculate the robustness index. First, the WASH policies and P&P were reviewed and coded based on the presence or absence of an indicator. The presence of each indicator was coded as 'Y' and its absence as 'N'. Next, the individual codes were combined to form a three-stringed alphabetical code for each of the documents. Such codes were developed by sector, by segment and by region. In total, eight different combination codes were developed for each sector, segment, and region. Lastly, these eight codes were ranked on an eight point scale where '1' denoted the absence of all three indicators and '8' denoted the presence of all three indicators.

The other six codes were ranked based on the presence or absence of barriers as presented in Figure 2. Identification of barriers was given a higher weightage because a clear understanding of barriers to access WASH services and facilities often results in effective service delivery. For example, the scores '7' and '6' denoted the presence of barriers and strategies or benefits. The scores 5 and 4 indicated the absence of barriers but the presence of strategies or and benefits, thus ensuring that the policies have recognised the WASH needs of the population segment. While '3' indicated the presence of only the benefits, '2' denoted presence of only the barriers without strategies or WASH benefits described which did not carry to any relevance to the population segment.

**Figure 2: Policy and P&P robustness scale**




## 3.2 Inclusion and exclusion criteria

### *3.2.1 Sectors relevant to the review*

WASH covers three main sub-sectors – Water, Sanitation and Hygiene. Definitions and descriptions of these sub-sectors have been provided in section 3.1.2.

### *3.2.2 Target Population*

Population segments were identified under both the LCS and GSS framework. Section 3.1.2 provides detailed description of population segments identified for this review.

### *3.2.3 Date and Language*

Policies and P&P formulated and implemented during the Millennium Development Goals period (January 1, 2000 and December 31, 2015) was chosen for this review. Policies before and after the MDGs were not included. However, an exception was made for a few countries who had existing WASH policies that overlapped with the MDG period. Since these policies were in operation for the early part of the MDG period they were found eligible for the study. Similarly, P&P started in the year 2015 but yet to be completed were included. Documents in English were predominantly used. Only one document was in French which was included in this review. For most documents, English equivalents were available, and the same were used.

### *3.2.4 Countries*

A total of eleven low and middle income countries in South Asia and sub-Saharan African were included in this review. These countries were identified from the list of WSSCC priority countries, most of which have received funding through the Global Sanitation Fund (GSF). Countries in both these regions fare lower than the rest of the world in WASH indicators (WHO and UNICEF 2015). Criteria used to shortlist these countries included WASH indicators such as: percentage of population practicing open defecation, percentage of population using improved drinking water and improved sanitation facilities and percentage of population with hand washing facilities at home. In addition to these indicators, other criteria included total population, percentage of poor, working language and extent of funding via GSF. The countries included for this review were India, Nepal, Pakistan and Bangladesh from the Asian region and Tanzania, Kenya, Ethiopia, Madagascar, Nigeria, Malawi and Uganda from sub-Saharan Africa. Appendix A provides further details on the method and rationale for short listing these countries.

### *3.2.5 Type of document*

Evidence for this review was obtained from two types of documents – (i) policy documents and (ii) P&P documents described in section 3.1.3. Any document that did

not describe or only partially referred to a WASH policy, programme or project and did not meet the definition of a policy or P&P document were excluded. (See Appendix B for a list of documents that were included for the review).

## 3.3 Document sourcing and search strategy

Since the database of documents comprised of policy notes, programme guidelines and project reports of selected governments, INGOs and multilateral/bi-lateral agencies, these were sourced directly from the websites of governments/organisations. In addition to government ministries or departments, organisations that were selected for this review included a combination of bi-lateral and multilateral agencies, international financial institutions and international non-government organisations. The absence of a common repository which contained documents from different organisations resulted in the research team conducting a manual search for documents in the websites of agencies.

A variety of organisations were included in the search strategy and given below are brief descriptions of these organisations:

a) Bi-lateral agencies are country specific agencies that provide development and financial assistance to developing countries, NGOs or think-tanks of other countries for implementing programmes that are of interest to both countries. The Department for International Development (DfID), Government of UK, USAID in the United States of America and AusAid in Australia are examples of bi-lateral agencies.
b) Multilateral agencies, on the other hand, are World Bank, UNICEF or UNDP, who raise funds from multiple country governments in order to fund programmes and projects in various countries.
c) INGOs are independent, organisations that are not aligned with any particular government, raise their own resources and work on welfare projects and programmes in multiple countries that they believe need assistance. WaterAid is an example of an INGO that has a large presence in Asian and African countries in the WASH sector.

These multilateral and bi-lateral agencies and INGOs were selected because of their work in water, sanitation and hygiene sectors, their presence in WASH programme implementation in the shortlisted countries and their contribution in formulating WASH policies at the global level. Appendix C provides a detailed list of organisations identified in consultation with WASH experts and our advisory board members. Appendices 9 and 15 provide a list of organisations contacted for policies and P&P respectively. Recommendations from the advisory group and experts led to the inclusion of a few more organisations during the search phase.

### *3.3.1 Sourcing Strategy*

The sourcing strategy involved direct correspondence with agencies and governments of selected countries. Shortlisted organisations and government ministries or departments were contacted via email, requesting them to share their WASH portfolio between January 1, 2000 and December 31, 2015. These organisations were contacted directly using contact details provided on their respective websites and also through contacts provided by our advisory board members, WSSCC and 3ie between March and the first week of June 2016. After identifying the contact, a detailed email was sent to the

organisations describing our requirements and requesting them for information (refer Appendix D for the letter sent to organisations).

### *3.3.2 Search Strategy*

The search for policy documents were conducted during the month of February 2016 whereas the search for P&P documents was conducted during the month of April 2016.The search strategy included the following steps:

I. Search of government websites – Government websites of the eleven selected countries were searched manually for policy notes, policy briefs, programme guidelines, mission documents, project reports and P&P evaluation reports. Ministries and departments that were searched included Ministry of Water and Sanitation, Health, Water Resources, Urban Development, Rural Development and Public Works. Search of government websites was completed by the end of February 2016.

II. Search of multi-lateral/bilateral organisations and INGO websites - In order to ensure completeness, authenticity and reliability of documents used, searching directly on agency websites was the preferred strategy. Websites of identified multi-lateral agencies and INGOs were searched using the search terms, for relevant P&P and evaluation documents (refer Appendix B for a detailed list of organizations shortlisted).

III. Electronic databases and grey literature - To ensure maximum coverage of documents, searches were conducted on electronic databases such as ELDIS and WEDC Knowledge base. Searches were also conducted on Open Grey, CAB Abstracts, and Google. This search was used to check for documents that could not be obtained directly from agencies. Website searches of organisations and databases were completed by the end of April, 2016.

### *3.3.3 Search terms used*

Searching for policy and P&P documents from websites of selected organisations was challenging as the search engines and filters varied across organisations. Search hits differed with the use of a) American and British spellings and b) use of singular and plural forms. Hence, the following basic search phrase and Boolean operators was adapted for search within each organisation:

“Water OR Sanitation OR Hygiene AND Project or Projects OR Policy OR Policies OR Programme OR Programmes OR Program OR Programs”

Appendix E gives a description of results obtained from website searches of all selected organisations using these search terms. Downloaded results were reviewed by two researchers in more detail using the inclusion and exclusion criteria to determine which documents could be included in the review.

## 3.4 Data extraction and management

All the documents downloaded were screened first using the exclusion criteria and then the inclusion criteria. Prior to coding of documents, based on the pilot search during the protocol phase, a data extraction or coding tool was developed to capture the variables of interest to this review such as background information, target population, barriers in accessing WASH, strategies adopted, benefits envisaged from the P&P, and so on. The

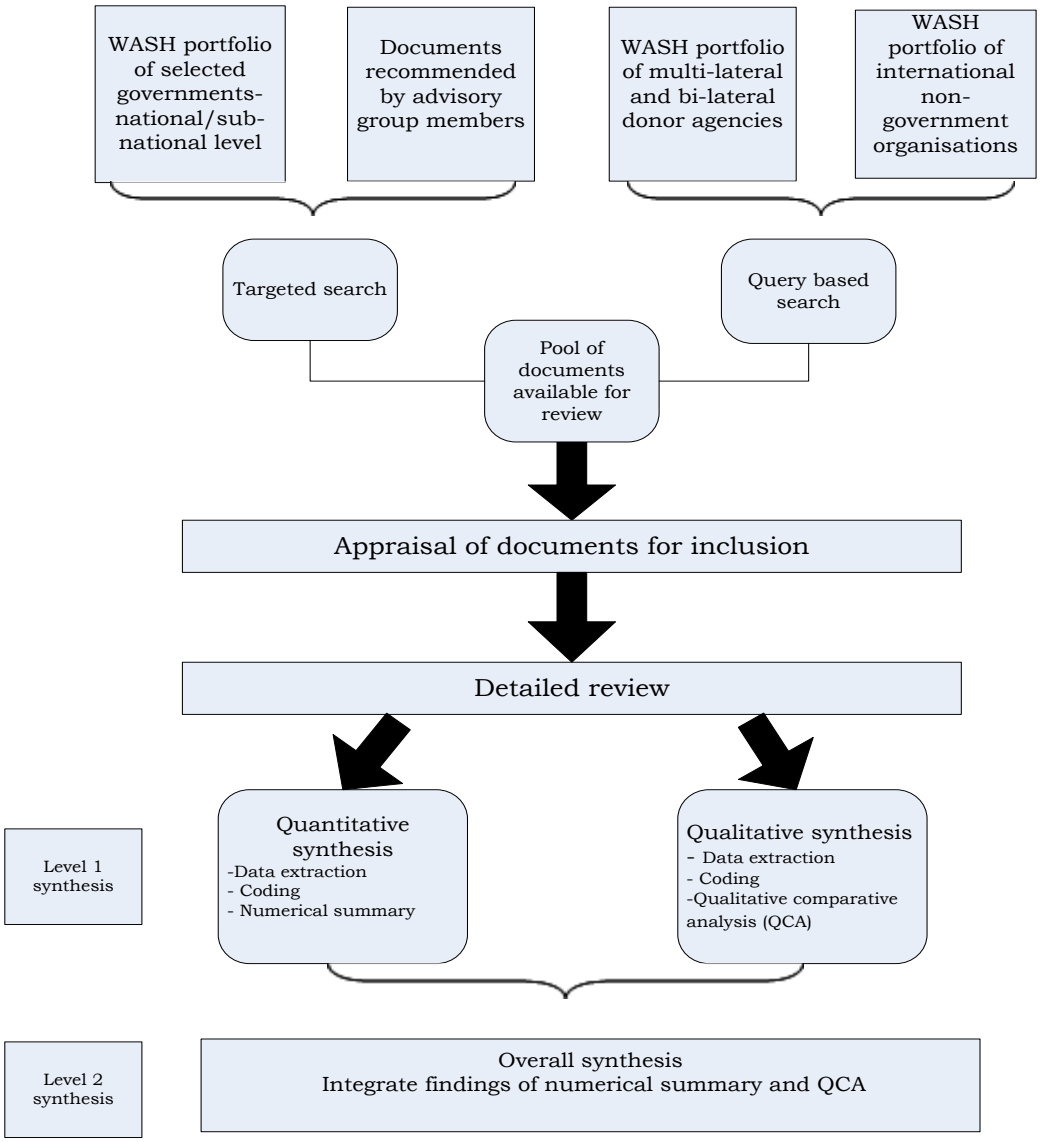
coding tool was designed to be exhaustive and capture all the information that might be needed during analysis. However, the analysis itself was restricted to only a few select variables that had an effect on the outcome.

The coding tool was piloted using a set of sample documents. This was done to ensure that coding decisions and data extraction was consistent amongst all documents. Minor revisions were made to the coding tool after the pilot screening. Separate coding tools were used to capture data from (i) policy documents and (ii) P&P documents (refer Appendix F). In order to ensure uniformity in coding, a guide that described the coding tool was also developed (refer Appendix G).

Included documents were then assigned unique codes consisting of country, document type and number for policy documents as such – INDPY01 for India's 'National Water Policy, 2012'. For P&P documents, the unique code included the country, sector, funding agency, programme or project code and a document number. For example USAID's 'Integrating WASH into HIV interventions and advancing improved sanitation uptake in Kenya' was coded as KEN/WASH/PG/USAID/04, where KEN refers to Kenya, WASH refers to the three sectors covered in the intervention, PG refers to programme, USAID refers to the organisation funding the programme and 4 refers to the fourth document coded for Kenya. A code for the researcher studying the document was also added for each document. Refer to Appendix F3 for a list of codes used in the coding process.

Data from policy documents were extracted line-by-line by a three member research team with two researchers independently coding the same document. The coding tools were then reconciled to enhance consistency of data and limit extent of ambiguity. Any disputes arising during this process were reconciled by a third researcher. However, a single P&P documents was coded only by one researcher and ambiguities arising during coding were reconciled through discussions within the research team. Figure 3 presents the search and synthesis process.

**Figure 3: Search and synthesis process adopted for this review**




A structured and systematic process was followed to extract data. A database was maintained separately for policy and P&P documents on Microsoft Excel (MS Excel). Information captured with the help of the coding tool was entered against the assigned document and researcher code and separate sheets were maintained for each question.

Upon completion of data entry, the data was cleaned to ensure it was in an appropriate form for data analysis. The cleaning process consisted of removing duplicates, deleting rows with no information and ensuring that the codes and data entered from each document was consistent with the coding tool. Once the data entry was completed, data pertaining to barriers, strategies and benefits were categorised into sub-themes based on their descriptions as mentioned in section. Figure 3 provides a description of the data that was extracted using the coding tool and Figure 4 describes how this information was used to answer each of the three research questions set out in section. In both figs 4 and 5, the question numbers (indicated by Q) denote the set of questions that provide the data pertaining to different categories of information which was used to answer the specific research questions. Refer to Appendix F and G for detailed explanations.

**Figure 4: Data extracted from documents**

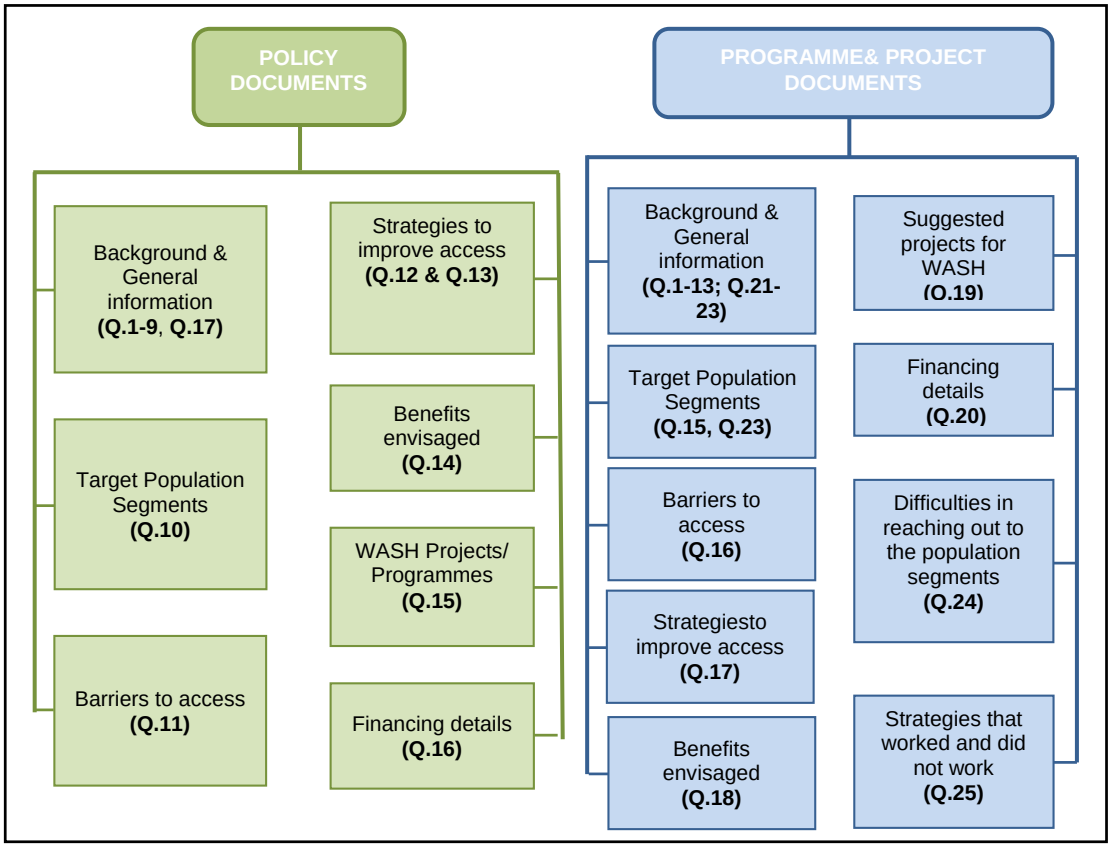
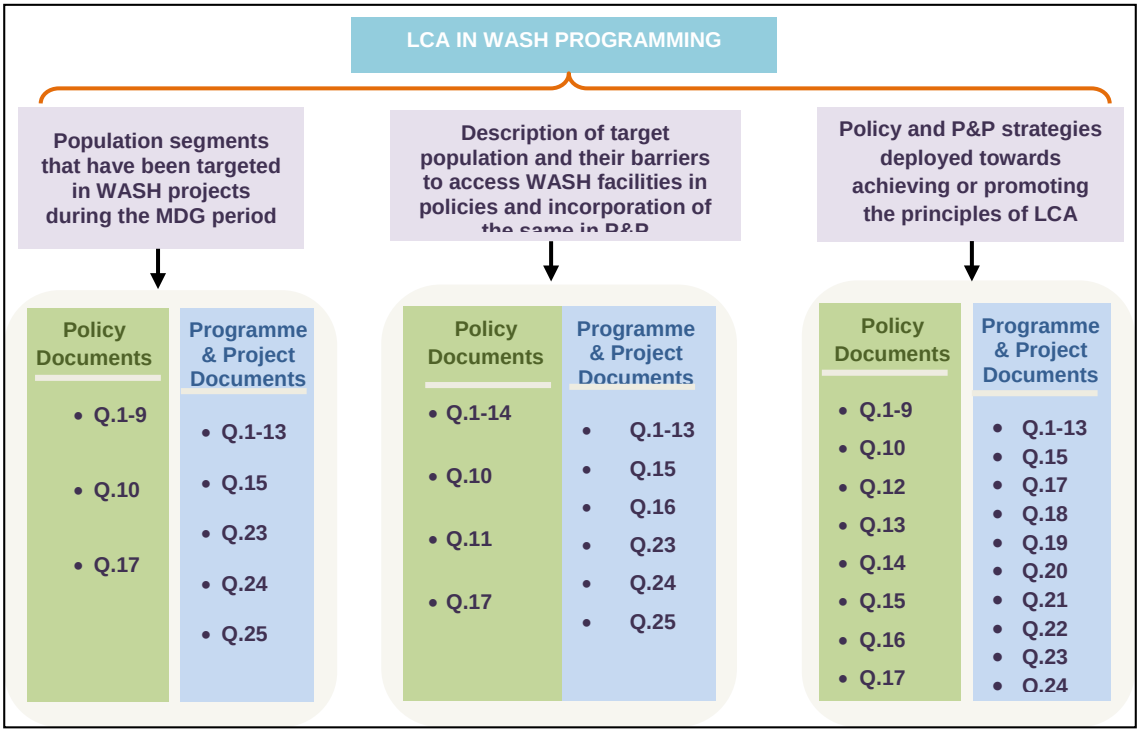



**Figure 5: Data from the coding tool used to address research questions**



### *3.4.1 Study dependency*

When our search showed multiple documents on the same intervention or a single policy that has led to several P&P, a single coding tool was used to record the data. Apart from capturing the title of the policy/progammme/project, the list of documents under a particular policy/P&P that contributed the data was also recorded. For example, the Kerala rural water supply and environmental sanitation project of the World Bank had a project appraisal document as well as a project implementation and completion report. The coding sheet specifically recorded both the appraisal report as well as the implementation and completion report as data sources (refer Q.3 in Appendix F2). Once all the documents were coded by sector and country, a check for duplicates was undertaken manually. Since the number of policies, programmes or projects for one country was limited, a manual check was sufficient to safeguard against duplicates as well as ensure all documents pertaining to one P&P were recorded together. The data cleaning process described in section 3.4 further helped remove any duplicates that might have been missed out in the manual process.

The unique document code was useful in capturing prospective and retrospective information provided in the documents. For instance, a policy document or a P&P inception report was prospective in nature as it sets outs the WASH goals to be achieved or addressed within a specified timeframe. A P&P completion report or an evaluation report was retrospective in nature as it provides information on the outputs and outcomes achieved.

## 3.5 Data analysis - Synthesis methods

### *3.5.1 Descriptive Statistics - numerical summary of the evidence*

Descriptive statistics summarizes important information about the study variables and can be used to present averages and understand the distribution of data. Light and Smith (1971) have indicated that the numerical summary of evidences is a useful review technique that helps to gather the body of evidence related to a theoretical relationship, count the percentage of tests that supported the relationship, and use that percentage as the basis for drawing conclusions about the state of the literature. While there are some limitations to synthesising evidence by numerical summary (Combs et al., 2011) we feel that the findings obtained from a numerical summary would provide insights on the underlying trends. The procedure used for a numerical summary involves extracting data on the different variables (refer Appendix F) identified in the review. The evidence extracted from all the included studies were summarised in the form of frequency tables, graphs and charts.

### *3.5.2 Qualitative Comparative Analysis*

QCA technique was used in this review to understand what combinations of conditions present in policies and P&P and context influenced and impacted the desired outcomes. Introduced by Charles Ragin, a sociologist, during the late 1980’s QCA is an intermediate technique between the qualitative analysis and quantitative analysis. QCA uses set theory and Boolean logic to understand the causal relationships (or pathways) leading to certain outcomes of interest. It helps in the generalization of findings from a relatively small number of cases and offers the ability to identify different pathways of condition combinations that lead to a similar outcome (Berg-Schlosser D, De Meur G,

Rihoux B, Ragin CC, 2009 and Ragin CC 1987). The strength of QCA lies in the fact that it helps in understanding multiple causal pathways of input conditions (or variables) leading to an outcome variable of interest. In this review, we have chosen to use QCA to analyse two research questions,

1. What conditions lead to the inclusion and identification of population segments in policies and P&P? Does it vary between sectors and regions?
2. What conditions lead to the inclusion and identification of population segments in WASH benefits in policies and P&P? Does it vary between sectors and regions?

The QCA analysis was carried out using the fsQCA 2.0 software[1]. In QCA process, each data point is coded whether it belongs to a particular set or not (called input conditions in QCA terminology). For example, if the presence of an international aid agency is suspected to be an contextual condition of interest to a particular WASH outcome, all the data points present will be coded as either belonging or not belonging to the set "PRESENCE OF INTERNATIONAL AID AGENCY" (usually a value of 1 is assigned if the data point belongs to set and 0 if not). Such crisp classification of data points may not be possible in certain cases, e.g. the poverty of country, the development of a country. In such cases, the input conditions are coded as fuzzy sets by giving a particular membership to each data point based on some pre-agreed criteria (usually referred to as calibration scheme). The same principles are applied to code the membership of the data point with respect to the outcomes of interest. For the QCA section, input conditions mean the contextual conditions which are of interest to the team to understand their causal significance towards the outcomes (similar but not equivalent to independent variables in quantitative analysis). The outcomes are coded as outcome conditions in QCA (similar but not equivalent to dependent variables in quantitative analysis).

***QCA concepts and process:***

**Stage 1: Identify conditions and outcome variable**

For this study, the team worked on two sets of data – policy and P&P data sets. The data sets varied in terms of the number of data points and the number of input conditions under study. Albeit the diversity of data collated, the primary research question aligned with the objective of the review: *"To what extent have the Water, Sanitation and Hygiene sub-sectors incorporated the life-cycle approach into policy, programmes and projects during the MDG period?"*

The initial set of input conditions for the QCA analysis were chosen based on the substantive knowledge on policies and P&P gained during the course of the review. The final QCA conditions was arrived iteratively based on the analysis results. Two different sets of input conditions were used to analyse the two research questions.

The conceptual model for the research question, "What conditions lead to the identification and inclusion of population segments in WASH policies and P&P?" has been presented in Figure 7. This model takes into consideration both internal and external factors and explores its influence on the outcome. The external factors include the Human Development Index (HDI) and the Joint Monitoring Programme (JMP) estimates for Water Supply and Sanitation. The HDI is a composite indicator of three

[1] fs/QCA 2.0 is a software developed for Windows by University of Arizona. It can be downloaded from http://www.u.arizona.edu/~cragin/fsQCA/software.shtml

development indices namely, life expectancy, education and per capita income. A country with a high HDI index would therefore indicate a positive trajectory to growth and development on both the economic and social spheres. It implies that the government and its citizens are productive, healthy and make informed choices as a result of increased access to knowledge. JMP aims to accelerate progress towards universal and sustainable access for underserved populations in the developing world to safe water and basic sanitation. We hypotheses in countries with high HDI and JMP coverage, WASH policies and programming are more nuanced and inclusive with fair representation of population groups within WASH initiatives.

The internal factors largely include the WASH sub-sectors, water, sanitation and hygiene, type of drafting agency, type of P&P funding agency and P&P implementation agency.

Finally, the outcome of interest in this analysis is the inclusion of the population segments in the WASH policies and P&P. To this end, to outcomes are important. The first of these is whether population segments based on LCS are explicitly mentioned in the policy/P&P. The second is whether the population segments pertaining to GSS are explicitly mentioned in policy/P&P. Thus these two outcome conditions were analysed in separate QCA analyses both at policy as well as at P&P levels.

**Figure 6: QCA conceptual model for inclusion and identification of population segments**

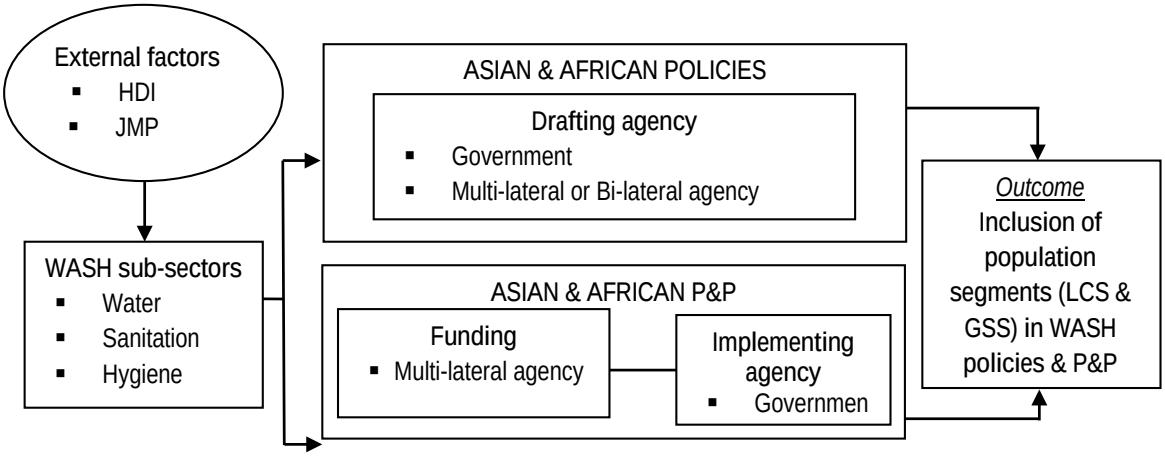
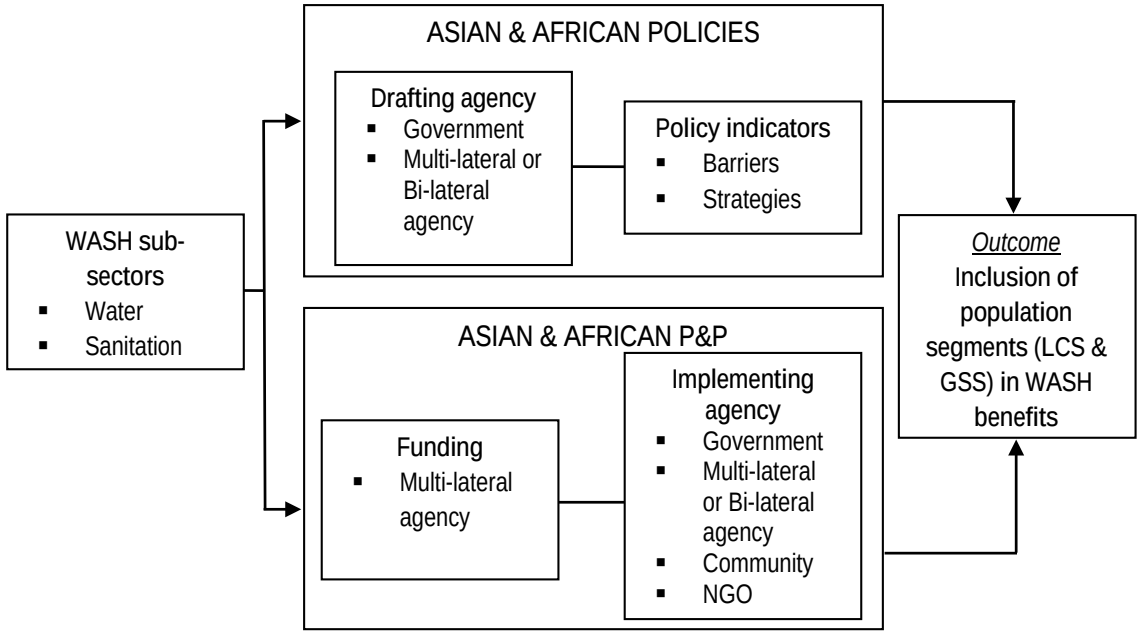



Figure 7 presents a visual representation of the conceptual model for the research question, “What conditions lead to the inclusion and identification of population segments in WASH benefits in policies and P&P?” The model shows five categories of variables that have an influence on the outcome that is, inclusion of population segments in WASH benefits. These variables have been commonly identified from the policy and P&P documents reviewed in this study. The first category includes WASH sub-sectors namely, water, sanitation and hygiene. The model suggests that each of the WASH sub-sectors have a significant role in providing WASH benefits to LCS and GSS.

**Figure 7: QCA conceptual model for identification and inclusion of population segments in WASH benefits**




The second and third categories: drafting agency and indicators pertain to policies. The WASH policies included in the review have been drafted predominantly by the Government and in some cases, with technical support from multi-lateral or bi-lateral agencies. As drafting agencies, we assume that they will have an influence on including population segments within the policy and P&P purview. The fourth category includes policy indicators such as barriers and strategies. Based on our extensive literature review, policy documents largely composed of three indicators: barriers, strategies and benefits. The barriers identified the various obstacles faced by different population segments in accessing WASH services or facilities and subsequently, strategies were proposed to address these limitations. Finally, intended WASH benefits for each of the population segments were detailed. The model therefore suggests that when policy indicators such as barriers and strategies are detailed for population segments, it is more likely that WASH benefits will be proposed for the segment.

Categories relating to P&P include funding and implementation agency. The role multi-lateral and bi-lateral agencies as funding and implementation partners in African and Asian WASH P&P have been very prominent. We hypothesise that as a lender and implementer they have ascendancy on the representation of population segments in P&P. Other implementing agencies like government, NGOs and community too have a great role to play in ensuring that benefits are distributed in an equitable manner across various population segments.

To understand the whether the population segments were identified for WASH benefits, two different outcome variables were considered in the present analysis. The first of these pertain to whether the benefits were identified for the population segments based on LCS in WASH policies and P&P. Second of these outcomes understand whether the benefits were identified for population segments based on GSS in WASH policies and P&P. Separate QCA analyses were carried out for each of these two outcomes both at policy level as well as P&P level.

**Stage 2: Assign membership values**

Both fuzzy and crisp sets were used for the analysis. Crisp are similar to dichotomous categorical variables in regression (Kane Heather, Lewis A Megan, Williams A Pamela, Kahwati C Leila, 2014) and they define a case as either full-membership (1) or no membership (0) to a particular input condition of interest. Crisp sets were used when the presence or absence of an input condition presented no ambiguity and such a classification is the only condition of interest for the QCA analysis. For example, for the input condition “Presence of an agency” a value of 1 denoted an agency was present and assisted the government in framing the policy of interest and a value of 0 represents that no agency was present. The fuzzy-set values were used for input conditions of interest when the membership of the data point (policy and P&P) under consideration could vary on a scale of association rather than sharp bifurcation as presence or absence. A detailed description of the fuzzy-set values for each output variable and input condition is presented in the appendix H. Once the coding scheme for input conditions and output conditions are established as shown in appendix H, the data points are coded according to the schemes. At the end of this exercise we get a dataset with values for various input conditions and output of interest at both the policy level and P&P level. Fuzzy set QCA (fs-QCA) analysis was carried out at both the levels.

A detailed description of the calibration scheme used for each output variable and input condition is presented in the appendix H.

**Stage 3: Construct truth tables**

The next stage after coding was to construct the truth tables. A truth table presents all the possible configurations of conditions and the number of cases that fall within these configurations. Further, it also provides the consistency of the cases that is, the number of cases that exhibit the outcome. The consistency value in crisp sets is the proportion of cases that exhibit the outcome. The truth tables have been presented in appendix h.

**Stage 4: QCA analysis and interpretation**

The results provided three solutions to each truth table analysis. (1) a “complex” solution that avoided using any counterfactual cases (rows without cases - “remainders”); (2) a “parsimonious” solution, which permitted the use of any remainder (for combinations of conditions which have few cases or that lack cases to be included) that yielded simpler (or fewer) recipes; and (3) an “intermediate” solution, which used only the remainders that survive counterfactual analysis based on theoretical and substantive knowledge. Generally, intermediate solutions are considered as the best solution (Olsen, Wendy, and H. Nomura, 2009) and it has been used to analyse and interpret the findings for this study.

**Precautions taken while using QCA as an analysis tool of QCA**

QCA provided a novel approach to understand and achieve the objectives of the present study. QCA helped to uncover various configurations of “institutional pathways” as will be discussed in the next section. However, it should be noted here that precautions should be taken to ensure scientific rigor in analysis and ensure replicability of the results. The following precautions were taken during the study to this end.

First, QCA analysis required extensive documentation of each and every step and assumption involved in the process. The coding scheme developed for the various

conditions used in this analysis was documented in Appendix h. The coding scheme was based on substantive knowledge that exists in the areas of research.

Second, it should be noted that all the configurations of the input conditions would not usually appear in the real world. For example, an analysis with four input conditions had 16 possible (24) configurations. However, not all the 16 combinations might have occurred in the field. In such cases, the researcher assumed the tendencies of the input conditions in causing the outcome of the interest. Such assumptions were clearly documented in the process.

Third, it should be noted that the input and the output conditions used in the analysis were clearly defined and presented. The results of the study should be looked in the light of these definitions.

Finally, it should be noted that QCA process involved an iterative process of analysis which involved the researchers to go back and forth on the data coded and collected for various documents. Such a process involved a lot of effort both in terms of time and effort. Similarly, the pathways which evolved from the analysis were interpreted in the light of the evidence points which were analyzed. For this, the researcher went back to the specific data points to substantiate the pathways from the analysis. Such an exercise also acted an additional check to see if the pathways make empirical sense. All such processes involved a high degree of iterative conversation between the data and the research team.

## 3.6 Variations from the protocol

The identification of variables and analysis has been refined since the submission of the protocol based on the nature of data collected and feedback received from advisory board members. Variations from the protocol are as follows:

a. **Refinement of objectives:** The objectives set out in the protocol were operationlised through a set of research questions which not only expanded the scope of this research but also provided clear direction to the analysis. Specifically, research questions were identified for robustness and QCA which focused on understanding the conditions that lead to the inclusion of LCS and GSS in WASH benefits (refer sections3.1.7 and 3.5.2 for details regarding robustness and QCA). It was decided to not use the IDEFO framework to discuss results of the QCA as mentioned in the protocol as it was felt that IDEFO was not an appropriate choice to represent the results.
b. **Population segments:** The identification of population segments in the protocol was based on the human life-cycle (defined by age, gender and disability), caste, ethnicity, occupation and income based discrimination, PLHIV and discrimination based on geographical context such as rural and urban. However these segments were further categorized into two distinct groups in order to study the difference between life-cycle groups and non-lifecycle groups. Life cycle segments (LCS) included segments categorised by age, gender, disabilities and PLHIV. Geographical and social segments (GSS) included segments categorised by location (such as rural and urban), income (poor and low income), caste, ethnicity and groups vulnerable by occupation (refer section 3.1 for detailed definitions).

c. **Outcome indicators:** Outcome indicators as defined in the protocol consisted of the various population segments and a set of WASH indicators which included availability, physical accessibility, affordability and quality and safety. However, these indicators were further developed and grouped based on reviewing the documents into comprehensive categories such as barriers, strategies and benefits (refer section 3.1 for definitions).
d. **Robustness:** The concept of robustness was conceptualized after the submission of the protocol and the draft report. Policy robustness aimed to understand the identification of barriers, strategies and benefits for each of the population segments in policies and P&Ps (refer section 3.1.7 for a description on robustness).
e. **Link between policies, P&P:** The link between policies, programmes and projects could not be established, as mentioned in the protocol. This was because P&P documents did not explicitly or implicitly mention the alignment or association to the goals of a specific policy. Therefore it would have been incorrect to assume that a specific programme or project fell within the ambit of a policy in operation during the concerned period. Also, several countries included in this review had multiple policies in operation at the same time period which made it difficult to link the P&P to one policy unless explicitly mentioned in the document.

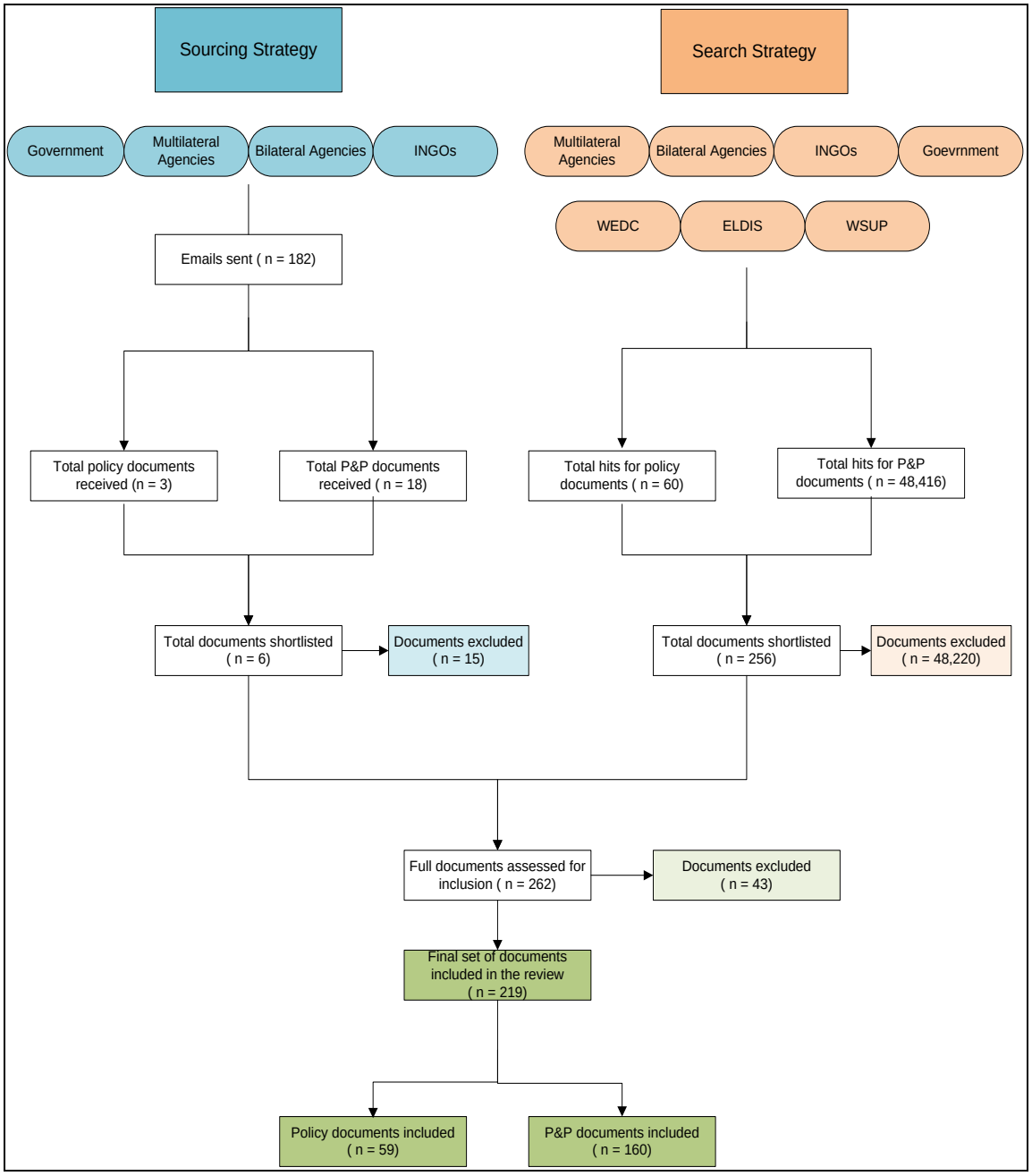
**Summary**
This Chapter provided a description of the methods and definitions used in this review. The following Chapter presents the results and discusses the findings.

# 4. Results and Discussion

**Overview:** This chapter presents the results of the review from the numerical summary and the qualitative comparative analysis (QCA). Section 4.1 describes the findings from WASH policies while Section 4.2 details the findings from WASH P&P. Both these sections are organised as follows: first, search results are presented. Second, the numerical summary which discusses findings on the extent to which life-cycle segments (LCS) and geographic and social segments (GSS) are described. The third section provides results from the QCA and is followed by the fourth section that synthesises results from the numerical summary and the QCA.

The search process and results for policy, P&P documents have been described in the PRISMA flowchart as shown in Figure 8. Both the search and sourcing strategy were implemented simultaneously. The sourcing strategy was a time consuming process and responses were obtained over many weeks unlike the search strategy which was implemented in a time bound manner (as described in section 3.3). Documents gathered from both strategies were reviewed together and care was taken to ensure that duplicates were removed. Once documents were shortlisted from the search and sourcing strategies, these underwent two rounds of screening. First, document titles and summaries of documents were screened in order to ensure that documents matched our inclusion criteria. This was followed by a full text screening of documents before the coding process was undertaken. It should be noted that while we had a total of 160 P&P documents that qualified for inclusion in the review, the final number of P&P reviewed were 131 as all documents pertaining to a single P&P were grouped together.

**Figure 8: PRISMA flow chart of search process and results**




## 4.1. WASH Policies

In this section we present the results of our findings from WASH policies. Findings have been grouped according to WASH barriers, strategies and benefits.

### *4.1.1 Overview of included documents*

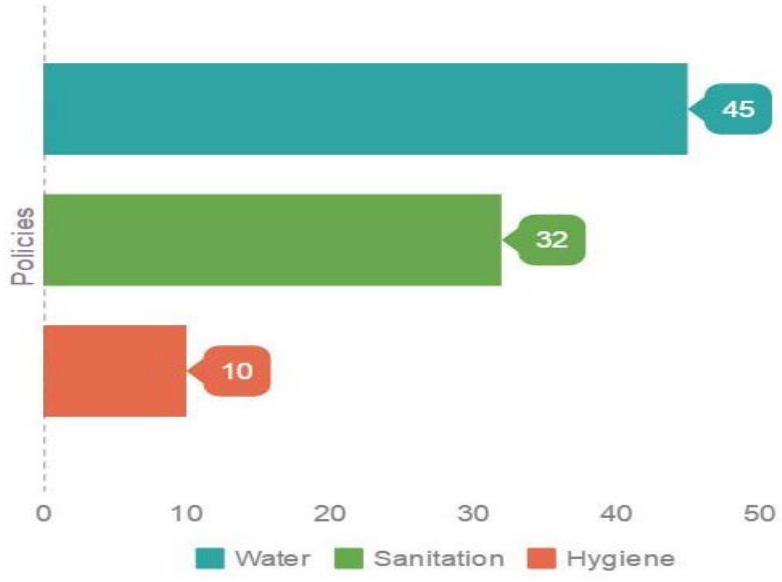
The sourcing and search strategy yielded 59 policy documents of which 33 were national policies and 26 were state policies (see Table 4*)*. State policies could be obtained only for two countries namely India and Pakistan. While there could be state level policies for other countries, our sourcing and search strategy could not fetch those documents. All 33 national policies were grouped together for analysis whereas state policies for India and Pakistan were analysed separately.

**Table 4: Classification of policies by country**

| | Country | Polices |
|---|---|---|
| ASIA | Bangladesh | 8 |
| | India<br>*National*<br>*State* | 27<br>*5*<br>*22* |
| | Nepal | 5 |
| | Pakistan<br>*National*<br>*State* | 6<br>*2*<br>*4* |
| | **Asia Total** | **46** |
| AFRICA | Ethiopia | 4 |
| | Kenya | 3 |
| | Malawi | 2 |
| | Madagascar | 1 |
| | Nigeria | 0 |
| | Tanzania | 2 |
| | Uganda | 1 |
| | **Africa Total** | **13** |
| | **Overall Total** | **59** |

**Water sector had highest policy coverage, hygiene had the least:** Of the 59 policies, 45 pertained to the water sector, 32 related to sanitation and 10 policies covered hygiene (see Fig 9). Although the total number of policy documents was 59, the sector wise total indicated a higher number of documents because often policies covered more than one of the WASH subsectors. For instance, Nepal's National Urban Water Supply and Sanitation Sector Policy, 2009, covered water and sanitation. This policy document was included in both the data set for sanitation and water. There were also instances when a 'National Water Policy' discussed the sanitation sector in detail and therefore it was found pertinent to include the document under both water and sanitation sub-sectors.

**Figure 9: Sector wise count of policies**



Higher number of water policies perhaps reflects the general importance given to water supply among the three WASH subsectors, and the importance of water supply for basic human sustenance. While, sanitation is also a basic need, the practice of open defecation exists in several parts of the world. The recognition of the health and environmental costs of open defecation given in the MDGs has provided the much needed fillip to sanitation sector policy making. The hygiene sector, however, has received attention only in the recent years and has often been combined with sanitation sector policies.

**WASH policy formulation had gained prominence during the MDG period:** With the implementation of the MDGs, countries seemed to become increasingly active in formulating policies in the WASH sector. It can be seen from Table 5 that in Asia, more number of policies were formulated from 2006 onwards whereas in Africa policies were introduced in the early years of the MDGs.

**Table 5: Timeline for WASH policies**

| S. No. | Time period | Number of National policies | | Number of State Policies | | Total |
|---|---|---|---|---|---|---|
| | | Asia | Africa | Asia | Africa | |
| 1 | Before 2000 | 2 | 3 | 0 | 0 | 5 |
| 2 | 2001 to 2005 | 6 | 4 | 7 | 0 | 17 |
| 3 | 2006 to 2010 | 4 | 4 | 11 | 0 | 19 |
| 4 | 2011 to 2015 | 8 | 2 | 8 | 0 | 18 |
| | **Total** | **20** | **13** | **26** | **0** | **59** |

For some countries (Ethiopia, Bangladesh, Kenya and Uganda) policy documents dating back to 1998 and 1999 have been included because these policies were in force at the start of the MDG period till they were either revised or replaced by another policy in the early part of the Millennium.

**Challenges in identifying WASH policies as several ministries hold responsibility for WASH:** Most number of policy documents were obtained directly from government websites. However, searching for policy documents from these websites was challenging for two reasons; a) multiple department or ministries were involved in the drafting of WASH policies as a result of which documents were spread across the websites of various departments. b) government websites were not updated with latest policy documents and hyperlinks. In such cases, policy documents were obtained from websites of other international agencies and through email correspondence with government departments (refer Appendix I for responses from governments). In order to ensure authenticity of such documents, care was taken to include only those documents that had the date, government department or ministry and government credentials on the document.

The nature and extent of information provided in the policies differed between countries. No two policy documents followed the same format. Some policies were well sequenced and laid out the vision, objectives, background and so on, whereas others were very brief with minimal details.

Whilst, policies were drafted by government departments or agencies, few external actors such as multilateral and bilateral agencies and international NGOs (INGOs) have

also lent their expertise. Some agencies that assisted in drafting were the World Bank's Water and Sanitation Programme, UNICEF and Canadian International Development Agency (CIDA). It was observed that policies drafted with the help of multilateral/bilateral agencies and INGOs were better structured and contained details on how the policies would achieve the MDG targets. These documents were also fairly lengthy in comparison to the policies drafted by government agencies on their own. However, quality assessment of these policy documents was not undertaken for two reasons: (i) Assessing the quality of policies was not within the scope of this study and (ii) the lack of established methods to judge the quality of policy document of different countries was also an impediment.

### *4.1.2 Numerical Summary: National Policies*

***Trends in Population Segmentation: A timeline***

All population segments mentioned in national policies were represented on a timeline based on the year they were mentioned in a WASH policy during the MDG period. This timeline has been presented separately for each WASH sub-sector in the Asian and African region (See Figures 10 to 4.8).

It can be observed from the timeline that the representation of life cycle segments in WASH policies was a gradual process moving from GSS to LCS. In the beginning of the MDG period, WASH policies seem to have focused on GSS such as rural and urban areas. Women were the only LCS that found a mention in policies in Asia (Bangladesh) and Africa (Ethiopia, Uganda and Kenya) as far back as 1998 and 1999. Other segments were subsequently identified only from the years 2004 – 2005 onwards. Although several policies continued to aim at universal access, the timelines showed that LSS and GSS were also identified during the MDG period.

**WASH in Asia**

Among the WASH policies in this region, Nepal had the most number of LCS mentioned in policies between 2004 and 2014 (See Figures 10, 11 and 12). A total of seven segments were mentioned and these included: women (rural and urban), men (rural), adolescent girls, disabled, senior citizens and PLHIV. These observations were from the Rural Water Supply and Sanitation National Policy 2004, Rural Water Supply and Sanitation National Strategy, 2004, Water Plan, 2005, National Urban Water Supply and Sanitation Sector Policy 2009 and the Sanitation and Hygiene Master Plan 2011. While women, men and children were identified in the year 2004, adolescent girls, disabled, senior citizens and PLHIV were introduced only in the year 2011.

WASH policies of Bangladesh discussed six LCS over a longer duration, between 1998 and 2014. These were: women (rural), disabled, children, men, and senior citizens. The Bangladesh Pro-poor Strategy for Water and Sanitation Sector 2005 and the Bangladesh National Sanitation Strategy 2005 contained references to senior citizens and children; whereas the disabled and men were mentioned much later in the National Hygiene Promotion Strategy for Water Supply and Sanitation Sector, 2012 and National Strategy for Water Supply and Sanitation, 2014 respectively.

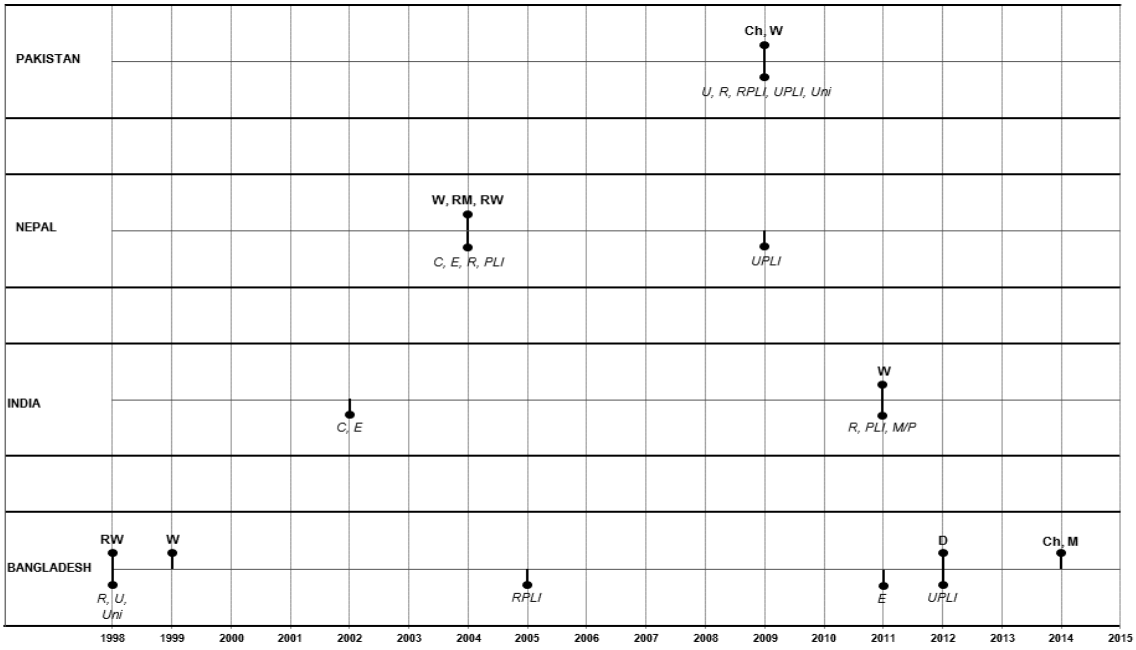
Pakistan policies were limited in their references to LCS with a mention of only four segments, namely women, children, men and the disabled while India had a total of five policies which mentioned only three life cycle segments – children, women and PLHIV

between 2002 and 2011. India and Nepal were the only two Asian countries to have mentioned PLHIV in their sanitation policies in the year 2011.

A sector wise analysis revealed that coverage of LCS in the water sector in Asia was limited to women, men, children and disabled with the disabled and men identified only in the years 2012 and 2014 respectively (See Figure 10). The sanitation sector mentioned more number of LCS that included women, men, children, the disabled, adolescent girls, senior citizens and PLHIV (Fig 11). The identification of men, disabled and senior citizens took place in policies drafted between 2004 and 2006 in Bangladesh, Nepal and Pakistan. The sector - wise comparison showed that sanitation sector policies acknowledged a greater number of LCAs than water or the hygiene sector. The number of evidences for the hygiene sector in Asia was limited to Bangladesh and Nepal and included the segments women, children, men and the disabled (Fig 12). Pakistan mentioned only women in its hygiene policy whereas India made no mention of any life cycle segments in its hygiene policies.

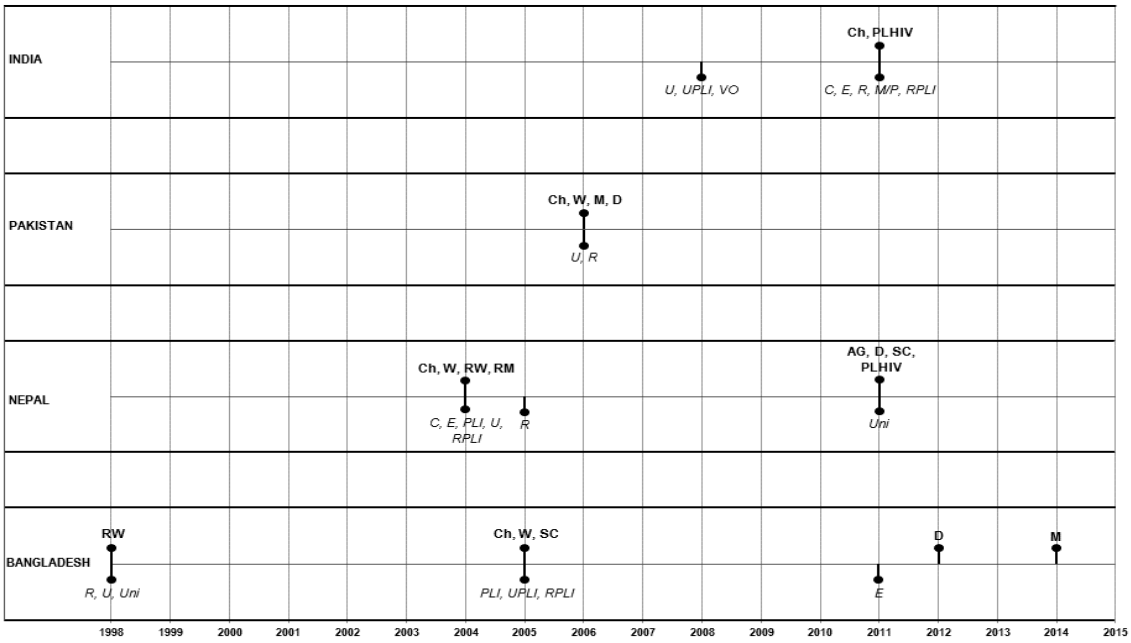
In the GSS, in Asia, rural, urban, and poor and low income segments have been consistently identified across all policies during the MDG period. While emphasis has been on rural areas, urban and the poor and low income segments had gained attention since 2004 onwards. In addition, groups marginalised by caste and ethnicity have also received attention in Asian policies whereas migrants and pastoralists and groups that are vulnerable by occupation found no mention at all.

**Figure 10: Inclusion of segments in water sector – Asia**



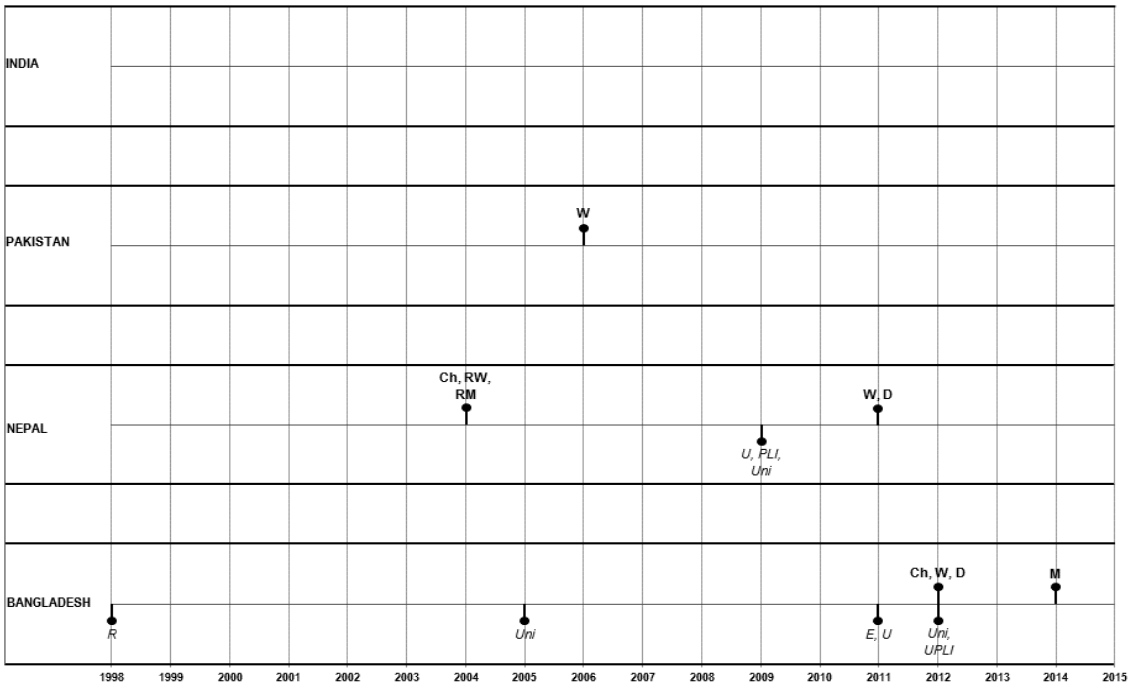

Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

## Figure 11: Inclusion of segments in sanitation sector – Asia




Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

## Figure 12: Inclusion of segments in hygiene sector – Asia




Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

**WASH in Africa**

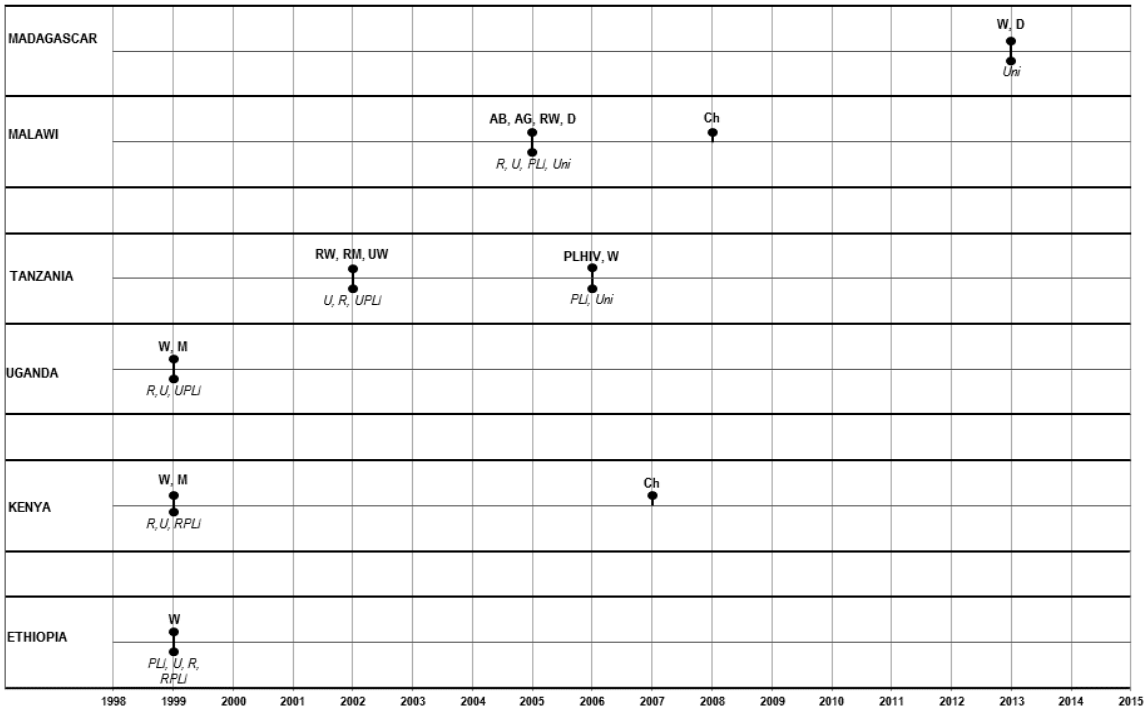
In the case of Africa, it was observed that till the year 2005, LCS that were mentioned in WASH policies were women (rural and urban) and men (see Figs 4.6 to 4.8). Children had been mentioned only once in, the National Water Policy of Uganda, 1999. Ethiopia led the African region with 4 WASH policies that had identified 8 LCS. Of these policies, three were announced during the MDG period in 2001, 2005, and 2006 respectively. The LCS included in these policies were children, women (rural and urban), adolescent girls, adolescent boys, PLHIV and disabled. Observations regarding these LCS in Ethiopia were predominantly from the sanitation and hygiene sectors while the water sector mentioned only women.

In Africa, apart from women and children, adolescents (girls and boys), disabled and PLHIV had got the most attention in all the three WASH sub-sectors. It was interesting to note that around the year 2005, Ethiopia, Malawi and Kenya had mentioned adolescents, children and the disabled in their WASH policies. A possible reason for this similarity in policy-making could be a result of “policy diffusion”, where countries learn from one another, especially from neighbouring countries with common conditions and problems (Bowman and Kearney, 1986). Some countries may be leaders in the adoption of WASH policies while others may be middle adopters or laggards depending on which country takes the lead in policy innovation and those that follow suit (Gray, 1973).

PLHIV, who were mentioned in all the three WASH sub-sectors, were identified in the early part of the MDGs. Policies that mentioned this segment included Tanzania’s National Water Sector Development Strategy, 2006-2015, Ethiopia’s National Hygiene and Sanitation Strategy, 2005 and Malawi’s National Sanitation Policy, 2008. Adolescent boys were a segment that had found specific mention in Africa, specifically in the Ethiopia’s National Hygiene and “On-Site” Sanitation Protocol, 2006 and Malawi’s National Water Policy 2005.

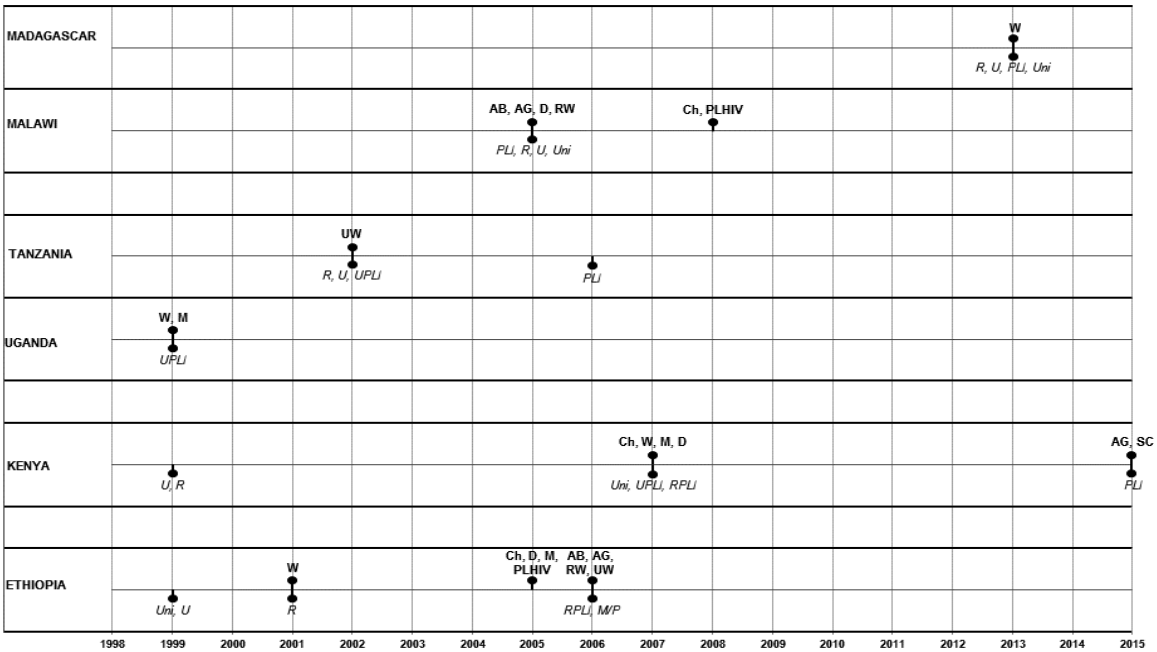
The GSS mentioned in Africa followed the same trend as seen in Asia. Rural, urban and the poor and low income were the three segments that had been identified in African WASH policies as well. However, the timeline shows that identification of all these three segments in African countries had been during the early part of the MDGs. Ethiopia was the only country to have included migrants and pastoralist in its National Hygiene and "On-site" Sanitation Protocol, 2006.

## Figure 13: Inclusion of segments in water sector – Africa



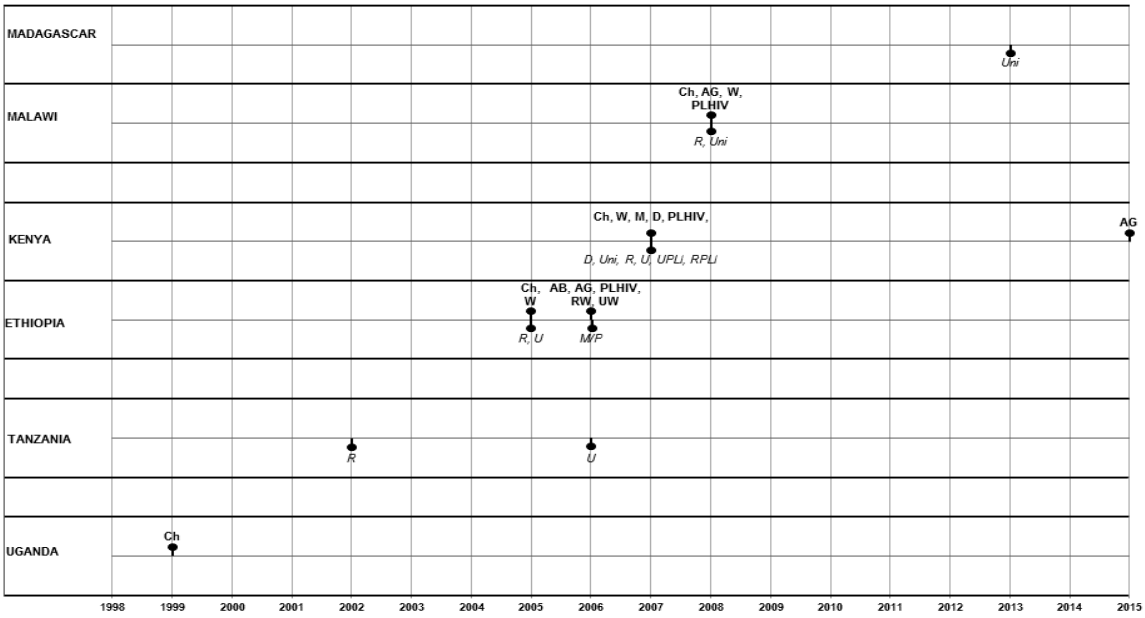

Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

## Figure 14: Inclusion of segments in sanitation sector – Africa




Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

**Figure 15: Inclusion of segments in hygiene sector – Africa**




Ch=Children; AG=Adolescent girls; AB=Adolescent boys; SC=Senior citizens; M=Men(Adults); W=Women(Adults); D=Disabled; R=Rural; U=Urban; C=Caste; E=Ethnicity; PLI=Poor and low income; PLHIV=People living with HIV/AIDS; Uni=Universal; M/P=Migrants/Pastoral; VO=Vulnerable by occupation; RM=Rural Men; RW=Rural Women, RPL=Rural poor & low income; UPLI=Urban poor & low income

Although the MDGs came into operation from the year 2000, there was an increase in WASH policy formulation only from 2004 onwards. A possible explanation for this observation may be found in the concept of incrementalism where governments make incremental changes over time instead of large reforms. Governments deal with the immediate problems as they occur instead of developing an overall strategic plan (Lindblom 1959). Although the MDGs came into force in the year 2000, several countries perhaps needed the time to formulate their WASH policies in order to align with the MDG targets.

It is also noteworthy that year 2005 to 2015 was named the International decade for Action: Water for Life and the year 2008 was declared the International year for Sanitation (described in detail in section 4.2.1). The stimulus provided by such calls for action at the international level could have also provided an impetus to the development priorities of government in policy making on WASH in some of the countries selected for this review. For example, the formation of the South Asian Conference on Sanitation (SACOSAN) in the year 2003 brought together several South Asian countries to accelerate the progress on MDGs. This platform was initiated by the Government of Bangladesh in partnership with several multi-lateral and bi-lateral agencies, international NGOs and UN organisations, in order to share its success in achieving total sanitation by using community based approaches (Ahmed et al. 2003). Formation of such initiatives within a region possibly resulted in the increase in WASH policy formulation in several participating countries.

***Population segments identified in policies***

**The extent of LCS varied between sectors:** Out of 33 national policies, 18 policies in Asia and 13 policies in Africa had identified LCS. On an average, a single WASH policy

identified slightly less than LCS (see Table 6).This average was consistent across Asia and Africa. It was also observed that while some policies mention LCS, few others did not mention any of the LCS included in this study. For example, in Asia two water sector policies from India and Nepal did not target any specific population segment (refer Appendix J). The extent of LCS was the highest in Hygiene sector, followed by Sanitation and water sectors in that order. In Hygiene and Sanitation, LCS were higher in the case of Africa, whereas in the case of Water, it was higher in Asia. The number of GSS was higher for Asia on all sectors except Hygiene.

**Table 6: Segment coverage in policies**

| Population Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | Asia (N=20) Mean [Max, Min] | Africa (N=13) Mean [Max, Min] | Asia (N= 15) Mean [Max, Min] | Africa (N=7) Mean [Max, Min] | Asia (N= 13), Mean [Max, Min] | Africa (N=8) Mean [Max, Min] | Asia (N= 3) Mean [Max, Min] | Africa (N=5) Mean [Max, Min] |
| **LCS** | 2.85 (7, 0) | 2.77 (7, 1) | 2.53 (7, 0) | 2.42 (5, 1) | 3.3 (7, 1) | 4.42 (7, 1) | 4.6 (7, 2) | 5 (5, 2) |
| **GSS** | 3.20 (5, 3) | 2.77 (4, 1) | 3.2 (5, 0, ) | 2.71 (4, 1) | 2.83 (5, 2) | 2.57 (4, 0) | 3 (4, 2) | 3.25 (4,3) |

**Policies in Africa identified more LCS**: In Africa, all WASH policies mentioned at least one LCS. While the average number of segments included per policy was three, there were a total of five policies that had identified as many as five LCS. Of these five policies, four pertained to the sanitation and hygiene sector whereas one was a water sector policy. These policies were from Ethiopia (2 policies), Kenya (2 policies) and Malawi (1 policy). The identification of a larger number of LCS could be a reflection of (a) policy makers understanding of the challenges and barriers faced by different segments of the population in accessing WASH, or (b) the influence of international treaties or support from multilateral or bilateral funding agencies in drafting the policies.

**Table 7: Percentage coverage of LCS in policies**

| Population Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | Asia (N=20) | Africa (N=13) | Asia (N=15) | Africa (N=7) | Asia (N=13) | Africa (N=8) | Asia (N=3) | Africa (N=5) |
| Children | 65%*** | 54%*** | 53%*** | 29%*** | 77%*** | 75%*** | 100%*** | 80%*** |
| Adolescent girls | 20% | 38% | 7% | 14% | 23% | 50% | 67%*** | 60% |
| Adolescent boys | 10% | 23% | 13% | 14% | 8% | 25% | 0% | 20% |
| Women | 90%*** | 100%*** | 87%*** | 100%*** | 100%*** | 100%*** | 100%*** | 100%*** |
| Men | 30% | 46%*** | 27%*** | 57%*** | 38% | 38% | 33% | 20% |
| Transgender | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Senior Citizens | 25% | 8% | 13% | 0% | 31% | 13% | 33% | 20% |
| Disabled | 35%*** | 46%*** | 27%*** | 29%*** | 46%*** | 63%*** | 67%*** | 80%*** |
| PLHIV | 10% | 38% | 0% | 14% | 15% | 50% | 67%*** | 60% |

(*** indicates that the population segment is ranked in the top 3 for that region)

**LCS identified in sanitation policies were higher**: Within the LCS, the top three segments that were frequently idenfitied in WASH policies across Asia and Africa were: women, children and the disabled (see Table 7). The representation of these three segments was higher in the sanitation sector, than that of water and hygiene sectors (refer Appendix J). In Asia, some of the other LCS that were recognised were men, senior citizens and adolescent girls whereas LCS for Africa included, men, adolescent girls and PLHIV. Similarities between the LCS identified in Asia and Africa showed that vulnerable groups such as children, adolescent girls and women were consistent across both regions. The mention of senior citizens in Asia and PLHIV in Africa, perhaps reflects the priority given to certain specific segments based on demographic trends within a region. Attention given to men in national policies, possbily, denotes the recognition of the roles played by men in WASH access.

The lack of attention to the transgender community in WASH policies in both Asia and Africa was conspicuous.

**WASH policies targeted GSS more than LCS, GSS identified in water sector was higher:** Out of 33 WASH policies, GSS were identified in 20 Asian policies and 12 African policies. The number of GSS identified in WASH policies across Asia and Africa averaged to three segments per policy. However, for the GSS, we found a greater number of policies (7 policies in Asia and 8 policies in Africa) that identified three segments. Further we also noticed five GSS mentioned in five of the Asian policies. Predominant segments identified were the poor and low income, rural and urban segments (see Table 8). Policies of Asian countries had mentioned groups marginalised by caste and ethnicity, whereas African policies had mentioned migrants and pastoralist. The priority given to these groups could be a reflection of the societal attributes of these two regions.

Unlike the LCS where we saw a large difference in the number of policies that mentioned women and those that mentioned the other categories such as children or the disabled, in the GSS we find a narrow difference between the top three segments. This is perhaps a reflection of the dominant paradigm that focuses on geography and income segments rather than LCS in WASH policies.

**Table 8: Percentage coverage of GSS in Policies**

| Population Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | Asia (N=20) | Africa (N=13) | Asia (N=15) | Africa (N=7) | Asia (N=13) | Africa (N=8) | Asia (N=3) | Africa (N=5) |
| Poor & low income | 85%*** | 77%*** | 87%*** | 100%*** | 85%*** | 63%*** | 67%*** | 80%*** |
| Rural | 70%*** | 85%*** | 67%*** | 100%*** | 62%*** | 75%*** | 67%*** | 80%*** |
| Urban | 70%*** | 77%*** | 67%*** | 86%*** | 69%*** | 75%*** | 67%*** | 100%*** |
| Vulnerable by occupation | 10% | 0% | 7% | 0% | 15% | 0% | 0% | 0% |
| Migrants & Pastoralists | 10% | 38% | 13% | 29% | 8% | 50% | 0% | 60% |
| Caste | 40% | 0% | 40% | 0% | 31% | 0% | 67%*** | 0% |
| Ethnicity | 35% | 0% | 40% | 0% | 23% | 0% | 33% | 0% |
| Universal | 50% | 100% | 67% | 100% | 62% | 100% | 67% | 100% |

(*** indicates that the population segment is ranked in the top 3 for that region)

***WASH Barriers***

Barriers to access WASH facilities differed across segments, sectors and regions. However, commonalities also existed. Of the 33 national policies, only 6 policies in Asia and 4 policies in Africa had identified barriers for the LCS. For the GSS, 13 policies in Asia and 9 policies in Africa had identified barriers. Children, women and adolescent girls were the top three LCS identified most frequently in the barriers whereas urban, rural and poor and low income segments were the top three GSS with the most number of barriers identified.

**Top three barriers for LCS were adequacy of WASH, environmental constraints and attitudinal challenges:** Adequacy of WASH facilities in Asia, environmental barriers in Asia and attitudinal barriers in Africa were the most frequently mentioned barriers for LCS (refer table 9). Amongst the LCS, barriers for children have been the most frequently mentioned across national policies with a total of 14 observations. Adequacy barrier included the lack of safe and child-friendly toilets at home and at school with sufficient number of toilet seats dedicated to children, whereas attitudinal barriers referred to poor hygiene and sanitation practices/beliefs, which resulted in children defecating in the open with little or no access to water for cleaning and washing.

The observations in the water sector for children pertained to environmental constraints such as distance travelled to fetch water (See Appendix K for WASH barriers by sector and region). Children experienced environmental barriers the most as they shared the water and sanitation burden of the household while accompanying their mothers in fetching water from far away locations. For example, National Water Policy of Tanzania (1999) stated that: *"in many areas of the dry central part of the country, water is so scarce that even water for personal hygiene cannot easily be found. The people, especially women and children, walk long distances to fetch water".* All three barriers identified for children in WASH policies were in line with the research findings and global concerns of diarrheal deaths, stunted growth and poor performance of children in schools (Black et.al, 2003; UNICEF, 2009).

**Table 9: Count of observations for WASH barriers for LCS by region**

| Population Segments | No of Policies | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 5 | 6 | 1 | | 3 | | | | 10 |
| Adolescent girls | 2 | 2 | | | | | | | 2 |
| Women | 4 | 1 | 1 | | 4 | | | | 6 |
| Others | 3 | 1 | | | 2 | | | | 3 |
| **Sub Total (Asia)** | **6** | **10** | **2** | | **9** | | | | 21 |
| **Africa** | | | | | | | | | |
| Children | 3 | | 3 | | 1 | | | | **4** |
| Adolescent girls | 2 | | | | | | 2 | | **2** |
| Adolescent boys | 2 | | 2 | | | | | | **2** |
| Women | 1 | | 1 | | 1 | | | | **2** |
| Others | 1 | | | | | | 2 | | **2** |
| **Sub Total (Africa)** | **4** | | **6** | | **2** | | **4** | | **12** |
| **Grand Total** | **10** | **10** | **8** | | **11** | | **4** | | **33** |

**Women are affected by attitudinal and social-cultural practices:** Environmental barriers were the most commonly identified barrier for women with a total of 8 observations. Long distances travelled to access WASH facilities, inadequate and poor supply of WASH, loss in productivity; issues of safety, lack of privacy and other health implications were commonly cited across several policies (Nepal's Water Plan, 2005; Nepal's Sanitation and Hygiene Master Plan, 2011; Tanzania's National Water Policy, 2002; Bangladesh's National Water Policy 1999). However, apart from environmental barriers, women also faced attitudinal barriersespecially in the sanitation sector. The National Hygiene and Sanitation Strategy of Ethiopia, 2005 stated that, "*men remain dominant in dictating domestic priorities making it difficult for women to voice their special personal hygiene needs and sanitation priorities. Men perceive latrine construction with some scepticism".* Other attitudinal barriers included socio-cultural practices that determined the access to WASH facilities for women, especially during menstruation.

**Adolescent girls were affected by inadequate sanitation facilities in schools and poor MHM:** For adolescent girls much of the observations were from the African region and pertained to the sanitation and hygiene sectors. Attitudinal, adequacy and physical barriers were commonly occurring barriers across policies for this segment. Few of the descriptions that were available in policies referred to inadequate WASH facilities at home and in schools, lack of safety and privacy and poor availability of menstrual hygiene management facilities all of which contributed to drop out of girl children from schools (National Hygiene and Sanitation Strategy of Ethiopia, 2005; National Sanitation Policy of Malawi, 2006, Nepal's Sanitation and Hygiene Master Plan, 2011).

**Disabled and PLHIV faced physical barriers:** Apart from women, children and adolescent girls, the description of barriers were available for PLHIV and the disabled in the sanitation sector in the African region. Although non-availability of WASH itself was a major barrier for both these segments, physical barriers which included the lack of design features (such as ramps and railings) to enable easier access to the disabled and PLHIV found specific mention in few policies. Population segments for whom barriers had not been mentioned at all were adolescent boys, senior citizens, men and the transgender population.

**ban areas received most attention amongst GSS:** Environmental barriers and adequacy barriers in both Asia and Africa were identified most frequently for population residing in urban areas(refer Table 10). In urban areas the lack of proper sanitation, drainage facilities, inadequate water supply and insufficient health and hygiene education were the primary causes of diseases. In addition, physical barriers such as limited sanitation options and space and the poor quality of sanitation infrastructure were also identified in a few policies (National Hygiene and Sanitation Strategy of Ethiopia, 2005; Kenya's Environmental Sanitation and Hygiene Strategic Framework, 2015). Further, the lack of financial allocation, absence of a master plan and poor co-ordination between agencies were few of the policy and institutional barriers mentioned for the urban segment in Asia (National Urban Water Supply and Sanitation Sector Policy, Nepal, 2009). Emphasis on the urban segment in WASH policies, perhaps, reflects (a) the requirement to tackle the WASH needs of a growing slum population in cities across Asia and Africa (UNFPA 2007) and (b) the differences between the requirement for water

and sanitation in urban and rural areas and the need for government and international agencies to recognise these difference to improve WASH access (UN-HABITAT 2003).

**Table 10: Count of observations for WASH barriers for GSS by region**

| Population Segments | No of Policies | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & low income | 5 | 1 | | 2 | 7 | | | 1 | **11** |
| Rural | 4 | 1 | 3 | | 5 | | 1 | 2 | **12** |
| Urban | 6 | 3 | 4 | | 4 | 1 | | 2 | **14** |
| Others | 7 | | 6 | | 4 | 1 | 1 | 2 | |
| **Sub Total (Asia)** | **13** | **5** | **13** | **2** | **20** | **2** | **2** | **7** | **51** |
| **Africa** | | | | | | | | | |
| Urban | 7 | 6 | | 1 | 6 | | 3 | | **16** |
| Rural | 5 | 1 | | | 6 | | | | **7** |
| Poor & low income | 2 | | | 5 | | 1 | | | **6** |
| Others | 4 | 4 | | 1 | 1 | | 1 | | **7** |
| **Sub Total (Africa)** | **7** | **11** | | **7** | **13** | **1** | **4** | | **36** |
| **Grand Total** | **20** | **18** | **25** | **9** | **38** | **3** | **6** | **7** | **87** |
| | | | | | | | | | |
| Universal Asia | 2 | | 3 | | 5 | | | | **8** |
| Universal Africa | 4 | 2 | 9 | | | | | | **11** |

**Rural areas also affected by environmental barriers:** Rural areas have also received considerable attention in the description of WASH barriers. Environmental barriers followed by attitudinal barriers ranked high for rural areas. Few of the environmental barriers were poor water supply coverage, need to travel long distance to access WASH facilities, difficult terrain, contamination of ground water, and the lack of institutionalised support to improve access in rural areas (Bangladesh's National Water Policy, 1999; India's Strategic Plan for Rural Drinking Water 2011-2022, Ethiopia's Water Resources Management Policy, 1999).

**Demand-side barriers and economic challenges constrain poor's access to WASH:**Poor and low-income and the urban poor and low income categories faced hardship due to Demand side barriers such as chronic water shortage and absence of cash to buy soap or build WASH facilities and unwillingness amongst beneficiaries to contribute towards operation and maintenance (Bangladesh's National Strategy for Water and Sanitation - Hard to Reach Areas, 2011; Nepal's Sanitation and Hygiene Master Plan, 2011; Ethiopia's National Hygiene and Sanitation Strategy, 2005).

For the urban poor and low income, adequacy and attitudinal barriers identified included, lack of awareness on personal hygiene, inadequate water supply and sanitation facilities, and poor excreta disposal facilities. Since the urban poor and low income were concentrated in slums, lack of proper drainage facilities and communal latrines were also identified as a barrier (Bangladesh's National Hygiene Promotion Strategy for Water

Supply and Sanitation Sector, 2012; Bangladesh's National Strategy for Water and Sanitation - Hard to Reach Areas, 2011; Tanzania's National Water Policy, 2002; Tanzania's National Water Sector Development Strategy, 2006-2015; Ethiopia's National Hygiene and Sanitation Strategy, 2005).

***WASH Strategies***

Results showed that policies of Asian countries had identified strategies more exhaustively than African countries. In the evidence base, strategies were proposed in 15 policies in Asia and 13 policies in Africa for the LCS. Amongst the LCS, those that had higher number of strategies mentioned were women, children, men and the disabled. For the GSS, 18 policies in Asia and 12 policies in Africa had proposed strategies mostly for the rural, urban and rural poor and low income categories Beneficiary participation emerged as the most commonly proposed strategy for the LCS in Asia and Africa whereas project management was given prominence as a strategy for the GSS.

**Observations for the sanitation and hygiene sectors were higher; strategies focused on IEC and inclusive planning:** The sanitation and hygiene sectors had gained prominence during the MDG period. Our results showed a higher number of strategies proposed for these two sectors than that of the water sector (refer appendix L for sector wise results on strategies). Within these two sectors, women and children were the most frequently identified LCS. For women, in addition to beneficiary participation, other sanitation and hygiene strategies include information, education and communication (IEC), assessing the demand for sanitation amongst women, ensuring equity in WASH through inclusive planning and encouraging the involvement of stakeholders such as NGOs/CBOs in service delivery. However, it was interesting to note that there were no strategies towards providing financial incentives such as subsidies, micro credit loans or reduced tariffs that could encourage women to apply for water connections in order to reduce their water burden.

Strategies targeted at children included, hygiene education in schools, construction of child-friendly toilets, incorporation of WASH in school health programmes, promotion of behavioural change activities and capacity building. The main purpose of these strategies was to encourage the use of toilets, promote hand washing and educating children about safe handling and storage of water. Children were also considered to be a crucial target segment to bring about overall behaviour change within the community. For instance, India's Rural Sanitation and Hygiene Strategy, 2011 stated that, "*children are more receptive to new ideas and schools/Anganwadis are appropriate institutions for changing the behaviour, mindset and habits of children from open defecation to the use of lavatory through motivation and education. The experience gained by children through use of toilets in school and sanitation education imparted by teachers would reach home and would also influence parents to adopt good sanitary habits. School Sanitation, therefore, has to form an integral part of any sanitation approach*". In Africa, Malawi's National Sanitation Policy (2008) recognised the need to provide sanitation and hygiene support to child headed households (Malawi).

Strategies for adolescent girls, which were also predominantly from the sanitation and the hygiene sector in Africa, stressed the need to improve awareness and practice of MHM among this segment. Commonly proposed strategies included participation of girls

in planning, design and implementation of WASH facilities, improving demand for WASH and designing inclusive WASH programmes that have a specific component for MHM.

Although PLHIV had received the least attention in WASH policies, the sanitation and hygiene sector policies provided a few evidences. Here again, African policies gave increased attention to HIV/AIDS than that of Asia. In addition to beneficiary participation, strategies mentioned for this sector included (i) developing of guidelines and minimum standards of service delivery and (ii) strengthening of institutional capacity of WASH institutions that deliver WASH services to PLHIV. Raising awareness through the use of IEC was the only hygiene related strategy.

**Policies recognised the need for greater involvement of women in WASH interventions:** The count of strategies targeted at women (including rural women) was the highest among all LCS (refer Table 11). Historically, the importance of involving women in the management of water and sanitation has been recognised at the global level. Some of the key developments that paved the way for inclusion of women were the 1977 United Nations Water Conference at Mar del Plata, the International Drinking Water and Sanitation Decade (1981-90) and the International Conference on Water and the Environment in Dublin (January 1992), which explicitly recognised the central role of women in the provision, management and safeguarding of water. Reference was also made to the involvement of women in water management in Agenda 21 (chapter 18) and the Johannesburg Plan of Implementation. Moreover, the resolution establishing the International Decade for Action, 'Water for Life' (2005-2015) (General Assembly Resolution 58/217), calls for women's participation and involvement in water-related development efforts. The higher share of women in the strategies was perhaps a reflection of these efforts taken at the international level.

**Table 11: Count of observations for strategies for LCS by region**

| Population Segments | No of policies | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Children | 9 | 3 | | 4 | 2 | 10 | | 1 | | | | **20** |
| Women | 11 | 24 | | 2 | 7 | 3 | | | | | 1 | **37** |
| Rural women | 3 | 5 | 1 | | | 4 | | 4 | | | | **14** |
| Others | 12 | 2 | 1 | 5 | 12 | 7 | | 2 | | | | **29** |
| **Sub Total (Asia)** | **15** | **34** | **2** | **11** | **21** | **24** | | **7** | | | **1** | **100** |
| **Africa** | | | | | | | | | | | | |
| Children | 6 | | | 7 | 2 | 14 | | | | 1 | | **24** |
| Adolescent girls | 4 | 2 | | 3 | 3 | 1 | | 2 | | | | **11** |
| Women | 10 | 19 | | 5 | 5 | 10 | | 5 | 2 | | | **46** |
| Men | 5 | 1 | | 3 | 3 | 3 | | 1 | | | | **11** |
| Others | 10 | 15 | | 5 | 1 | 1 | | 10 | 3 | 2 | | **37** |
| **Sub Total (Africa)** | **13** | **37** | | **23** | **14** | **29** | | **18** | **5** | **3** | | **129** |
| **Grand Total** | **28** | **71** | **2** | **34** | **35** | **53** | | **25** | **5** | **3** | **1** | **229** |

Increasing participation of women in planning, implementation and maintenance of facilities, representation of women in decision making, user participation, capacity building and empowerment of women were some of the most commonly suggested strategies for women in the WASH policies. For example, Ethiopia's National Hygiene and Sanitation Strategy (2005) stated that, "*women user (of WASH) should be decision makers/managers".* Bangladesh's National Strategy for Water Supply and Sanitation (2014) endorses the role of women by recognizing that, *"Women are generally the managers of water and sanitation in families and are also the guardians of hygiene enforcement, thus their involvement needs to be built in the sector activities"*.

**Policies acknowledged the need for gender balance in WASH but no specific strategies were proposed:** Men found mention in strategies while there were no barriers or benefits identified for this segment. WASH policies advocated the involvement of men for two reasons: (i) role of men as decision-makers in the family and (ii) men as beneficiaries of WASH services. Therefore, strategies proposed for men included beneficiary participation, user involvement in planning, design and maintenance of WASH facilities and promoting equity in WASH across population segments. While it may be encouraging to note the recognition given to men in WASH policies, they were mentioned in passing as part of a cohort consisting of women, men and children or while referring to gender mainstreaming. An example that illustrated this point was *'project interventions to give equal importance to men and women' (Bangladesh's National Strategy for Water Supply and Sanitation, 2014).* It appeared that there was not much thought given to men as a LCS in WASH policy-making but their role in improving access to WASH was acknowledged.

Although men had found mention in strategies, adolescent boys received least attention. Strategies listed for boys were few in number and included: consultation of beneficiaries, demand assessment and user participation. Strategies mentioned for adolescent boys were not as specific as the strategies mentioned for adolescent girls. Evidences were found only in African government policies (Ethiopia and Malawi). This could perhaps be due to the attention given to school sanitation and hygiene in African policies.

**Disability gained prominence in WASH policies**: People with disabilities have received some recognition in WASH policies of which majority evidences were from the sanitation and hygiene sectors. Commonly proposed strategies in Asia and Africa were user participation and consultation of beneficiaries, demand assessment and technology measures to improve access (Pakistan's National Sanitation Policy, 2006; Malawi's National Water Policy, 2005; Kenya's National Environmental Sanitation and Hygiene Policy, 2007; Nepal's Sanitation and Hygiene Master Plan, 2011). Within Asia, in Bangladesh, Nepal and Pakistan there was a stress on prioritising the needs of special groups by giving them "special consideration". However, this was not further elaborated. In Africa, Ethiopia, Malawi and Kenya had mentioned "*subsidies for improvement of sanitation facilities at the household level for the disabled*", *"cost effective technology for the physically challenged*" and "*construction and rehabilitation of infrastructure to include specific needs of the disabled*". Policies in Kenya, Nepal and India had also specifically mentioned the need for disabled friendly designs in schools (India's Rural Sanitation and Hygiene Strategy 2012-2022; Kenya Environmental Sanitation and Hygiene Strategic Framework, 2015; Nepal Sanitation and Hygiene Master Plan, 2011).

**Senior citizens and the aged lacked attention in WASH policies:** The aged were the LCS with the least attention in WASH policies. WASH needs of senior citizens in Asia and Africa have not been highlighted adequately in any of the policies. Across the three subsectors, sanitation was the only sector which mentioned strategies for senior citizens. In Asia (Bangladesh and Nepal), ensuring equity in WASH by prioritising the needs of all marginalised groups including the senior citizens was the only strategy suggested for this life-cycle segment. Similarly, in Africa (Kenya), designing appropriate subsidy and social protection package was the only strategy proposed. However, these strategies were not meant exclusively for senior citizens but were meant for all vulnerable groups that included, poor, elderly, disabled and so on.

**Strategies proposed for the water sector indicated a shift towards participatory approach:** Amongst all the WASH strategies suggested, beneficiary participation was the most commonly proposed strategy for the LCS whereas for the GSS, it was project management. Beneficiary participation largely consisted of consultation of beneficiaries at the planning, implementation and maintenance of infrastructure, involvement of target segments in the decision-making of location of the facility and encouraging local communities to develop and operate water supply systems. These strategies reflected a paradigm shift in model of water delivery from that of a top-down, centralised approach to a more participatory, bottom-up approach. However, for the GSS we found that project management gained prominence as a strategy. Largely, project management strategies focussed on the improvement of process, capacity and management of service delivery organisations. This difference in strategies showed that in the GSS paradigm, improvements in access is seen as a predominantly subject of "hard or engineering related" issues, whereas in the LCS paradigm, it is predominantly seen as a subject of "soft or social issue."

**Table 12: Count of observations for strategies for GSS by region**

| Population Segments | No of policies | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Poor & low income | 7 | 3 | | | 6 | 5 | | 4 | 9 | | | **27** |
| Rural | 10 | 6 | 3 | 20 | 2 | 17 | 3 | 29 | 2 | 10 | 6 | **98** |
| Urban | 10 | 2 | 3 | 7 | 1 | 10 | 1 | 15 | | 9 | 4 | **52** |
| Others | 16 | 10 | 3 | 6 | 6 | 8 | | 10 | 13 | 2 | 3 | **61** |
| **Sub Total (Asia)** | **18** | **21** | **9** | **33** | **15** | **40** | **4** | **58** | **24** | **21** | **13** | **238** |
| **Africa** | | | | | | | | | | | | |
| Poor & low income | 4 | | | 1 | | 2 | | 3 | 4 | | 2 | **12** |
| Rural | 10 | 3 | 1 | 14 | 2 | 11 | 2 | 18 | | 2 | 7 | **60** |
| Urban | 12 | 2 | | 13 | | 5 | 6 | 12 | 1 | 2 | 6 | **47** |
| Others | 8 | | | | | 2 | | 7 | 9 | 1 | 2 | **21** |
| **Sub Total (Africa)** | **12** | **5** | **1** | **28** | **2** | **20** | **8** | **40** | **14** | **5** | **17** | **140** |
| **Grand Total** | **30** | **26** | **10** | **61** | **17** | **60** | **12** | **98** | **38** | **26** | **30** | **378** |
| | | | | | | | | | | | | |
| Universal (Asia) | 9 | 6 | | 5 | | 21 | | 4 | | 10 | 2 | 48 |
| Universal (Africa) | 7 | 3 | 1 | 5 | | 10 | 2 | 7 | 2 | | | 30 |

**GSS received more attention than LCS in WASH strategies:** While observations on life-cycle segments were 229, there were 456 observations for the non-life cycle segments (see Table 11 and 12). Amongst the strategies, rural areas have received the most attention followed by urban areas and rural poor and low income. Strategies aimed at universal access have also received considerable attention.

Top three strategies that have been proposed for the rural population included project management, IEC and demand management. For these three strategies, amongst the Asian countries, Nepal and India had the most number of observations followed by Bangladesh and Pakistan. Within the WASH sectors in Asia, the focus has been more on sanitation followed by water and hygiene. In the African block, Malawi, Tanzania and Ethiopia had the most number of observations and Kenya and Uganda had the least observations. Amongst the African countries, the top three strategies followed the same pattern as seen in Asia, for the sanitation sector followed by water and hygiene.

The difference between project management and demand management is as follows: Project management comprised of several sub-strategies that included preparing plans and strategies at the village level, setting up of operations and maintenance fund, preparing guidelines on drinking water, development of infrastructure and entrepreneurship to produce equipment at local level, convergence amongst line departments and so on. Demand management, on the other hand, focused on the creation of demand for WASH facilities amongst the community by undertaking activities such as enabling communities to choose appropriate technologies, promoting diverse technology options, provide access to spare parts, designing the service according to ability and willingness to pay, use of local knowledge in WATSAN and so on.

The strategies proposed for the urban segment mirrored that of rural areas whereas strategies proposed for the rural poor and low income emphasised on provision of financial incentives, subsidies, micro-credit loans and tariffs that not only recovered costs but also protected the rural poor. Other strategies proposed for the rural poor and low income segment included IEC, beneficiary participation and project management.

***WASH Benefits***

Availability of WASH service emerged as the most frequently stated benefit across both LCS and GSS. WASH benefits identified for the LCS were from 8 policies in Asia and 7 policies in Africa. Our data showed that the total number of observation for the LCS was lesser than that of GSS. Within the LCS, the count of benefits identified for children, adolescent girls and adolescent boys were higher. Amongst the GSS, 18 policies in Asia and 12 policies in Africa had discussed the benefits for the rural and urban segments (as well as groups marginalised by caste and ethnicity). It can be found that African policies yielded more observations on WASH benefits than that of Asia. Further, there were no observations for the hygiene sector in Asia (refer Appendix M for sector wise observations).

**Top three benefits proposed for LCS were improving availability, physical accessibility and quality and safety:** Improving availability of WASH services to almost all the LCS was a common benefit envisaged across WASH policies in Asia and Africa (refer Table 13).

Children have been identified the most in benefits and this finding resonates with the global trend in improving health and education outcomes for children by improving their access to WASH facilities (UNICEF, 2009). Policies have emphasised the provision of drinking water in schools, construction of child friendly toilets, provision of soaps for hand washing in schools and construction of toilets for children in playgrounds. Construction of separate toilets for boys and girls in schools also found frequent mention. As in the case of barriers and strategies the sanitation sector had more number of observations followed by water and hygiene sector.

For adolescent girls, availability, physical accessibility and quality and safety were given equal attention in WASH policies. Availability, accessibility and safety referred to, " *the provision of safe, adequate, appropriate and affordable menstrual hygiene management including water, cleaning and washing material and private space for managing menstrual flow with dignity. 30% of the population should have access to these facilities", "100% of public schools with girls regularly supplied with sanitary towels/pads"* (Kenya's Environmental Sanitation and Hygiene Strategic Framework, 2015).

**Table 13: Count of observations for benefits for LCS by region**

| Population Segments | No of policies | Availability | Physical accessibility | Affordability | Quality and safety | Total |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 5 | 5 | 2 | | 3 | **10** |
| Adolescent boys | 1 | 1 | 1 | | 1 | **3** |
| Adolescent girls | 1 | 1 | 1 | | 1 | **3** |
| Rural women | 1 | 1 | 1 | | 1 | **3** |
| Disabled | 2 | 3 | | | | **3** |
| Others | 3 | 3 | 3 | | | **6** |
| **Sub Total (Asia)** | **9** | **14** | **8** | **0** | **6** | **28** |
| **Africa** | | | | | | |
| Children | 5 | 15 | 10 | | 8 | **33** |
| Adolescent boys | 2 | 5 | 5 | | 5 | **15** |
| Adolescent girls | 4 | 8 | 8 | 1 | 7 | **24** |
| Others | 5 | 10 | 9 | 1 | 8 | **28** |
| **Sub Total (Africa)** | **7** | **38** | **32** | **2** | **28** | **100** |
| **Grand Total** | **16** | **52** | **40** | **2** | **34** | **128** |

Although observations on strategies suggested for adolescent boys were low, this segment had received better attention in WASH benefits especially in the sanitation and hygiene sub-sectors. However, it was observed that adolescent boys were mentioned in the same way men had been mentioned in the strategies, as a part of the cohort of children, girls and boys. For example, "*all schools to have separate latrines for girls and boys with hand washing facilities (soap and water)" or " provide separate and adequate improved latrines and urinals and hand washing facilities for boys and girls with soap and running water in schools" (Ethiopia's National Hygiene and "On-site" Sanitation Protocol, 2006; Malawi National Sanitation Policy, 2008).*

The count of benefits proposed for women were low when compared to the count of barriers and strategies for this segment. This could be attributed to the differences in the articulation and details provided in policy documents. The benefits proposed for men were also similar to that of women. However, men were discussed along with several other categories and not as a single category. For example, in Pakistan, the National Sanitation Policy 2006 proposes the *"construction of public toilets for men, women, children and the disabled*".

Among the WASH indicators, physical accessibility was given a much higher priority in Africa. This finding was consistent with the environmental barriers to access WASH by the LCS in Africa.

**Urban areas in Asia and rural areas in Africa had a higher count of benefits amongst GSS:** Urban and Rural segments received equal attention in WASH benefits which were availability and physical accessibility (refer table 14). However, there were slight variations within the regions and between benefits. In Asia, policies focused on WASH in urban areas whereas in Africa the benefits proposed were focused on the rural areas. For the poor and low income segment, affordability was the main benefit proposed. *"provision of subsidies, sliding scale tariffs for the poor, provision of low-cost latrines for the poor, provision of specified target grants for poor, microcredit for poor to invest in sanitary disposal facilities, and subsidies provided on water rates to disadvantaged and poor sections"* were some of the benefits envisaged to improve affordability of WASH to the poor and low income communities *(*Ethiopia's Water Resources Management Policy; India's National Water Policy, 2002; Uganda's National Water Policy, 1999; Bangladesh's Pro poor strategy for water and sanitation sector, 2005, Kenya's National Environmental Sanitation and Hygiene Policy, 2007; Bangladesh's National Strategy for Water Supply and Sanitation, 2014).

**Table 14: Count of observations for benefits for GSS by region**

| Benefit | No of policies | Availability | Physical accessibility | Affordability | Quality and safety | Total |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Rural | 9 | 16 | 4 | 5 | 14 | **39** |
| Urban | 7 | 21 | 3 | 5 | 15 | **44** |
| Urban poor & low income | 6 | 10 | | 3 | 2 | **15** |
| Others | 10 | 5 | 3 | 10 | 5 | **23** |
| **Sub Total (Asia)** | **16** | **52** | **10** | **23** | **36** | **121** |
| **Africa** | | | | | | |
| Poor & low income | 3 | | | 3 | | **3** |
| Rural | 8 | 17 | 6 | 2 | 9 | **34** |
| Urban | 7 | 14 | 3 | 2 | 5 | **24** |
| Others | 5 | 4 | | 1 | | **5** |
| **Sub Total (Africa)** | **11** | **35** | **9** | **8** | **14** | **66** |
| **Grand Total** | **27** | **87** | **19** | **31** | **50** | **187** |
| | | | | | | |
| Universal (Asia) | 9 | 17 | 2 | 1 | 7 | 27 |
| Universal (Africa) | 8 | 20 | 12 | 5 | 11 | 48 |

***Policy Robustness***

This section concerned the extent to which policies were robust in terms of encompassing all three components: barriers, strategies and benefits. The overall trend in WASH policy robustness has been presented first and this was followed by a detailed analysis for LCS and GSS by sector and region.

An analysis of 33 national polices highlighted the contrast between the patterns of robustness among LCS and GSS. The robustness index for GSS was much higher than that of LCS. As presented in Table 15, the overall index for GSS was 6.8 which indicated that the barriers faced by GSS in accessing WASH services and strategies or benefits were better described. On the other hand, LCS had a robustness index of 4.5 that indicated non-identification of barriers but description of strategies and or benefits.

Among LCS, the robustness index was observed to be comparatively higher in African policies than in Asian policies. However, both the indices represented moderate robustness with only the strategies or and WASH benefits described in the documents. On the other hand, GSS in both countries reflected high robustness index with the African policies having a higher robustness index than that of Asian policies.

**Table 15: Policy robustness index across LCS and GSS**

| **LCS** | **Robustness index** |
|---|---|
| Overall LCS | 4.5 (N=33) |
| *LCS Asia* | *4.2 (N=20)* |
| *LCS Africa* | *5.0 (N=13)* |
| | |
| Overall GSS | 6.8 (N=33) |
| *GSS Asia* | *6.8 (N=20)* |
| *GSS Africa* | *7.5 (N=13)* |

Figure 16 and Figure 17 provide the average policy robustness index for countries in Asia and Africa respectively. It can be seen that there is considerable variation in the LCS robustness index for Asian countries – India and Bangladesh have low robustness index for LCS. For both these countries the difference in the robustness index scores between LCS and GSS are higher as compared to that of Nepal and Pakistan. Similarly Figure 17 shows the variation in LCS and GSS robustness index for African countries.

**Figure 16: Policy robustness index for Asian countries**

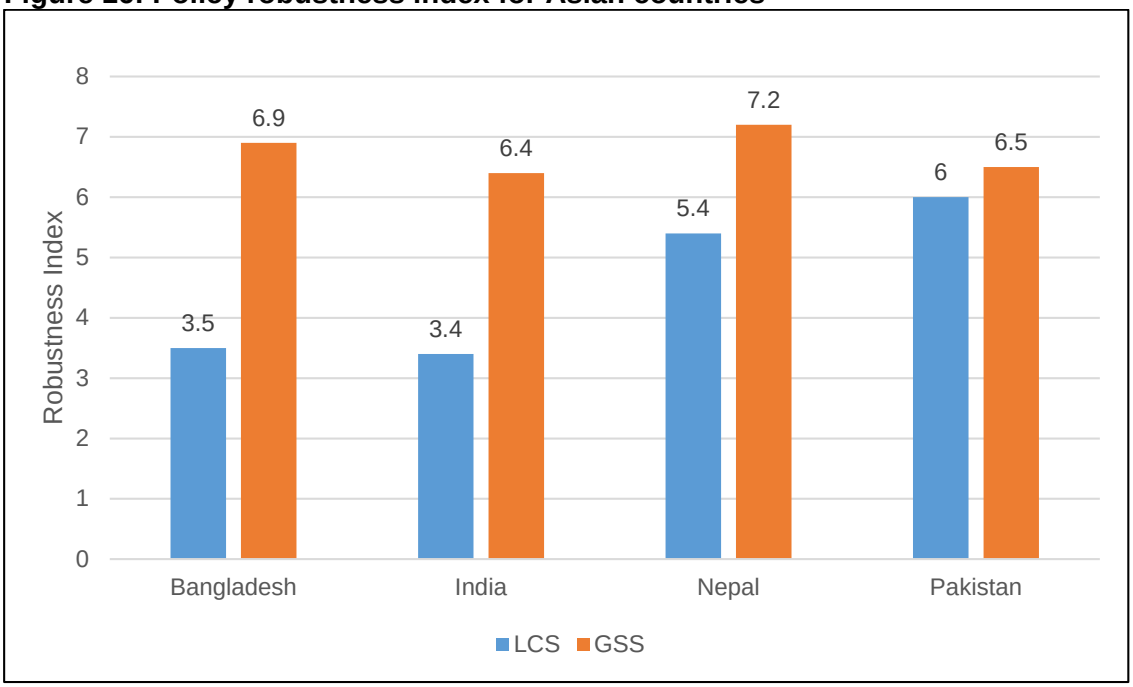
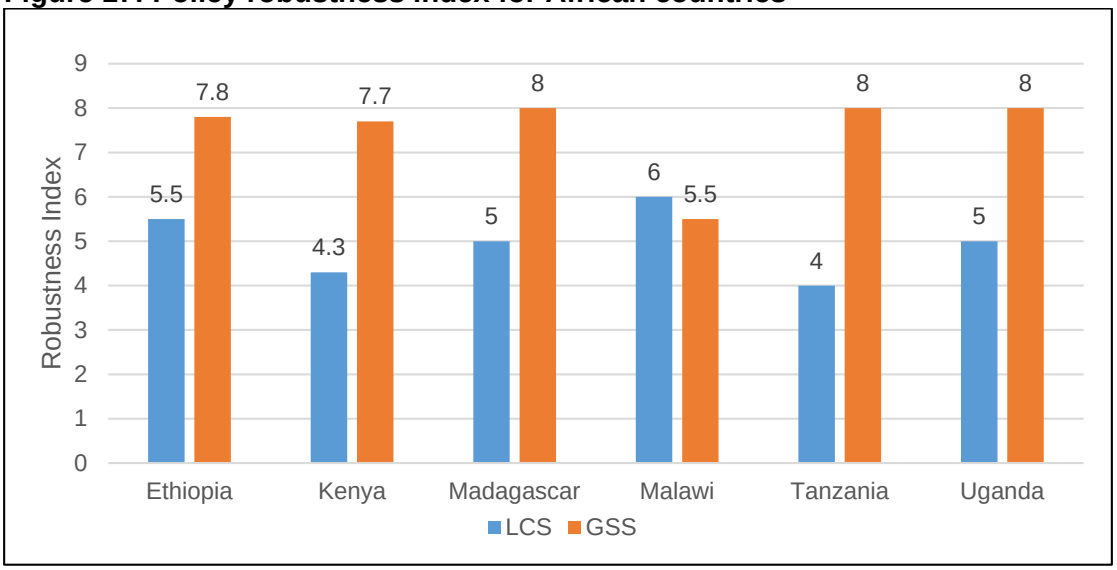
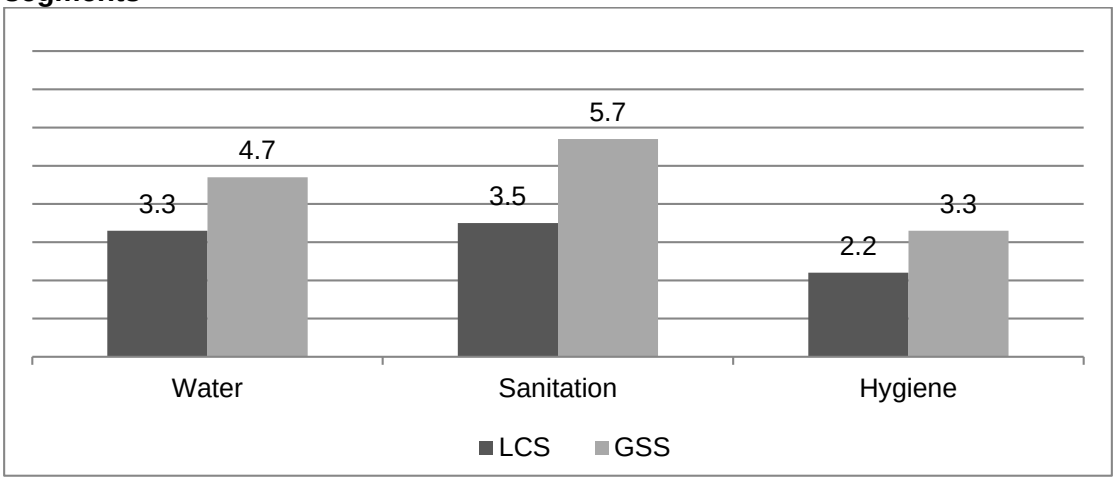



**Figure 17: Policy robustness index for African countries**




The robustness index across WASH sub-sectors was also analysed and has been presented in Figure 18. Comparatively, the sanitation policies had scored a high robustness index, followed by the water sector and the hygiene sector. It was observed that the robustness indices across WASH sub-sectors for GSS were relatively higher than that of LCS.

**Figure 18: Policy robustness index across WASH sectors and population segments**




A closer look at the robustness index among LCS revealed that policy documents were mostly strategy and benefit focused without any attention given to the identification of barriers. Table 16 presents the policy robustness index for LCS across segments in Asia and Africa. It can be observed that the overall WASH indices were marginally higher for almost all the segments in Africa than in Asia. However, a few exceptions were observed among segments like men, senior citizens and PLHIV at the WASH sub-sector level. Further, a sector-wise analysis showed that the robustness index for LCS in the sanitation sector was comparatively higher than the other WASH sub-sectors. Across the three WASH sub-sectors in Asia and Africa, women and children have secured the top two ranks. Women in Africa have received the most attention in WASH policies as it was evident from the high WASH robustness index of 4.8.

**Table 16: Policy robustness index among LCS**

| LCS | Water | | Sanitation | | Hygiene | | WASH | |
|---|---|---|---|---|---|---|---|---|
| | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* |
| Children | 1.7*** | 2.2*** | 2.8*** | 3.0*** | 1.6*** | 2.8*** | 3.4*** | 3.7*** |
| Adolescent girls | 1.0 | 1.5 | 1.4 | 2.2 | 1.2 | 2.0*** | 1.6 | 2.6 |
| Adolescent boys | 1.0 | 1.4 | 1.1 | 1.8 | 1.0 | 1.5 | 1.1 | 1.8 |
| Women | 2.4*** | 3.3*** | 2.6*** | 3.7*** | 1.9*** | 2.2*** | 3.5*** | 4.8*** |
| Men | 1.5*** | 1.9*** | 1.9*** | 1.8 | 1.3*** | 1.4 | 1.3 | 1.4 |
| Senior citizens | 1.0 | 1.0 | 1.4 | 1.2 | 1.1 | 1.0 | 1.5 | 1.2 |
| Disabled | 1.3 | 1.3 | 1.8 | 2.6*** | 1.3*** | 1.5 | 1.8*** | 2.9*** |
| PLHIV | 1.0 | 1.2 | 1.6 | 1.4 | 1.2 | 1.5 | 1.8*** | 1.8 |

Note: Segments with top three ranks have been denoted by ***

Table 17 presents the policy robustness index among GSS across WASH sub-sectors in Asia and Africa. The data revealed regional differences in terms of the population segments that had received attention within WASH policies. Further, African policies were characteristic of comparatively high robustness index than Asian policies which indicated better identification of barriers for the segment. In Asia, the poor and low income had received most attention with an overall WASH robustness index of 4.4. On the other hand, in Africa, it was the urban segments with an overall WASH robustness index of 6.2. Among WASH sub-sectors, the robustness index in Asia and Africa was comparatively higher in the sanitation sector than in the other two sub-sectors.

**Table 17: Policy robustness index among GSS**

| LCS | Water | | Sanitation | | Hygiene | | WASH | |
|---|---|---|---|---|---|---|---|---|
| | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* |
| Rural | 2.7*** | 4.0*** | 2.3*** | 4.4*** | 1.0 | 2.2*** | 3.3*** | 5.6*** |
| Urban | 2.4*** | 3.6*** | 3.1*** | 5.8*** | 1.6*** | 2.3*** | 3.5*** | 6.2*** |
| Poor and low income | 3.4*** | 3.3*** | 3.6*** | 3.1*** | 1.2*** | 1.2*** | 4.4*** | 4.5*** |
| Caste | 1.9 | 1.0 | 1.5 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| Ethnicity | 2.0 | 1.0 | 2.0 | 1.0 | 1.2*** | 1.0 | 2.0 | 1.0 |
| Migrants/ Pastoralist | 1.4 | 1.3 | 1.2 | 1.4 | 1.0 | 1.2*** | 1.2 | 1.7 |
| Vulnerable by occupation | 1.0 | 1.0 | 1.3 | 1.0 | 1.0 | 1.0 | 1.3 | 1.0 |

Note: Segments with top three ranks have been denoted by ***

Sector-wise analysis showed that the poor and low income in Asia had consistently secured the first rank in both water and sanitation sectors. In the hygiene sector, the urban segments followed by rural and the poor and low income had secured the top three ranks in Asia. However, the robustness indices for these segments largely reflected strategy-heavy or benefits-oriented WASH policies. In the case of Africa, it was the urban segments that had an edge over the others in all the three WASH sub-sectors. The GSS robustness indices for the hygiene sector in Africa were observed to be lower than the LCS robustness indices for the hygiene sector.

***National Vs State Policies***

This section compares national and state policies from India and Pakistan. An in-depth review of WASH policies from both these countries revealed notable differences between national and state policies (refer Appendix O for detailed discussion on State policies). In general, national WASH policies served more as a directive for states to tailor-make their policies to suit the needs at a regional level. Further, based on amount of financial resources available, the state further expanded the scope and proposed WASH initiatives for the population segments.

Differences within state and national policies were largely apparent in terms of the population segments covered and the extensity with which policy indicators were detailed for population segments in the document.

**India**

A total number of 5 national WASH policies and 22 state WASH policies were reviewed. It was observed that State policies had a wider representation of LCS than national policies and vice versa with respect to GSS. However, in both national and state policies, GSS were the most represented segments in barriers, strategies and WASH benefits.

In national policies, children and women were two LCS that had received most attention. On the other hand, in state policies, apart from women and children who had received most attention, other LCS including adolescent girls and boys and men had received considerable attention. It is noteworthy that PLHIV were represented only in national policies. Among GSS, state policies mostly focussed on rural, urban and poor and low income groups. Contrastingly, in addition to the above three population groups, national policies had given considerable attention to caste and ethnic groups.

The identification of barriers faced by population segments in accessing WASH services and facilities was not complete in all WASH national and state policies. Barriers were presented only in 3 national policies and 5 state policies. However, in terms of a numerical count, the number of barriers identified in national policies was more than that of state policies. Barriers related to environmental constraints were predominantly identified in both national and state policies. In addition, state policies had also identified the adequacy barriers faced by population segments. Majority of the barriers in national policies were largely identified for the rural segments and conversely, in state policies, barriers were mostly described for the urban segments.

It was generally observed that when compared to national policies, the state policies had proposed strategies to a wider section of the population. A large number of strategies in national policies were proposed only for the rural segments. On the other hand, in state polices, though the urban segments stood to benefit, other segments like adolescent girls and boys and men were also given sufficient attention. Further, while the state policies had proposed strategies for all three WASH sub-sectors, national policies had no strategies pertinent to the hygiene sector. Project management was the most proposed strategy in both national policies. While demand management was the second most proposed strategy in national policies, in state policies it was provision of WASH facilities.

Availability of WASH facilities was the most recurrent WASH benefit in both national and state policies. It was observed that while national policies had given priority to affordability as a WASH benefit, the state policies had prioritised physical accessibility to WASH services and facilities. While the rural segments were the most preferred beneficiaries, women did not find a place in national policies as beneficiaries of WASH benefits. On the other hand, in state policies, the WASH benefits were more or less equally distributed across GSS and LCS.

**Pakistan**

Two WASH national policies and four state policies were reviewed to capture the differences and similarities between both types of policies. Among LCS, the national policies largely covered only children, women, men and the disabled and among GSS, it was rural, urban and the poor and low income. The state policies were observed to be more diverse and had included both adolescent girls and boys within its scope. However, the disabled were not covered in state policies.

All the state policies had identified barriers faced by the population segment in accessing WASH services and facilities. Conversely, only one national policy had identified the barriers and they mostly reflected the adequacy barriers faced by children while accessing WASH facilities. Environmental barriers were predominant among GSS including urban, rural and the poor and low income. On the other hand, physical, attitudinal and adequacy barriers were commonly identified in state policies. Barriers were mostly identified for the urban segments.

A bottom-up approach through beneficiary participation was the most common strategy proposed in national policies and women and children were the only recipients of it. Contrarily, in state policies, a top-down approach that is, project management was the most proposed strategy and it largely catered to GSS. Urban segments were the most

benefited population group in state policies to have the most number of WASH strategies proposed and in national policies, it was women. Further, while the national policies were more focussed on the water sector,the state policies were more focussed on the sanitation sector.

In both national and state policies, the top three WASH benefits proposed were availability, quality and safety followed by affordability. While urban segments are the most benefitted population group in both national and state polices, children were also observed to have been equally benefited from WASH benefits in state policies.

### *4.1.3 Qualitative comparative analysis*

The findings from QCA carried out for the National policy data have been presented in this section. The analysis for national policies was primarily conducted separately for LCS and GSS and aimed to answer following two questions:

1. What conditions lead to the identification and inclusion of LCS and GSS in WASH policies?
2. What conditions lead to the identification and inclusion of LCS and GSS in the WASH benefits in the policy?

While csQCA was used to analyse the first question, fsQCA was used to analyse the second one. This largely depended on the type of input conditions selected for the analysis. The number of input conditions included for both LSS and GSS were broadly categorised into: type of WASH subsector, drafting agency and policy components. The description of the outcome variable and the input conditions used for the analysis for both LCS and GSS has been presented in Table 18.

**Table 18: Description of outcome variable and input conditions – national policies**

| | |
|---|---|
| **Outcome variable 1:** WASH benefits proposed for LCS in national policies | |
| **Outcome variable 2:** WASH benefits proposed for GSS in national policies | |
| **Outcome variable 3:** Inclusion of LCS in WASH national polices | |
| **Outcome variable 4:** Inclusion of GSS in WASH national polices | |
| **Input conditions:** | |
| **REGION:** | |
| ASIA | Asian WASH policies |
| AFRICA | African WASH policies |
| **WASH SUBSECTORS:** | |
| WATER | Policy covered the water sector |
| SANITATION | Policy covered the sanitation sector |
| HYGIENE | Policy covered the hygiene sector |
| **DRAFTING AGENCY:** | |
| AGENCY | Policy drafted with the support of a multilateral or/and bilateral agency |
| GOVT | Policy drafted by the government |
| **POLICY COMPONENTS:** | |
| BARLCS | Policy described the barriers faced by LCS in accessing WASH services |
| STRLCS | Policy proposed strategies specifically for LCS |
| BARGSS | Policy described the barriers faced by GSS in accessing WASH services |
| STRGSS | Policy proposed strategies specifically for GSS |
| **DEVELOPMENT INDICATORS:** | |
| HDI | Human Development Index |
| JMP | Joint Monitoring Programme for Water Supply and Sanitation |

The results for each QCA analysis carried describe the outcome condition, the input conditions used and all the possible configurations that led to the outcome. We describe a few terms frequently used in reporting the findings here. More details about the QCA method are provided in the Methods Chapter in Section 3.5.2.

- In the **configurations** presented, the condition in upper case denotes the presence of the condition and the absence or low prevalence of the condition is denoted in the lower case. For example, the condition “Agency” which represents the presence of a multilateral or bi-lateral agency in drafting the policy is denoted as “AGENCY” if present in the solution and “agency” in the absence of this condition. The symbol (*) denoted an AND relationship between two combinations within a configuration.
- **Raw coverage** for each configuration denotes the proportion of the data points that a configuration is present in the data points exhibiting the outcome.
- **Unique coverage** indicated the proportion of the data points (of the data points exhibiting a desired outcome) in which a particular configuration is alone present.
- **Solution coverage** measures the degree to which the outcome is covered or explained by all the configurations present in the solution.
- **Consistency** indicates how consistently a particular configuration explains an outcome. It is measured as the proportion of the data points exhibiting both the outcome and the configuration to the total number of data points in which the configuration in present. This gives an indication whether the presence of the condition alone is sufficient to lead an outcome. Higher the consistency, better the sufficiency of the configuration under question. A score of 0.8 or more for consistency is considered good for QCA solutions.
- **Frequency cut-off** denoted denotes the minimum number of cases (data points) with a configuration taken as significant to be included in the analysis.
- **Consistency cut-off** indicates the minimum consistency score taken in the analysis to consider a solution to be significant for a particular outcome of interest.

Before we discuss the results, the following initial patterns are interesting to note. First, our QCA analysis indicated the role of government as one of the key factors that facilitated the inclusion of LCS and GSS in Asia, whereas in Africa, the presence of multilateral/bilateral agency had a greater influence on the outcome. Second, while the sanitation sector was more encompassing in proposing WASH benefits for LCS, the water sector was observed to be more inclined towards GSS. Finally, when policies proposed more strategies for LCS and GSS, the population segments were more likely to be identified in the WASH benefits. Please refer to Appendix 8 on details of the QCA analysis carried out.

**Result 1: Conditions that lead to the identification and inclusion of LCS in WASH policies**

This analysis was carried out to understand whether there was any mention of LCS segments in the policy documents. The analysis resulted in four configurations (Refer Table 19) of which two pertained to Asia and another two to Africa.

**Table 19: Conditions that lead to the identification and inclusion of LCS in WASH policies**

| **Frequency cut off:**1.0 | | **Consistency cut off:** 0.9 | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| water*SANITATION* GOVT*HDI*JMP*ASIA | 0.19 | 0.19 | 0.90 |
| SANITATION*GOVT*AGENCY*HDI*JMP*ASIA | 0.03 | 0.03 | 1.00 |
| SANITATION*HYGIENE* GOVT*AGENCY*AFRICA | 0.25 | 0.25 | 0.94 |
| WATER*GOVT*AGENCY*JMP*AFRICA | 0.03 | 0.03 | 1.00 |
| ***Solution coverage*** | *0.53* | | |
| ***Solution consistency*** | *0.93* | | |

The solution coverage of 0.53 indicates that the configurations explain 53% of the cases that exhibit the outcome. The solution consistency was 0.93.

HDI is a composite indicator based on three criteria for human development namely, life expectancy, education, and per capita income. A country with high HDI would therefore imply a productive society with access to knowledge and healthy living. Likewise, JMP coverage relates to the extent of drinking water and sanitation coverage. Since human development facilitates equitable distribution of income and development it would be interesting to gauge its impact at the WASH policy making level. The JMP data provides not only an understanding of the extent of drinking water and sanitation coverage in the country but also the degree to which the Government, multi-lateral/bi-lateral, non-government organisations and communities have contributed towards the goal.

The configurations found in the analysis reveal that Asian countries high HDI and JMP usually had LCS mentioned in their policy documents. Sanitation is the WASH sector which usually had LCS mentioned in nations across Asia and Africa. It should be noted that multilateral agency presence played an important role for LCS to be included in policies even in sanitation sector in both Asia and Africa. Water sector policies included LCS in African countries with high JMP.

**Result 2: Conditions that lead to the inclusion of GSS in WASH policies**

Our analysis yielded six configurations as shown Table 20 out of which four concerned Asia and the rest two to Africa.

**Table 20: Conditions that lead to the identification and inclusion of GSS in WASH policies**

| **Frequency cut off:**1.0 | | **Consistency cut off: 0.76** | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| WATER*SANITATION* govt*HDI*JMP*ASIA | 0.04 | 0.04 | 1.00 |
| water* SANITATION* GOVT *HDI*JMP*ASIA | 0.16 | 0.16 | 0.94 |
| WATER *AGENCY*GOVT*HDI*JMP* ASIA | 0.06 | 0.06 | 1.00 |
| WATER *sanitation* agency*GOVT*AFRICA | 0.14 | 0.14 | 0.75 |
| SANITATION*HYGIENE* AGENCY*GOVT *jmp*AFRICA | 0.13 | 0.13 | 0.82 |
| ***Solution coverage*** | *0.55* | | |
| ***Solution consistency*** | *0.86* | | |

The solution coverage of 0.55 indicates that the five configurations explain 55% of the cases that exhibit the outcome. The solution consistency was 0.86.

In Asia, the presence of high HDI and JMP coverage were important to include GSS segments as well. An important observation here is that the policy makers in Water sector predominantly included GSS segmentation to draft their policies. Whereas, the sanitation sector has significantly included LCS segments. It can be implied that the policy makers saw segmentation through GSS segments as a good way in water sector, where provision of the water to all the segments was the key motivation. Hence, the focus was more to overcome geographical, technical and economic barriers to provide water supply. Hence, the dominant paradigm was to segment the population in terms of geography and social strata. Whereas when it came to sanitation sector, the needs of different population segments have to be accounted to provide such sanitation facilities. Hence, LCS segmentation became important in this sector.

**Result 3: Conditions that lead to the inclusion of LCS in WASH benefits**

The analysis for "Inclusion of LCS in WASH benefits in National polices" revealed six configurations as shown in Table 21. These configurations revealed a pattern wherein four configurations pertained to Asian polices and two configurations pertained to African policies. Each of these configurations has explained below:

**Table 21: Conditions that led to the identification and inclusion of LCS in the WASH benefits in national policies**

| **Frequency cut off:**1.0 | | | **Consistency cut off:** 1.0 |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| water*SANITATION* GOVT* STRLCS* ASIA | 0.25 | 0.06 | 1.0 |
| SANITATION *GOVT *BARLCS *STRLCS *ASIA | 0.25 | 0.06 | 1.0 |
| SANITATION *AGENCY* GOVT* STRLCS *ASIA | 0.06 | 0.06 | 1.0 |
| WATER * sanitation* agency* GOVT* barlcs*STRLCS * ASIA | 0.06 | 0.06 | 1.0 |
| WATER *SANITATION* GOVT* STRLCS *AFRICA | 0.18 | 0.18 | 1.0 |
| SANITATION * HYGIENE *AGENCY *GOVT*BARLCS* STRLCS * AFRICA | 0.12 | 0.12 | 1.0 |
| ***Solution coverage*** | *0.75* | | |
| ***Solution consistency*** | *1.0* | | |

The solution coverage 0.75 explains that the configurations presented explain 75% of the cases that exhibit the outcome. The solution consistency was 1.0.

The policies exhibited a stronger inclusion of LCS when the government had a predominant role in drafting the policies. The benefits were included only when sufficient strategies for different LCS segments were identified by the governments in their policy documents. Only then the intent of LCS was translated to benefits to various LCS segments in policies. The identification of barriers was important apart from strategies in sanitation policies in Asia. However, if the barriers were not properly identified, the multilateral agencies played a key role in augmenting this knowledge and facilitate the inclusion of LCS benefits. This pattern was particularly seen in African policies. For example, Ethiopia's National Hygiene and Sanitation Strategy 2005 was drafted by the Ministry of Health and had the support of a multilateral agency that had made "invaluable contributions" throughout the drafting process. Further, agencies also provided technical support to government during the policy making process by reviewing and even ensuring the publication of the policy document. A similar arrangement was observed in the case of Kenya's Environmental Sanitation and Hygiene Strategic Framework (KESSF), 2015. Other key observation is that in policies in Africa, the LCS was included in benefits when the policy dealt

with two or more of the WASH sectors whereas in Asian context, the LCS was included when the policy pertained to only one of the WASH sectors. This indicates that the governments in Asia identified LCA benefits better when they were focussed on one sector. Finally, we did not find any evidence of LCA benefits being included in Hygiene sector alone. However, in Africa LCA benefits find way to be included in the policies for hygiene when the policies also included sanitation in their scope. This points out to the fact that hygiene sector is still evolving and yet to mature in terms of inclusion of LCA in benefits.

## Result 4: Conditions that lead to the inclusion of GSS in WASH benefits

Inclusion of GSS in WASH benefits in National polices yielded seven configurations as shown in Table 22.

**Table 22: Conditions that led to the inclusion of GSS in the WASH benefits in national policies**

| **Frequency cut off:**1.0 | **Consistency cut off:** 1.0 | | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| WATER *GOVT*bargss *ASIA | 0.21 | 0.03 | 1.0 |
| WATER *GOVT*STRGSS *ASIA | 0.42 | 0.07 | 1.0 |
| WATER*SANITATION *BARGSS *STRGSS * ASIA | 0.21 | 0.03 | 1.0 |
| SANITATION*hygiene *GOVT *BARGSS *STRGSS * ASIA | 0.21 | 0.07 | 1.0 |
| WATER *SANITATION*GOVT *STRGSS * AFRICA | 0.10 | 0.07 | 1.0 |
| WATER *GOVT*BARGSS *STATGSS* AFRICA | 0.17 | 0.14 | 1.0 |
| SANITATION* HYGIENE*AGENCY *GOVT*BARGSS *STRGSS *AFRICA | 0.10 | 0.10 | 1.0 |
| ***Solution coverage*** | *0.92* | | |
| ***Solution consistency*** | *1.0* | | |

The solution coverage of 0.92 explains that the configurations presented explain 92% of the cases that exhibit the outcome. The solution consistency was 1.0.

Findings from this review revealed that across Asia and Africa, GSS were well represented in the water sector than the sanitation sector. However, they were least represented in the hygiene sector. A look at the dataset revealed that out of 33 polices, 24 had covered GSS in the water sector and 21 policies covered GSS in the sanitation sector. Only 8 policies had covered GSS in the hygiene sector. Higher solution coverage score in this analysis indicated that benefits for GSS segments were better identified than the LCS segments in the policies for WASH sectors. Similar to LCS, in the inclusion of population segments in the benefits for GSS, the presence of multilateral agency was key in the African context. An important pattern observed here is that for GSS segments, the identification of barriers and strategies for GSS segments was key in the identification for benefits for GSS segments. This differed significantly from LSS where the identification of strategies was key in inclusion of LCS benefits.

Overall, these patterns along with solution coverage and consistency indicate that while the governments are more comfortable in identifying barriers, strategies and benefits in GSS segments, such maturity is limited in the case of LCS. Thus, the inclusion of benefits for GSS segments is wide-spread in WASH policies. As far as LCS segments are concerned, some progress has been achieved in water and sanitation sector when the policies were focussed on individual sectors in Asia and when helped by a multi-

lateral agency in Africa. However, the hygiene sector lags the other two sectors in the inclusion of LCS in WASH benefits.

While our analyses revealed the existing patterns on identification and inclusion of population segments in the different WASH sectors, we do not comment whether this pattern of inclusion of GSS and LCS proved effective in ultimately delivering the WASH benefits to the population. Studying the effectiveness of GSS or LCS was not included in the intended scope of this study.

## 4.2 WASH programmes and projects

This section provides a description of the P&P dataset included for this review. The dataset included a c**ombination of completed and on-going P&P from selected agencies implemen**ted during the MDG period across countries in Asia and Africa. Following a brief description of the search results, this sector presents the results on WASH barriers, strategies and benefits.

### *4.2.1 Overview of included documents*

A total of 131 P&P were obtained through our sourcing and search strategy of which 105 were programmes and 26 were projects. The highest number of programmes were from India followed by Nepal and Ethiopia while the highest number of projects was from Bangladesh, Kenya, Tanzania and Uganda (see Table 23).Documents included for the review consisted of appraisal reports, completion reports and so on. All documents pertaining to a single programme or project were grouped and coded together.

**Table 23: P&P by country**

| | Region | Programmes | Projects |
|---|---|---|---|
| ASIA | Bangladesh | 7 | 5 |
| | India | 24 | 1 |
| | Nepal | 14 | 2 |
| | Pakistan | 5 | 1 |
| | **Total** | **50** | **9** |
| AFRICA | Ethiopia | 14 | 2 |
| | Kenya | 7 | 4 |
| | Malawi | 7 | 1 |
| | Madagascar | 8 | 0 |
| | Nigeria | 5 | 2 |
| | Tanzania | 7 | 4 |
| | Uganda | 7 | 4 |
| | **Total** | **55** | **17** |
| | **Overall Total** | **105** | **26** |

P&P documents were obtained directly from websites of agencies and this process yielded maximum number of documents. However, searching for P&P documents presented several challenges. There was considerable heterogeneity in (a) the way documents were catalogued by agencies unlike websites of academic journals and (b) in the sophistication of search engines across different agencies. The process of searching for documents on websites of some agencies was fairly straightforward while others were a little difficult. Therefore the search strategy had to be adapted for each agency

depending on the availability of filters and recognition of boolean operators. For example, in some agencies multiple filters could not be used simultaneously resulting in several repetitions of the search strategy to cover all the selected countries and time period. Further, in many cases, agencies did not provide the hyperlink to P&P databases such as ELDIS and WEDC. A list of documents that were unavailable on websites was maintained and included in email correspondence with each agency. Although emails were sent to all selected organisations and governments, the response was poor (refer Appendix P for a detailed list of agencies that responded). Several agencies referred us back to their websites while others responded that the request was time consuming and could not be complied with.

**Hygiene sector had the lowest number of P&P in both, Asia and Africa:** Results showed that the hygiene sector had not received much attention compared to water and sanitation, with only 21 P&P in Asia and 34 P&P in Africa (see Table 24). This could be because "there is a difficulty in finding indicators of progress for hygiene, since hygiene behaviour is difficult to measure objectively" (Biran et al. 2012). This coupled with the fact that hygiene does not have an MDG target could have contributed to the lack of attention given to this sector. Among the water and sanitation sectors, Asia had an equal number of water and sanitation P&P while Africa had marginally more sanitation P&P than water. This focus on sanitation P&P in Africa could be attributed to the need for additional effort to achieve the MDG target on sanitation in sub-Saharan Africa (UNICEF and WHO 2015).

documents available on their websites. Wherever links to these documents were not available, the same documents were searched using Google and Google Scholar as well as specialised

**Table 24: P&P by sector and region**

| Sector | Asia | Africa |
|---|---|---|
| Water | 50 | 66 |
| Sanitation | 50 | 70 |
| Hygiene | 21 | 34 |
| **Total** | **59** | **72** |

**Asia had more number of regional projects than Africa:** P&P were implemented on a national as well as at a regional level (refer Table 25). Our dataset had a larger number of P&P implemented at a regional level in Asia, than for Africa which had an equal number of national and regional P&P. The focus on regional level implementation in Asia could be because water and sanitation are 'State subjects' as per the constitution, in India, Pakistan and Bangladesh with state or provincial governments having the responsibility of providing water and sanitation facilities. There has also been a policy thrust towards rural and urban areas which could have resulted in regional level P&P in Asia. For instance, India's Strategic Plan for Water, 2011-2022 stated that the, "the rural water sector should promote overall decentralisation set out in the constitution and strengthen implementation approaches adopted by the government."

Among the African countries, Ethiopia led the count with most number of national level P&P. This could be because of the country's high level political commitment to achieve

MDG 7 and end open defecation. According to WHO (2015) there has been considerable push from the National Government of Ethiopia to introduce nation-wide programmes to improve access to WASH and also involve education institutions and human resources in implementation of these programmes.

**Table 25: P&Ps by domain and country**

| | Country | National | State or Regional | Total |
|---|---|---|---|---|
| ASIA | Bangladesh | 2 | 10 | 12 |
| | India | 7 | 18 | 25 |
| | Nepal | 5 | 11 | 16 |
| | Pakistan | 3 | 3 | 6 |
| | **Total** | **17** | **42** | **59** |
| AFRICA | Ethiopia | 10 | 6 | 16 |
| | Kenya | 7 | 4 | 11 |
| | Madagascar | 2 | 6 | 8 |
| | Malawi | 4 | 4 | 8 |
| | Nigeria | 2 | 5 | 7 |
| | Tanzania | 6 | 5 | 11 |
| | Uganda | 5 | 6 | 11 |
| | **Total** | **36** | **36** | **72** |

**P&Ps focussed on construction and rehabilitation of WASH infrastructure:** P&P included in the review focussed predominantly on infrastructure provisioning which included the construction and rehabilitation of WASH infrastructure (see Table 26). Other dominant themes that supplemented the creation of infrastructure were institutional capacity building, behaviour change including creating awareness among beneficiaries and community capacity building programmes.

**Table 26: Type of WASH P&P by agency**

| Type of intervention | Construction and rehabilitation | Behaviour change and awareness programmes | Institutional capacity building | Community capacity building |
|---|---|---|---|---|
| Multilateral Agencies | 74 | 47 | 56 | 51 |
| Bilateral Agencies | 34 | 23 | 10 | 15 |
| International NGOs | 3 | 2 | 0 | 5 |
| Governments | 14 | 16 | 12 | 7 |
| **Total** | **125** | **88** | **78** | **78** |

**Africa received more funding for WASH P&P than that of Asia during MDGs***:* P&P in the selected countries were funded by international financial institutions, multilateral and bilateral agencies, international NGOs and National governments*.* Our results showed that funding for a single WASH P&P ranged between USD 0.1million and USD 3 billion with an average of approximately USD 142.2million per programme or project. A large share of this funding was directed towards the African region, which received a total of approximately USD 9.5 billion as opposed to the Asian region which received USD 4.9 billion during the MDG period. This finding corresponds with global aid

commitment to sub-Saharan Africa which received USD 4 billion in 2012 for the water and sanitation sectors, the highest among all the regions (WHO 2014). Our dataset also showed a larger number of P&P funded by multilateral and bilateral agencies in Africa (65) compared to Asia (48) (refer Table 27).

Although multilateral and bilateral agencies did have a presence in Asia, it was interesting to note that national governments emerged as key funders in the region. Several flagship programmes such as National Rural Drinking Water Programme (2011) and Swachh Bharat (2014) in India and Rural Water Supply and Sanitation Project in Western Nepal (2009) have been introduced by National governments.

**Table 27: Classification of project P&P by agency and region**

| **Agency** | | **Asia** | **Africa** | **Total** |
|---|---|---|---|---|
| Multilateral agencies | ADB | 14 | 0 | **14** |
| | AfDB | 0 | 24 | **24** |
| | WB | 18 | 11 | **29** |
| | UNDP | 0 | 1 | **1** |
| | UNICEF | 4 | 4 | **8** |
| | European Commission | 0 | 1 | **1** |
| Bilateral Agencies | DFID | 8 | 7 | **15** |
| | SIDA | 0 | 2 | **2** |
| | AUSAID | 0 | 1 | **1** |
| | DANIDA | 1 | 0 | **1** |
| | USAID | 3 | 14 | **17** |
| **International NGOs** | IRC | 1 | 2 | **3** |
| **Government** | Gov-National | 9 | 5 | **14** |
| | Gov-State | 1 | 0 | **1** |
| **Total** | | **59** | **72** | **131** |

**Water and sanitation sub-sectors received more focus than hygiene***:* It can be seen from Table 28 that hygiene sector received low coverage corresponding with findings from Table 27. This could be because international agencies had more P&P in the water and sanitation sub-sectors. However, a number of hygiene P&P – 23 were funded by bilateral agencies.

**Table 28: Classification of P&P by agency and sector**

| **Agency** | | **Water** | **Sanitation** | **Hygiene** |
|---|---|---|---|---|
| Multilateral Agencies | ADB | 14 | 9 | 2 |
| | AfDB | 23 | 24 | 9 |
| | WB | 28 | 26 | 3 |
| | UNICEF | 4 | 8 | 6 |
| | UNDP | 1 | 1 | 0 |
| | European Commission | 1 | 1 | 1 |
| Bilateral Agencies | DFID | 15 | 15 | 12 |
| | USAID | 16 | 16 | 10 |
| | SIDA | 1 | 2 | 0 |
| | DANIDA | 1 | 1 | 0 |

| Agency | | Water | Sanitation | Hygiene |
|---|---|---|---|---|
| | AUSAID | 1 | 1 | 1 |
| International NGOs | IRC | 2 | 2 | 3 |
| Government | Gov-N | 9 | 13 | 8 |
| | Gov-S | 0 | 1 | 0 |
| **Grand Total** | | **116** | **120** | **55** |

**The evidence base showed an increase in the number of P&P from 2000 to 2015**: Across Asia and Africa, the number of P&P implemented showed a steady increase from 25 between 2000 and 2004 to 61 between 2010 and 2015 (refer Table 29). This increase could be attributed to the commencement of several international campaigns to accelerate progress on the MDGs from 2005 onwards. The decade of 2005 to 2015 was declared as the 'International Decade for Action: WATER FOR LIFE' by the UN (General Assembly Resolution 58/217). The General Assembly also declared the year 2008 as the 'International Year for Sanitation' on 26th December, 2006 (UN 2006). This declaration aimed to "provide the global community with an opportunity to raise awareness and accelerate action for the achievement of the sanitation MDG through a variety of actions and interventions" (UN Water, 2008). This was followed by an advocacy campaign, 'the sanitation drive to 2015' adopted through a UN resolution (General Assembly Resolution 65/153) in December 2010 to accelerate progress towards the MDG.

**Table 29: Timeline for WASH programmes and projects**

| S. No. | Time period | Number of P&P | | Total |
|---|---|---|---|---|
| | | Asia | Africa | |
| 1 | 2000 to 2004 | 11 | 14 | **25** |
| 2 | 2005 to 2009 | 16 | 29 | **45** |
| 3 | 2010 to 2015 | 32 | 29 | **61** |
| **Total** | | **59** | **72** | **131** |

**Limited data was available on the achievement of P&P targets:** Data was also collected on P&P targets wherever available and approximately 43 P&P (resulting in 302 observations) provided data on achievement of project goals and targets across WASH. P&Ps had a wide variety of parameters by which goals and targets were assessed. Some of these parameters were: number of people with access to safe WASH facilities, number of schools with access to safe WASH facilities, reduction in percentage of population practicing open defecation, number of people reached through awareness campaigns, establishment of user groups and percentage of women and excluded groups in water and sanitation committees and so on. P&P targets were analysed as they were mentioned in the document without any further classification.

Table 29 shows that among the LCS, targets intended for women were achieved (including rural and urban) while targets set for children, adolescent girls and boys were under achieved. Further, we found that those P&P that covered a wider geographical area such as rural or urban areas, achieved or over achieved their targets. However, nothing conclusive can be drawn from these results because several factors such as implementation capacity of agencies, co-operation from the community, political stability and so on (not in the scope of this review) could have contributed to the achievement or non-achievement of targets.

**Table 30: Achievement of targets by segments**

| Achievement of target | Under achieved | Over achieved | Achieved | Total |
|---|---|---|---|---|
| **LCS** | | | | |
| Children | 12 | 6 | | 18 |
| Rural children | 4 | 5 | 1 | 10 |
| Urban children | | | 1 | 1 |
| Adolescent boys | 7 | 3 | | 10 |
| Adolescent girls | 8 | 3 | | 11 |
| Women (Adults) | | 6 | 3 | 9 |
| Rural women | 2 | 1 | 5 | 8 |
| Urban women | | | 2 | 2 |
| Men (Adults) | | 1 | | 1 |
| Rural men | 1 | | 2 | 3 |
| Urban men | | | | |
| Transgender | | | | |
| Senior Citizens | | | | |
| Disabled | 1 | 1 | | 2 |
| PLHIV | | | | |
| **GSS** | | | | |
| Poor and low income | | 3 | | 3 |
| Rural | 50 | 70 | 13 | 133 |
| Urban | 27 | 30 | 9 | 66 |
| Rural poor and low income | 1 | 2 | | 3 |
| Urban poor and low income | | 3 | | 3 |
| Caste | | 1 | | 1 |
| Ethnicity | | 2 | | 2 |
| Migrants/Pastorals | | 4 | | 4 |
| Vulnerable by occupation | | 2 | | 2 |
| **Universal** | 6 | 4 | | 10 |

### *4.2.2 Numerical summary*

*Population segments identified in P&P*

Of a total of 131 P&P, 104 identified LCS segments of which 47 were from Asia while 57 were from Africa. On an average a single P&P mentioned two LCS in both regions (Table 31). This trend was consistent across the three WASH sub-sectors as well. Results also showed that a maximum of 7 segments were included in a single P&P. Further, approximately 11 P&P in Asia and 15 P&P in Africa did not identify any LCS at all suggesting that, like policy documents, P&P could have focused on provision of universal access.

**Table 31: Coverage of segments in P&P**

| Population Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | **Asia (N=59) Mean [Max, Min]** | **Africa (N=72) Mean [Max, Min]** | **Asia (N= 50) Mean [Max, Min]** | **Africa (N=66) Mean [Max, Min]** | **Asia (N= 49), Mean [Max, Min]** | **Africa (N=70) Mean [Max, Min]** | **Asia (N= 21) Mean [Max, Min]** | **Africa (N=34) Mean [Max, Min]** |
| **LCS** | 2.44 (7,0) | 2 (7, 0) | 1.88 (6, 0) | 2.14 (7, 0) | 2.63 (7,0) | 2.15 (7,0) | 3.4 (7,0) | 3.1 (7,0) |
| **GSS** | 2.08 (5,0) | 1.80 (4, 0) | 2.04 (5, 0) | 1.83 (4, 0) | 2.14 (5,0) | 1.82 (4,0) | 1.66 (5,0) | 1.76 (4,0) |

Among the LCS, women and children were the most mentioned segments and were recognised in more than 50% of P&P in both regions and across all three WASH sub-sectors (refer Appendix 15). All the other LCS were cited in less than 35% of P&P revealing a large gap between the top two and the rest of the segments identified (Table 32).Some of the other LCS which received attention were adolescent girls, boys, men and the disabled. Men were more frequently identified in Asian P&P which could be attributed to the recognition of men as decision makers and as managers of family budgets in a predominantly patriarchal society. Senior citizens and PLHIV were least mentioned segments. Further, PLHIV found mention only in Africa. Although WASH policies in few Asian countries (Nepal and India) recognised PLHIV, P&P in the region have not recognised them. The transgender community was not identified in any programme or project.

With respect to the GSS, 120 P&P mentioned GSS of which 51 were from Asia and 69 were from Africa. While the average number of GSS cited in a single programme or project was around 2, a total of 8 P&P in Asia and 3 P&P in Africa did not include any segment at all (Table 32). Of these P&P 7 pertained to WASH as a whole while others were a combination of the sub-sectors. Further, 38 P&P in Africa identified two segments as opposed to 16 P&P in Asia. Results also showed that in Africa a maximum of 4 segments have been included in a single P&P while in Asia 5 segments were included in a single P&P. Observations from the hygiene sector were limited because the number of hygiene P&P itself were few as seen in Table 31.

**Table 32: Percentage coverage of LCS in WASH P&P**

| Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | Asia (N=59) | Africa (N=72) | Asia (N=50) | Africa (N=66) | Asia (N=49) | Africa (N=70) | Asia (N=21) | Africa (N=34) |
| Children | 53%*** | 61%*** | 48%*** | 64%*** | 57%*** | 63%*** | 90%*** | 79%*** |
| Adolescent girls | 31%*** | 28%*** | 24%*** | 29%*** | 35%*** | 29%*** | 57%*** | 50%*** |
| Adolescent boys | 22% | 25% | 18% | 26% | 27% | 26% | 43% | 47% |
| Women | 71%*** | 58%*** | 70%*** | 61%*** | 80%*** | 59%*** | 86%*** | 62%*** |
| Men | 20% | 14% | 16% | 14% | 20% | 14% | 24% | 26% |
| Transgender | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 0% |
| Senior Citizens | 3% | 4% | 0% | 3% | 4% | 4% | 5% | 6% |
| Disabled | 17% | 17% | 12% | 17% | 18% | 17% | 19% | 29% |
| PLHIV | 0% | 4% | 0% | 5% | 0% | 4% | 0% | 3% |

Note: Segments with top three ranks have been denoted by ***

**Table 33: Percentage coverage of GSS in WASH P&P**

| Segments | WASH | | Water | | Sanitation | | Hygiene | |
|---|---|---|---|---|---|---|---|---|
| | Asia (N=59) | Africa (N=72) | Asia (N=50) | Africa (N=66) | Asia (N=49) | Africa (N=70) | Asia (N=21) | Africa (N=34) |
| Rural | 59%*** | 68%*** | 51%*** | 71%*** | 63%*** | 70%*** | 62%*** | 76%*** |
| Urban | 39%*** | 65%*** | 32%*** | 67%*** | 35%*** | 66%*** | 24%*** | 56%*** |
| Poor and low income | 58%*** | 36%*** | 46%*** | 33%*** | 65%*** | 36%*** | 48%*** | 29%*** |
| Caste | 25% | 0% | 22% | 2% | 27% | 1% | 14% | 3% |
| Ethnicity | 25% | 1% | 22% | 0% | 27% | 0% | 19% | 0% |
| Migrants and Pastoralists | 0% | 10% | 0% | 11% | 0% | 10% | 0% | 12% |
| Vulnerable by occupation | 3% | 0% | 2% | 0% | 4% | 0% | 5% | 0% |
| **Universal** | **17%** | **18%** | **15%** | **18%** | **16%** | **17%** | **43%** | **18%** |

Note: Segments with top three ranks have been denoted by ***

**Priority given to rural, urban and poor segments:** Among the GSS, results showed that the predominant segments mentioned were rural, urban and the poor. In Asia we found that the rural and poor segments were cited in equal percentage of P&P followed by the urban segment. On the other hand, in Africa, rural and urban segments found almost equal mention, suggesting an emphasis on improving access across regions with geographical variations. The poor were cited in less than 40% of P&P. Consistent with the trend in policy documents, Asian P&P have mentioned population groups marginalised by caste, ethnicity and occupation while African P&P mentioned migrants and pastoralists.

***BARRIERS***

**Identification of barriers in P&P was limited:** Out of 131 P&P, barriers were identified in 93 P&P. Within these, LCS were identified in 36 P&P (13 in Asia and 23 in Africa) whereas GSS were identified in 57 P&P (22 in Asia and 35 in Africa). With respect to the WASH sub sectors, there were more observations for water followed by sanitation and hygiene in both regions.

Our results showed that among the LCS, barriers faced by women and adolescent girls were the most frequently mentioned across the evidence base. These segments were followed by children and rural children. Descriptions of barriers were not available for senior citizens. With respect to GSS, most number of barriers were identified for rural, urban and urban poor segments. Barriers were not cited for the rural poor, groups marginalised by caste, ethnicity and occupation. Tables 34 and 35 provide observations for the type of barriers faced by the population in LCS and GSS respectively.

**Table 34: Count of observations for barriers for LCS by region**

| Population Segments | No of P&P | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 4 | 7 | | | 2 | | | | **9** |
| Adolescent Girls | 5 | 7 | 1 | 1 | 2 | | 3 | | **14** |
| Women | 8 | 7 | | 2 | 5 | | | | **14** |
| Others | 4 | 3 | 3 | 1 | | | 1 | | **8** |
| **Sub Total (Asia)** | **12** | **24** | **4** | **4** | **9** | | **4** | | **45** |
| **Africa** | | | | | | | | | |
| Rural Children | 8 | 4 | | | 6 | | | | **10** |
| Adolescent Girls | 5 | 4 | | | 6 | | 1 | | **11** |
| Women (Adults) | 6 | 4 | | | 3 | 4 | | | **11** |
| Others | 17 | 3 | 4 | 1 | 13 | 4 | 4 | | **29** |
| **Sub Total (Africa)** | **23** | **15** | **4** | **1** | **28** | **8** | **5** | | **61** |
| **Grand Total** | **35** | **39** | **8** | **5** | **37** | **8** | **9** | | **106** |

**Adequacy and environmental barriers cited for women, adolescent girls and children reflected stresses faced in access:** Adequacy and environmental barriers were cited the most for women, adolescent girls and children predominantly across the water and sanitation sectors (refer Appendix P). Example of adequacy barriers were, "*existing water supply schemes connect only limited population groups and women and children are forced to collect water from public stand posts*" (India's Punjab Rural Water Supply and Sanitation Sector Improvement Programme, 2015)". While examples of environmental barriers included "*women and children walk long distances to fetch water and experience waiting time between 20 and 15 minutes*" (Uganda's Small Towns Water Supply and Sanitation Project, 2008) and "*women had to travel long distances to access latrines*"(Pakistan's Sanitation Programme at Scale - Phase 1, 2014).

While the nature of barriers described for women, adolescent girls and children may be similar, the consequences of these constraints were nuanced with each of the segments. Women and adolescent girls largely faced gender based violence and sexual harassment while accessing facilities (Kenya's Sustainable Sanitation in Slums Project, 2012). Researchers refer to these consequences as stresses. Sahoo et al. (2015)'s study on the difficulties faced by women in accessing WASH facilities, during four life stages, revealed that women faced social, sexual and environmental stresses. Some of the stresses described by the authors were, "*simply being seen walking to the latrine or water source made women feel vulnerable*" and "*encountering drunk men when accessing sanitation and feeling apprehensive during these encounters because women could not rely on drunk men to act rationally*".

In addition to gender based violence, adolescent girls faced consequences related to MHM, especially in schools, which affected their school attendance rates. For example, "*absence of water and sanitation facilities in schools affects girls' performance and they miss classes during menstruation as they have to walk long distances home or to the nearest toilet"* (Ethiopia's One WASH Programme, 2013) and "*lack of sanitation facilities in schools reduces school attendance especially during menstruation*" (Tanzania's Rural Water Supply and Sanitation Programme, 2010). Children's attendance rates too were also affected because of their role in collecting water. For instance, "*children spend more time collecting water instead of attending school"* (Nigeria's Zaria Water Supply and Sanitation Expansion Project, 2011).

**Table 35: Count of observations for barriers for GSS by region**

| Population Segments | No of P&P | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Rural | 8 | 6 | 4 | 3 | 4 | | 2 | 1 | **20** |
| Urban | 5 | 5 | 1 | 3 | 2 | | | | **11** |
| Urban Poor & Low Income | 4 | 8 | 1 | 1 | | | 1 | 4 | **15** |
| Others | 1 | 1 | | | | | | | **1** |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Sub Total (Asia)** | **22** | **20** | **6** | **7** | **6** | | **3** | **5** | **47** |
| **Africa** | | | | | | | | | |
| Rural | 10 | 7 | 3 | | 4 | | 5 | 3 | **22** |
| Urban | 10 | 5 | | | | 2 | 2 | 7 | **16** |
| Urban Poor & Low Income | 5 | 1 | | 2 | | 4 | | 2 | **9** |
| Others | 5 | 6 | | 2 | | 3 | | | **11** |
| **Sub Total (Africa)** | **35** | **19** | **3** | **4** | **4** | **9** | **7** | **12** | **58** |
| **Grand Total** | **57** | **39** | **9** | **11** | **10** | **9** | **10** | **17** | **105** |
| | | | | | | | | | |
| Universal (Asia) | 5 | 1 | 2 | | | | 4 | 1 | 8 |
| Universal (Africa) | 5 | | 2 | 1 | 2 | | 1 | 2 | 8 |

**Urban segments in Asia and Africa faced different types of barriers:** Different types of barriers were mentioned for the urban population in the two regions. In Africa it was found that barriers related to policy and institutional constraints, physical constraints and exclusion of population segments from provision of WASH facilities (inclusion barrier). An example of a policy and institutional barrier was the existence of high water tariffs to access public sector services (Nigeria's Small Towns Water Supply and Sanitation Pilot Project, 2004). While physical barriers included poor maintenance of existing infrastructure (Nigeria's Small Towns Water Supply and Sanitation Pilot Project, 2004), inclusion barriers comprised of the non-integration of the poor and disadvantaged groups among the urban community into customer databases of service providers (Sustainable Water and Sanitation Programme in Africa (SUWASA), 2015).

In Asia, on the other hand, descriptions of barriers related to attitudinal and demand side constraints. Example of an attitudinal barrier was, "*lack of awareness among the urban community on hygiene and health aspects*" (India's SwachhTelangana Mission, 2015). While an example of a demand side barrier was, "*poverty often prevents the disadvantaged from accessing WASH facilities in urban areas*" (Bangladesh's Support to Water Supply and Sanitation Sector Programme, 2010). Such diversity in barriers was not observed for the rural population which predominantly faced adequacy and environmental barriers.

**Attitudinal barriers were more prevalent across the sanitation and hygiene sectors for both LCS and GSS:** Attitudinal barriers were cited across population segments. These barriers pertained to the lack of knowledge or awareness on the availability of WASH services and facilities, resulting in poor sanitation and hygiene practices such as open defecation. Among the LCS, attitudinal barriers were identified for 4 segments, namely, women, adolescent girls, men and PLHIV whereas in the GSS, rural, urban and poor segments were faced with attitudinal barriers. Examples this barrier cited in P&P documents were; "*there is a cultural taboo to build latrines within the compound*" (Madagascar's Grand South Rural Potable Water and Sanitation Programme, 2011) and "*men believe that open defecation is better than having a toilet in/near the house*" (India's Karnataka Integrated Urban Water Management Investment Programme, 2015). Examples from the data set seemed to suggest that there were taboos associated with sanitation and hygiene across cultures which affect the adoption and sustenance of new and safe practices. This finding on attitudinal barrier was corroborated in a report by

Water Aid (2011), which stated that, "*improving sanitation and hygiene is not just about physical infrastructure. Much depends on human behaviour change."*

***STRATEGIES***

Within the dataset, strategies were specified for LCS in 37 and 44 P&Ps in Asia and Africa respectively. Similarly, for GSS, 55 P&P in Asia and 66 P&P in Africa had identified WASH strategies. Sector wise results for both regions have been presented in Appendix Q.

Amongst the WASH strategies, women, specifically women in rural areas, children and adolescent girls had received maximum attention in WASH P&P in both regions. Due to the large number of P&P focussed on the rural sector in this review, there was a greater representation of life-segments in rural WASH initiatives.The GSS that featured frequently in our dataset in Asia and Africa were population in rural areas, urban areas and the urban poor and low income category). Apart from these three categories, strategies were identified for groups marginalised by caste and ethnicity in Asia and migrants and pastoralists in Africa.

**Table 36: Count of observations for strategies for LCS by region**

| Population Segments | No of P&P | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation Marketing | Skill development of community | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Children | 7 | | | | 28 | 3 | | 3 | | 3 | | | 3 | **40** |
| Rural children | 11 | | | | 24 | 6 | | | | 2 | 2 | | | **34** |
| Rural women | 20 | 3 | 27 | 7 | 10 | | | | | 1 | | 2 | | **50** |
| Others | 19 | 16 | 11 | 13 | 40 | 10 | 1 | | 2 | 1 | | 3 | 1 | **98** |
| **Sub Total (Asia)** | **36** | **19** | **38** | **20** | **102** | **19** | **1** | **3** | **2** | **7** | **2** | **5** | **4** | **222** |
| **Africa** | | | | | | | | | | | | | | |
| Adolescent girls | 8 | 3 | 1 | 3 | 17 | 1 | | | | 1 | | 3 | | **29** |
| Women | 12 | 4 | 6 | 25 | 5 | | | | | | | 3 | | **43** |
| Rural women | 16 | 7 | 30 | 12 | 12 | | 2 | | | | | | | **63** |
| Others | 43 | 6 | 14 | 33 | 80 | 2 | 4 | | | 7 | 1 | 6 | | **153** |
| **Sub Total (Africa)** | **44** | **20** | **51** | **73** | **114** | **3** | **6** | | | **8** | **1** | **12** | | **288** |
| **Grand Total** | **80** | **39** | **89** | **93** | **216** | **22** | **7** | **3** | **2** | **15** | **3** | **17** | **4** | **510** |

**IEC played an important role in implementation of P&Ps, especially in the sanitation sector:** Of the entire set of strategies used in P&P implementation, IEC appeared to play an important role in the implementation of WASH P&P and was often used in combination with other strategies such as promoting demand management, encouraging beneficiary participation, and decentralisation. This was possibly a reflection

of the low level of awareness about the importance of WASH and more importantly, aligns with the predominance of attitudinal barriers with regard to WASH amongst LCS and GSS. Therefore, IEC was used as means to various ends across all WASH P&P implemented by multi-laterals, bi-laterals and government agencies. Between the WASH sub-sectors, count of observations for the sanitation sector was the highest, followed by water and hygiene sectors.

**WASH P&Ps showed emphasis on decentralisation and beneficiary participation as preferred strategy for women:** Our analysis revealed increasing focus on the involvement of women in the planning, implementation and maintenance of WASH P&P. Strategies that were deployed frequently across various P&P for women included decentralisation of service delivery, beneficiary participation and IEC (refer Table 36). Decentralisation included the setting up of WASH committees in the community, involvement of local bodies in provision of services, formation of water and sanitation user groups, and the establishment of committees to plan, design, execute and maintain WASH infrastructure. The involvement of women in these decentralised structures in order to improve WASH access was emphasised in both Asia and Africa. Few examples of this component were:

- *"participation of women in water supply and sanitation user committees" (Nepal's Second Rural Water Supply and Sanitation Project , 2008),*
- *"inclusion of women in village water and sanitation committees, special women's gram sabha"(Maharashtra Rural Water Supply and Sanitation, India, 2014),*
- *"female participation in village-level decision making in community water supply and sanitation organizations" (Tanzania's Integrated Water, Sanitation and Hygiene Program (iWASH), 2013),*
- *"community management of water supply and sanitation facilities by organizing water user associations (WUAs) which include women in leading positions" (Malawi's Sustainable Rural Water Infrastructure for Improved Health and Livelihood project, 2014),*
- *"women to be fully involved in management and maintenance of water points (Madagascar's Short Term Rural Drinking Water Supply and Sanitation Programme, 2005),*
- *"establishment of WASH committees of which 35% are women and all treasurers are women" (Ethiopia's Water Supply and Sanitation Program, 2004).*

Countries like Nepal, India and Ethiopia had even gone to the extent of stipulating the extent of women's representation in such WASH committees. For instance, in Nepal's Rural Water Supply and Sanitation Programme-Gurkha Welfare Scheme-Phase IV, 2012, it was stipulated to have 33% representation of women in WATSAN committee whereas in Ethiopia (Water, Sanitation and Hygiene (WASH) Program, 2008), the composition of WASH committees had to include 2-3 women members in a total of 5-7 members. In India (Punjab Rural Water Supply and Sanitation, 2006), Gram panchayats, the lowest decentralized governance structure at the village level, was to have 1/3$^{rd}$ women members in its water and sanitation committees.

Beneficiary participation was yet another WASH component for women often mentioned in our dataset. The involvement of women in different aspects of planning, design, implementation and maintenance of WASH infrastructure comprises beneficiary participation. However, there were various ways in which different P&P achieved

beneficiary participation. For instance, Pakistan (Rural sanitation in nineteen flood affected districts of Pakistan- Phase II, 2011) had stressed on “the involvement of women in household level decision making in construction of sanitation and hygiene facilities”. In Uganda (Water and Sanitation Program, 2006), the focus was on the involvement of women in construction and training on improved WASH practices. Few P&P had envisaged the role of women as managers of WASH committees. For example in India (Kerala Rural water supply and environmental sanitation project, 2009), women taking on the role of water committee treasurers was considered as a step towards women’s empowerment.

**IEC messages for women targeted their role as change-makers**: Focus of IEC activities targeted at women largely included behavior change, training and capacity building on sanitation and hygiene, and hygiene promotion that includes menstrual hygiene management. These IEC activities were targeted at women playing different roles such as:

- *training of women members of water and sanitation committee (Nigeria’s Rural Water Supply and Sanitation Sub-Programmes in Yobe and Osun States, 2007),*
- *hygiene promotion activities for mothers (Pakistan’s Safe Drinking Water and Hygiene Promotion Project, 2008),*
- *training of female councilors and health workers in hygiene education (Pakistan’s Punjab Community Water Supply and Sanitation Sector Project, 2008),*
- *workshops for school teachers on hygiene (Zanzibar Urban Water and Sanitation Project, Tanzania, 2012),*
- *training of mothers to lead in hygiene and sanitation behavior change education (Rural Water Supply and Sanitation in Western Nepal - Phase I, 2009).*

Across the dataset, it was noticed that women were specifically recognised and targeted as change agents and not only as recipients of improved water supply and sanitation. The centrality of women as WASH managers within the household as well as the community level, which was emphasised in policy documents, found a corresponding focus in P&P and policies as well. Analysis of components by agencies funding/implementing the P&P revealed that all three strategies mentioned above were preferred by multilateral agencies, bi-lateral agencies and national governments. However, due to the lack of sufficient documents from other implementation agencies such as international, national and local NGOs, the results cannot be generalized across regions and organisations.

**Provision of WASH in schools and improving demand for WASH amongst children gained importance in WASH programmes:** Children also found specific mention in WASH P&P across Asia and Africa. Similar to women, within the larger group of children, rural children were the focus of several P&P. For this segment, IEC was the most often used component in WASH programming due to the emphasis on behavior change in children. Few of the activities that comprised IEC included:

- *“integrating hygiene messages into textbook curriculum and supplementary reading material” (SwacchVidyalaya Component of SwacchBharathAbhiyan, India, 2014),*
- *“child friendly school framework for improved sanitation and hygiene” (Nepal’s One Wash Programme, 2015),*

- *"out of school alternative education for children not in school on basic rights for water, sanitation and hygiene" (Nepal's One Wash Programme, 2015),*
- *"setting up of school sanitation clubs with students, teachers and parents" (Malawi's School Sanitation and Hygiene Project (SSHP), 2004),"*
- *"formation of school WASH clubs for capacity building" (Sanitation Programme at Scale in Pakistan - Phase 1, 2014), and*
- "*conduct public awareness campaigns on WASH, girls menstrual health and involve community and school children" (Nepal's Third Small Towns Water Supply and Sanitation Project, 2014).*

Apart from IEC, few WASH programmes had also focused on improving the demand for WASH facilities amongst children. In Pakistan (Early Recovery Scaling-up of Rural Sanitation in Flood Affected Districts (RUSFAD), 2013; Sanitation Programme at Scale in Pakistan - Phase 1, 2014), school children were not only the target for concerted IEC efforts to improve awareness on personal hygiene and sanitation but also were involved in community mobilization efforts for demand-led sanitation. Further, in Ethiopia, improving demand for WASH was stated to reduce poverty and address gender equality by reducing the time and effort spent by girls and children in accessing WASH (Ethiopia's Water Supply, Sanitation and Hygiene Project, 2014).

**Hygiene education, MHM and sanitation promotion were commonly prescribed strategies for adolescent girls**: For adolescent girls, in both Asia and Africa, IEC emerged as the most popular component used in WASH P&P. The emphasis of these IEC campaigns was on hygiene and creating awareness on MHM. Some of the commonly occurring observations under IEC were:

- *"menstrual hygiene education to schools for girls and stockpiling extra sanitary pads, clothes for emergencies" (SwacchVidyalaya Component of SwacchBharathAbhiyan, India, 2014),*
- *"community awareness campaigns including campaigns in schools where 50% are girl children" (Nepal's Kathmandu Valley water supply improvement project, 2011),*
- *"creating awareness among adolescent girls with knowledge of MHM" (Support to One Water, Sanitation and Hygiene National Programme (OWNP), Ethiopia, 2014), and*
- *"hygiene and sanitation sensitisation campaigns for school students of which 40% are girls" (Zanzibar Urban water and sanitation project, Tanzania, 2012).*

In addition to IEC, few other strategies deployed for adolescent girls included beneficiary participation, skill development and equity in WASH provision. Examples of these strategies included consultation of boys and girls in programme design i.e., beneficiary participation (One WASH National Programme, 2013), setting up of sanitation and hygiene stores by adolescent girls to promote skill development (Sanitation, Hygiene, Education and Water Supply in Bangladesh (SHEWA-B), 2012) and to accord priority to the needs of adolescent girls in order to ensure equity in WASH provision (India's SwachhBharath Mission Guidelines, 2014). However, the number of observations for these strategies was very few in our dataset.

**Gender sensitivity and training men and adolescent boys on management of WASH had gained some traction in WASH P&P**: WASH P&P documents also

included a mention of strategies for men and adolescent boys. Although IEC is by far the most used component for these two segments, it is useful to understand the focus of such IEC activities. Strategies such as the following alluded to the important role played by men as household decision makers in the construction of sanitation and hygiene facilities: "*training of beneficiaries (male, female, youth) on hygiene and sanitation to involve them in management and maintenance of water, sanitation and hygiene facilities and provision of sanitary bits to encourage good hygiene practices*"(Uganda's Water and Sanitation Programme, 2006); involvement of men in hygiene and sanitation training in order to encourage them to provide latrines for households (Malawi's National Water Development Programme - WASH promotion in Seven Market Centres, 2010). For adolescent boys, the emphasis of IEC efforts were towards "*developing gender sensitive school sanitation and hygiene promotion systems and materials*" (Malawi's School Sanitation and Hygiene Project, 2004), "*consultation with boys and girls for programme design* (Ethiopia's One WASH National Program,2014) and "*developing gender sensitive school sanitation and hygiene promotion systems and materials"* (Tanzania's Water sector development Programme, 2006).

**Disabled, the aged and PLHIV received limited attention**: LCS that received minimal attention in P&P strategies were the disabled, senior citizens and PLHIV in Africa. In Asia, PLHIV were not mentioned at all in our dataset and observations for senior citizens and disabled were too few in number. These observations mainly focused on equity in WASH provision for the vulnerable population which also included the disabled and the elderly. Some examples were the "*construction of communal toilets in low income areas with access to disabled and people with special needs*" (Ethiopia's Water Supply, Sanitation and Hygiene Project, 2014), "*involve disabled in programme designing*" (Ethiopia's One WASH National Program, 2014), "*expanding access to include poor, children, women, disabled, elderly*" and "*disabled groups will be involved in the planning and design of water points and latrines in schools and other places to ensure one latrine in each block for the disabled*" (Malawi's National Water Development Programme - WASH Promotion in Seven Market Centres, 2010).

For PLHIV in Africa, hygiene education efforts were highlighted in the IEC component. In Kenya, building institutional capacity for the integration of HIV awareness in WASH found mention (Kenya Integrating WASH into HIV interventions and advancing improved sanitation uptake, 2014).

**Strengthening of institutions and decentralisation were prominent strategies used for the rural population:** Similar to the LCS, IEC was the most frequently used component in improving access to WASH. For the rural population, apart from IEC, institutional strengthening, decentralisation, beneficiary participation, improving demand for WASH and ensuring equity in WASH provision were the most commonly implemented strategies (refer Table 4.34).

**Table 37: Count of observations for strategies for LCS by region**

| Population Segments | No of P&P | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation Marketing | Skill development of community | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Children | 7 | | | | 28 | 3 | | 3 | | 3 | | | 3 | **40** |
| Rural children | 11 | | | | 24 | 6 | | | | 2 | 2 | | | **34** |
| Rural women | 20 | 3 | 27 | 7 | 10 | | | | | 1 | | 2 | | **50** |
| Others | 19 | 16 | 11 | 13 | 40 | 10 | 1 | | 2 | 1 | | 3 | 1 | **98** |
| **Sub Total (Asia)** | **36** | **19** | **38** | **20** | **102** | **19** | **1** | **3** | **2** | **7** | **2** | **5** | **4** | **222** |
| **Africa** | | | | | | | | | | | | | | |
| Adolescent girls | 8 | 3 | 1 | 3 | 17 | 1 | | | | 1 | | 3 | | **29** |
| Women | 12 | 4 | 6 | 25 | 5 | | | | | | | 3 | | **43** |
| Rural women | 16 | 7 | 30 | 12 | 12 | | 2 | | | | | | | **63** |
| Others | 43 | 6 | 14 | 33 | 80 | 2 | 4 | | | 7 | 1 | 6 | | **153** |
| **Sub Total (Africa)** | **44** | **20** | **51** | **73** | **114** | **3** | **6** | | | **8** | **1** | **12** | | **288** |
| **Grand Total** | **80** | **39** | **89** | **93** | **216** | **22** | **7** | **3** | **2** | **15** | **3** | **17** | **4** | **510** |

Examples of a few observations were:

- *"capacity building of government staff of rural water supply and sanitation utilities" (Rural Water Supply and Sanitation Sub-Programmes in Yobe and Osun States, Nigeria, 2007),*
- *"capacity building of state institutions and institutional reform to bring in decentralization" (Uttaranchal Rural Water Supply and Sanitation, India, 2006),*
- *"community participation in all stages of the project including construction of facilities" (Tanzania's Integrated Water, Sanitation and Hygiene, 2013),*
- *"community participation in programme designing, selecting of water points, selection of service level" (Ethiopia's Rural Water Supply and Sanitation Programme, 2005),*
- *"determine rural water supply and sanitation needs of the region and develop a programme based on demand responsive approach" (Kenya Rift Valley Water Supply and Sanitation Project, 2004), and*
- *"adopting community-led people centered demand-led approached to lead to behaviour change" ( India's NirmalBharathAbhiyan, 2012).*

**Provision of water in urban areas, especially to the urban poor and low income groups has garnered more attention in WASH P&P:** For the urban population, priority was given to provision of WASH facilities, institutional strengthening and stakeholder participation. Few examples of these strategies included, "*providing institutional support to local utilities*"(Kenya's Urban Water and Sanitation OBA for Low-Income Areas, 2014), "*rehabilitation of existing urban water and sanitation facilities in Nakuru to reduce UFW*" (Kenya's Rift Valley Water Supply and Sanitation Project, 2004), "*infrastructure*

*investment in urban water supply and sanitation/sewerage and catchment source protection*" (Uganda Water Management and Development Project, 2012), and "*local NGOs working with the community to collect user fee for maintenance*" (Bangladesh's Secondary Towns Water Supply and Sanitation, 2009).

Apart from these two segments, urban poor and low income groups, groups marginalised by caste and ethnicity, and migrants and pastoralist had also received attention in terms of equity in WASH provisioning. Financial incentives were mentioned as a component only for the urban poor and low income in Asia.

**P&P strategies must be tailor-made and sensitive to ground realities:** From our dataset of 131 P&P, 47 documents provided information on the strategies that succeeded and those that did not. While some of these documents were evaluation reports, few others were completion reports. All the observations recorded from the data set were grouped under the same categories as the strategies for analysis. Data for only the top three LCS i.e., rural women, adolescent girls and children have been presented in Appendix Q. It must be noted that observations regarding the reasons that contributed to the success or failure of a component were specific to each P&P. What worked in one P&P may not have worked in the other and therefore generalisations have been avoided.

It was observed that for the LCS, provision of WASH facilities, beneficiary participation and IEC were the strategies that had contributed to improvements in access. For example, provision of WASH facilities for women, girls and children reduced the time and distance spent in accessing WASH infrastructure which helped women in income generating activities, improved daily life for girls and better health for children. However, in some instances, it was found that provision of WASH facilities had had a detrimental effect. For example, the introduction of flush latrines led to the increased demand for water as a result of which, women and adolescent girls had to fetch more water to keep the latrines clean. Participation of beneficiaries, through the course of implementation was found to have helped rural women whereas use of IEC to sensitise children improved household hygiene and sanitation practices.

Among the GSS, a wider range of strategies were deployed. Use of IEC efforts succeeded because it led to the capacity building of local community, fostered their willingness to participate in local committees, created awareness on importance of WASH practices. However, IEC efforts on hand washing had not worked in certain situations because of high cost of water and soap in rural areas. Decentralisation of WASH provision, as a component, succeeded in ensuring community ownership and transparency in the management of facilities, whereas the lack of capacity of local governments who were entrusted with WASH P&P implementation led to delays. In project management, while direct transfer of cash to local bodies and the treatment of water and sanitation projects separately had worked, organisation constraints and reluctance from community to sustain the efforts affected WASH P&P.

Since evaluation reports of all the P&P included in this review were not available, this analysis has been brief. However, few observations presented here highlighted the need to take a closer look at what might have worked and not worked during the MDGs. Availability of robust evaluation data would be helpful in undertaking such a study.

***BENEFITS***

WASH benefits were identified for the LCS in 72 P&P, of which 33 were from Asia and 39 were from Africa. Amongst these, count of benefits was higher in the African region across all the three WASH sub-sectors. Between the sub sectors, observations for LCS in the sanitation sector were higher than that of water and hygiene sectors (refer Appendix R for sector wise observations). Children, children residing in rural areas, adolescent girls and the disabled were the LCS with the most number of benefits identified (Table 38).

Among the GSS, a total of 120 P&P had identified benefits, of which 53 were from Asia and 67 were from Africa. Within these, count of benefits was higher in the African region across all the three WASH sub-sectors. Between the sub sectors, observations for GSS in the water sector were higher than that of sanitation and hygiene sectors. Rural, urban and urban poor and low income categories had the highest count of benefits attributed to them (refer fig. 34). Improving availability, physical accessibility and quality and safety of WASH facilities, were the most common benefits realised by LCS and GSS in Asia and Africa. However, there were sector and segment variations which have been discussed below.

**Ensuring availability of WASH facilities gained momentum in WASH P&P in Asia and Africa:** In both LCS and GSS, results showed a thrust towards improving availability of WASH facilities (refer Tables 38 and 39). Descriptions of observations from the data set revealed a few differences in the location where WASH facilities were made available for LCS. For example, providing WASH facilities in schools was the focal point for children and adolescent girls, whereas for women, men and the disabled, availability of WASH at the community level, in health centers, markets and other public places was given emphasis. The data showed a larger number of observations for the disabled in Africa than in Asia.

**Table 38: Count of observation for benefits for LCS by region**

| Population Segments | No of P&P | Availability | Physical Accessibility | Affordability | Quality & Safety | Total |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 12 | 30 | 10 | | 3 | **43** |
| Rural children | 14 | 28 | 13 | 6 | 6 | **53** |
| Adolescent girls | 10 | 24 | 15 | 2 | 3 | **44** |
| Others | 21 | 77 | 59 | 15 | 13 | **164** |
| **Sub Total (Asia)** | **32** | **159** | **97** | **23** | **25** | **304** |
| **Africa** | | | | | | |
| Children | 16 | 37 | 15 | | 10 | **62** |
| Rural children | 17 | 32 | 15 | | 2 | **49** |
| Adolescent girls | 17 | 28 | 22 | | 5 | **55** |
| Others | 30 | 111 | 104 | 1 | 22 | **238** |
| **Sub Total (Africa)** | **41** | **208** | **156** | **1** | **39** | **404** |
| **Grand Total** | **73** | **367** | **253** | **24** | **64** | **708** |

Few of the preeminent benefits for children included the provision of safe drinking water, access to soap and water for hand washing, construction of school latrines with separate toilets for girls and boys above the primary level and safe disposal of excreta in schools (Ethiopia's Water Supply, Sanitation and Hygiene Project, 2014; Malawi's School

Sanitation and Hygiene Project, 2004; Tanzania's Water Sector Support, 2007). Examples of observations for adolescent girls included:

- *"every adolescent girl and woman must have easy access to sufficient, affordable and hygienic menstrual absorbents" (India's Swachh Bharat Gramin, 2014),*
- *"separate latrines were installed for school girls and teachers" (Bangladesh's Action Research for Learning Programme, 2016),*
- *"toilets in all government schools to be constructed with emphasis on girls, schools to be provided with financial assistance up to 70% of unit cost" (India's Nirmal Bharat Abhiyan, 2012),*
- *"increase access to and use of safe water in schools for adolescent girls" (Ethiopia's ACP-EU Water Facility, 2010).*
- *"separate toilets for girls and boys, male and female teachers in schools which should be accessible by physically disabled girls" (India's SwacchBharath Mission, 2015),*

From the above observations, it was noticed that greater prominence given to sanitation and hygiene, especially availability of material for MHM for adolescent girls. This could be linked to puberty- an important stage in a girls' life cycle where the lack of toilets and sanitary facilities in schools affects their school attendance and educational aspirations. Some examples of observations on improved availability for men and the disabled were:

- *"construction of latrine blocks in health centers separately for male and female" (WASH initiative for the Rural Poor in 21 Districts in Uganda, 2012),*
- *"sex aggregated on-site public sanitation facilities which are also friendly to physically challenged users" (Tanzania's Arusha Sustainable Urban Water and Sanitation Delivery, 2015),*
- *"mono-blocks or single units that provide drinking water, toilets, shower and laundry facilities for men and women" (Madagascar's Water Supply, Sanitation and Hygiene Bilateral Projects: RanoHp, 2013),*
- *"installation of public pay and use latrines in markets, tourist spots - separate for men and women" (Second Kerala Water Supply and Sanitation, India, 2011) and*
- *"institutions, schools, public places to have disabled-friendly, gender friendly toilets and hand washing facilities" (Rural Water Supply and Sanitation in Western Nepal- Phase II, 2014).*
- *"provide access to improved sanitation facilities which are disaggregated by sex and usable by physically challenged" (Tanzania's Arusha Sustainable Urban Water and Sanitation Delivery, 2015),*
- *"construction of communal toilets in low income areas with access to disabled and people with special needs" (Ethiopia's Water Supply, Sanitation and Hygiene Project, 2014) and*
- *"construction of community toilets with water closet, facilities for hand washing with separate toilets for men, women, disabled friendly (ramps, braille signage), child friendly with good lighting and ventilation and connection to septic tanks or underground systems (India's SwachhTelangana Mission, 2015).*

**Physical accessibility of WASH facilities in terms of distance, time and privacy was addressed in P&P**: Enabling the physical accessibility of WASH, in terms of time and distance taken to access the facility, was a common benefit realized by LCS. The count of observations for this benefit was higher amongst LCS in Africa than that of Asia.

Few examples pertaining to this benefit for children were: "*schools in the programme area now have functioning hand wash points with soaps within 15 yards of their latrines*" (Bangladesh's Action Research for Learning Programme, 2016), "*safe water within 0.5km of all schools*" (Uganda's Rural Water Supply and Sanitation Programme, 2005), and "*new gender separated sanitation and disability sensitive facilities in schools and health centers at seat-student ratio of 1:50*" (Ethiopia's One WASH National Programme, 2013). For women, improved physical accessibility resulted in reduced water and sanitation burden captured in statements such as the following:

- *"household time saved in fetching water ranges from 0.86-4.0 hrs/day. Women and children have more time for schooling and household work" (Nepal's Third Small Towns Water Supply and Sanitation Project, 2014),*
- *"sex aggregated public toilets with disabled friendly design installed in strategic places, women's toilets to ensure privacy and safety" (Nepal's Third Small Towns Water Supply and Sanitation Project, 2014),*
- *"women benefit from the privacy offered by on-site sanitation" (Ethiopia Netherlands UNICEF Water Initiative (NUWI), 2010).*

**Quality and Safety of WASH facilities were given more attention than affordability:** Results showed more weightage given to quality and safety than ensuring affordability of WASH facilities. Amongst the LCS, count of observations of benefits on quality and safety was higher for Africa than that of Asia. This finding aligned with the goals of the MDGs which stressed on the provision of improved water that was free from contamination and improved sanitation facilities that hygienically separated human excreta from human contact. Further, historically, due to the linkages between inadequate WASH facilities and poor health outcomes especially that of diarrhoea in children in several poor countries, ensuring quality and safety of WASH appears to have gained priority over affordability. However, a recent study on cost of WASH provisioning by the Water and Sanitation Program of the World Bank (Hutton and Varughese, 2016) highlighted the importance of addressing affordability of WASH services in order to progress with the SDGs. The study claimed that while the overall sector spending may be sufficient to meet the SDGs, a significant share of public funds should be used to target the poor and marginalised population groups. The report also recommended national governments to provide a policy environment as well as use financial tools such as cross subsidies, grant financing and use of cost-recovery approach to make WASH services affordable to the un-served population.

From our dataset, women in Asia appeared to be the only LCS to have been targeted with financial incentives in order to improve the affordability of WASH. These incentives included "*provision of incentives of Rs.12,000/- provided to women headed households for construction of individual household level latrines*"(India's SwacchBharath Mission, 2015), "*households to be given small investments to construct toilets, new network extensions or for operation and maintenance*" (Punjab Rural Water Supply and Sanitation Sector Improvement Programme, India 2015), "*free/subsidized piped water connections and private toilet facilities to women*" (Nepal's Third Small Towns Water Supply and Sanitation Project, 2014).

**PLHIV and senior citizens mentioned only in Africa**: Keeping in line with the barriers and the strategies, senior citizens and PLHIV are two segments that have received very little attention in WASH programmes, in Africa. There was no mention of these two

segments in Asia. Improving availability and physical accessibility were the two benefits attributed to senior citizens and PLHIV. The examples on availability and physical accessibility were, "*construction of 17 stances of latrines for vulnerable population-persons affected by HIV/AIDS*" (Uganda's Water and Sanitation Programme, 2006) and "*women, children, senior citizens and disabled feel safer because of toilets in close proximity to their houses*" (Madagascar's Community Led Total Sanitation Campaign, 2014).

**Rural areas have benefited from increased coverage in water and sanitation sectors**: Amongst the GSS, people in rural areas were the focus of WASH benefits (refer Table 39). Increasing availability of WASH facilities received considerable attention, followed by physical accessibility and quality and safety. P&P implemented in African countries had more number of observations that were targeted at increasing availability of WASH facilities in rural areas than that of Asian region. Few examples of WASH benefits targeted at the rural population were:

- *"increase rural water and sanitation coverage" (Nigeria's Zaria Water Supply Expansion and Sanitation Project, 2011),*
- *"construction of community water points/stand posts linked to piped water and yard connections" (Nepal's Rural Water Supply and Sanitation Improvement Project, 2014),*
- *"construction of rural community water points" (Ethiopia's Water Supply and Sanitation Programme, 2004), and*
- *"increase in the number of rural people having access to improved water supply" (Uttaranchal Rural Water Supply and Sanitation, India, 2006).*

Similar pattern of WASH provision was observed for urban areas as well. However, the emphasis on providing a household connection for water and sanitation was higher in urban areas than rural areas. Few observations for this segment included:

- *"people to get potable water inside their house (Ethiopia's Harar Water Supply and Sanitation Project, 2013),*
- *"people in urban areas provided with access to improved sanitation" (Uganda's Water Management and Development Project, 2011),*
- *"increase average daily hours of water supply" (Kenya's Small Towns and Rural Water Supply and Sanitation Project, 2009).*
- *"coverage of urban population with access to improved sources" (Uganda Joint Water and Environment Sector Programme Support, 2013),*
- *"rehabilitation of water distribution network" (Bangladesh's Dhaka Water Supply Sector Development Programme, 2008),*
- *"access to improved water supply to urban residents" (Ethiopia's Water Supply and Sanitation Programme, 2004), and*
- *"construction of household toilets in urban areas" (SwachhTelangana Mission, India, 2015).*

**Table 39: Count of observations for benefits for GSS by region**

| Benefit | No of P&P | Availability | Physical Accessibility | Affordability | Quality & Safety | Total |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Rural | 32 | 126 | 37 | 12 | 23 | **198** |
| Urban | 16 | 49 | 15 | 3 | 11 | **78** |
| Urban poor & low income | 10 | 21 | 1 | 3 | 1 | **26** |
| Others | 15 | 32 | 8 | 22 | 7 | **69** |
| **Sub Total (Asia)** | **48** | **228** | **61** | **40** | **42** | **371** |
| **Africa** | | | | | | |
| Rural | 44 | 168 | 40 | 4 | 24 | **236** |
| Urban | 30 | 112 | 22 | | 7 | **141** |
| Urban poor & low income | 17 | 30 | 8 | 8 | 4 | **50** |
| Others | 7 | 20 | 6 | | | **26** |
| **Sub Total (Africa)** | **64** | **330** | **76** | **12** | **35** | **453** |
| **Grand Total** | **112** | **558** | **137** | **52** | **77** | **824** |
| Universal (Asia) | 7 | 15 | 1 | 3 | | 19 |
| Universal (Africa) | 9 | 26 | 10 | 3 | 7 | 46 |

**Poor and low income benefited from improved availability and affordability of WASH**: Apart from rural and urban areas, other categories of population for which WASH benefits were identified were the poor and low income in urban and rural areas. Few examples of observations were,

- "poor people gained access to safe water as a result of newly installed/repaired water points in rural communities" (Bangladesh's Sanitation, Hygiene, Education and Water Supply in Bangladesh (SHEWA-B), 2012),
- "construction of new public and community latrines for low income areas" (Kenya's Rift valley Water Supply and Sanitation Project, 2004),
- "support to poor households to construct latrines - Nepali Rs.1000 - Rs.1700" (Nepal's School led Safe Water, Sanitation and Hygiene Improvement in Mid-Western, 2014), and
- "increase access to drinking water supply for poor rural and small town dwellers in target areas" (Tanzania's Integrated Water, Sanitation and Hygiene Project, 2013).

**Caste based groups have received attention in Asia:** In Asia, groups marginalised by caste and ethnicity were mentioned in WASH benefits whereas in Africa, migrants and pastoralists were identified in WASH P&P. Programmes from India and Nepal contributed towards observations on caste and ethnicity from the Asia region. In Africa, Ethiopia was the only country to have mentioned migrants and pastoralists in their programme documents. Few examples of WASH benefits from India and Nepal were:

- "*provision of drinking water supply to SC/ST concentrated habitations" (India's National Rural Drinking Water Programme, 2010),*
- *"incentives of Rs.24,600 to BPL families, SC and ST, physically handicapped, women headed HH and Rs.5100 for hilly areas including beneficiary contribution to construct individual household toilets" (India's Nirmal Bharat Abhiyan, 2012),*

- *"provision of water to tribal Gram Panchayats households" (Maharashtra Rural Water Supply and Sanitation Project – Jalswarajya, 2003), and*
- *"dalits, ethnic groups and poor are not being denied access to water taps as was the case before" (Nepal's Community based water supply and sanitation sector project, 2012).*

For the migrants and pastoralists, the observations were as follows: *"provision of facilities to pastoralist regions to be integrated with other programme aimed at improving water supply to migrant population" (Ethiopia's Water Supply and Sanitation Programme, 2004), "consultations with pastoralists for designing the programme" (Ethiopia's One WASH National Program, 2013), and "rehabilitated water supply systems for rural areas and for pastoral areas" (Ethiopia's One WASH National Program, 2013).*

**Public connections were provided in larger numbers than household connections:** An analysis of data pertaining to the location of the WASH facility revealed the type of facilities provided during the MDGs (refer Appendix R). Since all P&P documents did not contain data on the location, the number of data points was limited. It was found that between 2000 and 2015, there were a greater number of public connections provided in both Asia and Africa. However, the observations for Africa were greater than Asia. Within the LCS, children followed by adolescent girls and boys were the beneficiaries of these public connections. This may be explained by the importance given to providing WASH facilities in schools. Women and disabled were also provided with public connections albeit not to the extent provided for children or adolescents.

In the GSS, rural areas, followed by urban populations received the most mention where it was found that observations for household connections were greater in Asia, whereas in Africa emphasis on public connections were higher. Although nothing conclusive can be said about this analysis, this information may be useful in understanding any linkages between the barriers such as adequacy or physical accessibility and the WASH benefits. For example, it can be seen that adequacy barriers to WASH services for children and the adolescents were addressed by the provision of public connections rather than shared or household connection. And, these public connections were largely provided in schools as availability of WASH was linked to education outcomes and school attendance. However, it cannot be concluded that household connections were not provided at all since there may be other programmes in a country or region that focused on household connections. These linkages could perhaps be explored in future research.

***P&P robustness***

The analysis for P&P robustness index was carried out across 131 P&P including 59 Asian P&P and 72 African P&P. At the aggregate level, GSS had a better representation of all the three indicators within P&P than LCS. The overall robustness index for GSS was 6.1 and 4.3 for LCS. Region-wise analysis resulted in interesting findings that reflected different approaches taken by Asian and African P&P towards LCS and GSS. African policies were observed to have a slightly higher robustness index than the Asian policies. However, it can be observed from Table 40 that there was only a marginal difference between the LCS robustness index in Africa and Asia.

**Table 40: P&P robustness index across LCS and GSS**

| LCS | Robustness index |
|---|---|
| Overall LCS | 4.3 (N=131) |
| *LCS Asia* | *4.2 (N=59)* |
| *LCS Africa* | *4.3 (N=72)* |
| | |
| Overall GSS | 6.1 (N=131) |
| *GSS Asia* | *5.9 (N=59)* |
| *GSS Africa* | *6.2 (N=72)* |

Figure 19 and Figure 20 provide the average P&P robustness index for countries in Asia and Africa respectively.

**Figure 19: Average P&P robustness index for Asian countries**

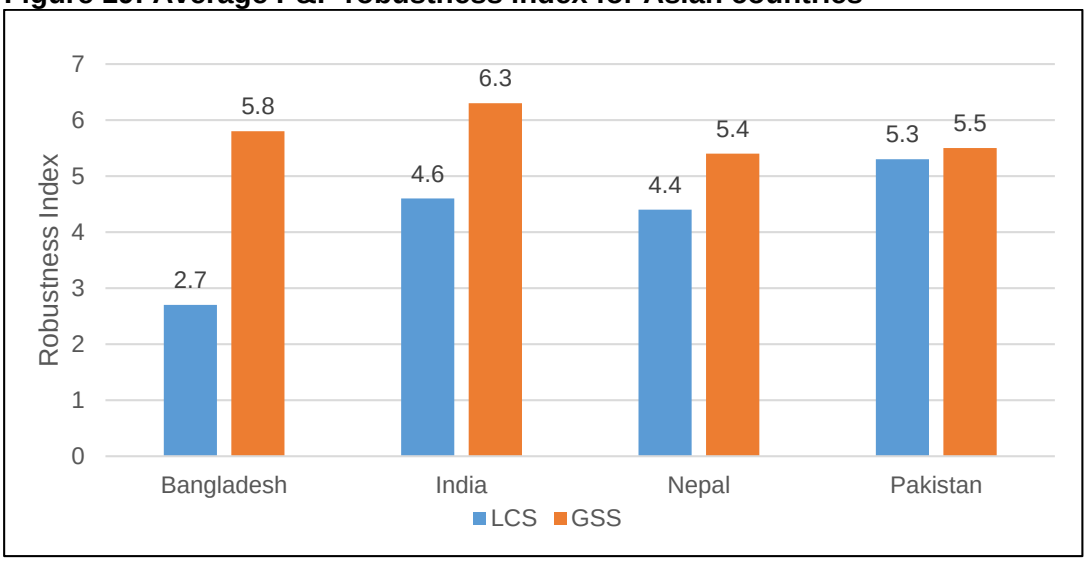



**Figure 20: Average P&P robustness index for African countries**

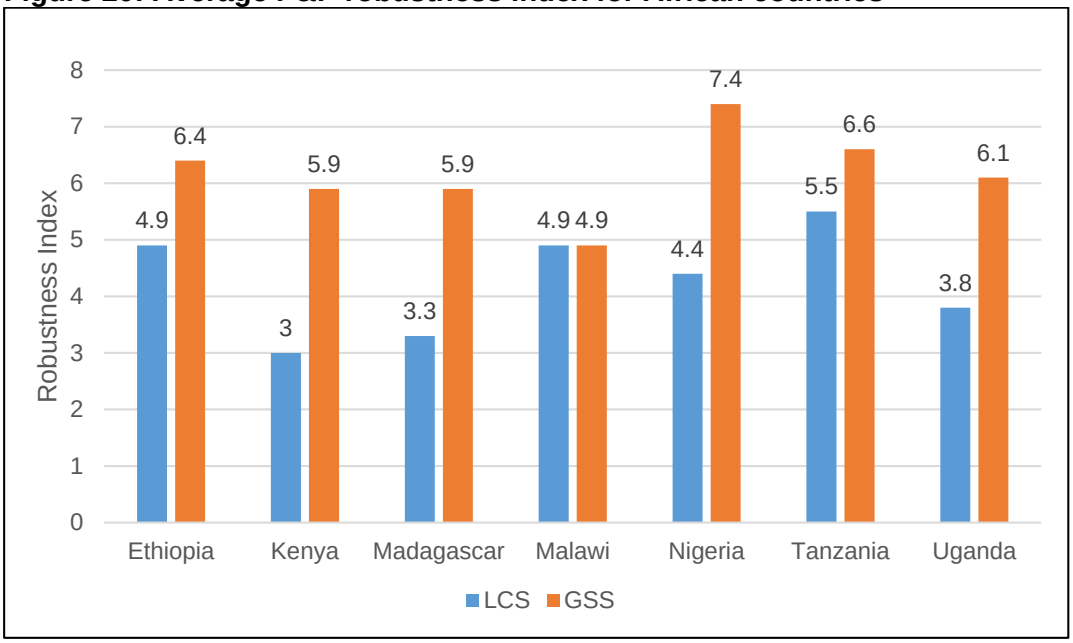
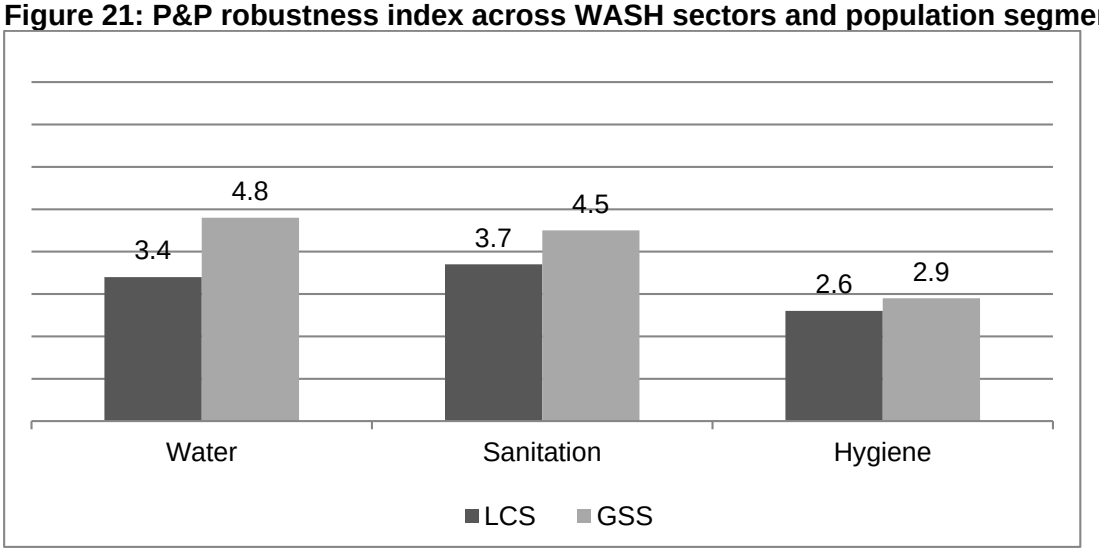


Figure 21 presents the P&P robustness index across WASH sectors and population segments. Of the three WASH sub-sectors, sanitation sector had a high robustness index among LCS and among GSS, it was the water sector.

**Figure 21: P&P robustness index across WASH sectors and population segments**




Though at the aggregate level, African P&P had an edge over Asian P&P, the segment wise data presented in Table 41 revealed that across WASH sub-sectors the robustness index for individual LCS was comparatively high in Asia than in Africa. The overall WASH robustness index in both Asia and Africa was found to the highest among women and followed by children and adolescent girls. The robustness index for children was a little higher in Africa than in Asia. In all the three sectors, women and children accounted for the top two ranks in both the regions. While only the adolescent girls had scored the third rank in water and sanitation in Asia, in Africa, the additional segments including men and the disabled were ranked third. Men had received attention in the hygiene sector in both Africa and Asia and the robustness index was marginally higher in Africa than in Asia.

**Table 41: P&P robustness index among LCS**

| LCS | Water | | Sanitation | | Hygiene | | WASH | |
|---|---|---|---|---|---|---|---|---|
| | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* |
| Children | 2.1*** | 1.9*** | 2.5*** | 2.3*** | 2.3*** | 1.9*** | 2.8*** | 3.1*** |
| Adolescent girls | 1.5*** | 1.2*** | 2.0*** | 1.5*** | 1.7 | 1.4 | 1.9*** | 1.9*** |
| Adolescent boys | 1.3 | 1.1 | 1.5 | 1.4 | 1.3 | 1.3 | 1.5 | 1.6 |
| Women | 3.5*** | 2.6*** | 3.1*** | 2.4*** | 2.4*** | 1.5*** | 3.4*** | 3.4*** |
| Men | 1.3 | 1.2*** | 1.5 | 1.5*** | 2.0*** | 2.1*** | 1.8 | 1.6 |
| Senior citizens | 1.0 | 1.1 | 1.0 | 1.1 | 1.1 | 1.0 | 1.1 | 1.1 |
| Disabled | 1.1 | 1.2*** | 1.4 | 1.4 | 1.1 | 1.2 | 1.4 | 1.5 |
| PLHIV | 1.0 | 1.1 | 1.0 | 1.2 | 1.0 | 1.1 | 1.0 | 1.2 |

Note: Segments with top three ranks have been denoted by ***

Contrary to LCS, among GSS, the P&P robustness index was observed to be higher in Africa than in Asia as presented in Table 42. This trend was consistent across all the three WASH sub-sector and the overall WASH. The segments with top three ranks across the three WASH sub-sectors and overall WASH were rural, urban, and poor and low income.

**Table 42: P&P robustness index among GSS**

| GSS | Water | | Sanitation | | Hygiene | | WASH | |
|---|---|---|---|---|---|---|---|---|
| | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* | *Asia* | *Africa* |
| Rural | 2.7*** | 3.8*** | 3.4*** | 3.6*** | 2.3*** | 2.7*** | 3.8*** | 4.2*** |
| Urban | 2.5*** | 3.4*** | 2.5*** | 3.3*** | 1.7*** | 2.0*** | 2.9*** | 3.8*** |
| Poor and low income | 2.2*** | 1.9*** | 2.4*** | 1.8*** | 1.3*** | 1.2*** | 2.8*** | 2.9*** |
| Caste | 1.6 | 1.0 | 1.4 | 1.0 | 1.1 | 1.0 | 1.7 | 1.0 |
| Ethnicity | 1.7 | 1.0 | 1.6 | 1.0 | 1.1 | 1.0 | 1.8 | 1.0 |
| Migrants/ Pastoralist | 1.0 | 1.2 | 1.0 | 1.2 | 1.0 | 1.2*** | 1.0 | 1.2 |
| Vulnerable by occupation | 1.0 | 1.0 | 1.1 | 1.0 | 1.0 | 1.0 | 1.1 | 1.0 |

Note: Segments with top three ranks have been denoted by ***

### *4.2.3 Qualitative Comparative Analysis*

The QCA results for P&P have been presented in this section. The presence of sufficient data points, that is, 59 Asian P&P and 72 African P&P, allowed separate analysis for Asia and Africa. The analysis for P&P was primarily conducted separately for LCS and GSS and aimed to answer following two questions:

1. What conditions lead to the identification and inclusion of LCS and GSS in WASH P&P?
2. What conditions lead to the identification and inclusion of LCS and GSS in the WASH benefits in WASH P&P?

While csQCA was used to analyse the first question, fsQCA was used to analyse the second one. This largely depended on the type of input conditions selected for the analysis. The number of input conditions included for both the regions differed, however, and fell under three broad categories: type of implementing agency, funding agency and type of WASH subsector. The description of the outcome variable and the input conditions used for the analysis for both LCS and GSS has been presented in Table 43.

The overall QCA resulted in region-specific conditions that ensured the inclusion of LCS and GSS in WASH benefits. In the Asian context, P&P implemented by government had a positive impact on the outcome and in addition a tripartite partnership with local NGO and community also ensured the inclusion of LCS and GSS in WASH benefits. On the other hand, aid agencies' influence in African P&P ensured LCS and GSS coverage in WASH benefits. With respect to the WASH subsectors, the sanitation sector had a higher degree of association in encompassing LCS in WASH benefits in both Asia and Africa. On the other hand, inclusion of GSS in WASH benefits was seen in all the three WASH subsectors.

**Table 43: Description of outcome variable and input conditions – P&P**

| |
|---|
| **Outcome variable 1:** Inclusion of LCS in WASH benefits in Asian P&P |
| **Outcome variable 2:** Inclusion of GSS in WASH benefits in Asian P&P |
| **Outcome variable 3:** Inclusion of LCS in WASH benefits in African P&P |
| **Outcome variable 4:** Inclusion of GSS in WASH benefits in African P&P |
| **Outcome variable 5:** Inclusion of LCS in Asian P&P |
| **Outcome variable 6:** Inclusion of GSS in Asian P&P |
| **Outcome variable 7:** Inclusion of LCS in African P&P |
| **Outcome variable 8:** Inclusion of GSS in African P&P |
| **Input conditions:** |
| **WASH SUBSECTORS:** |

| | |
|---|---|
| WATER | Policy covered the water sector |
| SANITATION | Policy covered the sanitation sector |
| HYGIENE | Policy covered the hygiene sector |
| **AGENCIES INVOLVED:** | |
| FUNDING | P&P funded by an aid agency |
| GOVT | Government as implementing agency |
| COMM | Community as implementing partner |
| NGO | Local NGO as implementing partner |
| MLBL | P&P implemented with the support of a multi-lateral or bi-lateral agency |
| **DEVELOPMENT INDICATORS:** | |
| HDI | Human Development Index |
| JMP | Joint Monitoring Programme for Water Supply and Sanitation |

The results for each QCA analysis carried describe the outcome condition, the input conditions used and all the possible configurations that led to the outcome. We describe a few terms frequently used in reporting the findings here. More details about the QCA method are provided in the Methods Chapter in Section 3.5.2.

- In the **configurations** presented, the condition in upper case denotes the presence of the condition and the absence or low prevalence of the condition is denoted in the lower case. For example, the condition “Agency” which represents the presence of a multilateral or bi-lateral agency in drafting the policy is denoted as “AGENCY” if present in the solution and “agency” in the absence of this condition. The symbol (*) denoted an AND relationship between two combinations within a configuration.
- **Raw coverage** for each configuration denotes the proportion of the data points that a configuration is present in the data points exhibiting the outcome.
- **Unique coverage** indicated the proportion of the data points (of the data points exhibiting a desired outcome) in which a particular configuration is alone present .
- **Solution coverage** measures the degree to which the outcome is covered or explained by all the configurations present in the solution.
- **Consistency** indicates how consistently a particular configuration explains an outcome. It is measured as the proportion of the data points exhibiting both the outcome and the configuration to the total number of data points in which the configuration in present. This gives an indication whether the presence of the condition alone is sufficient to lead an outcome. Higher the consistency, better the sufficiency of the configuration under question. A score of 0.8 or more for consistency is considered good for QCA solutions.
- **Frequency cut-off** denoted denotes the minimum number of cases (data points) with a configuration taken as significant to be included in the analysis.
- **Consistency cut-off** indicates the minimum consistency score taken in the analysis to consider a solution to be significant for a particular outcome of interest.

**Result 1: Identification and inclusion of LCS in Asian P&P**

The results for the outcome condition, “inclusion of LCS in Asian P&P” resulted in four causal configurations presented in Table 44.

**Table 44: Conditions that lead to the identification and inclusion of LCS in Asian WASH P&P**

| **Frequency cut off: 1.00Consistency cut off:0.77** | | | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| SANITATION*HYGIENE*funding*HDI*JMP | 0.15 | 0.03 | 0.94 |
| SANITATION*funding*GOVT*HDI*JMP | 0.21 | 0.09 | 1.00 |
| water*SANITATION *hygiene*FUNDING*HDI* JMP | 0.11 | 0.11 | 0.87 |
| WATER*SANITATION*HYGIENE *GOVT *HDI*JMP | 0.30 | 0.21 | 0.85 |
| ***Solution coverage*** | *0.55* | | |
| ***Solution consistency*** | *0.90* | | |

The solution coverage of 0.55 indicated that the different configurations explained 55% of the cases that exhibit the outcome. The solution consistency was 0.90.

The inclusion of LCS in WASH P&P was observed to be high in countries with high HDI and JMP coverage. Further, compared to other sectors, P&Ps in the sanitation sector were associated with high representation of LCS.

**Result 2: Identification and inclusion of GSS in Asian P&P**

Table 45 presents the results for outcome condition, “identification and inclusion of GSS in Asian P&P”.

**Table 45: Conditions that lead to the identification and inclusion of GSS in Asian WASH P&P**

| **Frequency cut off: 1.0** | | | **Consistency cut off: 1.0** |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| water*SANITATION*HYGIENE*funding*HDI*JMP | 0.06 | 0.06 | 1.0 |
| WATER*sanitation* funding*GOVT*HDI*JMP | 0.02 | 0.02 | 1.0 |
| ***Solution coverage*** | *0.09* | | |
| ***Solution consistency*** | *1.00* | | |

The low solution coverage 0.09 indicates that all the two configurations presented explain only 9% of the cases that exhibit the outcome. Low solution coverage and a high consistency score signify weak empirical evidence. The solution consistency was 1.0.

Similar to LCS, high HDI and JMP coverage were important development indicators that had a positive influence on the inclusion of GSS in WASH P&P. The presence of the agency was not imperative and high representation of GSS was possible even in the absence of a funding agency. With government as an implementing agency, the inclusion of GSS was observed to be high in the water sector. This is in contrast to the LCS where the sanitation was the key sector. The water sector seems to have identified GSS better than LCS.

**Result 3: Identification and inclusion of LCS in African P&P**

The results for the outcome condition, “inclusion of LCS in African P&P” resulted in two causal configurations presented in Table 46.

**Table 46: Conditions that lead to the inclusion of LCS in African WASH P&P**

| **Frequency cut off: 1.0** | | **Consistency cut off: 0.77** | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| SANITATION*HYGIENE* FUNDING *JMP | 0.20 | 0.03 | 0.78 |
| WATER*SANITATION* HYGIENE *FUNDING* GOVT | 0.52 | 0.35 | 0.72 |
| ***Solution coverage*** | *0.55* | | |
| ***Solution consistency*** | *0.72* | | |

The solution coverage of 0.55 indicates that all the configurations presented explain 55% of the cases that exhibit the outcome. The solution consistency was 0.72.

In Africa, the role of the funding agency in ensuring high representation of LCS in WASH P&P was prominent especially in the hygiene and sanitation sectors. Though JMP was present in one of the configurations it was not a necessary condition that led to the outcome.

**Result 4: Inclusion of GSS in African P&P**

Table 47 presents the results for outcome condition, “inclusion of GSS in African P&P”.

**Table 47: Conditions that lead to the identification and inclusion of GSS in African WASH P&P**

| **Frequency cut off: 1.0** | | **Consistency cut off: 1.0** | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| WATER*SANITATION* funding*GOVT* HDI | 0.04 | 0.04 | 1.00 |
| ***Solution coverage*** | *0.04* | | |
| ***Solution consistency*** | *1.00* | | |

The low solution coverage 0.04 indicates that all the two configurations presented explain only 4% of the cases that exhibit the outcome. Low solution coverage and a high consistency score signify weak empirical evidence. The solution consistency was 1.0.

In Asia, high GSS representation was possible when P&P targeting water and sanitation sectors were implemented by the government. Further, the presence of a funding agency was not seen as an important condition that had an impact on outcome.

**Result 5: Conditions that led to the inclusion of LCS in WASH benefits in Asian P&P**

The analysis yielded six configurations to the outcome variable, ‘WASH benefits received by LCS in Asian P&P’ as shown in Table 48. The solution coverage 0.47 explains that all of the configurations presented explain only 47% of the cases in which recognition was given to the inclusion of LCS in WASH benefits in Asian P&P. The solution consistency was 1.0.

**Table 48: Conditions that led to the identification and inclusion of LCS in the WASH benefits in Asian P&P**

| **Frequency cut off:**1.0 | **Consistency cut off:** 1.0 | | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| SANITATION* HYGIENE*funding*NGO*COMM | 0.08 | 0.04 | 1.0 |
| WATER*SANITATION * GOVT*ngo* COMM | 0.13 | 0.13 | 1.0 |
| SANITATION *funding*GOVT *NGO *COMM | 0.08 | 0.04 | 1.0 |
| WATER*funding*GOVT* NGO *COMM | 0.04 | 0.04 | 1.0 |
| WATER* SANITATION*HYGIENE*FUNDING*GOVT *NGO *comm | 0.04 | 0.04 | 1.0 |
| WATER* SANITATION*HYGIENE*govt*FUNDING*ngo *comm | 0.13 | 0.13 | 1.0 |
| ***Solution coverage*** | *0.47* | | |
| ***Solution consistency*** | *1.00* | | |

The configurations indicate that at the P&P level the kind of agencies involved in implementing the project becomes significant in terms of inclusion of LCS in WASH benefits. The patterns confirm that LCS would be prominent if the P&P were implemented by the government. For example, In India, the Swachh Bharat Mission Gramin is a flagship programme of the Government of India which focuses on rural sanitation. It is being implemented by the National and State Governments and the Water Sanitation Programme is providing technical assistance to develop key components of the program and supports implementation primarily at a state level (Water and Sanitation Program, End of Year Report, Fiscal Year 2015). Likewise, the Dhaka Water Supply and Sanitation Project in Bangladesh was implemented by the Government of Bangladesh through the Dhaka Water Supply and Sewerage Authority (DWASA).

Second, the community participation as captured by COMM condition becomes important for including LCS in WASH benefits. The community when included in the implementation process would help the inclusion of LCS. Community involvement was apparent in water and sanitation P&Ps and included most of the LCS - children, adolescent girls and boys, women and men. One of the popular community based approaches followed in the sanitation sector was the Community Approach to Total Sanitation (CATS). This approach believed in collective action and encouraged the rural communities to adopt safe and hygienic *sanitation* behaviour and ensured that all households have access to safe *sanitation* facilities (Kar and Chambers 2008; *WSP* 2007). This government-community partnership was key to the success of several P&Ps and one of them is the Rural Water Supply and Sanitation Project in Western Nepal (Phase I 2008-2013) which followed a community-led approach for promoting behaviour change and this led the community to obtain ODF status in a short time frame.

Third, the inclusion of LCS is usually strengthened by the presence of a NGO who could influence the inclusion of LCS in WASH benefits. NGOs played a variety of roles in the WASH sector and with a tradition of local level community engagement; they have a comparative advantage in addressing some critical components of successful sanitation

initiatives (Carrard et al. 2009). P&Ps revealed that the role of community and local NGOs were more dominant in sanitation related P&Ps than in water or hygiene related P&Ps. Further, they were prominent in the case of government implemented P&Ps. More importantly, the combined involvement of community and local NGO ensured the provision of WASH benefits of LCS in P&Ps. For example, the Central Rural Sanitation Programme and the Total Sanitation Campaign implemented by the National government of India followed a strategy to make the programme 'community led' and 'people centered' and NGOs were roped in to operate the Production Centers and Rural Sanitary Marts.

Finally, it should be noted that if the programmes/projects included all the three WASH sectors, the LCS segments were included even when the community participation is absent in the implementation. The role of the multilateral funding agency towards the inclusion of LCS in WASH benefits was not very prominent.

**Result 6: Conditions that led to the identification and inclusion of LCS in the WASH benefits in African P&P**

The analysis of the output condition, 'WASH benefits received by LCS in African P&P' revealed five configurations as shown in Table 49. The solution coverage of 0.51 shows that the five configurations explain 51% of the cases. The solution consistency was 1.0.

**Table 49: Conditions that led to the inclusion of LCS in the WASH benefits in African P&P**

| **Frequency cut off:** 1.0 | **Consistency cut off:** 1.0 | | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| water* SANITATION*HYGIENE* FUNDING*MLBL | 0.03 | 0.03 | 1.0 |
| water*SANITATION * FUNDING*GOVT*COMM | 0.03 | 0.03 | 1.0 |
| WATER* SANITATION*HYGIENE*FUNDING*GOVT* mlbl*comm | 0.34 | 0.34 | 1.0 |
| WATER* SANITATION*HYGIENE*funding*GOVT *NGO *COMM | 0.06 | 0.06 | 1.0 |
| SANITATION *HYGIENE*FUNDING*govt*MLBL*NGO*COMM | 0.03 | 0.03 | 1.0 |
| ***Solution coverage*** | *0.51* | | |
| ***Solution consistency*** | *1.0* | | |

The configurations revealed some key patterns. First, the presence of multilateral agencies becomes important in the inclusion of LCS in African P&Ps. Though Community participation and NGO presence are also key for the outcome, multilateral agencies played a dominant role in influencing the outcome. Again compared to Asian programmes/projects, even when the P&Ps covered all the three WASH sectors, the presence of NGOs and Community participation were found to be key in inclusion of LCS in WASH benefits.

A total number of 72 P&Ps were included for Africa and it was observed that the sanitation and hygiene sectors had received precedence over the water sector. Africa's priority to sanitation and hygiene sectors can be linked to the African conference on sanitation and hygiene (AfricaSan) that took place in 2002 with the overall goal to accelerate sanitation and hygiene work in Africa in fulfilment of the MDGs. Apart from this, three globally significant initiatives also contributed Africa's focus on these two sectors. They were the International Year of Sanitation 2008 which provided an opportunity for increased advocacy for sanitation; Sanitation and Water for All (SWA), launched in 2010 which aimed to bring sanitation and water issues to world leaders and Ministers of Finance; and lastly, the General Assembly resolution (65/153) which established the Sustainable Sanitation: 5-year drive to 2015, launched in June 2011 (AMCOW et al. 2011). In addition to Africa's commitment to achieve international standards on sanitation and hygiene, slow progress towards achieving the MDG goal had placed tremendous pressure on governments to focus more towards sanitation and hygiene initiatives.

Presence of an aid agency in the inclusion of LCS was more pronounced in African P&P. This can be attributed to immense focus and priority of aid agencies towards Sub-Saharan African to meet the MDG goals especially on sanitation. Country-to-country or bilateral aid continues to make up bulk of the aid to the sector, although the proportion delivered multilaterally is increasing. Aid to water and sanitation was increasingly delivered multilaterally, with total multilateral ODA to the sector reaching US$2,062 million in 2011–13 (three-year annual average) and Sub-Saharan Africa was one of the priority countries for aid investments (WaterAid 2015b). This corroborates with our review findings wherein majority of the P&Ps covered had strong multilateral agency assistance and mostly towards WASH infrastructure and construction initiatives. Moreover, a large emphasis was placed on the sanitation and hygiene sectors than the water sector.

**Result 7: Conditions that led to the identification and inclusion of GSS in the WASH benefits in Asian P&P**

The analysis of the output condition, 'WASH benefits received by GSS in Asian P&P' revealed five configurations as shown in Table 50. The solution coverage of 0.67 shows that the different configurations explain 67% of the cases. The solution consistency was 1.0.

**Table 50: Conditions that led to the inclusion of GSS in the WASH benefits in Asian P&P**

| **Frequency cut off:** 1.0 | **Consistency cut off:** 1.0 | | |
|---|---|---|---|
| **Configurations** | **Raw coverage** | **Unique coverage** | **Consistency** |
| WATER*SANITATION *GOVT* FUNDING*NGO | 0.18 | 0.04 | 1.0 |
| water* SANITATION *hygiene *GOVT* ngo* comm | 0.08 | 0.08 | 1.0 |
| WATER* sanitation*hygiene * FUNDING*NGO*comm | 0.04 | 0.02 | 1.0 |
| WATER* sanitation*hygiene*GOVT*FUNDING* comm | 0.12 | 0.10 | 1.0 |

| | | | |
|---|---|---|---|
| WATER * SANITATION *HYGIENE *GOVT *funding*ngo | 0.06 | 0.06 | 1.0 |
| WATER* SANITATION * hygiene *GOVT*COMM* ngo | 0.04 | 0.04 | 1.0 |
| water*SANITATION* funding *GOVT*NGO *COMM | 0.04 | 0.02 | 1.0 |
| WATER * SANITATION*hygiene * funding*NGO*COMM | 0.08 | 0.02 | 1.0 |
| water* SANITATION *hygiene * FUNDING*govt *NGO *comm | 0.02 | 0.02 | 1.0 |
| WATER* sanitation * hygiene * funding* GOVT*NGO* COMM | 0.02 | 0.02 | 1.0 |
| WATER* SANITATION *HYGIENE*FUNDING* govt*ngo* COMM | 0.04 | 0.04 | 1.0 |
| water* SANITATION *HYGIENE * GOVT* NGO*COMM | 0.02 | 0.00 | 1.0 |
| SANITATION * HYGIENE * FUNDING *GOVT*NGO* COMM | 0.10 | 0.00 | 1.0 |
| ***Solution coverage*** | *0.67* | | |
| ***Solution consistency*** | *1.00* | | |

Owing to the presence of too many configurations, these configurations were grouped based on the presence or absence of two conditions: GOVT (government as implementing agency) and FUNDING (Aid agency). This resulted in the following key patterns:

Overall presence of the government as implementing agency for P&P was observed to be a core indicator that was present in nine configurations. The role of government as implementing agency in P&P has been dealt with in detail in the previous discussions. Majority of the P&P implemented by the government had high coverage of GSS and on an average two GSS population groups were covered in P&P.

GSS segments were included in all the three WASH sectors. Findings revealed that in Asia there was an equal number of water and sanitation P&P. Despite lower number of hygiene P&P, the coverage of GSS in this sector has been considerable. This probably can be the result of common WASH project management practice in which the hygiene sector was usually combined with the sanitation sector.

P&P implementation through a tripartite partnership between the government, local NGO and community had a positive effect on the outcome. This partnership was evident in the Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN) which was a sector support program that focused in implementing WASH activities in Nepal. The project was implemented by the government of Nepal and the WASH service delivery was coordinated with the help of local NGOs and the community played an essential role in the project process and helped to define the priorities based on which resources were allocated. This kind of implementation arrangement was possible with or without the presence of a funding agency. In the absence of an aid agency, the government takes the lead role to fund and implement the project along with the local NGO and community like the One National WASH Programme in Ethiopia. Inclusion of GSS in WASH benefits was also seen when the P&P encompassed more than one WASH sector.

Another pattern that have led to the inclusion of GSS in WASH benefits was that P&P was funded by an aid agency and was implemented through local NGO or/and community. In addition, when P&P covered only the water or the sanitation sector it was implemented through the NGO and when two or more WASH subsectors were covered, P&P was implemented largely through the community and local NGO.

Overall, the results point to the fact that GSS segments were widely included in WASH benefits as compared to LCS segments. The sanitation sector due to its unique features which mandate the inclusion of LCS segments benefits by the inclusion of community and NGO participation. This is absent in water and hygiene sector. We could attribute this pattern to the characteristics of water sector and the still improving maturity of the hygiene sector. The patterns observed indicate the fact that the GSS segments are widely accepted and recognized ways of policy making and P&P implementation across Asia and Africa. Only when community and NGO participation were present in specific sectors like Sanitation where the significance of LCS segments is more prominent, in such instances, the LCS segments are increasingly getting included in the P&P implementation.

**Result 8: Conditions that led to the identification and inclusion of GSS in the WASH benefits in Asian P&P**

The analysis of the output condition, 'WASH benefits received by GSS in African P&P' revealed five configurations as shown in Table 51. The solution coverage of 0.67 shows that different the configurations explain 67% of the cases. The solution consistency was 1.0.

**Table 51: Conditions that led to the inclusion of GSS in the WASH benefits in African P&P**

| **Frequency cut off:** 1.0 | **Consistency cut off:** 1.0 | | |
|---|---|---|---|
| **Combination** | **Raw coverage** | **Unique coverage** | **Consistency** |
| SANITATION*HYGIENE * funding*GOVT | 0.07 | 0.01 | 1.0 |
| WATER*SANITATION * funding*GOVT | 0.09 | 0.03 | 1.0 |
| WATER*sanitation* FUNDING*GOVT | 0.01 | 0.01 | 1.0 |
| water*SANITATION *FUNDING*mlbl* comm | 0.04 | 0.04 | 1.0 |
| SANITATION *HYGIENE *FUNDING*mlbl* comm | 0.21 | 0.18 | 1.0 |
| WATER*SANITATION*HYGIENE*FUNDING*MLBL*NGO*COMM | 0.06 | 0.01 | 1.0 |
| WATER* SANITATION*hygiene *GOVT*COMM | 0.14 | 0.00 | 1.0 |
| WATER*hygiene *FUNDING*GOVT*COMM | 0.14 | 0.00 | 1.0 |
| WATER*SANITATION*HYGIENE*GOVT* NGO | 0.17 | 0.00 | 1.0 |
| WATER*SANITATION *GOVT*NGO* COMM | 0.17 | 0.00 | 1.0 |
| WATER*HYGIENE* FUNDING *GOVT*NGO | 0.10 | 0.00 | 1.0 |
| WATER* FUNDING *GOVT *NGO*COMM | 0.14 | 0.00 | 1.0 |

| | | | |
|---|---|---|---|
| WATER *SANITATION *HYGIENE * GOVT*MLBL | 0.09 | 0.00 | 1.0 |
| WATER*HYGIENE * FUNDING*GOVT*MLBL | 0.09 | 0.00 | 1.0 |
| ***Solution coverage*** | ***0.67*** | | |
| ***Solution consistency*** | ***1.00*** | | |

The analysis resulted in eleven configurations as shown in table 4.44. These configurations were again grouped based on the presence or absence of two conditions: GOVT (government as implementing agency) and FUNDING (Aid agency). This resulted in three key patterns:

The government as implementers and funding agencies had an equal presence in the configurations that indicated their positive effect on the output: Government was the predominant implementing agency in both Asia and Africa. The funding agencies had a greater presence in African P&P than in Asian P&P. A total number of 65 P&P in Africa were funded by an aid agency. On the other hand, only 48 P&P in Asia were funded by an aid agency.

Partnership with the local NGO led to the inclusion of GSS in WASH benefits. Apart from the government as the lead agency in implementing P&P, the role of other implementation partners like local NGOs have yielded positive results towards inclusion of GSS in WASH benefits. Additionally, this partnership was very effective in achieving the output when both the water and sanitation sector was covered in the P&P. For example, Malawi's Intergrated Rural Water Supply and Sanitation Project for Ntchisi and Mzimba district funded by an aid agency and implemented by the Government of Malawi had roped in local NGOs to carry out WASH campaigns at the grass-root level.

Overall, in terms of comparing the LCS to GSS benefits, the patterns observed here are similar to the observations in Asian P&Ps. GSS segments are more widely covered than LCS segments. LCS segments usually get incorporated when the implementing agency is assisted by community/NGOs.

### *4.2.4 Synthesis of results*

This section highlights the key results from the analysis of WASH P&P in Asia and Africa.

***Finding 1: Identification of population segments in WASH P&P, either by the LCS or GSS did not differ significantly between Asia and Africa.***

P&P implemented across Asia and Africa had identified an average of about two LCS and GSS across Asia and Africa. Between the regions, LCS was identified in 57 P&P in Africa whereas only 47 P&P in Asia identified LCS. Similar to WASH policies, P&P focused largely on women and children in the LCS whereas rural and urban areas were most frequently mentioned in the GSS. Since the proportion of P&P which focused on rural areas was higher than urban areas, the influence on LCS was also seen. This resulted in a higher count of observations for "rural women" and "rural children" within the LCS. Apart from women and children, adolescent girls, boys, and the disabled were also prominently identified as beneficiaries in WASH P&P.

***Finding 2: Adequacy and environmental barriers for LCS were tackled by providing WASH in schools and public connections within communities.***

Of the 7 barriers identified for this review, adequacy and environmental barriers were cited often for women, children and adolescent girls. These barriers reflected not only the distance, time and effort spent in collection of water or in the use of sanitation facilities but also the quantity of water, number of toilet seats and absence of soap available for hand washing. Since these barriers had different consequences for different LCS, it was observed that P&P had proposed multiple steps to increase the provision of WASH facilities in schools as well as providing public connections within communities. For adolescent girls and women, provision of WASH included gender separated facilities, better access to menstrual hygiene aids and safe disposal mechanisms. Children, especially rural children, were targeted mainly through several school WASH programs in Asia and Africa.

***Finding 3: IEC played an important role in implementation of P&P, especially in the sanitation sector.***

IEC appeared to have played an important role in the implementation of WASH P&P and was often used in combination with other strategies such as promoting demand management, encouraging beneficiary participation, and decentralization. This was possibly a reflection of the low level of awareness about the importance of WASH and more importantly, this component aligned with the attitudinal barriers specified for LCS and GSS. Therefore, IEC was commonly used as means to achieve various goals across all WASH P&Ps implemented by multi-laterals, bi-laterals and government agencies. Between the WASH sub-sectors, count of observations for IEC component in the sanitation sector was the highest, followed by water and hygiene sectors.

***Finding 4: Gender sensitivity training for men and adolescent boys on management of WASH had gained some traction in African WASH P&P***

WASH P&P in Africa exhibited an effort to include men in WASH interventions. These P&P not only recognized the role played by men in WASH related decision-making but also the need to change their attitude towards the use of WASH facilities. Strategies focused on the use of IEC and beneficiary participation to encourage the involvement of men and adolescent boys in planning and providing WASH facilities in schools as well as in the community. Adolescent boys were also provided gender-sensitive training programmes on WASH in schools.

***Finding 5: Availability, physical accessibility and quality and safety of WASH was prioritised.***

Results showed an emphasis on provision of WASH facilities which were easily accessible and of acceptable quality/safety. Ensuring affordability of WASH did not emerge as a priority for the LCS. This finding aligned with the goals of the MDGs which stressed on the provision of improved water that was free from contamination and improved sanitation facility that hygienically separated human excreta from human contact. Further, historically, due to the linkages between inadequate WASH facilities and poor health outcomes, especially that of diarrhoea in children, in several poor countries ensuring availability of quality WASH facilities appears to have gained priority over affordability. However, ensuring affordability of WASH had gained attention among the GSS.

***Finding 6: P&P implemented by the government in partnership with aid agencies showed high robustness between barriers, strategies and benefits.GSS had a better representation of all the three indicators within P&P than LCS***

Better alignment between barriers, strategies and benefits was observed in WASH P&P that were implemented by government agencies in partnership with aid agencies. In Africa, out of the 12 P&P that showed high robustness, 11 were funded by a multilateral or bi-lateral agency. Similar trend was observed in Asia as well. However, robustness within the GSS was better than that of LCS. A total of 51 P&Ps that targeted the GSS showed high robustness, whereas the corresponding number for the LCS was only 22.

***Finding 7: Engaging partnerships between government and the community or/and local NGOs in implementation, also yielded WASH benefits for LCS.***

The role of the funding agencies in facilitating the coverage of LCS in WASH benefits was apparent across all the three WASH sub sectors. However, in its absence, the role of other stakeholders as implementing partners became prominent, for instance, the community. Community involvement was apparent in water and sanitation P&Ps and included a range of LCS such as children, adolescent girls and boys, women and men. In addition to community, another implementing partner that came into focus was the local NGO.P&Ps revealed that the role of community and local NGOs were more dominant in sanitation related P&Ps  than in water or hygiene related P&Ps. Further, they were prominent in the case of government implemented P&Ps. More importantly, the combined involvement of community and local NGO ensured the provision of WASH benefits of LCS in P&Ps.

# 5. Summary and Implications

## 5.1 Review question and context

“To what extent have the Water, Sanitation, and Hygiene sub-sectors incorporated the life-cycle approach into policy, programmes, and projects during the MDG period?”

The paradigm for identifying the beneficiaries and understanding their needs and requirements for delivery of WASH services has evolved over time. Initially, governments started with the overarching objective of providing universal access to WASH services. With the increased thrust given by the MDGs, efforts were made to understand the specific needs and requirements of different population segments, in order to ensure equitable access. The idea behind this approach was that by addressing the access needs of different population segments, the objective of universal coverage to WASH services can be achieved. The population segments could be identified using different paradigms. The initial approach was to categorize the population using Geographic and Social segmentation (GSS). In recent years, population segments have been identified on the basis of gender, age, and disability.  We called this as the Life-Cycle Segments (LCS).

In this review, we studied the extent to which policies and P&P in WASH sectors during the MDG period have incorporated LCS and contrast it with the trends seen in the incorporation of GSS. By incorporation of LCS or GSS we mean the following: (i) the number of different LCS and GSS that could be explicitly identified in the selected

documents for the review; (ii) the identification of the barriers (i.e., obstacles to access) specific to the different population segments; (iii) the strategies used to address the needs and requirements of different LCS and GSS; and (iv) the nature of benefits envisaged for the different segments.

The LCS and GSS were conceptual constructs. Analysis of the documents showed that both the LCS and GSS were not seen as mutually exclusive, and in almost all the documents the target population was classified into different segments, some of which pertained to the LCS framework and the remaining pertained to the GSS framework. This presented an unexpected opportunity to the research team. In addition to an analysis of the incorporation of LCS, the dataset also provided a prospect to compare the extent of the incorporation of both the LCS and GSS approaches in the policy and P&P documents. Such an analysis would have more relevance for the policy makers because of better insights.

Accordingly, the overall review question was operationalized into the following sub-questions:

- *Which segments of the population have been addressed in WASH initiatives during the MDG period? Did it vary between sectors, regions, policy domain and implementing agency?*
  This question referred to the coverage of different population segments in National/State WASH policies and P&P during the MDG period. It also attempted to understand if the coverage of population segments differed within the three WASH sectors, Asian and African region and among the implementing agency.
- *Have the barriers been identified for each of the segments in policies, P&P? What were the common barriers described? Did it vary between sectors and regions?*
  The above question pertained to the different barriers faced by population segments in accessing WASH services or facilities. The scope of WASH policies and P&P in identifying the common barriers faced by both LCS and GSS were analysed by sector and region.
- *Have the strategies been identified for each of the segments in policies, P&P? What were the common strategies proposed? Did it vary between sectors and regions?*
  The different WASH policy and P&P strategies proposed for population segments were identified through this question and the common strategies were analyzed to capture the variations between sectors regions.
- *Have the WASH benefits been identified for each of the segments in policies, P&P? What were the common WASH benefits suggested? Did it vary between sectors and regions?*
  This question aimed to describe the WASH benefits proposed in WASH policies and P&P for population segments and how it varied sector and region wise.
- *What was the extent of robustness between barriers, strategies and WASH benefits for each population segment mentioned within policies and P&P? Did it vary between sectors and regions?*
  This question on robustness provided an in-depth perceptive on the extent to which barriers, strategies and WASH benefits were proposed for population segments.

- *What conditions lead to the inclusion of population segments in WASH policies and P&P? Does it vary between sectors and regions?*
  The above question analysed the extent of influence external indicators such as Human Development Index (HDI) and achievement of MDG targets (JMP data) in the inclusion of population segments in different WASH policies and P&P.
- *What conditions lead to the inclusion of population segments in WASH benefits in policies and P&P? Does it vary between sectors and regions?*
  The above question analysed the different conditions within the WASH policy and P&P purview that aided in the inclusion of population segments in WASH benefits. The indicators mostly comprised of the conditions that lay within the scope of the policy and P&P that were included for study.

## 5.2 Method

Details pertaining to the methods used in the review are provided below:

**Document sources:** Documents used for the study were of two types: Policy documents and P&P documents. Since the source for these two documents were several, this review used a sourcing and search strategy. The search strategy included a systematic search of websites of government agencies and departments in the eleven countries selected for the review for policy as well as P&P documents. Using a set of keywords and Boolean operators, these websites were searched for documents over a 15 year period. The search for P&P documents was expanded to include the websites of multilateral and bi-lateral agencies and INGOs. Apart from the search strategy, this review also adopted a sourcing strategy whereby, all the institutions mentioned above were contacted by email with a request to send documents pertaining to policy/ P&P implemented or supported by them during the MDG period. In addition to the sourcing and search strategy, 4 knowledge databases, Google, and Google scholar were also searched. Documents identified from cross-references were also searched using Google.

**In-depth review:** 190 documents that met the exclusion and inclusion criteria were included in the analysis.

**Synthesis method:** The evidence from the 190 documents was synthesized using numerical summary techniques and qualitative comparative analysis.

- **Descriptive Statistics:** In this review, a coding tool was used to capture information from the documents identified for inclusion in the review. Some of the important parameters were: the different population segments identified in the policies and/or P&P, WASH sectors, geographical regions, agencies involved in drafting/ implementation of the WASH intervention, and the WASH indicators specified for each segment and so on. A numerical summary of all the observations from 190 documents were used for the analysis.
- **Qualitative Comparative Analysis (QCA):** Out of the 190 documents, observations from 164 documents were used for the QCA. The input conditions for the QCA were derived based on an understanding of the content and context provided in the documents included for the review. Depending on the research question, either crisp set or fuzzy set scores were used for the QCA. The results were presented in configurations that denoted the combination of conditions that were associated with the outcome.

These two modes of synthesis not only gave the results on the extent to which the LCS or GSS has been adopted in WASH programmes but also highlighted the conditions that led to the incorporation of population segments in WASH. However, since the policies and P&P environment were not the same across all the eleven countries, the evidences were characterised by considerable heterogeneity.

## 5.3 Results

The results of the review based on the findings from numerical summary and QCA are as follows:

### *5.3.1 Population Segments*

Initially, policies formulated in the WASH sector appear to have aimed at universal access to the facilities. It was found that as the MDGs progressed, policies were more focussed and started including LCS. At a policy level, GSS were more widely included than LCS. Among the LCS segments, women were the focus of relatively large number of policies. This was followed by children and the disabled segments. Other population segments were not given as much importance as noticed by the absence of certain segments like transgender in the policy documents. On a contrast, policies were relatively uniform in their focus on various GSS segments. Similar trends were noticed across different geographical regions as well. However, in Africa, relative importance was given to "persons living with HIV/AIDS" which was limited in Asia.

In the case of P&Ps too women and children were the most commonly identified LCS. However, a more uniform distribution across LCS and GSS segments was observed at P&P level as compared to the policy level. Among the various GSS segments, rural and urban segments received more attention. It was further observed that the number of P&P across all the WASH sectors increased with time. Finally, the water and sanitation sub-sectors received more focus than hygiene in P&P funded by multi-lateral/bi-lateral agencies.

### *5.3.2 Barriers*

Barriers described in the policies and P&P documents were broadly classified into seven categories. Adequacy, environmental and attitudinal barriers were commonly identified across the LCS segments in WASH policies. However, the identification of barriers to WASH services was more uniform in the case of GSS. Similar trend was observed for the P&Ps across both LCS and GSS segments. Further, the most frequently identified barriers differed across Asia and Africa. Policies in Asia frequently identified adequacy and environmental barriers when using the LCS, whereas environmental barriers were the most frequently identified under the GSS. In contrast, policies in Africa identified attitudinal barriers most frequently in LCS, whereas it was adequacy and environmental barriers in GSS. However, when it came to P&P, both Asian and African countries followed similar patterns in identifying the barriers across LCS and GSS. Among the various LCS, barriers were most frequently identified for children.

The patterns observed could relate to the familiarity of the policy makers and project implementers in classifying and including the GSS in their mandates. However, the life-cycle approach has now found some traction amongst policy-makers. It was observed that the Asian countries identified adequacy related barriers as key across the LCS

segments. On the other hand, the African countries gave more importance to environmental related factors across LCS. This could be because of the contextual differences between the two regions.

### *5.3.3 Strategies*

The contrast between LCS and GSS perspective in policies was also observed in the strategies identified. In LCS segments, beneficiary participation and IEC strategies were given greater importance whereas strategies for project management, financing, provision of services were given greater importance in GSS. Similar pattern was observed both in policies as well as P&P documents. Further, the trend was similar across both Asia and Africa.

This contrast between the LCS and GSS paradigms brings out interesting intuitions into the strategies adopted by the countries in achieving WASH objectives. While the GSS perspective made the policy makers aim more at efficiency and provision related strategies, the LCS perspective made them focus on more inclusion and empowerment based strategies. It could be concluded that the LCS perspective would bring about more de-centralized and demand based approaches to achieve WASH objectives as compared to centralized, supply driven approaches when looked at from a GSS perspective.

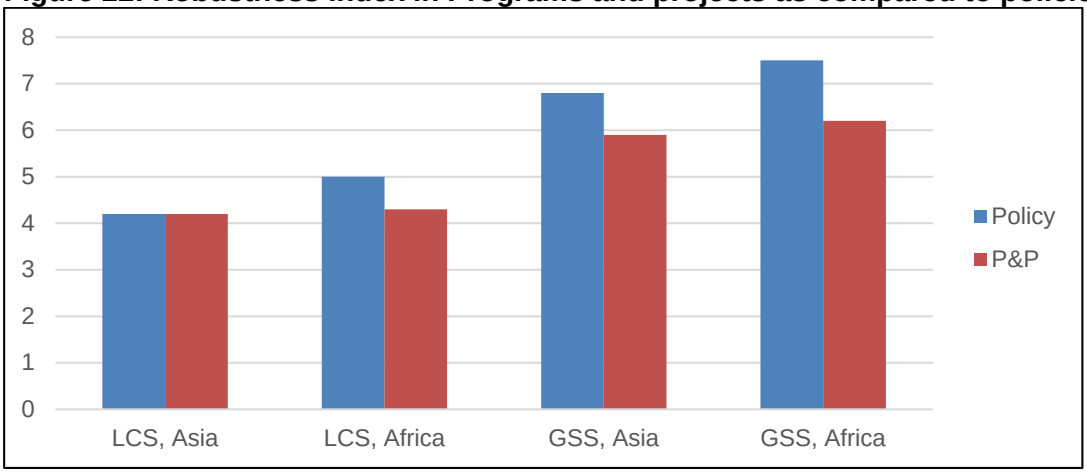
### *5.3.4 Benefits*

Availability was the most common benefit identified across LCS and GSS in policies as well as P&P. Further, there was a greater focus on benefits related to affordability across the GSS segments as compared to physical accessibility across LCS segments. This highlighted the fact that when looked from a GSS perspective, the policy makers considered the population in aggregate and analysed the pricing of services. Whereas, when looked from a LCS perspective, the focus of policy makers was more on provision of services to various segments and whether each segment of population can use particular WASH service. Hence, segmentation by LCS and GSS may help policy makers to obtain diverse perspectives on improving different dimensions of access.

### *5.3.5 Policy and P&P robustness*

A robustness index was developed to indicate the comprehensiveness of WASH policies and P&P documents. This index is an indication of population segments, barriers, strategies, and benefits in the documents. It had a maximum value of 8, indicating the presence of barriers, strategies and benefits and a minimum value of 0, when none of the above features are present. Analysis of WASH policies indicated that the overall robustness index was higher for GSS as compared to that of LCS. Between Asia and Africa, the latter had higher index values. Analysis of sector level robustness index showed that sanitation had the highest index values and hygiene sub-sector the least. The Robustness index of P&P documents were lower than the levels of policies, indicating that policies were more comprehensive in capturing the pathway of barriers, strategies, and benefits. However, the trend of lower robustness index values for LCS as compared to that of GSS persisted even in P&P. Robustness index of P&P in Africa were higher than that of Asia. In general, robustness index values for sanitation P&P were the highest, while hygiene P&P had the lowest index values.

**Figure 22: Robustness Index in Programs and projects as compared to policies**




A look at the change of robustness index as we move from policies to programmes and projects gives us an indication the relationship between incidences of LCS/GSS in policies as compared to P&P. While the incidence of robustness is high in GSS is high in both policy and P&P across Asia and Africa, attrition of this robustness is observed as we move down from policies to P&P levels. In GSS, it is observed that the programmes and projects usually have less robustness as compared to policy level. However, in the case of LCS, it was observed that the attrition of robustness index was lower. This is prominent in Asian region where the robustness index of P&P in LCS is similar to that seen in policies. While additional analysis is needed, this finding suggests that percolation of robustness from policy to P&P is higher in the case of LCS as compared to that of GSS.

### *5.3.6 Conditions leading to the espousal or incorporation of LCS and GSS segments*

The following conditions played an important role in the incorporation of LCS in policies and P&P: (i) drafting/implementing agency and (ii) the WASH sub-sector. Between the three sectors, WASH benefits for LCS were more often included in policies related to sanitation and hygiene sectors. At a programme level, projects funded by multilateral agencies and implemented by government in sanitation sector usually incorporated LCS. However, when they were not funded by multilateral agencies, community partnerships usually ensured the incorporation of LCS. Therefore, community and NGO participation became important when funding by a multilateral agency was absent.

## 5.4 Strengths and limitations of this systematic review

### *5.4.1 Strengths of the review*

Life cycle approach is a recent paradigm in the delivery of infrastructure services. This is one of the first systematic reviews to synthesise evidence using a portfolio review approach on the extent of incorporation of LCS in WASH sector. This systematic review is also innovative in terms of the evidence base. While most systematic reviews use results from previous evaluation studies as the evidence base, the evidence for this review was obtained from various policy and P&P documents.

Incorporation of LCS was analysed not just in terms of the mention of different population segments, but across the pathway that comprised of barriers, strategies and outcomes.

An exhaustive sourcing and search strategy was deployed to include as many relevant policy and P&P documents as possible. More importantly, multiple modes of synthesis have been used. Not only were the findings from these different modes consistent, but they also complemented each other, thereby increasing the robustness of the results, while providing a more holistic perspective on the evidence.

### *5.4.2 Limitations of the review*

The evidence base was obtained only from 11 countries in Asia and Africa regions. Future studies could expand the evidence base by including policies and P&P from more countries, which could enhance the generalizability of the results. In addition, countries like India and Pakistan were better covered as we were able to get access to state policies as well. As a country, India contributed the largest number of documents in both policies and P&Ps. This in a way is understandable as India is the largest of the countries included in the review. Though many organisations were contacted for P&P documents, they were not responsive. It is possible that this review might not have been able to include some of the sensitive projects and therefore have introduced some form of bias. However, since this review is not an effectiveness review but more a review of policies and P&P inception documents, it is felt that any potential bias would not significantly compromise the validity of the findings. Inclusion of non-English documents was limited by their non-availability, which is another limitation of this review.

The policy environment and the nature of policies substantially differed between countries. The coverage and extent of description of population segments, barriers, strategies, and benefits varied significantly across different policies and P&Ps. While some were very descriptive and detailed, some were less so. This posed a challenge in synthesizing the evidence.

Most of the P&P documents in the evidence base were supported by multilateral and bilateral agencies. We were unable to get access to as many P&P documents as we had wished because many of the agencies such as governments, international or local NGOs do not systematically provide these documents in the public domain.

## 5.5 Implications

### *5.5.1 Policy*

**WASH policies must create an enabling framework by specifically mentioning the different LCS in order to facilitate adoption and percolation of life-cycle approach in P&Ps:** Findings from this study indicate that LCA has been adopted only partially by practitioners and P&P implementing agencies. However a lot needs to be done to mainstream this approach and include all population segments in implementation. One way to do this would be for policies to take the lead and specify the different population segments, articulate the barriers to access, strategies to address the barriers and detail the benefits that each segment receives. When policies set the tone for adoption of LCS, it would be more likely that the P&Ps could follow suit.

**Life-cycle approach shows greater applicability in the sanitation sector:** Amongst the WASH triumvirate, the sanitation sector shows greater use and applicability of the life-cycle approach. This has been mainly due to the challenges faced in the provision of sanitation vis-a-vis water or hygiene services. Notwithstanding this fact, policymakers

and practitioners should consider incorporating the values of the life-cycle approach in water and hygiene sectors as well in order to ensure that the linkages between all the WASH sub-sectors are addressed in the design and development of WASH policies or programmes.

**Incorporating life-cycle approach within the current GSS paradigm can help achieve inclusiveness:** WASH policies have been traditionally conceptualized from the geographical and social lens. Evidence indicated that the GSS like poor and low income, rural, urban and universal have been the traditional focus of WASH policies. In comparison, the lifecycle paradigm has been slowly evolving, and requires consolidation and focus in design of WASH policies. Apart from segments like women and children, the rest of LCS had very limited mention in WASH policies. Also, there are wide variations in the extent of coverage of different LCS as compared to that of different GSS. It is well known from the reports of JMP that the benefits of the MDGs on water and sanitation services can be realized by all sections of society, only when the needs of marginalized persons are addressed. In this context, policy makers should take systematic steps to incorporate the principles of the life-cycle approach even within the current GSS paradigm in order to ensure maximum benefit across population segments and improve effectiveness of WASH interventions.

**Greater level of effort required towards understanding barriers faced by LCS and devising strategies to overcome them:** Identification of barriers to WASH for the GSS has been better than that observed in LCS. This was due to the primary focus on GSS of population by policy-makers. There is a need for greater effort in understanding barriers faced by different LCS. As a result, there were several barriers such as adequacy, attitudinal, demand side, environmental, inclusion, policy and institutional-policy identified for GSS. However, barriers for LCS were limited to adequacy, attitudinal and environmental barriers. This may be a reflection of current state of policy making and project implementation that shows a limited understanding of the barriers faced by LCS in accessing WASH services. Therefore, policy makers have to investigate different facets of LCS to clearly all the barriers faced by different population groups.

The evidence on WASH strategies indicated preference to “bottom up approaches” or “grass root mobilization” to overcome barriers faced by LCS. These strategies include beneficiary participation, decentralization, demand management, equity in WASH provision and IEC activities. Such efforts to involve the community in the provision of WASH facilties could be encouraged by policy makers.

**Benefits for LCS should be expanded:** The evidence base indicated that benefits mentioned for GSS were higher compared to LCS. Also, there were wide variations between types of benefits envisaged for LCS when compared to those seen for GSS. This could be an indication of the experience among policy makers about benefits to be envisaged for GSS. Policy makers must be mindful of articulating not only immediate benefits such as availability and physical accessibility but also rather challenging benefits of affordability and quality and safety in WASH policies. The existing WASH policies have envisaged benefits primarily for LCS categorized by age (children, adolescent boys and girls, adults) and provided very little importance to categories like gender, disability and people with HIV / AIDS. There is a need for policy makers to expand the benefits to all categories within LCS in WASH policies.

**Need for improvement of robustness among WASH policies and projects:** The policy robustness and programme robustness are important elements which ensured logical sequencing of indicators – barriers, strategies and benefits for each policy segment. The evidence base indicated that robustness among LCS was not high or strong as compared to that of GSS. Also, there were large variations on policy and project robustness among different lifecycle segments, with strong observation only for children and women. Similar scenario of large variations was observed even for GSS. Hence, there is a need to improve policy and P&P design to ensure robustness, as it ensures not only quality and content of WASH policies and programmes but also their effectiveness. There is also need to ensure that robustness percolates from policies to P&P as our study shows a decline in robustness index as we from policies to P&P.

### *5.5.2 Practice*

The policy making process as well as P&P design for WASH sector has begun taking preliminary steps and initiatives towards encompassing LCS. However, these efforts have not been sufficient over the duration of MDGs. Therefore, there is a need for substantial revamp and transformation in policy making and programme design. In this journey, the governments must be provided with necessary capacity building support from practitioners and INGOs. However, the governments cannot shy away from the responsibility of setting their priorities right towards WASH sector as well as provide the required administrative and political resources. The content and quality of WASH policies and programmes has to ensure coverage of all LCS, clear understating of barriers faced by these segments, creation of well devised strategies and all round benefits.

### *5.5.3 Research and scope for future work*

This portfolio review indicated that WASH policies and projects have a long way to go in imbibing the concept of life cycle approach. Moreover, there is a need to analyse the evidence from few early P&P that have adopted this approach. While this review analysed the extent of adoption of LCS in WASH, future work could focus on the adoption of LCS and improvement in access. Broadly, there is a need for future research on investigating “effectiveness” of WASH interventions and the findings of this study will provide much needed input to the policy making process.

There are few other research trajectories that could be explored further. The influence of bilateral agencies and INGOs has been widely discussed in academic and practitioner literature. Therefore, a research study could be undertaken to address questions such as: 1) What were the challenges or hurdles faced by bilateral agencies and INGOs in the adoption of life cycle approach in WASH programmes? and, 2) What were the strategies or mechanisms used by bi-lateral agencies and INGOs that were effective in mainstreaming the life-cycle approach in WASH programming?

Systematic reviews have traditionally focused on meta-analysis techniques to synthesize evidence. This review has highlighted that relevance of using techniques such as QCA in systematic reviews. Research teams could be encouraged to use techniques such as QCA to complement some of the existing qualitative synthesis methods such as textual narration, thematic synthesis, and so on. By bringing in an element of quantitative rigour, techniques such as QCA could increase the validity of the results.

## Appendix A: Country profiles

WASH performance, demography and HDI values of the countries included in the review are described in the table below. Indicators that have been used to measure WASH performance of the countries include percentage of population with access to improved drinking water, sanitation, hand washing facilities and percentage of population practicing open defecation. In order to understand the broader political and socio-economic contexts of the countries, demographic indicators such as population, poverty levels, HDI and political stability have also been compared. These indicators were used to the select countries for this review.

*Table A1* shows that access to improved sanitation is low in many of the countries selected. However, they perform better in the JMP water target viz. use of improved water facilities. With respect to the other non-WASH indicators, countries characterised with high population, poverty and HDI values are largely in the medium or low human development range. Political stability as measured by the Fragile State Index ranked the selected countries between a range consisting of ‘warning’, ‘alert’ and ‘high alert’.

**Table A52.WASH and demographic performance of selected countries**

| WASH, Demographic and HDI Indictors | ASIA | | | | | AFRICA | | | | | | | | World |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bangladesh | Pakistan | India | Nepal | ***South Asia Region*** | Kenya | Madagascar | Malawi | Ethiopia | Nigeria | Tanzania | Uganda | ***Sub-Saharan Region*** | |
| ***Funding (via GSF in million USD)*** | not in the GSF | not in the GSF | $6.2 | $13.83 | - | $7.44 | $12.9 | $6.55 | $5.4 | $6.79 | $ 6.14 | $10.48 | - | - |
| ***Wash Indicators*** | | | | | | | | | | | | | | |
| Percentage of population practicing open defecation | 1% | 13% | 44% | 32% | **34%** | 12% | 40% | 4% | 29% | 25% | 12% | 7% | **23%** | **13%** |
| Percentage of population using improved sanitation facilities | 87% | 64% | 40% | 46% | **47%** | 30% | 12% | 41% | 28% | 29% | 16% | 19% | **30%** | **68%** |
| Percentage of population using improved drinking water | 87% | 91% | 94% | 92% | **93%** | 63% | 52% | 90% | 57% | 69% | 56% | 79% | **68%** | **91%** |
| Percentage of population with hand washing facilities at | 21% | 54% | NA | 48% | **NA** | NA | NA | 3% | 1% | 12% | NA | 8% | **NA** | **NA** |

| WASH, Demographic and HDI Indictors | ASIA | | | | | AFRICA | | | | | | | | World |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bangladesh | Pakistan | India | Nepal | ***South Asia Region*** | Kenya | Madagascar | Malawi | Ethiopia | Nigeria | Tanzania | Uganda | ***Sub-Saharan Region*** | |
| home with soap and water | | | | | | | | | | | | | | |
| ***Demographics*** | | | | | | | | | | | | | | |
| Population (in millions) | 157 | 188 | 1280 | 28 | **1698** | 44 | 23 | 16 | 95 | 173 | 50 | 37 | **947.4** | **7 billion** |
| Percentage of population surviving on $1.90 / day | 44% | 8% | 21% | 15% | **18.8%** | 34% | 82% | 71% | 34% | 54% | 47% | 33% | **42.7%** | **12.7%** |
| **HDI** | 0.570 | 0.538 | 0.609 | 0.548 | **0.607** | 0.548 | 0.510 | 0.445 | 0.442 | 0.514 | 0.521 | 0.483 | **0.518** | **0.711** |
| **Political instability** | alert | High alert | warning | alert | **NA** | alert | High warning | High warning | alert | High alert | High warning | alert | **NA** | **NA** |
| ***Working Language*** | English | English | English/ hindi | English | **NA** | English | English/ French | English | English | English | English | English | **NA** | **NA** |

*Source: WHO and UNICEF 2015, World Bank database, UNDP2015, Messner et al. 2015*

## Appendix B: Documents included for the review

Documents that have been included for this review are given below. These documents have been included based on our inclusion criteria.

### a) List of Documents Included

**Table B 1: List of policy documents included**

| S. No. | Country | Year | Title of the document | Department |
|---|---|---|---|---|
| 1 | Bangladesh | 1998 | National Policy for Safe Water Supply & Sanitation | Ministry of Local Government, Rural Development and Cooperatives |
| 2 | Bangladesh | 1999 | National Water Policy | Ministry of Water Resources |
| 3 | Bangladesh | 2005 | Pro-Poor Strategy for Water and Sanitation Sector in Bangladesh | Ministry of Local Government, Rural Development and Cooperatives |
| 4 | Bangladesh | 2005 | National Sanitation Strategy | Ministry of Local Government, Rural Development and Cooperatives |
| 5 | Bangladesh | 2011 | National Strategy for Water and Sanitation - Hard to Reach Areas of Bangladesh | Ministry of Local Government, Rural Development and Cooperatives |
| 6 | Bangladesh | 2011 | Water Safety Framework | Ministry of Local Government, Rural Development and Cooperatives |
| 7 | Bangladesh | 2012 | National Hygiene Promotion Strategy for Water Supply and Sanitation Sector in Bangladesh | Ministry of Local Government, Rural Development and Cooperatives |
| 8 | Bangladesh | 2014 | National Strategy for Water Supply and Sanitation | Ministry of Local Government, Rural Development and Cooperatives |
| 9 | Ethiopia | 1999 | Ethiopian Water Resources Management Policy | Ministry of Water Resources |
| 10 | Ethiopia | 2001 | Ethiopian Water Sector Strategy | Ministry of Water Resources |
| 11 | Ethiopia | 2005 | National Hygiene and Sanitation Strategy | Ministry of Health |
| 12 | Ethiopia | 2006 | National Hygiene and "On-site" Sanitation Protocol | Ministry of Health |
| 13 | India | 2002 | State Water Policy, Karnataka | Water Resources Department |

| S. No. | Country | Year | Title of the document | Department |
|---|---|---|---|---|
| 14 | India | 2002 | National Water Policy | Ministry of Water Resources |
| 15 | India | 2003 | Karnataka Urban Drinking Water and Sanitation Policy | Government of Karnataka |
| 16 | India | 2003 | State Water Policy, Madhya Pradesh | Water Resources Department |
| 17 | India | 2003 | Maharashtra State Water Policy | Water Resources Department |
| 18 | India | 2004 | Orissa State Water Plan | Department of Water Resources |
| 19 | India | 2001-2002 to 2005-2006 | Policy Notes, Tamil Nadu | Municipal Administration and Water Supply Department |
| 20 | India | 2006-2007 to 2011-2012 | Policy Notes, Tamil Nadu | Municipal Administration and Water Supply Department |
| 21 | India | 2007 | State Water Policy, Orissa | Water Resources Department |
| 22 | India | 2008 | National Urban Sanitation Policy | Ministry of Urban Development |
| 23 | India | 2008 | Water Policy, Kerala | Water Resources Department |
| 24 | India | 2008 | Andhra Pradesh State Water Policy | Water Resources Department |
| 25 | India | 2009 | State Water Policy, Sikkim | Irrigation and Flood Control Department |
| 26 | India | 2010 | Uttar Pradesh Urban Sanitation Policy | Government of Uttar Pradesh |
| 27 | India | 2010 | State Water Policy, Rajasthan | State Water Resources Planning Department |
| 28 | India | 2011 | Odisha State Urban Sanitation Strategy | Housing and Urban Development Department |
| 29 | India | 2008 | Kerala State Sanitation Strategy | Government of Kerala |
| 30 | India | 2011 | State Water Policy West Bengal | Government of West Bengal |
| 31 | India | 2011 | Jharkhand State Water Policy | Water Resources Department |
| 32 | India | 2011 | Rural Sanitation and Hygiene Strategy | Ministry of Drinking Water and Sanitation |
| 33 | India | 2011 | Strategic Plan - Rural Drinking Water | Ministry of Drinking Water and Sanitation |
| 34 | India | 2012 | National Water Policy | Ministry of Water Resources |

| S. No. | Country | Year | Title of the document | Department |
|---|---|---|---|---|
| 35 | India | 2012-2013 to 2014-2015 | Policy Notes, Tamil Nadu | Municipal Administration and Water Supply Department |
| 36 | India | 2013 | Himachal Pradesh State Water Policy | Department of Irrigation and Public Health |
| 37 | India | 2013 | Odisha State Urban Water Supply Policy | Housing and Urban Development Department |
| 38 | India | 2014 | State Water Policy, Uttar Pradesh | Irrigation Department |
| 39 | India | 2014 | Punjab State Rural Water Supply and Sanitation Policy | Department of Water Supply and Sanitation |
| 40 | Kenya | 1999 | Sessional Paper No.1 of 1999 on National Policy on Water Resources Management and Development | Ministry of Water Resources |
| 41 | Kenya | 2007 | National Environmental Sanitation and Hygiene Policy | Ministry of Health |
| 42 | Kenya | 2015 | Kenya Environmental Sanitation and Hygiene Strategic Framework (KESSF) | Ministry of Health |
| 43 | Malawi | 2005 | National Water Policy | Ministry of Irrigation and Water Development |
| 44 | Malawi | 2008 | National Sanitation Policy | Ministry of Irrigation and Water Development |
| 45 | Madagascar | 2013 | National Strategy for Water, Sanitation and Hygiene | Ministry of Water |
| 46 | Nepal | 2004 | Rural Water Supply and Sanitation National Policy | Ministry of Physical Planning and Works |
| 47 | Nepal | 2004 | Rural Water Supply and Sanitation National Strategy | Ministry of Physical Planning and Works |
| 48 | Nepal | 2005 | Nepal Water Plan | Government of Nepal |
| 49 | Nepal | 2009 | National Urban Water Supply and Sanitation Sector Policy | Ministry of Physical Planning and Works |
| 50 | Nepal | 2011 | Sanitation and Hygiene Master Plan, Nepal | National Planning Commission |
| 51 | Pakistan | 2005 | Integrated Water Resources Management Policy, Balochistan | Government of Balochistan |
| 52 | Pakistan | 2006 | Domestic Water and Sanitation Policy for Sindh | Government of Sindh |

| S. No. | Country | Year | Title of the document | Department |
|---|---|---|---|---|
| 53 | Pakistan | 2006 | National Sanitation Policy | Ministry of Environment |
| 54 | Pakistan | 2007 | Punjab Urban Water and Sanitation Policy | Government of Punjab |
| 55 | Pakistan | 2008 | Azad Jammu and Kashmir Sanitation Policy and Strategy | Ministry of Local Government and Rural Development |
| 56 | Pakistan | 2009 | National Drinking Water Policy | Ministry of Environment |
| 57 | Tanzania | 2002 | National Water Policy | Ministry of Water and Irrigation |
| 58 | Tanzania | 2006-2015 | National Water Sector Development Strategy | Ministry of Water and Irrigation |
| 59 | Uganda | 1999 | National Water Policy | Ministry of Water, Lands and Environment |

**Table B 2: List of P&P documents included**

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 1 | Bangladesh | 2004 | Water Supply Program Project - Project Appraisal Document | World Bank |
| 2 | Bangladesh | 2006 | Secondary Towns Water Supply and Sanitation - Project Data Sheet | ADB |
| 3 | Bangladesh | 2008 | Dhaka Water Supply Sector Development Program - Project Administration Memorandum | ADB |
| 4 | Bangladesh | 2008 | Dhaka Water Supply and Sanitation Project - Project Appraisal Document | World Bank |
| 5 | Bangladesh | 2010 | Chittagong Water Supply Improvement and Sanitation Project - Project Appraisal Document | World Bank |
| 6 | Bangladesh | 2010 | Support to Water Supply and Sanitation Sector 2012-2015 | DANIDA |
| 7 | Bangladesh | 2011 | Water Supply Program Project - Implementation Completion and Results Report | World Bank |
| 8 | Bangladesh | 2012 | Bangladesh Rural Water Supply and Sanitation Project | World Bank |
| 9 | Bangladesh | 2012 | Sanitation, Hygiene Education and Water Supply in Bangladesh- Annual Review | DFID |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 10 | Bangladesh | 2013 | Flood Resistant Shelter and WASH (FRESH) for the South-West Region of Bangladesh-Project Completion Review | DFID |
| 11 | Bangladesh | 2015 | Accelerating Sanitation and Water for All in Off-track Countries, Annual Review - Summary Sheet | DFID |
| 12 | Bangladesh | 2016 | Action Research for Learning programme - Lessons Learnt from WASH Action Research with Practitioners in Four Countries – Bangladesh | IRC |
| 13 | Bangladesh | 2016 | Dhaka Water Supply Sector Development Program - Project Data Sheet | ADB |
| 14 | Bangladesh | 2016 | Khulna Water Supply Project - Project Data Sheet | ADB |
| 15 | Ethiopia | 2002 | Water Sector Development Program, Main Report Volume 1 | UNDP |
| 16 | Ethiopia | 2002 | Water Sector Development Program, Main Report Volume 2 | UNDP |
| 17 | Ethiopia | 2004 | Ethiopia Water Supply and Sanitation Project - Project Appraisal | World Bank |
| 18 | Ethiopia | 2004 | Emergency Water Supply and Sanitation Project in Three Regional States, Afar, Somali and SNNP | USAID |
| 19 | Ethiopia | 2005 | Rural Water Supply and Sanitation Programme - Appraisal Report | AfDB |
| 20 | Ethiopia | 2007 | Urban Water Supply and Sanitation Project - Project Appraisal Report | World Bank |
| 21 | Ethiopia | 2008 | External Programme Evaluation of Water, Sanition and Hygiene Program in Ethiopia | USAID |
| 22 | Ethiopia | 2008 | Water Sanitation and Hygiene Programme - Annual Review | DFID |
| 23 | Ethiopia | 2010 | Netherlands Unicef Water Initiative-Evaluation Report | UNICEF |
| 24 | Ethiopia | 2010 | ACP-EU water facility- Mid-Term Evaluation Report, 2010 | UNICEF |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 25 | Ethiopia | 2012 | Urban Water Supply and Sanitation Project - Project Information Document | World Bank |
| 26 | Ethiopia | 2013 | One WASH National Programme - Final Programme Document | Govt. of Ethiopia |
| 27 | Ethiopia | 2014 | Water Sanitation and Hygiene Programme - Project Completion Review | DFID |
| 28 | Ethiopia | 2013 | Harar Water Supply and Sanitation Project - Project Completion Report | AfDB |
| 29 | Ethiopia | 2013 | Sustainable Water and Sanitation in Africa (SUWASA) Africa- Mid-Term Evaluation Report | USAID |
| 30 | Ethiopia | 2014 | Ethiopia Water Supply and Sanitation Project - Implementation Completion and Results Report | World Bank |
| 31 | Ethiopia | 2014 | Project Appraisal document for Water Supply, Sanitation and Hygiene Project | World Bank |
| 32 | Ethiopia | 2014 | Final Performance Evaluation of the WASH Transformation for Enhanced Resiliency Project | USAID |
| 33 | Ethiopia | 2014 | Support to the One Water, Sanitation and Hygiene National Programme (OWNP) - Programme Appraisal Report | AfDB |
| 34 | Ethiopia | 2014 | Support for the Ethiopian One WaSH National Programme - Annual Review | AfDB |
| 35 | Ethiopia | 2015 | Sustainable Water and Sanitation in Africa (SUWASA) Africa- Final Report | USAID |
| 36 | Ethiopia | 2016 | Action Research for Learning programme - Lessons Learnt from WASH Action Research with Practitioners in Four Countries - Ethiopia | IRC |
| 37 | India | 2000 | Kerala Rural Water Supply and Environmental Sanitation Project - Project Appraisal, Implementation and Completion Report and Project Performance Report | World Bank |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 38 | India | 2001 | Second Karnataka Rural Water Supply and Sanitation Project-Appraisal Document | World Bank |
| 39 | India | 2001 | Rural Community Water, Andhra Pradesh, India - Implementation Completion & Results Report | World Bank |
| 40 | India | 2003 | Maharashtra Rural Water Supply and Sanitation Jalswarajya Project - Appraisal Document | World Bank |
| 41 | India | 2006 | Punjab Rural Water Supply and Sanitation - Appraisal Report | World Bank |
| 42 | India | 2006 | Uttaranchal Rural Water Supply and Sanitation Project | World Bank |
| 43 | India | 2007 | Central Rural Sanitation Programme-Total Sanitation Campaign-Guidelines | Government of India |
| 44 | India | 2007 | Rural Community Water, Andhra Pradesh, India - Project Appraisal-Commitment Document | World Bank |
| 45 | India | 2008 | Integrated Low Cost Sanitation Scheme | Government of India |
| 46 | India | 2008 | Rajasthan Urban Sector Development Investment Program - Bharatpur Water Supply Sub project (Tr 2) - Initial Environmental Examination, September 2008 | ADB |
| 47 | India | 2009 | Slum development project for Gyannagar, Bhuvaneswar | USAID |
| 48 | India | 2009 | AP Rural Water Supply and Sanitation Project - Appraisal Document | World Bank |
| 49 | India | 2010 | Maharashtra Rural Water Supply and Sanitation Jalswarajya Project - Implementation Completion and Results Report | World Bank |
| 50 | India | 2010 | National Rural Drinking Water Programme - IEC Guidelines | Government of India |
| 51 | India | 2010 | Nirmal Gram Puraskar, Guidelines | Government of India |
| 52 | India | 2011 | Second Kerala Rural Water Supply and Sanitation - Project Appraisal | World Bank |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 53 | India | 2011 | Central Rural Sanitation Programme-Total Sanitation Campaign-Guidelines | Government of India |
| 54 | India | 2011 | Guidelines for Engagement of SwachchhataDoot under TSC | Government of India |
| 55 | India | 2012 | Nirmal Bharat Abhiyan Guidelines | Government of India |
| 56 | India | 2013 | National Rural Drinking Water Programme – Guidelines | Government of India |
| 57 | India | 2013 | Urban Water Supply and Environmental Improvement Project in Madhya Pradesh - Project Data Sheet | ADB |
| 58 | India | 2013 | Maharashtra Rural Water Supply and Sanitation Jalswarajya Project - Project Performance Report | World Bank |
| 59 | India | 2013 | Rural Water Supply and Sanitation Project for Low Income States – Appraisal | World Bank |
| 60 | India | 2014 | Second Karnataka Rural Water Supply and Sanitation Project-implementation and completion report | World Bank |
| 61 | India | 2014 | Guidelines for SwachhBharath Mission - Urban | Government of India |
| 62 | India | 2014 | Maharashtra Rural Water Supply and Sanitation Programme - Appraisal Document | World Bank |
| 63 | India | | Karnataka Integrated Urban Water Management Investment Program - Output Based Toilet Program – Summary | ADB |
| 64 | India | | Karnataka Integrated Urban Water Management Investment Program - Summary Poverty Reduction and Social Strategy | ADB |
| 65 | India | | Karnataka Integrated Urban Water Management Investment Program - Gender Action Plan | ADB |
| 66 | India | 2014 | Swachh Bharat Vidyalaya - Guidelines | Government of India |
| 67 | India | 2014 | Swachh Bharat Gramin Guidelines | Government of India |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 68 | India | 2015 | Punjab Rural Water Supply and Sanitation Sector Improvement Project - Project Information Document Appraisal Stage | World Bank |
| 69 | India | 2015 | Punjab Rural Water Supply and Sanitation - Implementation Completion and Results Report | World Bank |
| 70 | India | 2015 | Karnataka Integrated Urban Water Management Investment Program - Project Data Sheet | ADB |
| 71 | India | 2015 | Water, Sanitation and Hygiene Programme in MP and Odisha - Summary Sheet | DFID |
| 72 | India | 2015 | Water, Sanitation and Hygiene Programme in MP and Odisha - Intervention Summary | DFID |
| 73 | India | 2015 | MHM guidelines, Swachh Bharat | Government of India |
| 74 | India | 2015 | Swachh Bharat Mission Support Program-Program for Results Information Document (PID), Concept stage | World Bank |
| 75 | India | 2015 | Swachh Bharat Mission Support Operation_Program Appraisal Document | World Bank |
| 76 | India | 2015 | Swachh Telangana Mission - Comprehensive Guidelines | State Government of Telangana |
| 77 | Kenya | 2004 | Rift Valley Water Supply and Sanitation Project - Project Appraisal Report | AfDB |
| 78 | Kenya | 2009 | Small Towns and Rural Water Supply and Sanitation Project - Project Appraisal Report | AfDB |
| 79 | Kenya | 2007 | Water and Sanitation Service Improvement Project - Appraisal Report | World Bank |
| 80 | Kenya | 2009 | Kenya Water and Sanitation Programme: A Joint Sida, GTZ and Government of Kenya Mid-Term Evaluation Report | SIDA |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 81 | Kenya | 2010 | Nairobi Rivers Rehabilitation and Restoration Program: Sewerage Improvement Project - Project Appraisal Report | AfDB |
| 82 | Kenya | 2010 | Water, Sanitation and Education for Health (WASEH) - Final Product Document | USAID |
| 83 | Kenya | 2013 | Sustainable Water and Sanitation in Africa (SUWASA) Africa- Mid-Term Evaluation Report | USAID |
| 84 | Kenya | 2013 | Sustainable Sanitation in Slums | USAID |
| 85 | Kenya | 2014 | National Guidelines for County ODF Communication Planning | Government of Kenya |
| 86 | Kenya | 2014 | Integrating WASH into HIV Interventions and Advancing Improved Sanitation Uptake - End Project Report | USAID |
| 87 | Kenya | 2014 | Urban Water and Sanitation OBA Fund for Low-Income Areas | World Bank |
| 88 | Kenya | 2015 | Sustainable Water and Sanitation in Africa (SUWASA) Africa -Final Report | USAID |
| 89 | Malawi | 2001 | Integrated Rural Water Supply and Sanitation Project for Ntchisi and Mzimba Districts - Appraisal and Completion Report | AfDB |
| 90 | Malawi | 2004 | Evaluation of the Strategic Sanitation and Hygiene Promotion for Schools | UNICEF |
| 91 | Malawi | 2007 | 2nd National Water Development Programme - Appraisal Report | World Bank |
| 92 | Malawi | 2008 | National Water Development Programme -Appraisal Report | AfDB |
| 93 | Malawi | 2010 | Supporting Malawi's National Water Development Programme - WASH Promotion in Seven Market Centers-Design Summary and Implementation Document | AUSAID |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 94 | Malawi | 2010 | Integrated Rural Water Supply and Sanitation Project for Ntchisi and Mzimba Districts - Completion Report | AfDB |
| 95 | Malawi | 2014 | Sustainable Rural Water and Sanitation Infrastructure Project for Improved Health and Livelihoods - Project Appraisal Report | AfDB |
| 96 | Malawi | 2014 | Malawi WASH Programme - Annual Review | DFID |
| 97 | Malawi | 2015 | Mazimba Integrated Urban Water and Sanitation | AfDB |
| 98 | Madagascar | 2001 | The Grand Sud Rural Potable Water and Sanitation Project - Appraisal Report | AfDB |
| 99 | Madagascar | 2005 | Short term Rural Drinking Water Supply and Sanitation Programme - Appraisal Report | AfDB |
| 100 | Madagascar | 2005 | National Rural Drinking Water Supply and Sanitation Programme - Appraisal Report | AfDB |
| 101 | Madagascar | 2010 | The Improving Family Planning and Increasing Access to Safe Water and Sanitation in Rural Communities Project | USAID |
| 102 | Madagascar | 2011 | The Grand Sud Rural Rural Drinking Water Supply and Sanitation Project - Project Completion Report | AfDB |
| 103 | Madagascar | 2013 | Project Completion Report of RANO HP; | USAID |
| 104 | Madagascar | 2014 | Evaluation of the Approach "CLTS" | UNICEF |
| 105 | Madagascar | 2014 | Evaluation of the USAID/ Madagascar Water Supply, Sanitation and Hygiene Bilateral Projects: Rano HP et Ranon'ala | USAID |
| 106 | Madagascar | 2015 | Accelerating Sanitation and Water for All in Off-track Countries, Annual Review - Summary Sheet | DFID |
| 107 | Nepal | 2004 | Fourth Rural Water Supply and Sanitation Sector Project, Project Completion Report | ADB |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 108 | Nepal | 2008 | Project Paper - Nepal Second Rural Water Supply and Sanitation Project | World Bank |
| 109 | Nepal | 2009 | Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN) - Revised Project Document | Government of Nepal |
| 110 | Nepal | 2010 | Nepal Small Towns Water Supply and Sanitation Project - Completion report | ADB |
| 111 | Nepal | 2011 | Kathmandu Valley Water Supply Improvement - Project Data Sheet | ADB |
| 112 | Nepal | 2011 | Kathmandu Valley Water Supply Improvement - Gender Action Plan | ADB |
| 113 | Nepal | 2012 | Community Based Water Supply and Sanitation Sector Project - Completion Report | ADB |
| 114 | Nepal | 2012 | Rural Water Supply and Sanitation Programme (Gurkha Welfare Scheme) -Phase IV- Project Completion Report | DFID |
| 115 | Nepal | 2012 | Nepal Small Towns Water Supply and Sanitation Project - Validation Report | ADB |
| 116 | Nepal | 2013 | Community Based Water Supply and Sanitation Sector Project - Validation Report | ADB |
| 117 | Nepal | 2013 | Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN) - Completion Report | Government of Nepal |
| 118 | Nepal | 2014 | Rural Water Supply and Sanitation Improvement Project - Appraisal Report | World Bank |
| 119 | Nepal | 2014 | School-led Safe Water, Sanitation and Hygiene Improvement in Mid-Western Nepal - Final Progress Report | USAID |
| 120 | Nepal | 2014 | Rural Water Supply and Sanitation Project in Western Nepal (RWSSP-WN) - Phase II, Project Document | Government of Nepal |
| 121 | Nepal | 2014 | Nepal: Third Small Towns Water Supply and Sanitation Project - Project Data Sheet | ADB |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 122 | Nepal | 2014 | Nepal: Third Small Towns Water Supply and Sanitation Project - Gender Action Plan, 2014 | ADB |
| 123 | Nepal | 2014 | Nepal: Melamchi Water Supply Project - Project Data Sheet | ADB |
| 124 | Nepal | 2015 | One WASH Annual Report 2014 | UNICEF |
| 125 | Nepal | 2015 | Rural Water Supply and Sanitation Programme (Gurkha Welfare Scheme) -Phase V- Project Completion Report | DFID |
| 126 | Nepal | 2015 | Accelerating Sanitation and Water for All in Off-track Countries, Annual Review - Summary Sheet | DFID |
| 127 | Nepal | 2016 | Second Small Towns Water Supply and Sanitation Sector - Project Data Sheet | ADB |
| 128 | Nigeria | 2000 | Small Towns Water Supply and Sanitation Pilot Project - Project Appraisal Report | World Bank |
| 129 | Nigeria | 2004 | Small Towns Water Supply and Sanitation Pilot Project - Implementation Completion Report | World Bank |
| 130 | Nigeria | 2006 | Small Towns Water Supply and Sanitation Pilot Project - Project Performance Assessment Report | World Bank |
| 131 | Nigeria | 2007 | Rural Water Supply and Sanitation Sub-Programmes in Yobe and Osun States - Project Appraisal | AfDB |
| 132 | Nigeria | 2011 | Zaria Water Supply Expansion and Sanitation Project | AfDB |
| 133 | Nigeria | 2012 | Sanitation, Hygiene and Water in Nigeria (SHAWN) - Annual Review | DFID |
| 134 | Nigeria | 2013 | Sustainable Water and Sanitation in Africa (SUWASA) Africa- Mid-Term Evaluation Report | USAID |
| 135 | Nigeria | 2014 | Sanitation, Hygiene and Water in Nigeria (SHAWN II) - Annual Review | DFID |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 136 | Nigeria | 2014 | Urban Water Sector Reform and Port-Harcourt Water Supply and Sanitation - Appraisal Report | AfDB |
| 137 | Nigeria | 2015 | Sustainable Water and Sanitation in Africa (SUWASA) Africa -Final Report | USAID |
| 138 | Pakistan | 2008 | Pakistan: Punjab Community Water Supply and Sanitation Sector Project - Completion Report, 2008 | ADB |
| 139 | Pakistan | 2008 | Pakistan Safe Drinking Water and Hygiene Promotion Project - Baseline and Completion Report | USAID |
| 140 | Pakistan | 2009 | Pakistan: Punjab Community Water Supply and Sanitation Sector Project - Validation Report, 2009 | ADB |
| 141 | Pakistan | 2010 | Pakistan Safe Drinking Water and Hygiene Promotion Project - Completion Report | USAID |
| 142 | Pakistan | 2010 | Early Recovery Scaling-up of Rural Sanitation in Flood Affected Districts (RuSFAD) - Evaluation Report | UNICEF |
| 143 | Pakistan | 2011 | Rural Sanitation in Nineteen Food Affected Districts of Pakistan (Phase II) – Mid-Term Evaluation | UNICEF |
| 144 | Pakistan | 2014 | Sanitation Programme at Scale in Pakistan - Phase 1 – Evaluation | UNICEF |
| 145 | Pakistan | 2015 | Accelerating Sanitation and Water for All in Off-track Countries, Annual Review - Summary Sheet | DFID |
| 146 | Tanzania | 2001 | Dar es Salaam Water Supply and Sanitation Project - Project Appraisal and Completion Report | AfDB |
| 147 | Tanzania | 2002 | Rural Water Supply and Sanitation - Appraisal Report | World Bank |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 148 | Tanzania | 2003 | Dar es Salaam Water Supply and Sanitation Project - Project Appraisal, Project Completion Report | AfDB |
| 149 | Tanzania | 2003 | Monduli District Water Project - Appraisal Report | AfDB |
| 150 | Tanzania | 2006 | Water Sector Development Program - Consolidated document | Government of Tanzania |
| 151 | Tanzania | 2007 | Water Sector Support Project - Project Appraisal Report | World Bank |
| 152 | Tanzania | 2008 | Rural Water Supply and Sanitation - Implementation Completion and Results Report | World Bank |
| 153 | Tanzania | 2009 | Monduli District Water Project - Project Completion Report | AfDB |
| 154 | Tanzania | 2010 | Rural Water Supply and Sanitation Programme II - Appraisal Report | AfDB |
| 155 | Tanzania | 2012 | Zanzibar Urban Water and Sanitation Project - Appraisal Report | AfDB |
| 156 | Tanzania | 2013 | Integreated Water, Sanitation and Hygiene (iWASH) Program: Performance Evaluation - Final Report | USAID |
| 157 | Tanzania | 2014 | Rural Water Supply and Sanitation - Annual Review | DFID |
| 158 | Tanzania | 2015 | Phase 2 of Rural Water Supply and Sanitation - Annual Review | DFID |
| 159 | Tanzania | 2015 | Arusha Sustainable Urban Water and Sanitation Delivery Project - Appraisal Report | AfDB |
| 160 | Uganda | 2004 | Small Towns Water Supply and Sanitation Project - Appraisal Report | AfDB |
| 161 | Uganda | 2005 | Rural Water Supply and Sanitation Program, Appraisal Report | AfDB |
| 162 | Uganda | 2006 | Water and Sanitation Programme - Final Results Form | USAID |
| 163 | Uganda | 2007 | Joint Water and Sanitation Sector Programme Support-Final Report | Government of Uganda |

| S. No. | Country | Document Year | Title of the document | Agency |
|---|---|---|---|---|
| 164 | Uganda | 2008 | Kampala City Council - A Project for Promoting Ecological Sanitation in Kampala, Uganda- Final Evaluation Report | SIDA |
| 165 | Uganda | 2008 | OBA in Kampala–Water Connections for the Poor-GPOBA Commitment Paper | World Bank |
| 166 | Uganda | 2011 | Water Supply and Sanitation Programme - Appraisal Report | AfDB |
| 167 | Uganda | 2012 | Water Management and Development Project | World Bank |
| 168 | Uganda | 2012 | WASH Initiative for the Rural Poor in 21 Districts in Uganda - End term Evaluation | UNICEF |
| 169 | Uganda | 2012 | OBA in Kampala–Water Connections for the Poor-GPOBA Evaluation Notes | World Bank |
| 170 | Uganda | 2013 | Joint Water and Environment Sector Programme Support-Final Programme Document | Government of Uganda |
| 171 | Uganda | 2015 | Water Supply and Sanitation Programme - Additional Funds | AfDB |
| 172 | Uganda | 2016 | Action Research for Learning programme - Lessons Learnt from WASH Action Research with Practitioners in Four Countries - Uganda | IRC |

## Appendix C: List of organisations whose P&P were included for this review

**Table C 1: List of organisations and their presence in selected countries**

| Organisations | Asia | | | | Africa | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | India | Pakistan | Nepal | Bangladesh | Ethiopia | Kenya | Tanzania | Nigeria | Malawi | Uganda | Madagascar |
| **I. Multi-lateral Agencies** | | | | | | | | | | | |
| 1. United Nations Children's Fund (UNICEF) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 2. United Nations Development Programme (UNDP) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 3. Water Supply and Sanitation Collaborative Council (WSSCC) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 4. Water and Sanitation Programme (WSP) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 5. World Bank | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 6. Asian Development Bank (ADB) | ● | ● | ● | ● | | | | | | | |
| 7. African Development Bank (AfDB) | | | | | ● | ● | ● | ● | ● | ● | ● |
| **II. Bi-lateral Agencies** | | | | | | | | | | | |
| 8. United States Agency for International Development (USAID) | ● | ● | ● | ● | ● | ● | ● | ● | | ● | |
| 9. Department for International Development (DFID) (does not refer to R4D) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| 10. Danish International Development Agency (Danida) | | ● | ● | ● | ● | ● | ● | | | ● | |
| 11. Australia Agency for International Development (AUSAID) | ● | ● | ● | ● | ● | ● | | ● | | | |
| 12. Canadian International Development Agency (CIDA) | | ● | | ● | ● | ● | ● | ● | | | |
| 13. Swedish International Development Cooperation Agency (SIDA) | | | | ● | ● | ● | ● | | | ● | |

| Organisations | Asia | | | | Africa | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | India | Pakistan | Nepal | Bangladesh | Ethiopia | Kenya | Tanzania | Nigeria | Malawi | Uganda | Madagascar |
| | | | | | | | | | | | |
| 14. Swiss Agency for Development and Cooperation (SDC) | | ● | ● | ● | ● | ● | ● | | ● | | |
| **III. International NGOs** | | | | | | | | | | | |
| 15. WaterAid | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 16. Sanitation and Hygiene Applied Research for Equity (SHARE) | ● | | ● | ● | | ● | ● | | ● | ● | |
| 17. WASH Alliance | | | ● | ● | ● | ● | | | | ● | |
| 18. Community Led Total Sanitation (CLTS) | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 19. Care International | ● | ● | ● | ● | ● | ● | ● | | ● | ● | ● |
| 20. Bill and Melinda Gates Foundation | ● | | | | ● | ● | ● | | | | |
| 21. IRC Netherlands | ● | | | ● | ● | | | | | ● | |
| 22. Water.org | ● | | | ● | ● | ● | | | | ● | |
| 23. BRAC | | ● | ● | ● | | | ● | | | ● | |
| **IV. Research Centres/ Consultancies** | | | | | | | | | | | |
| 24. Water and Sanitation for the Urban Poor (WSUP) | | | | ● | | ● | | | | | ● |
| 25. Water Engineering Development Centre (WEDC) – Knowledge Base | ● | ● | ● | ● | ● | ● | ● | ● | | ● | |

# Appendix D: Covering letter to governments and shortlisted organisations

## I. Covering letter to governments of countries included in this review

Dear Sir/Madam,

Greetings from the Department of Management Studies, Indian Institute of Technology-Madras (IIT-M). IIT Madras is an institute of national importance in higher education set up by the Government of India that conducts basic and applied research in various disciplines of engineering and social sciences.

As a professor in the Department of Management Studies, I am currently engaged in a research project that involves a systematic review of the water, sanitation and hygiene (WASH) policies, programs and projects implemented during the Millennium Development Goals period (2000-2015). For this study, we specifically focus on eleven low and middle income countries in Asia and Africa. These countries are: Nigeria, Tanzania, Kenya, Ethiopia, Madagascar, Uganda, Malawi, Nepal, Pakistan, Bangladesh, and India.

As the lead government agency in the drafting and implementation of WASH policies, we would like to include your policies, programs and projects in our research study. Currently we have been able to access the National Environmental Sanitation and Hygiene Policy 2007 and Kenya Environmental Sanitation and Hygiene Strategic Framework 2015 for inclusion in our review.

We would be glad if you could share with us relevant policy documents (including strategies/plans/policy notes), program or project inception / concept documents and implementation documents pertaining to the different Sanitation and Hygiene interventions that you had implemented in Kenya during 2000-15.

The results would be reported only in aggregate and not by specific agencies. We look forward to your co-operation and will acknowledge your support in the review. We would also send you a summary of the study findings after the completion of the study as a gesture of thanks for your participation in this research. Either my colleague, Sriharini Narayanan, or I will be happy to answer to any queries or clarifications that you might have. Thanks in advance for your time.

Sincerely
ThillaiRajan, A

## II. Covering letter to organisations included in this review

Dear Colleague,

Greetings from the Department of Management Studies, Indian Institute of Technology-Madras (IIT-M). IIT Madras is an institute of national importance in higher education set up by the Government of India that conducts basic and applied research in various disciplines of engineering and social sciences. As a professor in the Department of Management Studies, I am currently engaged in a research project that involves a systematic review of the water, sanitation and hygiene (WASH) programs and projects implemented during the Millennium Development Goals period (2000-2015). This research is being conducted in collaboration with the Water Supply and Sanitation Collaborative Council (WSSCC) and International Initiative for Impact Evaluation (3ie).

For this systematic review, we specifically focus on eleven low and middle income countries in Asia and Africa. These countries are: Nigeria, Tanzania, Kenya, Ethiopia, Madagascar, Uganda, Malawi, Nepal, Pakistan, Bangladesh, and India. Since your organisation is actively involved in the development of WASH in African and Asian countries, we would like to include your programs and projects in our research study. As a leading organization involved in the social development, I hope you would be able to participate in our study. We would be glad if you could share with us the program or project inception / concept documents pertaining to the different WASH projects that you had implemented in African and Asian countries during 2000-15. This includes any work on WASH in schools, health care facilities, and the workplace.

We would provide complete confidentiality for all the documents that you provide us. The results would be reported only in aggregate and not by specific agencies. Feel free to mask any confidential sections of the document, should you think it necessary, before sending the same to us.

We look forward to your co-operation and will ensure that the efforts and contributions made by all will be acknowledged in the review. We would also send you a summary of the study findings after the completion of the study as a gesture of thanks for your support in this research. Either my colleague, Sriharini Narayanan or I will be happy to answer to any queries or clarifications that you might have. Thanks in advance for your time.

Sincerely
ThillaiRajan, A

## Appendix E: Results from website searches

As mentioned in Chapter 3, policy, programme and project documents were sourced directly from websites of shortlisted organisations. The following tables provide a list of hits, search terms, filters and documents downloaded from the selected organisations identified in Appendix C.

**Table E 1: Hits from search of websites of selected agencies**

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| **Multilateral Agencies** | | | | | |
| 1. | World Bank<br><br>http://www.worldbank.org/projects/search?lang=en | Water projects (262)<br>Water project (389)<br><br>Sanitation projects (292)<br>Sanitation project (266)<br><br>Hygiene Projects (13)<br>Hygiene Project (46) | Year, country | 1268 | 42 |
| | | Water program (190)<br>Water programs (190)<br><br>Water programme (74)<br>Water programmes (74)<br><br>Sanitation program (126)<br>Sanitation programs (126)<br><br>Sanitation programme (39)<br>Sanitation programmes (39)<br><br>Hygiene program (34)<br>Hygiene programs (34)<br><br>Hygiene programme (8)<br>Hygiene programmes (8) | Year, country | 942 | |
| 2. | Asia Development Bank (ADB)<br><br>http://www.adb.org/projects/documents/search/country/ban/country/ind/c | Water projects (1495)<br>Water project (1424)<br><br>Sanitation projects (527)<br>Sanitation project (529)<br><br>Hygiene projects (2)<br>Hygiene project (2) | Country, language, year | 3979 | 44 |

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| | ountry/nep/country /pak/language/en | Water program (7)<br>Water programs (7)<br><br>Water programme (1)<br>Water programmes (1)<br><br>Sanitation program (6)<br>Sanitation programs (6)<br><br>Sanitation programme (1)<br>Sanitation programmes (1)<br><br>Hygiene program (0)<br>Hygiene programs (0)<br><br>Hygiene programme (0)<br>Hygiene programmes (0) | Country, year, content type | 30 | |
| 3. | United Nations Children's Fund (UNICEF)<br><br>http://www.unicef.org/publications/ | Water projects (61)<br>Water project (70)<br><br>Sanitation projects (63)<br>Sanitation project (94)<br><br>Hygiene projects (62)<br>Hygiene project (87) | Year, , country, content type | 437 | 15 |
| | | Water program (53)<br>Water programs (48)<br><br>Water programme (92)<br>Water programmes (91)<br><br>Sanitation program (68)<br>Sanitation programs (68)<br><br>Sanitation programme (120)<br>Sanitation programmes (119)<br><br>Hygiene program (65)<br>Hygiene programs (65)<br><br>Hygiene programme (112)<br>Hygiene programmes (111) | Year, country, content type | 1638 | |

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| | | Water program evaluations (42)<br>Water programme evaluations (69)<br>Water project evaluations (61)<br><br>Sanitation program evaluations (59)<br>Sanitation programme evaluations (92)<br>Sanitation project evaluations (82)<br><br>Hygiene program evaluations (57)<br>Hygiene programme evaluations (87)<br>Hygiene project evaluations (77) | | | |
| 4. | Water and Sanitation Program (WSP)<br><br>http://wsp.org/library | No provision to apply search term | Year, country, region | 15 | 0 |
| 5. | African Development Bank (AfDB)<br><br>http://www.afdb.org/en/documents/project-operations/ | No provision to apply search terms | Country, topic | 62 | 45 |
| 6. | United Nations Development Fund (UNDP) | None | Country | 359 | 0 |
| **Bilateral Agencies** | | | | | |
| 7. | Department for International Development (DFID) | None | Sector, countries | 66 | 18 |

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| | https://devtracker.dfid.gov.uk/ | | | | |
| 8. | United States Agency for International Development (USAID)<br><br>https://dec.usaid.gov/dec/home/Default.aspx | None | Topic, countries, year, language | 181 | 21 |
| 9. | Canadian International Development Agency (CIDA)<br><br>http://www.international.gc.ca/international/index.aspx?lang=eng | Water, sanitation, hygiene (no documents listed on website) | Country, | 168 | 0 |
| 10. | Swedish International Development Agency (SIDA)<br><br>http://www.sida.se/English/ | Water program (819)<br>Water programs (143)<br>Water programme (257)<br>Water programmes (257)<br><br>Sanitation program (780)<br>Sanitation programs (87)<br>Sanitation programme (642)<br>Sanitation programmes (207)<br><br>Hygiene program (754)<br>Hygiene programs (45)<br>Hygiene programme (614)<br>Hygiene programmes (169) | Language | 7030 | 3 |
| | | Water project (525)<br>Water projects (305)<br><br>Sanitation project (493)<br>Sanitation projects (206)<br><br>Hygiene project (454)<br>Hygiene projects (219) | | | |

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| 11. | Swiss Agency for Development and Cooperation (SDC)<br><br>https://www.eda.admin.ch/deza/en/home/activities-projects/projekte-fokus.html | No documents listed on project database | | 0 | 0 |
| 12. | Australian Aid<br><br>http://dfat.gov.au/aid/pages/australias-aid-program.aspx | None | None | | 3 |
| **International NGOs** | | | | | |
| 13. | Water Aid | Use of all search terms yielded same number of hits – 100. No project documents on website | | | 0 |
| 14. | SHARE (Sanitation and Hygiene Applied Research for Equity)<br><br>http://www.shareresearch.org/ | Water programme (47)<br>Water program (39)<br>Water project (66)<br><br>Sanitation programme (127)<br>Sanitation projects (140)<br>Sanitation program (143)<br><br>Hygiene programme (82)<br>Hygiene program (77)<br>Hygiene project (106)*<br><br>*No difference between singular and plural for all search terms | Country | 827 | 0 |
| 15. | Bill and Melinda Gates Foundation | No documents on website | | | 0 |
| 16. | CLTS (Community-led Total Sanitation) | Sanitation programme (649)<br>Sanitation project (641)<br>Sanitation program (638) | None | 2968 | 0 |

| Sl. No. | Organisation | Search Phrase used and hits | Filters applied | Total Hits | Documents downloaded |
|---|---|---|---|---|---|
| | http://www.communityledtotalsanitation.org/resources | Hygiene programme (351)<br>Hygiene program (323)<br>Hygiene project (366) | | | |
| 17. | IRC WASH<br><br>http://www.ircwash.org/resources | None | location | 492 | 5 |
| 18. | WASH Alliance<br><br>http://washalliance.akvoapp.org/en/projects/ | None | Sector | 84 | 0 |
| 19. | BRAC<br><br>http://research.brac.net/new/ | Water programme (31)*<br>Water programmes (6)<br>Water project (13)<br><br>Sanitation programme (24)<br>Sanitation project (4)<br>Sanitation projects (0)<br><br>Hygiene programme (25)<br>Hygiene project (2)<br>Hygiene projects (0)<br><br>*No difference in hits between American and British spelling. | None | 105 | 0 |
| 20. | Care International<br><br>http://www.care-international.org/ | Water programme (20)<br>Water program (4)<br>Water project (11)<br><br>Sanitation programme (17)<br>Sanitation program (7)<br>Sanitation project (11)<br><br>Hygiene programme (12)<br>Hygiene program (11)<br>Hygiene project (15) | Language, publication type | 108 | 0 |
| 21. | Water.org<br><br>http://water.org/ | No documents on the website | | 0 | 0 |

**Table E 2: Hits from databases and research centres**

| Sl. No. | Organisation | Search Phrase | Filter applied | Hits | Documents downloaded |
|---|---|---|---|---|---|
| 1. | Eldis<br><br>http://www.eldis.org/ | Water policies, programmes, projects | Gender<br>Health | 2426<br>2725 | 0 |
| | | Sanitation policies, programmes, projects | Gender<br>Health | 2398<br>2669 | 0 |
| | | Hygiene policies, programmes, projects | Gender<br>Health | 2396<br>2670 | 0 |
| | | Water OR Sanitation OR Hygiene AND Project or Projects OR Policy OR Policies OR Programme OR Programmes OR Program OR Programs | Gender<br>Health | 2618<br>2903 | |
| | | Water OR Sanitation OR Hygiene AND Project or Projects OR Policy OR Policies OR Programme OR Programmes OR Program OR Programs AND Evaluations | Gender<br>Health | 2669<br>3007 | 0 |
| 2 | WEDC knowledge base[2]<br><br>https://wedc-knowledge.lboro.ac.uk/search.html | Water AND Program OR Programs | Content type | 298 | |
| | | Water AND Programme OR Programmes | | 249<br>277 | |
| | | Sanitation AND Program OR Programs | | 184 | |
| | | Sanitation AND Programme OR Programmes | | 52<br>58 | |
| | | Hygiene AND Program OR Programs | | 8 | |
| | | Hygiene AND Programme OR Programmes | | 16 | |
| | | Water AND Programme AND Evaluations | | 9<br>11 | 0 |
| | | Water AND Project AND Evaluations | | 2<br>5 | |
| | | Sanitation AND Programme AND Evaluations | | | |
| | | Sanitation AND Project AND Evaluations | | | |
| | | Hygiene AND Programme AND Evaluations | | | |
| | | Hygiene AND Project AND Evaluations | | | |

| Sl. No. | Organisation | Search Phrase | Filter applied | Hits | Documents downloaded |
|---|---|---|---|---|---|
| 3 | WSUP (Water and Sanitation for the Urban Poor)<br><br>http://www.wsup.com/ | None | Language, country | 7 | 0 |

# Appendix F: Coding Tools and Key Codes

## Appendix F1: Coding tool for policy documents

Researcher Code ☐ Document Code ☐☐

**General Instructions**

1. Please fill in the country code and the number for the document in the box above
2. Refer Key Codes while filling the tool
3. Please circle multiple codes, if necessary
4. Fill necessary details as given in the policy document in the space/line provided
5. Please refer to the 'narration for the coding tool', for definitions of sectors and variables
6. If information is not available for a question, code '99'

**Section 1: General Information**

1. Title of the document

☐

2. Year of operation of the policy ☐

3. Type of document (circle the appropriate) 1 2 3 4

If coded '4', specify _____

4. Type of agency(s) involved in: (circle the appropriate)
   a) Drafting the policy 1 2 3 4 5 6 7 8
   b) Implementing the policy 1 2 3 4 5 6 7 8

5. Policy affiliated to another WASH sector policy. Yes 1 No 2

---

6. Policy domain 1 2

7. Country(s)

1 2 3 4 5 6 7 8 9 10 11 12

8. Sector(s) 1 2 3

**Section 2: Details from policy documents**

9. Describe the policy priorities mentioned in the document *(Statement that describes the main goal of the policy).*

| |
|---|
| |

10. Indicated target population segments.

1 2 3 4 5 6 7 8 9 10 11

12 13 14 15 16 17 18

11. Barriers of different population segments with regard to WASH.

| Sector Code | Segment Code | Description (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |

12. Location of WASH facilities mentioned in the policy.

| Sector code | HH/PC/SH* | Description (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

*HH = Household; PC= Public/Community; SH=Shared Households

13. Strategies adopted and involvement of population segments in programme/project planning, implementation or infrastructure maintenance to address the needs/problems of various population segments.

| Sector code | Segment code | P/I/M* | Strategies (As given in the document) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

*P = Planning; I= Implementation; M= Maintenance

14. Description of targets and benefits of WASH activities for the target population sector wise.

| Sector code | Segment code | WASH indicator code | Targets/Benefits (As given in the document) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

15. Programmes/projects planned for implementation of WASH.

| Sector code | Segment code | Programmes/projects (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |

16. Financial details of funds allocated for WASH sector mentioned in the policy document.

| Sector code | Funds amount | Funders (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**Background information**

17. Details of WASH history. Yes 1 No 2

| |
|---|
| |

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**Appendix F2: Coding tool for programme/project documents**

**General Instructions:**

1. Please fill in the country code and the number for the document in the box above
2. Refer Key Codes while filling the tool
3. Please circle multiple codes, if necessary
4. If coded 'Yes', fill necessary details as given in the programme/project document in the space/line provided
5. Please refer to the 'narration for the coding tool', for definitions of sectors and variables
6. If information is not available for a question, code '99'

**Section 1: General Information**

1. Organization/Agency

2. Title of Programme/Project

3. Documents used for coding - Title and date

4. Project/Programme status Ongoing 1 Completed 2

5. Project/Programme duration

6. Document source 1 2 3

7. Type of agency(s) involved in implementation: (circle the appropriate)

   1 2 3 4 5 6 7 8

8. Affiliated to another WASH sector policy Yes 1 No 2

---

9. Affiliated to another WASH sector programme Yes 1 No 2

---

10. Domain 1 2

11. Country(s) 1 2 3 4 5 6 7 8 9 10 11

12. Sector(s) 1 2 3

13. Objectives/goals

| |
|---|
| |

14. Type of WASH intervention

15. Indicated target population segments

1 2 3 4 5 6 7 8 9 10 11

12 13 14 15 16 17 18

16. Barriers of different population segments with regard to WASH

| **Sector code** | **Segment code** | **Barriers** |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

17. Components that addresses the needs/problems of various population segments and inclusion of population segments in the planning, programme or at the infrastructure maintenance stage.

| Sector code | Segment code | P/I/M* | Components (As given in the document) |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
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| | | | |
| | | | |
| | | | |

*P = Planning; I= Implementation; M= Maintenance

18. Description of segment coverage, location and benefits of WASH activities for the target population

| Sector code | Segment code | Segment coverage | | | HH/PC/SH | WASH indicator code |
|---|---|---|---|---|---|---|
| | | Targets/Indicators/Benefits | Intended | Actual | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |

19. FOR PROGRAMME DOCUMENTS ONLY - Suggested projects for implementation of WASH programme

| Sector code | Segment code | Projects (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

20. Financial details of funds allocated

| Sector code | Funds amount in USD | Funders (As given in the document) |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**Section 3: Evaluation**

21. Title

22. Year

23. Population segments targeted

| **Sector code** | **Segment code** |
|---|---|
| | |
| | |
| | |
| | |
| | |

24. Difficulties in reaching out to the population segments

| **Sector code** | **Segment code** | **Difficulties** |
|---|---|---|
| | | |
| | | |
| | | |

25. WASH strategies that worked and did not work

| **Sector code** | **Segment code** | **Strategies** | **Worked = 1**<br><br>**Did not work =2** |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

**Appendix F3: Key Codes**

1. Document Type

| Description | Code |
|---|---|
| Policy | 1 |
| Strategy | 2 |
| Framework | 3 |
| Others | 4 |

2. Document Source

| Description | Code |
|---|---|
| Government Websites | 1 |
| Contact | 2 |
| Websites of Agencies | 3 |

3. Policy Domain

| Description | Code |
|---|---|
| National | 1 |
| State | 2 |

4. Countries

| Description | Code |
|---|---|
| Bangladesh | 1 |
| India | 2 |
| Pakistan | 3 |
| Nepal | 4 |
| Ethiopia | 5 |
| Kenya | 6 |
| Madagascar | 7 |
| Malawi | 8 |
| Nigeria | 9 |
| Tanzania | 10 |
| Uganda | 11 |

5. Sectors

| Description | Code |
|---|---|
| Water | 1 |
| Sanitation | 2 |
| Hygiene | 3 |

6. Segments

| Description | Code |
|---|---|
| Children | 1 |
| Adolescent girls | 2 |
| Adolescent boys | 3 |
| Senior citizens | 4 |
| Men (Adults) | 5 |
| Women (Adults) | 6 |
| Transgender | 7 |
| Disabled | 8 |
| Rural | 9 |
| Urban | 10 |
| Caste | 11 |
| Ethnicity | 12 |
| Poor and low income | 13 |
| People with HIV/AIDS | 14 |
| Universal | 15 |
| Not indicated | 16 |
| Migrants/Pastorals | 17 |
| Vulnerable by occupation | 18 |

7. WASH Indicators

| Description | Code |
|---|---|
| Availability | 1 |
| Physical accessibility | 2 |
| Affordability | 3 |
| Quality &Safety | 4 |

8. Agencies

| Description | Code |
|---|---|
| National/Federal Government | 1 |
| State Government | 2 |
| International NGOs | 3 |
| Local NGOs | 4 |
| Local community | 5 |
| Private sector | 6 |
| Multilateral/ Bi-lateral agencies | 7 |
| Independent consultants | 8 |

## Appendix G: A guide to coding

This narrative is a detailed guide for filling the policy, P&P coding tools. The guide describes the manner in which questions should be answered and key codes should be used. While some questions in the coding tool are self-explanatory, others require specific instructions to fill and these are described below.

**General Instructions**

1. Wherever applicable, sector(s) and segment(s) pertaining to the information recorded must be captured using the key codes developed in Appendix F3.
2. Information must be captured as it has been described in the document.
3. If multiple population segments are mentioned in the same sentence with respect to a strategy/ component/ barrier/ benefit, these have to be coded together. For example, 'provision of subsidies for construction of toilets to the urban poor' has to be coded as urban poor, using two codes, 10 and 13. A similar procedure has to be followed if multiple WASH sectors are mentioned.
4. Questions may have single or multiple responses and must be answered accordingly. This has been indicated along-side each question.

**Questions specific to policy documents:**

I. **Year of operation of the policy (Q 2):** The year in which the policy was formulated must be captured under this question. The year of operation could coincide with the year in which the policy document was published unless otherwise specified.

II. **Type of document (Q.3) (single response):** Policy documents could be of different kinds, such as strategies, frameworks, guidelines and so on. Documents should be coded under the appropriate category based on the category mentioned in the title of the document and using the key codes. For example, 'Ethiopia's National Hygiene and Sanitation Strategy, 2005, should be coded '2' (strategy). If the type of document does not match any of the given categories, code 4 should be used.

III. **Type of agency involved in drafting and implementation of the policy (Q 4) (multiple responses):** This question captures the type of agencies involved in a) drafting and b) implementing the policy. Agencies involved in drafting of the policy are usually National or State Governments and are the authors of the document. They would be mentioned in the beginning of the document. Multilateral and bi-lateral agencies may also help in drafting and implementation and this information should also be captured.

IV. **Location of WASH facility (Q. 12):** This question captures the location of WASH facilities, which have been categorised, as follows;
   - **A.** Household: WASH facilities provided within the household or within the household premises such as yard taps should be coded as household facilities.
   - **B.** Public and community: Public/community facilities are those facilities which are provided for the general use of the community or public as a whole. These

include facilities such as community toilets, community taps, public toilets and so on.

**C.** Shared Household: Shared household facilities refer to WASH facilities which are shared between a group of households. These facilities may be described as shared connections in the document itself.

**V. Policy strategies (Q. 13):** Strategies proposed in policies to address WASH problems faced by population segments must be recorded under this question. Examples of strategies include, provision of subsidies for construction of toilets to the urban poor, implementation of awareness programmes, beneficiary participation, decentralisation, provision of WASH facility, enhancing the legal and regulatory framework and so on.

**VI. WASH benefits (Q. 14):** This question captures information regarding WASH indicators that lead to improvement in access to WASH facilities and services. The WASH indicators - availability, physical accessibility, affordability and quality and safety have been described below.

**A. Availability:** Availability refers to the existence of the WASH facility in sufficient quantity and on a continuous basis for the target population. Availability not only includes access at the household level but also in public places such as markets, stations, hospitals and schools. Indicators used to measure availability are:

**i.** Provision of the WASH facilities and/or

**ii.** Existence of WASH facilities in sufficient quantity and on continuous basis.

Examples of statements that have to be coded under availability are, "*providing access to proper sanitation facilities for poor communities and other un-served settlements"* (India's National Urban Sanitation Strategy, 2008).

**B. Physical Accessibility:** Physical accessibility captures target population's access to WASH facilities in terms of effort and time, design of the facility and physical security or privacy.

**i.** Effort and time: WASH facilities must be easily accessible to all and within or in the immediate vicinity of each household, workplace or educational institution. Examples of statements which describe time and distance are, the WASH facility must be within or in the immediate vicinity (not more than 30min) of the house. Or, the WASH facility must not be beyond 1000 meters from the house.

**ii.** Design of the WASH facility: WASH facilities must be designed in such a way that all users can physically access them and must be culturally appropriate/ sensitive to gender. Examples of statements that measure design are existence of ramps and railing for the disabled and elderly or child friendly facilities.

**iii.** Physical safety and privacy: Physical safety includes facilities that are easily accessible via safe paths, are not isolated and are sufficiently well lit at night. Both men and women should have access to WASH

facilities which takes into account their privacy and dignity. For example, provision of separate sanitation facilities for men and women.

C. **Affordability:** Affordability captures the cost of the service or cost incurred by the target population for WASH services and facilities. For example, payment of a monthly user fee/tariff to access WASH facilities, payment of a monthly charge for maintenance and provision of subsidies to the poor.

D. **Quality and Safety:** This parameter determines if the WASH facility is safe for the beneficiary to use in terms of safety to health. Therefore water must be of acceptable colour, odour and taste and sanitation facilities should effectively prevent human, animal and insect contact with human excreta. In terms of hygiene, toilets should be regularly cleaned and facilities to enable MHM including disposal of menstrual products should be provided. For example, provision of dustbins in schools or public places and provision of safe, potable drinking water to all households.

VII. **Details of WASH history (Q. 18):** Descriptions of existing WASH situation and coverage illustrated in policy documents have to be captured under this question. For example, "*over 90% of the rural population do have access to potable water because of subsistence level of economic life and spread out settlements*."(Ethiopia's National Sanitation and Hygiene Strategy, 2005). Or, "*in sanitation, while only 3% of the population defecates in the open, more than half of the latrines are unsanitary in design, operation or maintenance. In hygiene while awareness is high, only 30% of people wash hands with soap or ash and water after defecating*" (Bangladesh's National Strategy for Water Supply and Sanitation, 2014).

**Questions specific to programme or project documents**

VIII. **Documents used for coding (Q. 3):** Documents used for coding could be of different types, including project appraisal reports, completion reports and evaluation reports. All the documents used for coding should be captured under this question along with the date of publication of the document.

IX. **Programme or project duration (Q. 5):** This question captures the duration of the programme or project which could be different from the year of publication of the document (Q. 3). In case the programme or project is ongoing, the tentative year of completion may be captured, if specified. For example, a Project Appraisal Report was published in 2012 for Uganda's Water Management and Development Programme, while the programme began in 2013.

X. **Type of WASH intervention (Q. 14):** This question captures the broad nature of WASH interventions implemented by programmes and projects as specified in the document. For example, construction and rehabilitation of piped water systems, awareness programmes on hand washing with soap, behaviour change programmes to end open defecation.

XI. **Programme or project components (Q. 17):** Different types of WASH project and programme components which address the target population should be captured under this question. Examples of P&P components are, capacity building, construction of WASH facilities and behaviour change. Components have to be captured exactly as they have been described in the document.

XII. **WASH benefits, location and segment coverage (Q. 18):** This question captures information regarding WASH indicators that lead to improvement in access to WASH facilities and services. The WASH indicators have been described earlier in 'point VI' or 'Q. 14'. It should also capture the location of WASH facilities and segment coverage in terms of intended and actual target population covered by the programme/project. For example, "*499,467 poor people gained access to safe water as a result of newly installed/repaired water points in rural communities as against 630,000 originally intended*" (Bangladesh's Sanitation, Hygiene Education and Water Supply in Programme*,* 2012*)*.

XIII. **Difficulties in reaching out to population segment (Q.24):** This question captures the complexities faced in reaching out to the target population, during programme or project planning, implementation and maintenance. Examples of statements that can be coded under this question are; there could be a strong cultural belief that sanitation facilities should not be within the household premises. Or, non-poor households could threaten project volunteers to give them subsidies to construct facilities. Or, there could be vandalism and theft of spare parts used in construction of WASH facilities.

XIV. **WASH components that worked and did not work (Q. 25):** Details regarding the success and failure of programme or project components and reasons for the outcomes must be recorded under this question. For example, statements such as, "*school hygiene promotion was a success as children learnt key messages quickly and carried them home"*(Pakistan's Safe Drinking Water and Hygiene Promotion Project, 2010) should be captured under Q. 25.

**Common questions for both coding tools**

XV. **Sector (Q. 8 in policy coding tool, Q. 12 in P&P tool) (multiple responses):** This question captures the predominant sector (water/ sanitation/ hygiene) that the policy/ programme/ project discuses. Documents have to be coded to a sector, based on two parameters; a) if the sector(s) is mentioned in the title of the document and b) if a sub-section in the document describes a sector that is not mentioned in the title.

XVI. **Objectives/goals (Q. 9 in policy tool, Q13. in P&P tool):** Statement(s) that describe the overall objective or goal of the policy, programme or project should be recorded here. For instance, "*safe and potable water and basic sanitation services will be provided to all rural people of the Kingdom of Nepal within the 12th five year plan (2012-2017)"* (Nepal's Rural Water Supply and Sanitation National Policy, 2004).

**XVII. Indicated target population segments (Q. 10 for policy documents and Q.15 for P&P documents) (multiple responses):** Target population segments or beneficiaries that have been mentioned in the document have to be recorded under this question. Target beneficiaries were classified on the basis of life-cycle and geographical and social segments as follows:

**A.** LSS were broken down:

**i.** Age
- Children (0 – 12yrs)
- Adolescent girls and boys (13yrs – 18 yrs)
- Adults (19yrs – 59yrs)
- Senior Citizens (60yrs and above)

**ii.** Gender
- Male
- Female
- Transgender

**iii.** Disability – Beneficiaries who have any kind of physical or mental disability such as visual impairments, hearing impairments, autism, epilepsy and other disabilities which limit a person's physical functioning were captured under this parameter.

**iv.** People with HIV/AIDS

**B.** GSS were further categorised into;

**i.** Geographical Context: It denotes the physical location of the target population and was classified as:
- Rural
- Urban (includes peri-urban areas as well)

**ii.** Minority and marginalised groups: Minority groups refer to those sections of population that are discriminated based on their caste and ethnicity, income and economic status. This category has been further broken down into the following:
- Caste
- Ethnicity
- Poor and low income groups
- Migrants and Pastoralists
- Occupation based vulnerable groups (for example, sanitary workers)

**C.** Universal: Documents which do not specify a segment but include statements such as 'provision of hygiene facilities for all' or 'universal access to sanitation facilities in rural and urban areas' have to be coded as universal.

**D.** Not indicated: Documents which do not mention any target population segments have to be coded as 'not indicated'.

**XVIII. Barriers faced by target population (Q.11 in policy tool and Q.16 in P&P tool):** Difficulties faced by target population segments in accessing and using WASH facilities have to be captured here. For example, "*rural women travel long distances*

*over many hours to fetch unsafe water"* (Ethiopia's National Sanitation and Hygiene Strategy, 2005).

XIX. **Stage in which strategies and components of population groups have been described (Q. 13 in policy tool and Q. 17 in P&P tool):** Stages are divided into three:

**A.** Planning Stage:

- Policy documents: In policy documents, the planning stage consists of information on proposed involvement of target population while designing programmes and projects proposed in the policy. For example, involvement of women and disabled in planning WASH infrastructure.
- P&P documents: For P&P, information regarding involvement of target population in the planning of P&P has to be captured. For example, consulting children before designing child friendly sanitation facilities in school WASH programmes.

**B.** Implementation Stage:

- Policy documents: The implementation stage captures information on the proposed involvement of target population in P&P implementation. For example, involvement of the poor in construction of community WASH facilities.
- P&P documents: Involvement of target population in the implementation of P&P should be documented under this stage. For example, involving senior citizens in setting up WASH facilities to suit their needs.

**C.** Maintenance of infrastructure:

- Policies documents: The maintenance stage in policy documents should capture information regarding involvement of target population in maintaining the infrastructure provided.
- P&P documents: This stage should capture details on the involvement of target population in the upkeep of WASH infrastructure. For example, the formation of women's user groups for maintaining toilets.

XX. **Funding details (Q 17 in the policy tool and Q. 20 for the P&P tool):** Only funds allocated (not proposed) for the policy/programme/project has to be captured here along with the funder, sector and target population group. Funding details have to be coded in US dollars (USD) and information in local currencies must be converted to USD using the following website; https://www.oanda.com/currency/average

XXI. **Affiliated to another WASH sector policy (Q.4 in Policy coding tool and Q8. in P&P coding tool):** Documents that specifically mention that they are affiliated to another programme or policy should be captured under this question. For example, Uganda's Joint Water and Sanitation Sector Support Programme states that it is aligned to the National Water Policy 1999.

# Appendix h: Protocol for the qualitative comparative analysis (QCA)

**Table H 1: Calibration of conditions for csQCA**

| Conditions | Description | Scoring |
|---|---|---|
| **Outcome variables** | | |
| WASH benefits for LCS | WASH policy or P&P document explicitly included anyone of the LCS: children, adolescent boys and girls, women, men, senior citizens and the disabled and people living with HIV/AIDS as beneficiaries of WASH benefits such as availability, physical accessibility, affordability and quality and safety | 1 = Included any one of the LCS in WASH policy and P&P<br>0 = Not included any one of the LCS in WASH policy and P&P |
| WASH benefits for GSS | WASH policy or P&P document explicitly included anyone of the GSS: rural, urban, poor and low income, caste, ethnicity, vulnerable by occupation and migrants/pastorals as beneficiaries of WASH benefits such as availability, physical accessibility, affordability and quality and safety | 1 = Included any one of the GSS in WASH policy and P&P<br>0 = Not included any one of the GSS in WASH policy and P&P |
| **Input conditions** | | |
| ASIA | National WASH policies selected from four South Asian countries including Bangladesh, India, Nepal and Pakistan | 1 = National WASH policies from Asia<br>0 = National WASH policies not from Asia |
| AFRICA | National WASH policies selected from seven sub-Saharan African countries including Ethiopia, Malawi, Nigeria, Madagascar, Kenya, Tanzania and Uganda | 1 = National WASH policies from Africa<br>0 = National WASH policies not from Africa |
| WATER | Policies had proposed water-sector related initiatives and had described the ensuing benefits that population groups gain. Likewise, P&P implemented specific water sector related infrastructure or services | 1 = Policies and P&P targeted the water sector<br>0 = Policies and P&P did not target the water sector |
| SANITATION | Policies had proposed sanitation-sector related initiatives and had described the ensuing benefits that population groups gain. Likewise, P&P implemented specific sanitation sector related infrastructure or services | 1 = Policies and P&P targeted the sanitation sector<br>0 = Policies and P&P did not target the sanitation sector |
| HYGIENE | Policies had proposed hygiene-sector related initiatives and had described the ensuing benefits that population groups gain. Likewise, P&P implemented specific hygiene | 1 = Policies and P&P targeted the hygiene sector<br>0 = Policies and P&P did not target the hygiene sector |

| Conditions | Description | Scoring |
|---|---|---|
| | sector related infrastructure or services | |
| AGENCY | Apart from channelling their resources to development projects and programmes in the recipient country, multi-lateral and bi-lateral agencies also make their presence while drafting polices and often steers the National Government to incorporate the agency's principles. This kind of a technical support help countries to keep themselves complied with the many international agreements that they are signatories to. | 1 = Presence of a multilateral and or bilateral agency in drafting the policy<br>0 = Absence of a multilateral and or bilateral agency in drafting the policy |
| GOVT | WASH policies included for the study were predominately drafted by the National government and by adding this condition we except to understand the impact of government in including different population segments within the scope of the policy. | 1 = Presence of government in drafting the policy<br>0 = Absence of government in drafting the policy |
| BARLCS | Policy document had identified the barriers faced by LCS while accessing WASH services | 1 = Barriers identified for LCS<br>0 = Barriers not identified for LCS |
| BARGSS | Policy document had identified the barriers faced by GSS while accessing WASH services | 1 = Barriers identified for GSS<br>0 = Barriers not identified for GSS |
| STRLCS | Policy document had proposed WASH strategies for LCS while accessing WASH services | 1 = WASH strategies proposed for LCS<br>0 = WASH strategies not proposed for LCS |
| STRGSS | Policy document had proposed WASH strategies for GSS while accessing WASH services | 1 = WASH strategies proposed for GSS<br>0 = WASH strategies not proposed for GSS |
| FUNDING | Majority of the P&P included for the study were funded by multi-lateral/bi-lateral agencies. The input condition aimed to understand the role of aid agencies in influencing the comprisal of LCS and GSS in P&P. | 1 = Presence of a multi-lateral/bi-lateral funding agency<br>0 = Absence of a multi-lateral/bi-lateral funding agency |
| GOVT-P&P | National/State government had played a leading role in implementing P&P and this condition assumes the strong impact of government on targeting the LCS and GSS in WASH benefits. | 1 = Presence of government as implementing agency<br>0 = Absence of government as implementing agency |

| Conditions | Description | Scoring |
|---|---|---|
| COMM | The presence of the community as implementing partners was also evident in the P&P analysed. We assume that the involvement of community would assist in the comprisal of LCSGSS in WASH benefits. | 1 = Presence of community as implementing partners<br>0 = Absence of community as implementing partners |
| NGO | In several P&P analysed, the local NGO had played a vital role in ensuring the realisation of WASH benefits at the grass root level. | 1 = Presence of NGO as implementing partners<br>0 = Absence of NGO as implementing partners |

**Table H 2: Calibration of conditions for fsQCA**

| Conditions | Description | Scoring |
|---|---|---|
| **Outcome variables** | | |
| Inclusion of LCS in WASH policies and P&P | WASH policies and P&P had identified anyone of the 9 LCS: children, adolescent boys and girls, women, men, senior citizens, the disabled, transgender and people living with HIV/AIDS as target audience for the WASH initiatives and programmes. It included describing the barriers faced by the segment while accessing WASH services, proposing WASH strategies and the ensuing WASH benefits such as availability, physical accessibility, affordability and quality and safety | 1 = 5 or more LCS included<br>0.9 = 4 LCS included<br>0.7 = 3 LCS included<br>0.3 = 2 LCS included<br>0.1 = 1 LCS included<br>0 = 0 LCS included |
| Inclusion of GSS in WASH policies and P&P | WASH policies and P&P had identified anyone of the 7 GSS: rural, urban, poor and low income, caste, ethnicity, vulnerable by occupation and migrants/pastorals as target audience for the WASH initiatives and programmes. It included describing the barriers faced by the segment while accessing WASH services, proposing WASH strategies and the ensuing WASH benefits such as availability, physical accessibility, affordability and quality and safety | 1 = 5 or more GSS included<br>0.9 = 4 GSS included<br>0.7 = 3 GSS included<br>0.3 = 2 GSS included<br>0.1 = 1 GSS included<br>0 = 0 GSS included |
| **Outcome variables** | | |
| HDI | HDI is the statistic of life expectancy, education, and income per capita indicators, which are used to rank countries into four tiers of human development. As per the Human Development Index Report 2015, the countries under our study fall either within the medium HDI category or | 1 = Medium HDI – 0.609<br>0.9 = Medium HDI – 0.57<br>0.8 = Low HDI – 0.548<br>0.7 = Low HDI –0.538<br>0.6 = Low HDI –0.521<br>0.4 Low HDI –0.510 |

| Conditions | Description | Scoring |
|---|---|---|
| | the low HDI category. However, the case of full-membership and lowest membership in the fuzzy set has been worked out within the scope of the countries under study. For example, India falls under the medium category (Rank-130; HDI-0.609) but when compared to the other 10 countries in our study ranks the highest and hence scores a full membership value. On the other hand, Ethiopia ranks the lowest (Rank-174; HDI-0.442) and scores the lowest membership value. | 0.3 Low HDI –0.514<br>0.2 Low HDI –0.483<br>0.1 Low HDI –0.445<br>0 Low HDI –0.442 |
| JMP | The Joint Monitoring Programme for Water Supply and Sanitation (JMP) was launched in the year 1990 by the joint effort of WHO and UNICEF to monitor the progress of drinking water and sanitation coverage at the country-level. The JMP data provides not only an understanding of the extent of drinking water and sanitation coverage in the country but also the degree to which the Government, multi-lateral/bi-lateral, non-government organisations and communities have contributed towards the goal. The input condition 'JMP' has been worked on the consolidated scores of both drinking water and sanitation (2015). | 1 = High drinking water coverage (91%) and sanitation coverage (64%)<br>0.9 = High drinking water coverage (87%) and moderate sanitation coverage (61%)<br>0.7 = High drinking water coverage (94-92%) and low sanitation coverage (46%-40%)<br>0.3 = Moderate drinking water coverage (63%) and moderate sanitation coverage (30%)<br>0.1 = Moderate drinking water coverage (57%) and low sanitation coverage (28%)<br>0 = Low drinking water coverage (56%-52%) and low sanitation coverage (16%-12%) |

**Table H 3: Truth table of the crisp sets: inclusion of LCS in WASH benefits – national policies**

| govt | barlcs | strlcs | asia | africa | agency | water | sanitation | hygiene | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 3 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 0.666667 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 3 | 0 | 0.666667 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 3 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 3 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

**Table H 4: Truth table of the crisp sets: inclusion of GSS in WASH benefits – national policies**

| govt | bargss | strgss | asia | africa | water | sanitation | hygiene | agency | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 4 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 2 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 0 | 0.5 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |

**Table H 5: Truth table of the crisp sets: inclusion of LCS in WASH benefits – Asian P&P**

| comm | govt | funding | ngo | water | sanitation | hygiene | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 0 | 0.75 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 3 | 0 | 0.666667 |
| 0 | 1 | 1 | 0 | 0 | 1 | 0 | 3 | 0 | 0.666667 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 0 | 1 | 1 | 0 | 1 | 1 | 0 | 17 | 0 | 0.235294 |
| 0 | 1 | 1 | 0 | 1 | 0 | 0 | 5 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 0 | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 2 | 0 | 0 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

**Table H 6: Truth table of the crisp sets: inclusion of LCS in WASH benefits – African P&P**

| comm | mlbl | govt | ngo | water | sanitation | hygiene | funding | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 8 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 5 | 0 | 0.4 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0.333333 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 3 | 0 | 0.333333 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 0 | 0.333333 |
| 0 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 21 | 0 | 0.238095 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 2 | 0 | 0 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 0 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 |
| 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |

**Table H 7: Truth table of the crisp sets: inclusion of GSS in WASH benefits – Asian P&P**

| comm | govt | ngo | funding | water | sanitation | hygiene | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 1 | 1 | 0 | 0 | 5 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | 1 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 17 | 0 | 0.823529 |
| 0 | 1 | 0 | 1 | 1 | 1 | 1 | 3 | 0 | 0.666667 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 |

**Table H 8: Truth table of the crisp sets: inclusion of GSS in WASH benefits – African P&P**

| comm | mlbl | govt | ngo | funding | water | sanitation | hygiene | number | benefits | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 8 | 1 | 1 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 5 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 3 | 1 | 1 |
| 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 |
| 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 2 | 1 | 1 |
| 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 |
| 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 21 | 0 | 0.904762 |
| 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 2 | 0 | 0.5 |
| 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 0 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |

**Table H 9: Truth table of the fuzzy sets: inclusion of LCS in WASH policies**

| asia | africa | jmp | hdi | agency | govt | water | sanitation | hygiene | number | lcs | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 0.913043 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 0.652174 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 0 | 0.631579 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 5 | 0 | 0.560976 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0.526316 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 6 | 0 | 0.369565 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0.333333 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0.333333 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 |

**Table H 10: Truth table of the fuzzy sets: inclusion of GSS in WASH policies**

| asia | africa | jmp | hdi | agency | govt | water | sanitation | hygiene | number | gss | Consistency |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 3 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 3 | 1 | 0.913043 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 6 | 1 | 0.76087 |
| 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 2 | 0 | 0.76 |
| 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 3 | 0 | 0.652174 |
| 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0.538462 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 5 | 0 | 0.463415 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0.428571 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0.333333 |

**Table H 11: Truth table of the fuzzy sets: inclusion of LCS in Asian P&P**

| govt | funding | water | sanitation | hygiene | hdi | jmp | number | lcs | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 1 | 0.809524 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 0.803279 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.777778 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0.428571 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0.3 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 0 | 0.285714 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 22 | 0 | 0.215569 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 0 | 0.145833 |
| 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0.142857 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |

**Table H 12: Truth table of the fuzzy sets: inclusion of GSS in Asian P&P**

| govt | funding | water | sanitation | hygiene | hdi | jmp | number | gss | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 0 | 0.619048 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 0 | 0.52381 |
| 1 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 0 | 0.5 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 22 | 0 | 0.467066 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 0 | 0.458333 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 0 | 0.42623 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 0 | 0.346939 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 0.3 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0.142857 |
| 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |

**Table H 13: Truth table of the fuzzy sets: inclusion of LCS in African P&P**

| govt | funding | water | sanitation | hygiene | hdi | jmp | number | lcs | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 0 | 4 | 1 | 0.885714 |
| 1 | 1 | 1 | 1 | 1 | 0 | 0 | 10 | 1 | 0.788136 |
| 1 | 1 | 1 | 1 | 1 | 0 | 1 | 6 | 1 | 0.775862 |
| 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0.625 |
| 1 | 0 | 1 | 1 | 1 | 0 | 0 | 4 | 0 | 0.59375 |
| 1 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0.5625 |
| 0 | 1 | 1 | 1 | 1 | 0 | 0 | 6 | 0 | 0.458333 |
| 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0.421053 |
| 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0.416667 |
| 1 | 1 | 1 | 1 | 0 | 0 | 0 | 16 | 0 | 0.34104 |
| 1 | 1 | 1 | 1 | 0 | 1 | 0 | 13 | 0 | 0.245098 |
| 1 | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 0.166667 |
| 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.153846 |
| 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0.142857 |
| 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0.111111 |
| 1 | 1 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 |
| 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |

**Table H 14: Truth table of the fuzzy sets: inclusion of LCS in African P&P**

| govt | mlfunding | water | sanitation | hygiene | hdi | jmp | number | lcs | Consistency |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 1 | 1 | 1 | 1 | 3 | 1 | 1 |
| 1 | 0 | 0 | 1 | 0 | 1 | 1 | 2 | 1 | 1 |
| 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 0 | 1 | 0 | 1 | 1 | 3 | 1 | 0.809524 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 8 | 1 | 0.803279 |
| 0 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0.777778 |
| 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0.7 |
| 1 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0.428571 |
| 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0.3 |
| 0 | 1 | 1 | 1 | 1 | 1 | 1 | 6 | 0 | 0.285714 |
| 1 | 1 | 1 | 1 | 0 | 1 | 1 | 22 | 0 | 0.215569 |
| 1 | 1 | 1 | 0 | 0 | 1 | 1 | 6 | 0 | 0.145833 |
| 0 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0.142857 |
| 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 |

## Appendix I: List of governments contacted by email for policy documents

**Table I 1: List of governments contacted via email**

| Sl. No. | Organisation | Country/ regional/ head offices contacted | Number of offices that responded | Documents received | Documents included/ excluded | Sector |
|---|---|---|---|---|---|---|
| 1 | Government of India and State governments | National Ministry of Water Resources, National Ministry of Drinking Water and Sanitation, National Ministry of Urban Development, National Ministry of Rural Development, State Water Resources Departments, State Rural Development Departments, State Urban Development Departments, State Public Health and Engineering Departments | 2 | 0 | 0 | |
| 2 | Government of Kenya | Ministry of Health and Ministry of Water and Irrigation | 1 | 3 | 1 | Sanitation and hygiene |
| 3 | Government of Tanzania | Ministry of Water and Irrigation | 0 | 0 | 0 | |
| 4 | Government of Ethiopia | Ministry of Water and Energy and Ministry of Health | 0 | 0 | 0 | |
| 5 | Government of Uganda | Ministry of Water and Environment | 0 | 0 | 0 | |
| 6 | National Government of Pakistan | Ministry of Climate Change | 0 | 0 | 0 | |
| 7 | Government of Nigeria | Ministry of Water Resources | 0 | 0 | 0 | |
| 8 | Government of Malawi | Government of Malawi | 0 | 0 | 0 | |
| 9 | Government of Bangladesh | Ministry of Local Government, Rural Development and Cooperatives, Ministry of Water Resources | 0 | 0 | 0 | |
| 10 | Government of Nepal | Ministry of Physical Planning and Works | 0 | 0 | 0 | |
| **Total** | | | **3** | **3** | **1** | |

## Appendix J: Population segments identified in policies by sector and region

**Table J 1: Identification of LCS in the WASH subsectors by region**

| No. of LCS covered | Water sector | | | Sanitation sector | | | Hygiene sector | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | Total | Asia | Africa | Total | Asia | Africa | Total |
| 0 | 2 | - | **2** | - | - | **-** | - | - | **-** |
| 1 | 4 | 2 | **6** | 2 | 1 | **3** | - | - | **-** |
| 2 | 4 | 3 | **7** | 2 | 1 | **3** | 1 | 1 | **2** |
| 3 | 4 | 2 | **6** | 3 | 1 | **4** | - | - | **-** |
| 4 | 1 | - | **1** | 3 | 4 | **7** | - | - | **-** |
| 5 | 1 | 1 | **2** | 2 | - | **2** | 1 | 4 | **5** |
| 6 | - | - | **-** | - | - | **-** | - | - | **-** |
| 7 | 1 | - | **1** | 1 | 1 | **2** | 1 | - | **1** |
| 8 | - | - | **-** | - | - | **-** | - | - | **-** |
| 9 | - | - | **-** | - | - | **-** | - | - | **-** |

**Table J 2: Count of observations for LCS in the WASH subsectors by region**

| Population segments | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | Total | Asia | Africa | Total | Asia | Africa | Total |
| Children | 8 | 2 | **10** | 10 | 6 | **16** | 3 | 4 | **7** |
| Adolescent girls | 1 | 1 | **2** | 3 | 4 | **7** | 2 | 3 | **5** |
| Adolescent boys | 2 | 1 | **3** | 1 | 2 | **3** | - | 1 | **1** |
| Women | 13 | 8 | **21** | 13 | 8 | **21** | 3 | 5 | **8** |
| Men | 4 | 4 | **8** | 5 | 3 | **8** | 1 | 1 | **2** |
| Transgender | - | - | **-** | - | - | **-** | - | - | **-** |
| Senior citizens | 2 | - | **2** | 4 | 1 | **5** | 1 | 1 | **2** |
| Disabled | 4 | 2 | **6** | 6 | 5 | **11** | 2 | 4 | **6** |
| PLHIV | - | 1 | **1** | 2 | 4 | **6** | 2 | 3 | **5** |

**Table J 3: Identification of GSS coverage in WASH subsectors by region**

| No. of GSS covered | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Asia** | **Africa** | **Total** | **Asia** | **Africa** | **Total** | **Asia** | **Africa** | **Total** |
| 0 | 1 | - | **1** | - | 2 | **2** | - | - | **-** |
| 1 | - | 1 | **1** | - | - | **-** | - | - | **-** |
| 2 | 5 | 1 | **6** | 5 | - | **5** | 1 | - | **1** |
| 3 | 3 | 5 | **8** | 5 | 5 | **10** | 1 | 4 | **5** |
| 4 | 1 | 1 | **2** | 2 | 1 | **3** | 1 | 1 | **2** |
| 5 | 5 | - | **5** | 1 | - | **1** | - | - | **-** |
| 6 | - | - | **-** | - | - | **-** | - | - | **-** |
| 7 | - | - | **-** | - | - | **-** | - | - | **-** |
| 8 | - | - | **-** | - | - | **-** | - | - | **-** |
| 9 | - | - | **-** | - | - | **-** | - | - | **-** |

**Table J 4: Count of observations for GSS in the WASH subsectors by region**

| Population segments | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | **Total** | Asia | Africa | **Total** | Asia | Africa | **Total** |
| Poor & low income | 13 | 7 | **20** | 11 | 5 | **16** | 2 | 4 | **6** |
| Rural | 10 | 7 | **17** | 8 | 6 | **14** | 2 | 4 | **6** |
| Urban | 10 | 6 | **16** | 9 | 6 | **15** | 2 | 5 | **7** |
| Vulnerable by occupation | 1 | - | **1** | 2 | - | **2** | - | - | **-** |
| Migrants & Pastoralists | 2 | 2 | **4** | 1 | 4 | **5** | - | 3 | **3** |
| Caste | 6 | - | **6** | 4 | - | **4** | 2 | - | **2** |
| Ethnicity | 6 | - | **6** | 3 | - | **3** | 1 | - | **1** |
| | | | | | | | | | |
| **Universal** | 10 | 7 | **17** | 8 | 8 | **16** | 2 | 5 | **7** |

## Appendix K: Count of barriers from policy documents by sector, segment and region

**Table K 1: Count of observations for WASH barriers for LCS by region**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | |
| Children | 6 | 1 | | 3 | | | | 10 |
| Rural children | | | | | | | | |
| Urban children | | | | | | | | |
| Adolescent girls | 2 | | | | | | | 2 |
| Adolescent boys | | | | | | | | |
| Women | 1 | 1 | | 4 | | | | 6 |
| Rural women | | | | 1 | | | | 1 |
| Urban women | | | | | | | | |
| Men | 1 | | | | | | | 1 |
| Rural men | | | | | | | | |
| Urban men | | | | | | | | |
| Transgender | | | | | | | | |
| Senior citizens | | | | 1 | | | | 1 |
| PLHIV | | | | | | | | |
| Disabled | | | | | | | | |
| **Total** | **10** | **2** | | **9** | | | | **21** |
| **Africa** | | | | | | | | |
| Children | | 3 | | 1 | | | | |
| Rural children | | | | | | | | |
| Urban children | | | | | | | | |
| Adolescent girls | | | | | | 2 | | |
| Adolescent boys | | 2 | | | | | | |
| Women | | 1 | | 1 | | | | |
| Rural women | | | | | | | | |
| Urban women | | | | | | | | |
| Men | | | | | | | | |
| Rural men | | | | | | | | |
| Urban men | | | | | | | | |
| Transgender | | | | | | | | |
| Senior citizens | | | | | | | | |
| PLHIV | | | | | | 1 | | |
| Disabled | | | | | | 1 | | |
| **Total** | | **6** | | **2** | | **4** | | **12** |
| **Grand Total** | **10** | **8** | | **11** | | **4** | | **33** |

**Table K 2: Count of observations for WASH barriers for GSS by region**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | |
| Poor & low income | 1 | | 2 | 7 | | | 1 | **11** |
| Rural | 1 | 3 | | 5 | | 1 | 2 | **12** |
| Urban | 3 | 4 | | 4 | 1 | | 2 | **14** |
| Rural poor and low income | | | | 1 | | | | **1** |
| Urban poor & low income | | 6 | | 2 | | 1 | 2 | **11** |
| Vulnerable by occupation | | | | | 1 | | | **1** |
| Migrants & Pastoralists | | | | 1 | | | | **1** |
| Caste | | | | | | | | |
| Ethnicity | | | | | | | | |
| **Total** | **5** | **13** | **2** | **20** | **2** | **2** | **7** | **51** |
| **Africa** | | | | | | | | |
| Poor & low income | | | 5 | | 1 | | | 6 |
| Rural | 1 | | | 6 | | | | 7 |
| Urban | 6 | | 1 | 6 | | 3 | | 16 |
| Rural poor and low income | | | | | | | | |
| Urban poor & low income | 4 | | | 1 | | | | 5 |
| Vulnerable by occupation | | | | | | | | |
| Migrants & Pastoralists | | | 1 | | | 1 | | 2 |
| Caste | | | | | | | | |
| Ethnicity | | | | | | | | |
| **Total** | **11** | | **7** | **13** | **1** | **4** | | **36** |
| **Grand Total** | **18** | **25** | **9** | **38** | **3** | **6** | **7** | **87** |
| | | | | | | | | |
| **Universal Asia** | | 3 | | 5 | | | | **8** |
| **Universal Africa** | 2 | 9 | | | | | | **11** |

**Table K 3: Count of observations of barriers for LCS in the water sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 1 | | | | | | | **1** | **2** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | | | | | | | | | |
| Adolescent boys | | | | | | | | | |
| Women | | | | 1 | | | | **1** | **2** |
| Rural women | | | | 1 | | | | **1** | **1** |
| Urban women | | | | | | | | | |
| Men | | | | | | | | | |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | | | | | | |
| **Total** | **1** | | | **2** | | | | **3** | |
| **Africa** | | | | | | | | | |
| Children | | | | 1 | | | | **1** | **2** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | | | | | | | | | |
| Adolescent boys | | | | | | | | | |
| Women | | | | 1 | | | | **1** | **2** |
| Rural women | | | | | | | | | **1** |
| Urban men | | | | | | | | | |
| Men | | | | | | | | | |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | | | | | | |
| **Total** | | | | **2** | | | | **2** | |
| **Grand total** | **1** | | | **4** | | | | **5** | |

**Table K 4: Count of observations of barriers for GSS in the water sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & low income | 1 | | 1 | 1 | | | | **3** | **6** |
| Rural | | | | 5 | | | 2 | **7** | **11** |
| Urban | 1 | 1 | | 3 | | | 1 | **6** | **10** |
| Rural poor & low income | | | | 1 | | | | **1** | **1** |
| Urban poor & low income | | | | | | | 1 | **1** | **4** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **2** | **1** | **1** | **10** | | | **4** | **18** | |
| **Africa** | | | | | | | | | |
| Poor & low income | | | 2 | | 1 | | | **3** | **6** |
| Rural | 1 | | | 3 | | | | **4** | **11** |
| Urban | 3 | | | 1 | | | | **4** | **10** |
| Rural poor & low income | | | | | | | | | **1** |
| Urban poor & low income | 2 | | | 1 | | | | **3** | **4** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **6** | | **2** | **5** | **1** | | | **14** | |
| **Grand total** | **8** | **1** | **3** | **15** | **1** | | **4** | **32** | |
| | | | | | | | | | |
| **Universal (Asia)** | | | | 2 | | | | **2** | **4** |
| **Universal (Africa)** | 2 | | | | | | | **2** | **4** |

**Table K 5: Count of observations of barriers for LCS in the sanitation sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 4 | 1 | | 2 | | | | **7** | **9** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | 2 | | | | | | | **2** | **4** |
| Adolescent boys | | | | | | | | | |
| Women | 1 | 1 | | 2 | | | | **4** | **5** |
| Rural women | | | | | | | | | |
| Urban women | | | | | | | | | |
| Men | 1 | | | | | | | **1** | **1** |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | 1 | | | | **1** | **1** |
| PLHIV | | | | | | | | | **1** |
| Disabled | | | | | | | | | **1** |
| **Total** | **8** | **2** | | **5** | | | | **15** | |
| **Africa** | | | | | | | | | |
| Children | | 2 | | | | | | **2** | **9** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | | 1 | | | | 1 | | **2** | **4** |
| Adolescent boys | | | | | | | | | |
| Women | | 1 | | | | | | **1** | **5** |
| Rural women | | | | | | | | | |
| Urban women | | | | | | | | | |
| Men | | | | | | | | | **1** |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | | | | | | **1** |
| PLHIV | | | | | | 1 | | **1** | **1** |
| Disabled | | | | | | 1 | | **1** | **1** |
| **Total** | | **4** | | | | **3** | | **7** | |
| **Grand total** | **8** | **6** | | **5** | | **3** | | **22** | |

**Table K 6: Count of observations of barriers for GSS in the sanitation sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & low income | | | 1 | 5 | | | 1 | **7** | **8** |
| Rural | 1 | 3 | | | | | | **4** | **7** |
| Urban | 1 | 2 | | 1 | 1 | | 1 | **6** | **14** |
| Rural poor & low income | | | | | | | | | |
| Urban poor & low income | | 3 | | 2 | | 1 | 1 | **7** | **9** |
| Vulnerable by occupation | | | | | 1 | | | **1** | **1** |
| Migrants & Pastoralists | | | | | | | | | **2** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **2** | **8** | **1** | **8** | **2** | **1** | **3** | **25** | |
| **Africa** | | | | | | | | | |
| Poor & low income | | | 1 | | | | | **1** | **8** |
| Rural | | | | 2 | 1 | | | **3** | **7** |
| Urban | 2 | | 1 | 3 | | 2 | | **8** | **14** |
| Rural poor & low income | | | | | | | | | |
| Urban poor & low income | 2 | | | | | | | **2** | **9** |
| Vulnerable by occupation | | | | | | | | | **1** |
| Migrants & Pastoralists | | | 1 | | | 1 | | **2** | **2** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **4** | | **3** | **5** | **1** | **3** | | **16** | |
| **Grand total** | **6** | **8** | **4** | **15** | **3** | **4** | **3** | **41** | |
| | | | | | | | | | |
| **Universal (Asia)** | | 2 | | 2 | | | | **4** | **10** |
| **Universal (Africa)** | | **6** | | | | | | **6** | **10** |

**Table K 7: Count of observations of barriers of LCS in the hygiene sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 1 | | | 1 | | | | **2** | **3** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | | | | | | | | | **1** |
| Adolescent boys | | | | | | | | | |
| Women | | | | 1 | | | | **1** | **1** |
| Rural women | | | | | | | | | |
| Urban women | | | | | | | | | |
| Men | | | | | | | | | |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | | | | | | |
| **Total** | **1** | | | **2** | | | | **3** | |
| **Africa** | | | | | | | | | |
| Children | | 1 | | | | | | 1 | **3** |
| Rural children | | | | | | | | | |
| Urban children | | | | | | | | | |
| Adolescent girls | | 1 | | | | | | 1 | **1** |
| Adolescent boys | | | | | | | | | |
| Women | | | | | | | | | **1** |
| Rural women | | | | | | | | | |
| Urban women | | | | | | | | | |
| Men | | | | | | | | | |
| Rural men | | | | | | | | | |
| Urban men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | | | | | | |
| **Total** | | **2** | | | | | | **2** | **5** |
| **Grand total** | **1** | **2** | | **2** | | | | **5** | |

**Table K 8: Count of observations of barriers for GSS in the hygiene sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & low income | | | 1 | | | | | **1** | **3** |
| Rural | | | | | | | | | **1** |
| Urban | 1 | 1 | | | | | | **2** | **6** |
| Rural poor & low income | | | | | | | | | |
| Urban poor & low income | | 1 | | | | | | **1** | **1** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **1** | **2** | **1** | | | | | **4** | |
| **Africa** | | | | | | | | | |
| Poor & low income | | | 2 | | | | | **2** | **3** |
| Rural | | | | 1 | | | | **1** | **1** |
| Urban | | | | 2 | | 1 | | **3** | **6** |
| Rural poor & low income | 1 | | | | | | | **1** | |
| Urban poor & low income | | | | | | | | | **1** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **1** | | **2** | **3** | | **1** | | **7** | |
| **Grand total** | **2** | **2** | **3** | **3** | | **1** | | **11** | **16** |
| | | | | | | | | | |
| **Universal (Asia)** | | 1 | | 1 | | | | **2** | **5** |
| **Universal (Africa)** | | **3** | | | | | | **3** | **5** |

## Appendix L: Count of strategies for policy documents by sector, segment and region

**Table L 1: Count of observations for WASH strategies for LCS by region**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | |
| Children | 3 | | 4 | 2 | 10 | | 1 | | | | **20** |
| Rural children | | | | | | | | | | | |
| Urban children | | | | | | | | | | | |
| Adolescent girls | | | 1 | | | | | | | | **1** |
| Adolescent boys | | | | | | | | | | | |
| Women | 24 | | 2 | 7 | 3 | | | | | 1 | **37** |
| Rural women | 5 | 1 | | | 4 | | 4 | | | | **14** |
| Urban women | | | | | | | | | | | |
| Men | | | 1 | 3 | | | | | | | **4** |
| Rural men | 2 | 1 | | | 4 | | 2 | | | | **9** |
| Urban men | | | | | | | | | | | |
| Transgender | | | | | | | | | | | |
| Senior citizens | | | 1 | 1 | | | | | | | **2** |
| PLHIV | | | | 2 | | | | | | | **2** |
| Disabled | | | 2 | 6 | 3 | | | | | | **11** |
| **Total** | **34** | **2** | **11** | **21** | **24** | | **7** | | | **1** | **100** |
| **Africa** | | | | | | | | | | | |
| Children | | | 7 | 2 | 14 | | | | 1 | | **24** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural children | | | | | | | | | | | |
| Urban children | | | | | | | | | | | |
| Adolescent boys | 2 | | 2 | | | | | | | | **4** |
| Adolescent girls | 2 | | 3 | 3 | 1 | | 2 | | | | **11** |
| Women | 19 | | 5 | 5 | 10 | | 5 | 2 | | | **46** |
| Rural women | 5 | | | | | | 2 | | | | **7** |
| Urban women | 2 | | | | | | 2 | | | | **4** |
| Men | 1 | | 3 | 3 | 3 | | 1 | | | | **11** |
| Rural men | 2 | | | | | | | | | | **2** |
| Urban men | | | | | | | | | | | |
| Transgender | | | | | | | | | | | |
| Senior citizens | | | | | | | | 1 | | | **1** |
| PLHIV | 1 | | | 1 | 1 | | 6 | | | | **9** |
| Disabled | 3 | | 3 | | | | | 2 | 2 | | **10** |
| **Total** | **37** | | **23** | **14** | **29** | | **18** | **5** | **3** | | **129** |
| **Grand Total** | **71** | **2** | **34** | **35** | **53** | | **25** | **5** | **3** | **1** | **229** |

**Table L 2: Count of observations for WASH strategies for GSS by region**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | |
| Poor & low income | 3 | | | 6 | 5 | | 4 | 9 | | | **27** |
| Rural | 6 | 3 | 20 | 2 | 17 | 3 | 29 | 2 | 10 | 6 | **98** |
| Urban | 2 | 3 | 7 | 1 | 10 | 1 | 15 | | 9 | 4 | **52** |
| Rural poor & low income | 2 | | | 1 | 2 | | 3 | 11 | 1 | | **20** |
| Urban poor & low income | | 1 | | 3 | 2 | | 3 | | 1 | 3 | **13** |
| Vulnerable by occupation | | | | | 1 | | | | | | **1** |
| Migrants & Pastorals | | | 2 | | | | | | | | **2** |
| Caste | 3 | 1 | 2 | 1 | | | 2 | 1 | | | **10** |
| Ethnicity | 5 | 1 | 2 | 1 | 3 | | 2 | 1 | | | **15** |
| **Total** | **21** | **9** | **33** | **15** | **40** | **4** | **58** | **24** | **21** | **13** | **238** |
| **Africa** | | | | | | | | | | | |
| Poor & low income | | | 1 | | 2 | | 3 | 4 | | 2 | **12** |
| Rural | 3 | 1 | 14 | 2 | 11 | 2 | 18 | | 2 | 7 | **60** |
| Urban | 2 | | 13 | | 5 | 6 | 12 | 1 | 2 | 6 | **47** |
| Rural poor & low income | | | | | | | 1 | 5 | | | **6** |
| Urban poor & low income | | | | | | | 2 | 4 | 1 | 2 | **9** |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Vulnerable by occupation | | | | | | | | | | | |
| Migrants & Pastorals | | | | | 2 | | 4 | | | | **6** |
| Caste | | | | | | | | | | | |
| Ethnicity | | | | | | | | | | | |
| **Total** | **5** | **1** | **28** | **2** | **20** | **8** | **40** | **14** | **5** | **17** | **140** |
| **Grand Total** | **26** | **10** | **61** | **17** | **60** | **12** | **98** | **38** | **26** | **30** | **378** |
| | | | | | | | | | | | |
| **Universal (Asia)** | 6 | | 5 | | 21 | | 4 | | 10 | 2 | **48** |
| **Universal (Africa)** | 3 | 1 | 5 | | 10 | 2 | 7 | 2 | | | **30** |

**Table L 3: Count of observations of strategies for LCS in the water sector**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Children | 2 | | | | 2 | | | | | | **4** | **7** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |
| Adolescent girls | | | | | | | | | | | | **1** |
| Adolescent boys | | | | | | | | | | | | **1** |
| Women | 12 | | | 1 | 1 | | | | | | **14** | **32** |
| Rural women | 3 | 1 | | | | | 2 | | | | **6** | **10** |
| Urban women | | | | | | | | | | | | **1** |
| Men | | | | 1 | | | | | | | **1** | **3** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural men | 1 | 1 | | | 2 | | 1 | | | | **5** | **7** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior citizens | | | | | | | | | | | | |
| Disabled | | | | 1 | 1 | | | | | | **2** | **5** |
| PLHIV | | | | | | | | | | | | **1** |
| **Total** | **18** | **2** | | **3** | **6** | | **3** | | | | **32** | |
| **Africa** | | | | | | | | | | | | |
| Children | | | | | 3 | | | | | | **3** | **7** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |
| Adolescent boys | 1 | | | | | | | | | | **1** | **1** |
| Adolescent girls | 1 | | | | | | | | | | **1** | **1** |
| Women | 12 | | | | 5 | | 1 | | | | **18** | **32** |
| Rural women | 4 | | | | | | | | | | **4** | **10** |
| Urban women | 1 | | | | | | | | | | **1** | **1** |
| Men | | | | | 2 | | | | | | **2** | **3** |
| Rural men | 2 | | | | | | | | | | **2** | **7** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior Citizens | | | | | | | | | | | | |
| Disabled | 1 | | | | | | | | 2 | | **3** | **5** |
| PLHIV | | | | 1 | | | | | | | **1** | **1** |
| **Total** | **22** | | | **1** | **10** | | **1** | | **2** | | **36** | |
| **Grand total** | **40** | **2** | | **4** | **16** | | **4** | | **2** | | **68** | |

**Table L 4: Count of observations of strategies for GSS in the water sector**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Poor & low income | 2 | | | 2 | 3 | | 2 | 4 | | | **13** | **20** |
| Rural | 4 | 1 | 7 | 1 | 7 | 1 | 16 | 1 | 7 | 2 | **47** | **71** |
| Urban | 1 | | 2 | 1 | 4 | | 3 | | 5 | 2 | **18** | **33** |
| Rural poor & low income | 1 | | | 1 | 1 | | 1 | 6 | | | **10** | **12** |
| Urban poor & low income | | 1 | | 1 | | | | | 1 | 1 | **4** | **7** |
| Vulnerable by occupation | | | | | | | | | | | | |
| Migrants & Pastoralists | | | 1 | | | | | | | | **1** | **1** |
| Caste | 2 | 1 | 1 | 1 | | | 1 | 1 | | | **7** | **7** |
| Ethnicity | 3 | 1 | 1 | 1 | 1 | | 1 | 1 | | | **9** | **9** |
| **Total** | **13** | **4** | **12** | **8** | **16** | **1** | **24** | **13** | **13** | **5** | **109** | |
| **Africa** | | | | | | | | | | | | |
| Poor & low income | | | 1 | | 1 | | 2 | 2 | | 1 | **7** | **20** |
| Rural | 2 | 1 | 7 | | 3 | 1 | 7 | | 1 | 2 | **24** | **71** |
| Urban | 1 | | 3 | | 1 | 3 | 3 | 1 | 1 | 2 | **15** | **33** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural poor & low income | | | | | | | 1 | 1 | | | **2** | **12** |
| Urban poor & low income | | | | | | | 1 | 1 | | 1 | **3** | **7** |
| Vulnerable by occupation | | | | | | | | | | | | |
| Migrants/ Pastoralists | | | | | | | | | | | | **1** |
| Caste | | | | | | | | | | | | **7** |
| Ethnicity | | | | | | | | | | | | **9** |
| **Total** | **3** | **1** | **11** | | **5** | **4** | **14** | **5** | **2** | **6** | **51** | |
| **Grand total** | **16** | **5** | **23** | **8** | **21** | **7** | **38** | **18** | **15** | **11** | **160** | |
| | | | | | | | | | | | | |
| **Universal (Asia)** | 2 | | 2 | | 5 | | 2 | | 4 | | **15** | **23** |
| **Universal (Africa)** | 1 | | 1 | | 1 | 2 | 3 | | | | **8** | **23** |

**Table L 5: Count of observations of strategies for LCS in the sanitation sector**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Children | 1 | | 4 | 2 | 3 | | 1 | | | | **11** | **22** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |
| Adolescent girls | | | 1 | | | | | | | | **1** | **3** |
| Adolescent boys | | | | | | | | | | | | **4** |
| Women | 8 | | 1 | 4 | 1 | | | | | 1 | **15** | **31** |
| Rural women | 2 | | | | 3 | | 2 | | | | **7** | **9** |
| Urban women | | | | | | | | | | | | **2** |
| Men | | | 1 | 1 | | | | | | | **2** | **8** |
| Rural men | 1 | | | | 1 | | 1 | | | | **3** | **3** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior citizens | | | 1 | 1 | | | | | | | **2** | **3** |
| PLHIV | | | | 2 | | | | | | | **2** | **8** |
| Disabled | | | 2 | 3 | 1 | | | | | | **6** | **10** |
| **Total** | **12** | | **10** | **13** | **9** | | **4** | | | **1** | **49** | |
| **Africa** | | | | | | | | | | | | |
| Children | | | 4 | 1 | 5 | | | | 1 | | **11** | **22** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adolescent boys | 1 | | 1 | | | | | | | | **2** | **3** |
| Adolescent girls | 1 | | 2 | 1 | | | | | | | **4** | **4** |
| Women | 6 | | 3 | 2 | 3 | | 1 | 1 | | | **16** | **31** |
| Rural women | 1 | | | | | | 1 | | | | **2** | **9** |
| Urban women | 1 | | | | | | 1 | | | | **2** | **2** |
| Men | 1 | | 2 | 1 | 1 | | 1 | | | | **6** | **8** |
| Rural men | | | | | | | | | | | | **3** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior citizens | | | | | | | | 1 | | | **1** | **3** |
| Disabled | 2 | | 2 | | | | | 2 | | | **6** | **8** |
| PLHIV | 1 | | | | | | 3 | | | | **4** | **10** |
| **Total** | **14** | | **14** | **5** | **9** | | **7** | **4** | **1** | | **54** | |
| **Grand total** | **26** | | **24** | **18** | **18** | | **11** | **4** | **1** | **1** | **103** | |

**Table L 6: Count of observations of strategies for GSS in the sanitation sector**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Poor & low income | 1 | | | 3 | 1 | | 2 | 4 | | | **11** | **16** |
| Rural | 2 | 2 | 13 | 1 | 9 | 2 | 13 | 1 | 3 | 4 | **50** | **78** |
| Urban | 1 | 3 | 5 | | 5 | 1 | 11 | | 4 | 2 | **32** | **58** |
| Rural poor & low income | 1 | | | | 1 | | 2 | 5 | 1 | | **10** | **13** |
| Urban poor & low income | | | | 2 | 1 | | 3 | | | 2 | **8** | **13** |
| Vulnerable by occupation | | | | | 1 | | | | | | **1** | **1** |
| Migrants & Pastoralists | | | 1 | | | | | | | | **1** | **4** |
| Caste | 1 | | 1 | | | | 1 | | | | **3** | **3** |
| Ethnicity | 2 | | 1 | | 1 | | 1 | | | | **5** | **5** |
| **Total** | **8** | **5** | **21** | **6** | **19** | **3** | **33** | **10** | **8** | **8** | **121** | |
| **Africa** | | | | | | | | | | | | |
| Poor & low income | | | | | 1 | | 1 | 2 | | 1 | **5** | **16** |
| Rural | 1 | | 6 | 1 | 5 | 1 | 10 | | 1 | 3 | **28** | **78** |
| Urban | 1 | | 7 | | 3 | 3 | 8 | | 1 | 3 | **26** | **58** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural poor & low income | | | | | | | | 3 | | | **3** | **13** |
| Urban poor & low income | | | | | | | 1 | 2 | 1 | 1 | **5** | **13** |
| Vulnerable by occupation | | | | | | | | | | | | **1** |
| Migrants & Pastoralists | | | | | 1 | | 2 | | | | **3** | **4** |
| Caste | | | | | | | | | | | | **3** |
| Ethnicity | | | | | | | | | | | | **5** |
| **Total** | **2** | **1** | **13** | **1** | **10** | **4** | **22** | **7** | **3** | **8** | **70** | |
| **Grand Total** | **10** | **5** | **34** | **7** | **29** | **7** | **55** | **17** | **11** | **16** | **191** | |
| | | | | | | | | | | | | |
| **Universal (Asia)** | 2 | | 3 | | 9 | | | | 5 | | **19** | **32** |
| **Universal (Africa)** | 1 | 1 | 3 | | 4 | | 3 | 1 | | | **13** | **32** |

**Table L 7: Count of observations of strategies for LSS in the hygiene sector**

| **Strategy** | **Beneficiary Participation** | **Decentralisation** | **Demand Management** | **Equity in WASH provision** | **IEC** | **Legal and Regulatory Framework** | **Project Management** | **Provision of subsidies/ tariffs/ loans/ micro credit/ grants** | **Provision of WASH facility** | **Stakeholder Participation** | **Total** | **Total of Asia and Africa** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Children | | | | | 5 | | | | | | **5** | **15** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |
| Adolescent girls | | | | | | | | | | | | **1** |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adolescent boys | | | | | | | | | | | | **6** |
| Women | 4 | | 1 | 2 | 1 | | | | | | **8** | **20** |
| Rural women | | | | | 1 | | | | | | **1** | **2** |
| Urban women | | | | | | | | | | | | **1** |
| Men | | | | 1 | | | | | | | **1** | **4** |
| Rural men | | | | | 1 | | | | | | **1** | **1** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior Citizens | | | | | | | | | | | | |
| Disabled | | | | 2 | 1 | | | | | | **3** | **4** |
| PLHIV | | | | | | | | | | | | **4** |
| **Total** | **4** | | **1** | **5** | **9** | | | | | | **19** | |
| **Africa** | | | | | | | | | | | | |
| Children | | | 3 | 1 | 6 | | | | | | **10** | **15** |
| Rural children | | | | | | | | | | | | |
| Urban children | | | | | | | | | | | | |
| Adolescent boys | | | 1 | | | | | | | | **1** | **1** |
| Adolescent girls | | | 1 | 2 | 1 | | 2 | | | | **6** | **6** |
| Women | 1 | | 2 | 3 | 2 | | 3 | 1 | | | **12** | **20** |
| Rural women | | | | | | | 1 | | | | **1** | **2** |
| Urban women | | | | | | | 1 | | | | **1** | **1** |
| Men | | | 1 | 2 | | | | | | | **3** | **4** |
| Rural men | | | | | | | | | | | | **1** |
| Urban men | | | | | | | | | | | | |
| Transgender | | | | | | | | | | | | |
| Senior citizens | | | | | | | | | | | | |
| Disabled | | | 1 | | | | | | | | **1** | **4** |
| PLHIV | | | | | 1 | | 3 | | | | **4** | **4** |
| **Total** | **1** | | **9** | **8** | **10** | | **10** | **1** | | | **39** | |
| **Grand total** | **5** | | **10** | **13** | **19** | | **10** | **1** | | | **58** | |

**Table L 8: Count of observations of strategies for GSS in the hygiene sector**

| Strategy | Beneficiary Participation | Decentralisation | Demand Management | Equity in WASH provision | IEC | Legal and Regulatory Framework | Project Management | Provision of subsidies/ tariffs/ loans/ micro credit/ grants | Provision of WASH facility | Stakeholder Participation | Total | Total of Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | |
| Poor & low income | | | | 1 | 1 | | | 1 | | | **3** | 3 |
| Rural | | | | | 1 | | | | | | **1** | 9 |
| Urban | | | | | 1 | | 1 | | | | **2** | 8 |
| Rural poor & low income | | | | | | | | | | | | 1 |
| Urban poor & low income | | | | | 1 | | | | | | **1** | 2 |
| Vulnerable by occupation | | | | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | | | | 3 |
| Caste | | | | | | | | | | | | |
| Ethnicity | | | | | 1 | | | | | | **1** | 1 |
| **Total** | | | | **1** | **5** | | **1** | **1** | | | **8** | |
| **Africa** | | | | | | | | | | | | |
| Poor & low income | | | | | | | | | | | | 3 |
| Rural | | | 1 | 1 | 3 | | 1 | | | 2 | **8** | 9 |
| Urban | | | 3 | | 1 | | 1 | | | 1 | **6** | 8 |
| Rural poor & low income | | | | | | | | 1 | | | **1** | 1 |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban poor & low income | | | | | | | | 1 | | | **1** | 2 |
| Vulnerable by occupation | | | | | | | | | | | | |
| Migrants & Pastoralists | | | | | 1 | | 2 | | | | **3** | 3 |
| Caste | | | | | | | | | | | | |
| Ethnicity | | | | | | | | | | | | 1 |
| **Total** | | | **4** | **1** | **5** | | **4** | **2** | | **3** | **19** | |
| **Grand total** | | | **4** | **2** | **10** | | **5** | **3** | | **3** | **27** | |
| | | | | | | | | | | | | |
| **Universal (Asia)** | 2 | | | | 7 | | 2 | | 1 | 2 | **14** | 23 |
| **Universal (Africa)** | 1 | | 1 | | 5 | | 1 | 1 | | | **9** | 23 |

## Appendix M: Count of benefits for policy documents by sector, segment and region

**Table M 1: Count of WASH benefits for LCS by region**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Children | 5 | 2 | | 3 | **10** |
| Rural children | | | | | |
| Urban children | | | | | |
| Adolescent boys | 1 | 1 | | 1 | **3** |
| Adolescent girls | 1 | 1 | | 1 | **3** |
| Women | 1 | 1 | | | **2** |
| Rural women | 1 | 1 | | 1 | **3** |
| Urban women | | | | | |
| Men | 1 | 1 | | | **2** |
| Rural men | | | | | |
| Urban men | | | | | |
| Transgender | | | | | |
| Senior citizens | 1 | 1 | | | **2** |
| Disabled | 3 | | | | **3** |
| PLHIV | | | | | |
| **Total** | **14** | **8** | **0** | **6** | **28** |
| **Africa** | | | | | |
| Children | 15 | 10 | | 8 | **33** |
| Rural children | | | | | |
| Urban children | | | | | |
| Adolescent boys | 5 | 5 | | 5 | **15** |
| Adolescent girls | 8 | 8 | 1 | 7 | **24** |
| Women | 3 | 5 | 1 | 5 | **14** |
| Rural women | | | | | |
| Urban women | | | | | |
| Men | 2 | 2 | | 2 | **6** |
| Rural men | | | | | |
| Urban men | | | | | |
| Transgender | | | | | |
| Senior citizens | | | | | |
| Disabled | 3 | 2 | | 1 | **6** |
| PLHIV | 2 | | | | **2** |
| **Total** | **38** | **32** | **2** | **28** | **100** |
| **Grand Total** | **52** | **40** | **2** | **34** | **128** |

**Table M 2: Count of observations for WASH benefits for GSS by region**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Poor & low income | 3 | 1 | 8 | 1 | **13** |
| Rural | 16 | 4 | 5 | 14 | **39** |
| Urban | 21 | 3 | 5 | 15 | **44** |
| Rural poor & low income | | | | | |
| Urban poor & low income | 10 | | 3 | 2 | **15** |
| Vulnerable by occupation | | | | | |
| Migrants &Pastorals | | | | 2 | **2** |
| Caste | | | 1 | | **1** |
| Ethnicity | 2 | 2 | 1 | 2 | **7** |
| **Total** | **52** | **10** | **23** | **36** | **121** |
| **Africa** | | | | | |
| Poor & low income | | | 3 | | **3** |
| Rural | 17 | 6 | 2 | 9 | **34** |
| Urban | 14 | 3 | 2 | 5 | **24** |
| Rural poor & low income | | | 1 | | **1** |
| Urban poor & low income | 2 | | | | **2** |
| Vulnerable by occupation | | | | | |
| Migrants &Pastorals | 2 | | | | **2** |
| Caste | | | | | |
| Ethnicity | | | | | |
| **Total** | **35** | **9** | **8** | **14** | **66** |
| **Grand Total** | **87** | **19** | **31** | **50** | **187** |
| | | | | | |
| **Universal (Asia)** | **17** | **2** | **1** | **7** | **27** |
| **Universal (Africa)** | **20** | **12** | **5** | **11** | **48** |

**Table M 3: Count of observations of benefits for LCS in the water sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 1 | 1 | | | 2 | **10** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent girls | | | | | | **4** |
| Adolescent boys | | | | | | **3** |
| Women | | 1 | | | 1 | **4** |
| Rural women | | | | | | |
| Urban women | | | | | | |
| Men | | 1 | | | 1 | **1** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | 1 | | | | 1 | **3** |
| PLHIV | | | | | | |
| **Total** | **2** | **3** | | | **5** | |
| **Africa** | | | | | | |
| Children | 3 | 3 | | 2 | **8** | **10** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent girls | 1 | 2 | | 1 | **4** | **4** |
| Adolescent boys | 1 | 1 | | 1 | **3** | **3** |
| Women | | 2 | | 1 | **3** | **4** |
| Rural women | | | | | | |
| Urban women | | | | | | |
| Men | | | | | | **1** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | 1 | 1 | | | **2** | **3** |
| PLHIV | | | | | | |
| **Total** | **6** | **9** | | **5** | **20** | |
| **Grand total** | **8** | **12** | | **5** | **25** | |

**Table M 4: Count of observations of benefits for GSS in the water sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | 1 | 1 | 5 | | **7** | **8** |
| Rural | 11 | 3 | 2 | 11 | **27** | **46** |
| Urban | 6 | 1 | 1 | 6 | **14** | **24** |
| Rural poor & low income | | | | | | |
| Urban poor & low income | 5 | | 2 | 2 | **9** | **9** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | | | | 1 | **1** | **3** |
| Caste | | | 1 | | **1** | **1** |
| Ethnicity | | | 1 | | **1** | **1** |
| **Total** | **23** | **5** | **12** | **20** | **60** | |
| **Africa** | | | | | | |
| Poor & low income | | | 1 | | **1** | **8** |
| Rural | 9 | 4 | 2 | 4 | **19** | **46** |
| Urban | 5 | 1 | 1 | 3 | **10** | **24** |
| Rural poor & low income | | | | | | |
| Urban poor & low income | | | | | | **9** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | 2 | | | | 2 | **3** |
| Caste | | | | | | **1** |
| Ethnicity | | | | | | **1** |
| **Total** | **16** | **5** | **4** | **7** | **32** | |
| **Grand total** | **39** | **10** | **16** | **27** | **92** | |
| | | | | | | |
| **Universal (Asia)** | 6 | 1 | | 5 | **12** | **29** |
| **Universal (Africa)** | 6 | 5 | 1 | 5 | **17** | **29** |

**Table M 5: Count of observations of benefits for LCS in the sanitation sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 4 | 1 | | 3 | **8** | **24** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent boys | 1 | 1 | | 1 | **3** | **9** |
| Adolescent girls | 1 | 1 | | 1 | **3** | **12** |
| Women | 1 | | | | **1** | **5** |
| Rural women | 1 | 1 | | 1 | **3** | **3** |
| Urban women | | | | | | |
| Men | 1 | | | | **1** | **4** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | 1 | 1 | | | **2** | **2** |
| Disabled | 2 | | | | **2** | **6** |
| PLHIV | | | | | | **1** |
| **Total** | **12** | **5** | | **6** | **23** | |
| **Africa** | | | | | | |
| Children | 8 | 4 | | 4 | 16 | **24** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent boys | 2 | 2 | | 2 | 6 | **9** |
| Adolescent girls | 3 | 3 | | 3 | 9 | **12** |
| Women | 1 | 1 | | 2 | 4 | **5** |
| Rural women | | | | | | **3** |
| Urban women | | | | | | |
| Men | 1 | 1 | | 1 | 3 | **4** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | **2** |
| Disabled | 2 | 1 | | 1 | 4 | **6** |
| PLHIV | 1 | | | | 1 | **1** |
| **Total** | **18** | **12** | | **13** | **43** | |
| **Grand total** | **30** | **17** | | **19** | **66** | |

**Table M 6: Count of observations of benefits for GSS in the sanitation sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | 2 | | 3 | 1 | **6** | **8** |
| Rural | 5 | 1 | 3 | 3 | **12** | **21** |
| Urban | 13 | 2 | 4 | 7 | **26** | **35** |
| Rural poor & low income | | | | | | **1** |
| Urban poor & low income | 5 | | 1 | | **6** | **8** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastorals | | | | 1 | **1** | **1** |
| Caste | | | | | | |
| Ethnicity | 2 | 2 | | 2 | **6** | **6** |
| **Total** | **27** | **5** | **11** | **14** | **57** | |
| **Africa** | | | | | | |
| Poor & low income | | | 2 | | **2** | **8** |
| Rural | 5 | 1 | | 3 | **9** | **21** |
| Urban | 6 | 1 | 1 | 1 | **9** | **35** |
| Rural poor & low income | | | 1 | | **1** | **1** |
| Urban poor & low income | 2 | | | | **2** | **8** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastorals | | | | | | **1** |
| Caste | | | | | | |
| Ethnicity | | | | | | **6** |
| **Total** | **13** | **2** | **4** | **4** | **23** | |
| **Grand Total** | **40** | **7** | **15** | **18** | **80** | |
| | | | | | | |
| **Universal (Asia)** | 8 | 1 | | 2 | **11** | **31** |
| **Universal (Africa)** | 9 | 5 | 2 | 4 | **20** | **31** |

**Table M 7: Count of observations of benefits for LCS in the hygiene sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | | | | | | **9** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent boys | | | | | | **6** |
| Adolescent girls | | | | | | **11** |
| Women | | | | | | **7** |
| Rural women | | | | | | |
| Urban women | | | | | | |
| Men | | | | | | **3** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | | | | | | |
| PLHIV | | | | | | **1** |
| **Total** | | | | | 0 | |
| **Africa** | | | | | | |
| Children | 4 | 3 | | 2 | **9** | **9** |
| Rural children | | | | | | |
| Urban children | | | | | | |
| Adolescent boys | 2 | 2 | | 2 | **6** | **6** |
| Adolescent girls | 4 | 3 | 1 | 3 | **11** | **11** |
| Women | 2 | 2 | 1 | 2 | **7** | **7** |
| Rural women | | | | | | |
| Urban women | | | | | | |
| Men | 1 | 1 | | 1 | **3** | **3** |
| Rural men | | | | | | |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | | | | | | |
| PLHIV | 1 | | | | **1** | **1** |
| **Total** | **14** | **11** | **2** | **10** | **37** | |
| **Grand total** | **14** | **11** | **2** | **10** | **37** | |

**Table M 8: Count of observations of benefits for the GSS in the hygiene sector**

| Benefit | Availability | Physical accessibility | Affordability | Quality & safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | | | | | | |
| Rural | | | | | | **6** |
| Urban | 2 | | | 2 | 4 | **9** |
| Rural poor & low income | | | | | | |
| Urban poor & low income | | | | | | |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastorals | | | | | | |
| Caste | | | | | | |
| Ethnicity | | | | | | |
| **Total** | **2** | | | **2** | **4** | |
| **Africa** | | | | | | |
| Poor & low income | | | | | | |
| Rural | 3 | 1 | | 2 | 6 | **6** |
| Urban | 3 | 1 | | 1 | 5 | **9** |
| Rural poor & low income | | | | | | |
| Urban poor & low income | | | | | | |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastorals | | | | | | |
| Caste | | | | | | |
| Ethnicity | | | | | | |
| **Total** | **6** | **2** | | **3** | **11** | |
| **Grand total** | **8** | **2** | | **5** | **15** | |
| | | | | | | |
| **Universal (Asia)** | 3 | | 1 | | 4 | **15** |
| **Universal (Africa)** | 5 | 2 | 2 | 2 | 11 | **15** |

# Appendix N: Policy Robustness

**Figure N 1: LCS robustness score in polices**

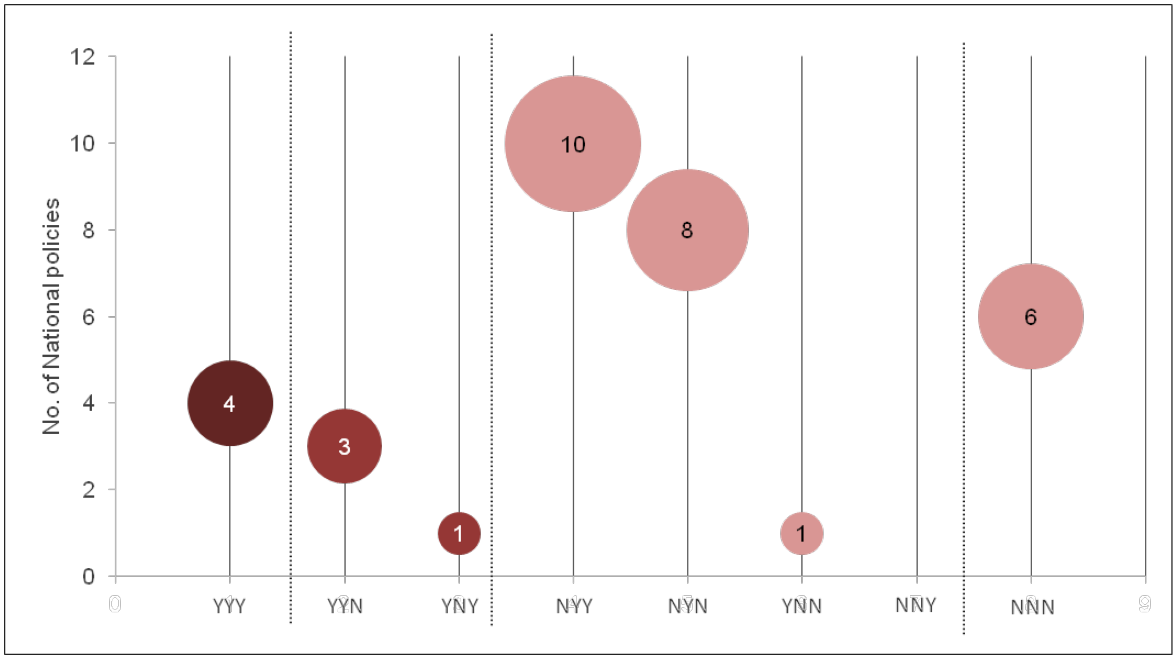



**Figure N 2: LCS robustness score in Asian and African polices**

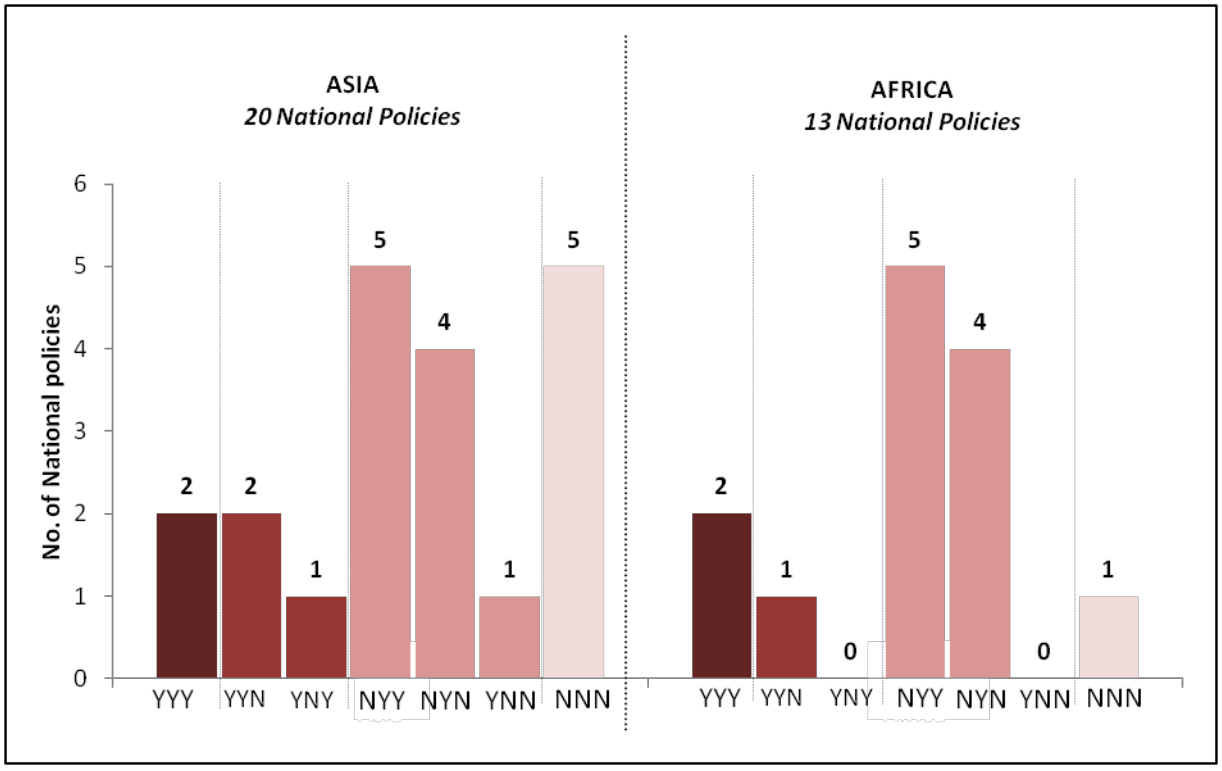


**Figure N 3: GSS robustness score in polices**

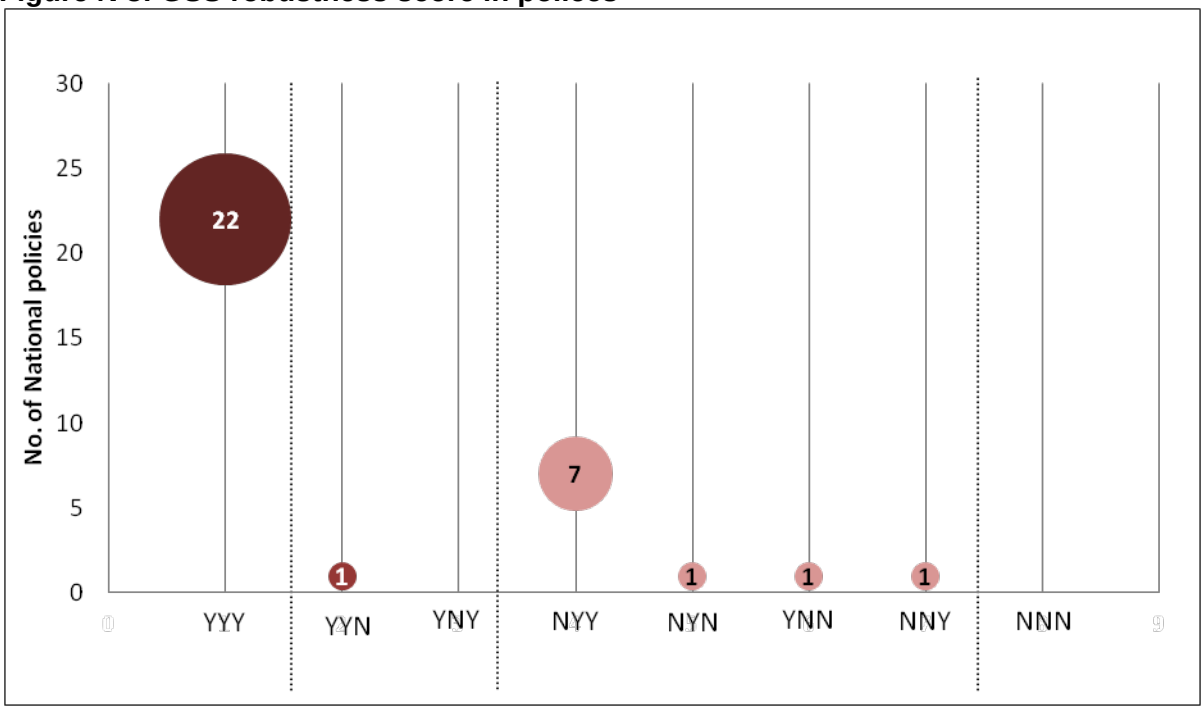



**Figure N 4: GSS robustness score in Asian and African polices**

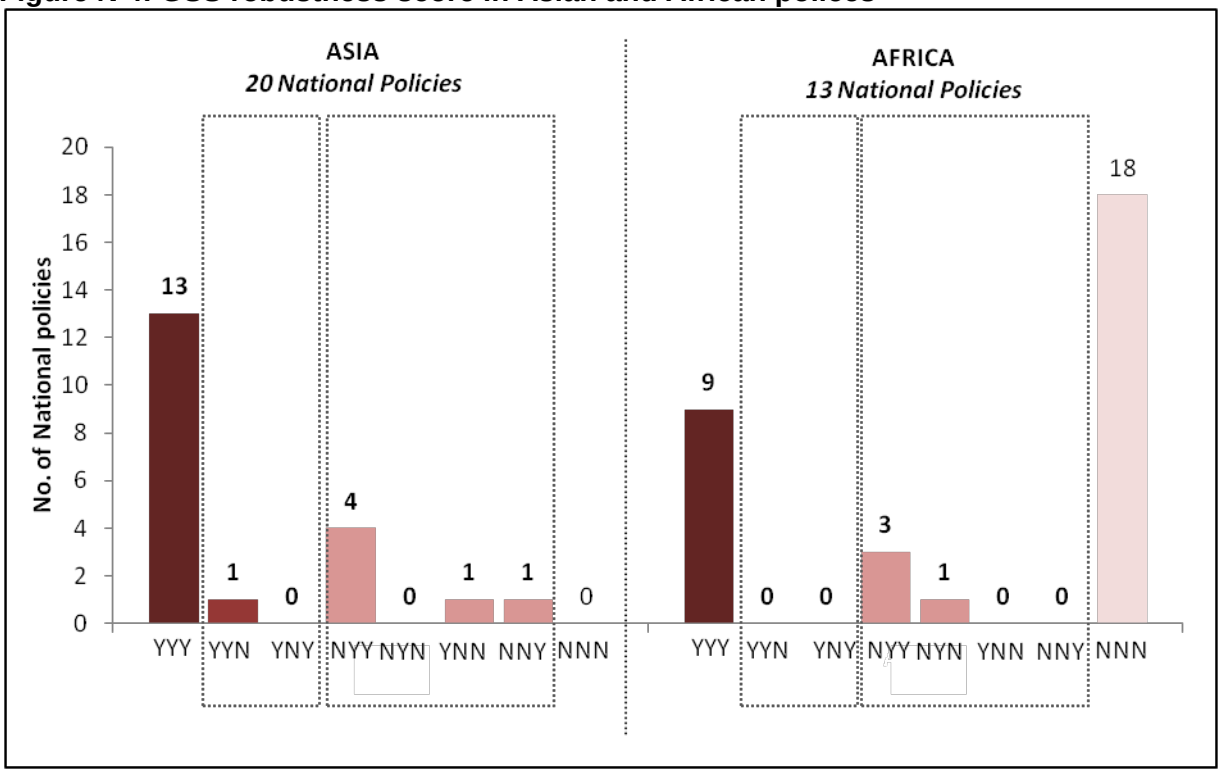


**Table N 1: LCS robustness in policies across WASH sub-sectors in Asia**

| **WATER SECTOR** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 0 | 1 | 0 | 0 | 1 | 2 | 0 | 16 |
| Women | 1 | 1 | 0 | 0 | 7 | 0 | 0 | 11 |
| Adolescent girls | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Adolescent boys | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Men | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 17 |
| Senior citizens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Disabled | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 18 |
| PLHIV | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| **SANITATION SECTOR** | | | | | | | | |
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 2 | 1 | 0 | 2 | 2 | 0 | 2 | 11 |
| Women | 0 | 1 | 0 | 2 | 5 | 0 | 2 | 10 |
| Adolescent girls | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 17 |
| Adolescent boys | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 19 |
| Men | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 14 |
| Senior citizens | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 17 |
| Disabled | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 15 |
| PLHIV | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 16 |
| **HYGIENE SECTOR** | | | | | | | | |
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 15 |
| Women | 0 | 1 | 0 | 0 | 4 | 0 | 0 | 15 |
| Adolescent girls | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 18 |
| Adolescent boys | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Men | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 18 |
| Senior citizens | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 19 |
| Disabled | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 18 |
| PLHIV | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 |

**Table N 2: LCS robustness in policies across WASH sub-sectors in Africa**

| **WATER SECTOR** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 0 | 0 | 0 | 1 | 2 | 2 | 1 | 7 |
| Women | 0 | 1 | 0 | 1 | 6 | 1 | 0 | 4 |
| Adolescent girls | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 10 |
| Adolescent boys | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 11 |
| Men | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 9 |
| Senior citizens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Disabled | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 12 |
| PLHIV | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 |
| **SANITATION SECTOR** | | | | | | | | |
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 1 | 1 | 0 | 2 | 1 | 1 | 0 | 7 |
| Women | 0 | 1 | 0 | 2 | 7 | 0 | 0 | 3 |
| Adolescent girls | 0 | 0 | 0 | 3 | 1 | 0 | 1 | 8 |
| Adolescent boys | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 9 |
| Men | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 9 |
| Senior citizens | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 |
| Disabled | 0 | 1 | 0 | 1 | 3 | 1 | 0 | 7 |
| PLHIV | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 11 |
| **HYGIENE SECTOR** | | | | | | | | |
| **LCS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Children | 0 | 1 | 0 | 3 | 2 | 0 | 0 | 7 |
| Women | 0 | 0 | 0 | 1 | 3 | 1 | 0 | 8 |
| Adolescent girls | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 9 |
| Adolescent boys | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 10 |
| Men | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 11 |
| Senior citizens | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Disabled | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 11 |
| PLHIV | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 11 |

**Table N 3: GSS robustness in policies across WASH sub-sectors in Asia**

| **WATER SECTOR** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 2 | 0 | 0 | 4 | 0 | 1 | 2 | 11 |
| Urban | 2 | 0 | 0 | 1 | 2 | 1 | 2 | 12 |
| Poor & Low income | 3 | 0 | 0 | 4 | 2 | 2 | 0 | 9 |
| Caste | 0 | 0 | 0 | 0 | 5 | 1 | 0 | 14 |
| Ethnicity | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 14 |
| Migrants/Pastorals | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 |
| Vulnerable by occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| **SANITATION SECTOR** | | | | | | | | |
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 1 | 0 | 0 | 3 | 3 | 2 | 0 | 11 |
| Urban | 2 | 0 | 0 | 3 | 4 | 1 | 1 | 9 |
| Poor & Low income | 2 | 1 | 0 | 5 | 3 | 1 | 0 | 8 |
| Caste | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 16 |
| Ethnicity | 0 | 0 | 0 | 1 | 5 | 0 | 0 | 14 |
| Migrants/Pastorals | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 19 |
| Vulnerable by occupation | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 19 |
| **HYGIENE SECTOR** | | | | | | | | |
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Urban | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 15 |
| Poor & Low income | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 18 |
| Caste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Ethnicity | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 19 |
| Migrants/Pastorals | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |
| Vulnerable by occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 20 |

**Table N 4: GSS robustness in policies across WASH sub-sectors in Africa**

| **WATER SECTOR** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 2 | 0 | 0 | 3 | 1 | 1 | 2 | 4 |
| Urban | 1 | 1 | 0 | 3 | 2 | 1 | 1 | 4 |
| Poor & Low income | 0 | 1 | 1 | 1 | 5 | 0 | 0 | 5 |
| Caste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Ethnicity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Migrants/Pastorals | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 11 |
| Vulnerable by occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| **SANITATION SECTOR** | | | | | | | | |
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 1 | 1 | 0 | 2 | 7 | 1 | 0 | 1 |
| Urban | 3 | 3 | 0 | 2 | 5 | 0 | 0 | 0 |
| Poor & Low income | 0 | 0 | 0 | 4 | 3 | 0 | 2 | 4 |
| Caste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Ethnicity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Migrants/Pastorals | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 10 |
| Vulnerable by occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| **HYGIENE SECTOR** | | | | | | | | |
| **GSS** | **YYY** | **YYN** | **YNY** | **NYY** | **NYN** | **NNY** | **YNN** | **NNN** |
| Rural | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 7 |
| Urban | 0 | 0 | 0 | 1 | 2 | 1 | 1 | 8 |
| Poor & Low income | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 |
| Caste | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Ethnicity | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |
| Migrants/Pastorals | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 12 |
| Vulnerable by occupation | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 |

## Appendix O: Numerical Summary: State Policies

Of the 59 WASH policy documents included for the study, 33 documents were National polices and 26 were State policies of India and Pakistan. Given the federal structure in both India and Pakistan, states/provinces/territories have the autonomy and power to formulate public policies for the development and welfare of the states. However, in both these countries, the National Government often formulates policies on state/provincial/territorial subjects such as water and sanitation. The National WASH policies therefore act more like a framework within which the state/provincial/territorial governments can further delineate according to their regional context.

**INDIA**

In India, both water and sanitation are state subjects (according to the State list or List II in Schedule Seven to the Constitution of India) and it is the responsibility of the states to formulate and implement policies on various sectors within the ambit of its legislative powers. A total number of 22 state policies across 14 states in India were included for the study.

**Table O 1: State policies, India**

| S. No | States | No. of policies |
|---|---|---|
| 1 | Odisha | 4 |
| 2 | Tamil Nadu | 3 |
| 3 | Kerala | 2 |
| 4 | Uttar Pradesh | 2 |
| 5 | Karnataka | 2 |
| 6 | Rajasthan | 1 |
| 7 | West Bengal | 1 |
| 8 | Jharkhand | 1 |
| 9 | Madhya Pradesh | 1 |
| 10 | Maharashtra | 1 |
| 11 | Himachal Pradesh | 1 |
| 12 | Andhra Pradesh | 1 |
| 13 | Punjab | 1 |
| 14 | Sikkim | 1 |
| **Total state polices** | | **22** |

Water sector emerged as the predominant WASH sector among the State policies with 14 standalone water policies. Only three states, Odisha, Kerala and Uttar Pradesh had an individual sanitation policy. Multi-sector WASH policies including water and sanitation were in place among three states namely, Tamil Nadu, Karnataka and Punjab. Hygiene had received very poor attention among the state policy makers with the exception of Tamil Nadu where the sector had been subsumed in its overall WASH policy. Dominance of the water sector was evident even at the National level too. Of the five National WASH policies, three covered only the water sector. This trend reflected the country's agenda towards WASH right from the first five year plan period (1951–1956) which included both water and sanitation as priority sectors. However, water which was

already recognised as a public good gained momentum with heavy infrastructure investments and projects. One of the factors that contributed to this development was the declaration of International Decade of Drinking Water Supply and Sanitation in the 1980's (Satish, n.d.).

Although the country's first comprehensive National Urban Sanitation Policy was drafted only in 2008, states like Tamil Nadu and Karnataka had subsumed the sanitation sector within its WASH policy even before the year 2008.

**LCS: India**

The presence of LCS in state policies was rather moderate with only a partial coverage of segments on the life-cycle stage. While children, adolescent girls and boys, men and women had received fair attention; senior citizens, disabled, transgender and people living with HIV/AIDS have received no attention at all. Comparatively, National policies had presented a very sparse coverage of LCS. While adolescent girls and boys, men, senior citizens and transgender had not found any representation, disabled and people living with HIV/AIDS had received some representation.

State policies inclined more towards provision of WASH services and facilities for women followed by children. However, women had not received equal attention across all 14 states. Only six states including Himachal Pradesh, Kerala, Odisha, Punjab, Rajasthan and Tamil Nadu had proposed WASH strategies for women. Among them, Tamil Nadu was the only state that had suggested WASH benefits for women. The most proposed strategy for women was beneficiary participation (n=8), followed by information, education and communication (n=5) and the least proposed strategy was demand management (n=1). Tamil Nadu had focused its strategies more towards providing WASH facilities for women (n=3), for example, *"Implementation of a special scheme to provide toilets with bathing facilities for women from poorer sections in all urban local bodies"* (Tamil Nadu's Policy Note by Municipal Administration and Water Supply Department, 2001-02).

Attention on children was again limited to three states, Himachal Pradesh, Punjab and Tamil Nadu. There again, Tamil Nadu was the only state that had recommended strategies for children and all pertain to provision of WASH facilities (n=3). Availability (n=12) was the most common WASH benefit proposed for children followed by quality and safety (n=3) and physical availability (n=1).

Followed by women and children, adolescent girls and boys had received some attention in State policies whereas they had not received any attention in National policies. With regard to adolescents, only three states, Punjab, Odisha and Tamil Nadu had encapsulated their WASH needs and proposed strategies. For example, the state of Punjab had adopted a demand-centred approach at school and college level by including WASH in teaching curricula (Punjab State Rural Water Supply and Sanitation Policy, 2014). In Tamil Nadu, efforts to provide public convenience for the adolescent boys and girls were a priority in the Policy Note by Municipal Administration and Water Supply Department (2004-05).

Among LCS, men had received the least attention. Punjab, Kerala and Tamil Nadu, the only three states that had incorporated men in WASH strategies have given priority to men in terms providing IEC and in incorporating their needs at the planning level. With regard to WASH benefits, Tamil Nadu alone had suggested the construction 20 integrated sanitary complexes for men (Policy Note by Municipal Administration and Water Supply Department (2003-04).

**GSS: India**

At the state level, urban segment emerged as the dominant group followed by the rural segment and poor and low income. Of the 13 states, only seven had covered the rural and urban segments in their WASH policies and all had included the poor and low income group. Provision of WASH facilities was the most proposed strategy for the urban (n=33) and the poor and low income segment (n=11). Provision of subsidies/tariffs/loans/micro credit/grant (n=11) was another commonly suggested strategy for the poor and low income. Compared to other states, Tamil Nadu had proposed the most number of strategies related to provision of WASH facilities (n=41). For the rural segment strategies were mostly on project management (n=11) followed by IEC (n=10) and provision of WASH facilities (n=10). WASH benefits for the urban (n=39), rural (n=37) and poor and low income (n=4) were more focused towards availability of WASH services and facilities.

Population segments marginalised by caste and ethnicity had also received fair coverage however only six states, Himachal Pradesh, Madhya Pradesh, Punjab, Sikkim, Tamil Nadu and West Bengal had addressed the WASH needs of this vulnerable group. Among them, Punjab, Himachal Pradesh and West Bengal fell under the top five states that had a high of population of Scheduled Castes and Madhya Pradesh had a high Scheduled Tribe population (Census of India, 2011). The most common strategies proposed were beneficiary participation (n=2), project management (n=2) and provision of WASH facilities (n=2) and WASH benefits were more towards availability (n=7) and affordability (n=1) of WASH services and facilities.

The vulnerable by occupation had received more attention than migrants and pastoralists. The states of Karnataka, Kerala, Odisha, Tamil Nadu and Uttar Pradesh included this segment in their WASH policies though at a very minimal level. The policies had proposed an array of strategies for the vulnerable by occupation including demand management (n=2), decentralisation of service delivery (n=1), beneficiary participation (n=1) and project management (n=1). However, Tamil Nadu stood out to be the only state to have had suggested substantive WASH benefits to vulnerable population especially the sanitary workers. The proposed benefits highlighted the state's prerogative to ensure availability and quality (n=1) and quality and safety (n=1) of WASH services that were to be provided to this vulnerable group, for example, *"Provision of soap and soap allowance to field workers and sanitary workers"* (Municipal Administration and water supply department policy note, 2008-2009).

Migrants and Pastoralists had received attention in the states of Odisha and Kerala. The Kerala State Sanitation Strategy, 2008 emphasised the need to provide WASH facilities (n=1) *"to cater to the needs of floating population of tourists and migrants"*. On the other hand, the Odisha Urban Sanitation Strategy, 2011 spelt out the need for demand

management (n=1) through user pay approach for public toilets in bus and railway stations, fairs, shopping complexes for floating population and migrants. Availability (n=2) and physical accessibility (n=2) of WASH services and facilities were the only two WASH benefits proposed for migrants/pastorals.

**PAKISTAN**

The National Government of Pakistan officially recognises the human right to water and sanitation as it is a signatory to key international treaties, and had established a number of national and domestic level policies (Khairpur Rural Development Organisation 2013). Under the Constitution of Pakistan, both drinking water supply and sanitation are provincial subjects and the provinces/territories have the power to formulate and implement WASH policies and strategies.

**Table O 2: Provincial/Regional policies in Pakistan**

| S. No | States | No. of policies |
|---|---|---|
| 1 | Baluchistan | 1 |
| 2 | Sindh | 1 |
| 3 | Punjab | 1 |
| 4 | Azad Jammu & Kashmir (AJK) | 1 |
| **Total state polices** | | **4** |

A total number of four provincial/territorial WASH policies were included for the study. The provinces of Baluchistan and Sindh had standalone water and sanitation policy respectively and the province of Punjab and the territory of Azad Jammu & Kashmir each had a combined water & sanitation policy.

**LCS: Pakistan**

Coverage of LCS in Pakistan's provincial/territorial WASH policies was incomplete. Of the nine LCS only three - children, women and men had received attention. Adolescent girls and boys were also been included but at an aggregate level that is, beneficiaries at the secondary and tertiary educational institutions.

Among the LCS addressed, women were given more priority followed by children, men and adolescent girls and boys. Women's access to WASH services especially in rural areas was greatly limited by environmental barriers (n=3) including gender restrictions which allowed the, *"strict separation of men and women and low socio-economic status of most rural women restrict mobility and decision making"* and geographical challenges that required rural women to travel long distances in search of water (Integrated Water Resources Management Policy, Balochistan, Pakistan, 2005).
Adequacy (n=1) and attitudinal barriers (n=1) in terms of shortage of WASH facilities complemented by the lack of knowledge to use it had impounded the poor WASH situation among women. Beneficiary participation (n=10) was the most proposed strategy for women followed by project management (n=4) and information, education and communication (n=2). With beneficiary participation, the policies had recognised women as co-partners in decision making, consulting, operation and maintenance of WASH facilities. For example, *"to recognize the key role that women play in the drinking water*

*sector and ensure their participation in decision-making for the sector at all levels"* (The domestic water and sanitation policy for Sindh 2006). Availability (n=2) and physical accessibility (n=2) were the key WASH benefits proposed for women followed by quality and safety (n=1).

AJK and Sindh were the only two territories/provinces to have included children as LCS in their WASH policies. Children mostly faced physical barriers (n=2) where they use poorly maintained of toilets in schools and also ill-designed toilets, *"wherever latrines exists in most cases, these are not used properly by the students due to; blockage (lack of maintenance), non-availability of water, or exclusive use by the teachers who generally keep the toilets locked*" (AJK Sanitation Policy and Strategy 2008). The only strategy proposed for children in both these territories/provinces was IEC (n=2) through a school-centred approach. Except for physical availability, AJK had proposed accessibility (n=2), quality and safety (n=2) and affordability (n=2) as WASH benefits for children, On the other hand, Sindh had focused mostly on availability (n=1) and physical accessibility (n=1) of WASH services/facilities.

Men were covered only in two provinces, Sindh and Punjab. While Sindh had spelt out the barriers men face while accessing WASH services/facilities and the WASH benefits, WASH strategies alone had been suggested in the Punjab Urban Water and Sanitation Policy, 2007. Their usage of WASH facilities was limited by their lack of knowledge to use them (attitudinal barrier; n=1) and also the insufficient WASH services/facilities available (adequacy barrier; n=1). The strategy focused on project management (n=2) and specifically to use gender analysis to assess levels of participation of both men and women in planning process. The proposed WASH benefit ensured availability (n=1) and physical accessibility (n=1) of WASH services/facilitates, *"Public toilets keeping in mind different needs of men, women and children in open spaces such as markets, parks and playgrounds".*

Adolescent girls and boys were encapsulated only in the Punjab Urban Water and Sanitation Policy 2007 and were included while proposing WASH strategy IEC (n=1 each) through "*environmental health and hygiene education and curricula of primary, secondary and tertiary educational institutions*".

**GSS: Pakistan**

Urban segments emerged as the dominant GSS in the provincial/territory WASH policies followed by universal and the poor and low income. The focus on urban segments could be attributed to the rapid urbanisation in Pakistan and between the years 1950–2011, it's urban population expanded over seven-fold, while the total population increased by over four-fold (Climate Change Division, 2013). The United Nations Population Division estimated that, by 2025, nearly half the country's population will live in urban areas (Kugelman 2014). The impact of urbanization on water and sanitation was alarming and the barriers faced by the urban segments in accessing WASH services as described in the policy documents were mostly related to physical barriers (n=2) like faulty sewerage systems (Integrated Water Resources Management Policy, Balochistan, Pakistan, 2005). Further, inadequate WASH facilities (n=1) also hindered urbanities to realize their right to water and sanitation for example, "Absence of proper public toilets in high traffic areas due to poor maintenance" (AJK Sanitation Policy and Strategy 2008). An array of

strategies were proposed for the urban segment and mostly pertained to institutional level operation and management. Majority of them related to project management (n=8) especially on allocation of property rights, water supply utilities, implementation of appropriate corporate institutional arrangements, etc. The strategies further provided scope for legal and regulatory framework (n=4) in terms of promoting appropriate legislation in urban water and sanitation sector and regulatory institutional framework. Demand management (n=4) was also proposed as a strategy to meet the needs of the urban segment. The WASH benefits mostly focused on ensuring availability (n=3), quality and safety (n=3) of WASH services/facilities and affordability (n=2).

Very less attention was given to the rural population in the provincial/territory WASH policies in Pakistan. Except for the AJK Sanitation Policy and Strategy 2008 which mentioned the problem on inadequate WASH facilities other policies failed to detail out the barriers faced by the rural segment in accessing WASH services. Azad Jammu and Kashmir took precedence in proposing WASH strategies for this segment and had focused on demand management (n=2) like providing sanitation incentives to achieve excreta free, litter free, foul water free status and IEC (n=2) including a behaviour change and demand driven bottom up approach. While proposing WASH benefits, the province of Sindh took the lead and had included WASH benefits that mostly pertained to affordability (n=2) and availability (n=1).

Poor and low income including those living in urban areas was targeted in WASH policies under strategies and benefits. The strategies proposed were mostly designed to address their economic incapacity to avail WASH services and the provision of subsidies/tariffs/loans/micro credit/grant (n=4) was considered as appropriate. The policies had suggested a sliding scale for the poor (Integrated Water Resources Management Policy, Balochistan, Pakistan, 2005), microcredit (AJK Sanitation Policy and Strategy 2008) and tariff systems (The domestic water and sanitation policy for Sindh 2006). All the proposed WASH benefits were focussed on providing affordable WASH services/facilities (n=6) to the poor and low income.

## Appendix P: Organisations contacted through email

**Table P 1: List of organisations contacted through email**

| Sl. No. | Organisation | Country/ regional/ head offices contacted | Number of offices that responded | Documents received | Documents included/ excluded | Sector |
|---|---|---|---|---|---|---|
| **Multilateral Agencies** | | | | | | |
| 1 | World Bank | Bangladesh, India, Nepal, Kenya, Ethiopia, Tanzania, Malawi, Madagascar, Uganda, Pakistan, Nigeria | 4 | 6 | 1 | Water and sanitation |
| 2 | UNICEF | Bangladesh, India, Nepal, Kenya, Ethiopia, Tanzania, Malawi, Madagascar, Uganda, Pakistan, Nigeria | 7 | 5 | 1 | WASH |
| 3 | WSP | Head, Regional Offices | 0 | 0 | 0 | |
| 4 | UNDP | Head Office, Bangladesh, Nepal, Pakistan, Ethiopia, Kenya, Malawi, Madagascar, Tanzania, Uganda | 1 | 1 | 0 | WASH |
| 5 | WHO | Bangladesh, India, Nepal, Kenya, Ethiopia, Tanzania, Malawi, Madagascar, Uganda, Pakistan, Nigeria | 2 | 0 | 0 | |
| **Bi-lateral Agencies** | | | | | | |
| 6 | USAID | Bangladesh, India, Nepal, Kenya, Ethiopia, Tanzania, Malawi, Madagascar, Uganda, Pakistan, Nigeria | 1 | 0 | 0 | |
| 7 | DFID | Head office | 1 | 0 | 0 | |
| 8 | DANIDA | Head office, Uganda office | 1 | 4 | 3 | Water and sanitation |
| 9 | AUSAID | Head office | 0 | 0 | 0 | |
| 10 | SIDA | Head office | 0 | 0 | 0 | |
| 11 | CIDA | Head office | 1 | 0 | 0 | |
| **International NGOs** | | | | | | |
| 12 | Water Aid | Head office, India office | 1 | 0 | 0 | |
| 13 | SHARE | Head office | 1 | 0 | 0 | |
| 14 | CLTS | Head office | 1 | 0 | 0 | |
| 15 | WASH Alliance | India | 0 | 0 | 0 | |
| 16 | Bill and Melinda Gates Foundation | Head office | 1 | 0 | 0 | |

| Sl. No. | Organisation | Country/ regional/ head offices contacted | Number of offices that responded | Documents received | Documents included/ excluded | Sector |
|---|---|---|---|---|---|---|
| 17 | Care International | Head Office, Bangladesh, Nepal, Pakistan, India, Ethiopia, Kenya, Madagascar, Tanzania, Uganda | 1 | 0 | 0 | |
| 18 | IRC | India, Ethiopia, Uganda | 0 | 0 | 0 | |
| 19 | Simavi Netherlands | Head office | 0 | 0 | 0 | |
| 20 | Water.org | Head office | 0 | 0 | 0 | |
| **Government** | | | | | | |
| 21 | Government of India and State governments | National Ministry of Water Resources, National Ministry of Drinking Water and Sanitation, National Ministry of Urban Development, National Ministry of Rural Development, State Water Resources Departments, State Rural Development Departments, State Urban Development Departments, State Public Health and Engineering Departments | 2 | 0 | 0 | |
| 22 | Government of Kenya | Ministry of Health and Ministry of Water and Irrigation | 1 | 2 | 0 | Sanitation and hygiene |
| 23 | Government of Tanzania | Ministry of Water and Irrigation | 0 | 0 | 0 | |
| 24 | Government of Ethiopia | Ministry of Water and Energy and Ministry of Health | 0 | 0 | 0 | |
| 25 | Government of Uganda | Ministry of Water and Environment | 0 | 0 | 0 | |
| 26 | National Government of Pakistan | Ministry of Climate Change | 0 | 0 | 0 | |
| 27 | Government of Nigeria | Ministry of Water Resources | 0 | 0 | 0 | |
| 28 | Government of Malawi | Government of Malawi | 0 | 0 | 0 | |
| 29 | Government of Bangladesh | Ministry of Local Government, Rural Development and Cooperatives, Ministry of Water Resources | 0 | 0 | 0 | |
| 30 | Government of Nepal | Ministry of Physical Planning and Works | 0 | 0 | 0 | |
| **Total** | | | **26** | **18** | **5** | |

## Appendix Q: Population segments identified in P&P by sector and region

**Table Q 1: Identification of LCS in the WASH subsectors by region**

| No of LCS mentioned in P&P | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | Total | Asia | Africa | Total | Asia | Africa | Total |
| 0 | 12 | 13 | **25** | 6 | 14 | **20** | 4 | 4 | **8** |
| 1 | 13 | 18 | **31** | 13 | 19 | **32** | 5 | 7 | **12** |
| 2 | 12 | 12 | **24** | 13 | 12 | **25** | 3 | 3 | **6** |
| 3 | 3 | 8 | **11** | 5 | 9 | **14** | 4 | 7 | **11** |
| 4 | 4 | 2 | **6** | 5 | 3 | **8** | 2 | - | **2** |
| 5 | 4 | 10 | **14** | 5 | 10 | **15** | 2 | 10 | **12** |
| 6 | 2 | 2 | **4** | - | 2 | **2** | 1 | 2 | **3** |
| 7 | - | 1 | **1** | 1 | 1 | **2** | - | 1 | **1** |
| 8 | - | - | **-** | - | - | **-** | - | - | **-** |

**Table Q 2:Count of observations of LCS in the WASH subsectors by region**

| Population Segments | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | Total | Asia | Africa | Total | Asia | Africa | Total |
| Children | 24 | 42 | **66** | 28 | 44 | **72** | 19 | 27 | **46** |
| Adolescent girls | 12 | 19 | **31** | 17 | 20 | **37** | 12 | 17 | **29** |
| Adolescent boys | 9 | 17 | **26** | 13 | 18 | **31** | 9 | 16 | **25** |
| Women | 35 | 40 | **75** | 39 | 41 | **80** | 18 | 21 | **39** |
| Men | 8 | 9 | **17** | 10 | 10 | **20** | 5 | 9 | **14** |
| Transgender | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 | **0** |
| Senior citizens | 0 | 2 | **2** | 2 | 3 | **5** | 1 | 2 | **3** |
| Disabled | 6 | 11 | **17** | 9 | 12 | **21** | 4 | 10 | **14** |
| PLHIV | 0 | 3 | **3** | 0 | 3 | **3** | 0 | 1 | **1** |

**Table Q 3: Identification of GSS the WASH subsectors by region**

| No of segments mentioned in P&P | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | Asia | Africa | Total | Asia | Africa | Total | Asia | Africa | Total |
| 0 | 7 | 2 | **9** | 7 | 2 | **9** | 7 | 3 | **10** |
| 1 | 12 | 19 | **31** | 9 | 20 | **29** | 3 | 10 | **13** |
| 2 | 13 | 35 | **48** | 15 | 38 | **53** | 4 | 15 | **19** |
| 3 | 9 | 8 | **17** | 8 | 8 | **16** | 5 | 4 | **9** |
| 4 | 8 | 2 | **10** | 8 | 2 | **10** | 1 | 2 | **3** |
| 5 | 1 | 0 | **1** | 2 | 0 | **2** | 1 | 0 | **1** |
| 6 | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 | **0** |
| 7 | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 | **0** |
| 8 | 0 | 0 | **0** | 0 | 0 | **0** | 0 | 0 | **0** |

**Table Q 4: Count of observations of GSS in the WASH subsectors by region**

| Population Segments | Water | | | Sanitation | | | Hygiene | | |
|---|---|---|---|---|---|---|---|---|---|
| | **Asia** | **Africa** | **Total** | **Asia** | **Africa** | **Total** | **Asia** | **Africa** | **Total** |
| Rural | 30 | 47 | **77** | 31 | 49 | **80** | 13 | 26 | **39** |
| Urban | 19 | 44 | **63** | 17 | 46 | **63** | 5 | 19 | **24** |
| Poor and low income | 27 | 22 | **49** | 32 | 25 | **57** | 10 | 10 | **20** |
| Ethnicity | 13 | 1 | **14** | 13 | 1 | **14** | 3 | 1 | **4** |
| Caste | 13 | 0 | **13** | 13 | 0 | **13** | 4 | 0 | **4** |
| Migrants & Pastorals | 0 | 7 | **7** | | 7 | **7** | 0 | 4 | **4** |
| Vulnerable by occupation | 1 | 0 | **1** | 2 | 0 | **2** | 1 | 0 | **1** |
| | | | | | | | | | |
| **Universal** | 9 | 12 | **21** | 8 | 12 | **20** | 9 | 6 | **15** |

## Appendix R: Count of barriers from P&P by sector, segment and region

**Table R 1: Count of observations for WASH barriers for LCS by region**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | |
| Children | 7 | | | 2 | | | | **9** |
| Rural Children | 2 | | | | | 1 | | **3** |
| Urban Children | | | | | | | | |
| Adolescent Girls | 7 | 1 | 1 | 2 | | 3 | | **14** |
| Adolescent Boys | | | | | | | | |
| Women | 7 | | 2 | 5 | | | | **14** |
| Rural Women | 1 | 2 | 1 | | | | | **4** |
| Urban Women | | | | | | | | |
| Men | | 1 | | | | | | **1** |
| Rural Men | | | | | | | | |
| Urban Men | | | | | | | | |
| Transgender | | | | | | | | |
| Senior Citizens | | | | | | | | |
| Disabled | | | | | | | | |
| PLHIV | | | | | | | | |
| **Total** | **24** | **4** | **4** | **9** | | **4** | | **45** |
| **Africa** | | | | | | | | |
| Children | 1 | | | 2 | | 2 | | **5** |
| Rural Children | 4 | | | 6 | | | | **10** |
| Urban Children | 2 | | | | | | | **2** |
| Adolescent Girls | 4 | | | 6 | | 1 | | **11** |
| Adolescent Boys | | | | | | 1 | | **1** |
| Women (Adults) | 4 | | | 3 | 4 | | | **11** |
| Rural Women | | | 1 | 7 | | | | **8** |
| Urban Women | | | | 3 | 4 | | | **7** |
| Men (Adults) | | | | | | | | |
| Rural Men | | | | | | | | |
| Urban Men | | | | | | | | |
| Transgender | | | | | | | | |
| Senior Citizens | | | | | | | | |
| Disabled | | | | 1 | | 1 | | **2** |
| PLHIV | | 4 | | | | | | **4** |
| **Total** | **15** | **4** | **1** | **28** | **8** | **5** | | **61** |
| **Grand Total** | **39** | **8** | **5** | **37** | **8** | **9** | | **106** |

**Table R 2: Count of observations for WASH barriers for GSS by region**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total |
|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | |
| Poor & Low Income | 1 | | | | | | | **1** |
| Rural | 6 | 4 | 3 | 4 | | 2 | 1 | **20** |
| Urban | 5 | 1 | 3 | 2 | | | | **11** |
| Rural poor & low income | | | | | | | | |
| Urban Poor & Low Income | 8 | 1 | 1 | | | 1 | 4 | **15** |
| Vulnerable by occupation | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | |
| Caste | | | | | | | | |
| Ethnicity | | | | | | | | |
| **Total** | **20** | **6** | **7** | **6** | | **3** | **5** | **47** |
| **Africa** | | | | | | | | |
| Poor & Low Income | 3 | | 2 | | 3 | | | **8** |
| Rural | 7 | 3 | | 4 | | 5 | 3 | **22** |
| Urban | 5 | | | | 2 | 2 | 7 | **16** |
| Rural poor & low income | | | | | | | | |
| Urban Poor & Low Income | 1 | | 2 | | 4 | | 2 | **9** |
| Vulnerable by occupation | | | | | | | | |
| Migrants & Pastoralists | 3 | | | | | | | **3** |
| Caste | | | | | | | | |
| Ethnicity | | | | | | | | |
| **Total** | **19** | **3** | **4** | **4** | **9** | **7** | **12** | **58** |
| **Grand Total** | **39** | **9** | **11** | **10** | **9** | **10** | **17** | **105** |
| | | | | | | | | |
| **Universal (Asia)** | 1 | 2 | | | | 4 | 1 | **8** |
| **Universal (Africa)** | | 2 | 1 | 2 | | 1 | 2 | **8** |

**Table R 3: Count of observations of barriers for LCS in the water sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 2 | | | 2 | | | | **4** | **10** |
| Rural Children | 1 | | | | | | | **1** | |
| Urban Children | | | | | | | | | **7** |
| Adolescent Girls | 1 | | | 2 | | 1 | | **4** | **9** |
| Adolescent Boys | | | | | | | | | **1** |
| Women | 3 | | 1 | 4 | | | | **8** | **13** |
| Rural Women | 1 | | | | | | | **1** | **9** |
| Urban Women | | | | | | | | | **5** |
| Men | | | | | | | | | |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior Citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | | | | | | **2** |
| **Total** | **8** | | **1** | **8** | | **1** | | **18** | |
| **Africa** | | | | | | | | | |
| Children | | | | 2 | | 1 | | 3 | **10** |
| Rural Children | 2 | | | 6 | | | | 8 | |
| Urban Children | 1 | | | | | | | 1 | **7** |
| Adolescent Girls | 2 | | | 4 | | | | 6 | **9** |
| Adolescent Boys | | | | | | | | | **1** |
| Women | 1 | | | 2 | 2 | | | 5 | **13** |
| Rural Women | | | 1 | 7 | | | | 8 | **9** |
| Urban Women | | | | 3 | 2 | | | 5 | **5** |
| Men | | | | | | | | | |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Senior Citizens | | | | | | | | | |
| PLHIV | | | | | | | | | |
| Disabled | | | | 1 | | 1 | | 2 | **2** |
| **Total** | **6** | | **1** | **25** | **4** | **2** | | **38** | |
| **Grand total** | **14** | | **2** | **33** | **4** | **3** | | **56** | |

**Table R 4:Count of observations of barriers for GSS in the water sector**

| Barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & Low Income | 1 | | | | | | | **1** | **4** |
| Rural | 2 | 1 | 1 | 2 | 1 | | 1 | **8** | **19** |
| Urban | 3 | | 1 | 1 | | | | **5** | **13** |
| Rural Poor & Low Income | | | | | | | | | **1** |
| Urban Poor & Low Income | 3 | | | | | | 2 | **5** | **11** |
| Migrants & Pastoralists | | | | | | | | | **1** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| Vulnerable by occupation | | | | | | | | | |
| **Total** | **9** | **1** | **1** | **3** | **1** | | **3** | **19** | |
| **Africa** | | | | | | | | | |
| Poor & Low Income | 1 | | | | 2 | | | **3** | **4** |
| Rural | 4 | 2 | | 2 | | 2 | 1 | **11** | **19** |
| Urban | 2 | | | | 1 | 1 | 4 | **8** | **13** |
| Rural Poor & Low Income | | | 1 | | | | | **1** | **1** |
| Urban Poor & Low Income | | | 2 | | 2 | | 2 | **6** | **11** |
| Migrants & Pastoralists | 1 | | | | | | | **1** | **1** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| Vulnerable by occupation | | | | | | | | | |
| **Total** | **8** | **2** | **3** | **2** | **5** | **3** | **7** | **30** | |
| **Grand total** | **17** | **3** | **5** | **5** | **6** | **3** | **10** | **49** | |
| | | | | | | | | | |
| **Universal (Asia)** | **1** | **1** | | | **1** | | **1** | **4** | **7** |
| **Universal (Africa)** | | | | **2** | | | **1** | **3** | **7** |

**Table R 5:Count of observations of barriers for LCS in the sanitation sector**

| Type of barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 3 | | | | | | | **3** | **5** |
| Rural Children | 1 | | | | | 1 | | **2** | **4** |
| Urban Children | | | | | | | | | **1** |
| Adolescent Girls | 4 | | | | | 1 | | **5** | **8** |
| Adolescent Boys | | | | | | | | | **1** |
| Women | 3 | | 1 | 1 | | | | **5** | **10** |
| Rural Women | | | | | | | | | |
| Urban Women | | | | | | | | | **2** |
| Men | | 1 | | | | | | **1** | **1** |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Disabled | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | **2** |
| **Total** | **11** | **1** | **1** | **1** | | **2** | | **16** | |
| **Africa** | | | | | | | | | |
| Children | 1 | | | | | 1 | | **2** | **5** |
| Rural Children | 2 | | | | | | | **2** | **4** |
| Urban Children | 1 | | | | | | | **1** | **1** |
| Adolescent Girls | 1 | | | 1 | | 1 | | **3** | **8** |
| Adolescent Boys | | | | | | 1 | | **1** | **1** |
| Women | 2 | | | 1 | 2 | | | **5** | **10** |
| Rural Women | | | | | | | | | |
| Urban Women | | | | | 2 | | | **2** | **2** |
| Men | | | | | | | | | **1** |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Disabled | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | 2 | | | | | | **2** | **2** |
| **Total** | **7** | **2** | | **2** | **4** | **3** | | **18** | |
| **Grand total** | **18** | **3** | **1** | **3** | **4** | **5** | | **34** | |

**Table R 6:Count of observations of barriers for GSS in the sanitation sector**

| Type of barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & Low Income | | | | | | | | | **2** |
| Rural | 4 | 2 | 1 | 2 | | 1 | | **10** | **20** |
| Urban | 2 | | 1 | 1 | | | | **4** | **12** |
| Rural Poor & Low Income | | | | | | | | | **1** |
| Urban Poor & Low Income | 4 | | 1 | | | 1 | 2 | **8** | **11** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | **1** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **10** | **2** | **3** | **3** | | **2** | **2** | **22** | |
| **Africa** | | | | | | | | | |
| Poor & Low Income | 1 | | | | 1 | | | **2** | **2** |
| Rural | 3 | 1 | | 2 | | 2 | 2 | **10** | **20** |
| Urban | 3 | | | | 1 | 1 | 3 | **8** | **12** |
| Rural Poor & Low Income | | | 1 | | | | | **1** | **1** |
| Urban Poor & Low Income | 1 | | | | 2 | | | **3** | **11** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | 1 | | | | | | | **1** | **1** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **9** | **1** | **1** | **2** | **4** | **3** | **5** | **25** | |
| **Grand total** | **19** | **3** | **4** | **5** | **4** | **5** | **7** | **47** | |
| | | | | | | | | | |
| **Universal (Asia)** | | 1 | | | | 3 | | **4** | **8** |
| **Universal (Africa)** | | 1 | 1 | | | 1 | 1 | **4** | **8** |

**Table R 7:Count of observations of barriers for LCS in the hygiene sector**

| Type of barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Children | 2 | | | | | | | **2** | **2** |
| Rural Children | | | | | | | | | |
| Urban Children | | | | | | | | | |
| Adolescent girls | 2 | 1 | 1 | | | 1 | | **5** | **7** |
| Adolescent boys | | | | | | | | | |
| Women | 1 | | | | | | | **1** | **2** |
| Rural Women | | 2 | 1 | | | | | **3** | **3** |
| Urban Women | | | | | | | | | |
| Men | | | | | | | | | |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Disabled | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | | | | | | | | **2** |
| **Total** | **5** | **3** | **2** | | | **1** | | **11** | |
| **Africa** | | | | | | | | | |
| Children | | | | | | | | | **2** |
| Rural Children | | | | | | | | | |
| Urban Children | | | | | | | | | |
| Adolescent girls | 1 | | | 1 | | | | **2** | **7** |
| Adolescent boys | | | | | | | | | |
| Women | 1 | | | | | | | **1** | **2** |
| Rural Women | | | | | | | | | **3** |
| Urban Women | | | | | | | | | |
| Men | | | | | | | | | |
| Rural Men | | | | | | | | | |
| Urban Men | | | | | | | | | |
| Transgender | | | | | | | | | |
| Disabled | | | | | | | | | |
| Senior citizens | | | | | | | | | |
| PLHIV | | 2 | | | | | | **2** | **2** |
| **Total** | **2** | **2** | | **1** | | | | **5** | |
| **Grand total** | **7** | **5** | **2** | **1** | | **1** | | **16** | |

**Table R 8:Count of observations of barriers for GSS in the hygiene sector**

| Type of barrier | Adequacy | Attitudinal | Demand side | Environmental | Inclusion | Physical | Policy and institutional | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | |
| Poor & Low Income | | | | | | | | | **1** |
| Rural | | 1 | 1 | | | | | **2** | **3** |
| Urban | | 1 | 1 | | | | | **2** | **2** |
| Rural Poor & Low Income | | | | | | | | | |
| Urban Poor & Low Income | 1 | 1 | | | | | | **2** | **2** |
| Vulnerable by occupation | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | **1** |
| Caste | | | | | | | | | |
| Ethnicity | | | | | | | | | |
| **Total** | **1** | **3** | **2** | | | | | **6** | |
| **Africa** | | | | | | | | | |
| Poor & Low Income | 1 | | | | | | | **1** | **1** |
| Rural | | | | | | 1 | | **1** | **3** |
| Urban | | | | | | | | | **2** |
| Rural Poor & Low Income | | | | | | | | | |
| Urban Poor & Low Income | | | | | | | | | **2** |
| Caste | | | | | | | | | |
| Migrants & Pastoralists | 1 | | | | | | | **1** | **1** |
| Ethnicity | | | | | | | | | |
| Vulnerable by occupation | | | | | | | | | |
| **Total** | **2** | | | | | **1** | | **3** | |
| **Grand total** | **3** | **3** | **2** | | | **1** | | **9** | |
| | | | | | | | | | |
| **Universal (Asia)** | | | | | | | | | **1** |
| **Universal (Africa)** | | 1 | | | | | | **1** | **1** |

## Appendix S: Count of strategies from P&P by segment, sector and region

**Table S 1: Count of observations for WASH strategies for LCS by region**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation Marketing | Skill development of community | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | |
| Children | | | | 28 | 3 | | 3 | | 3 | | | 3 | **40** |
| Rural children | | | | 24 | 6 | | | | 2 | 2 | | | **34** |
| Urban children | | | | 5 | | | | | | | | | **5** |
| Adolescent boys | | | | 7 | 2 | | | | | | | | **9** |
| Adolescent girls | | | 1 | 14 | 2 | | | | | | 3 | | **20** |
| Women | 12 | 8 | 5 | 6 | 3 | | | 2 | 1 | | | | **37** |
| Rural women | 3 | 27 | 7 | 10 | | | | | 1 | | 2 | | **50** |
| Urban women | 3 | 2 | 3 | 1 | | 1 | | | | | | | **10** |
| Men | | | | 3 | 3 | | | | | | | 1 | **7** |
| Rural men | | 1 | | 3 | | | | | | | | | **4** |
| Urban men | 1 | | 1 | 1 | | | | | | | | | **3** |
| Transgender | | | | | | | | | | | | | |
| Senior citizens | | | 1 | | | | | | | | | | **1** |
| Disabled | | | 2 | | | | | | | | | | **2** |
| PLHIV | | | | | | | | | | | | | |
| **Total** | **19** | **38** | **20** | **102** | **19** | **1** | **3** | **2** | **7** | **2** | **5** | **4** | **222** |
| **Africa** | | | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Children | | 1 | 5 | 18 | 1 | | | | 3 | | | | **28** |
| Rural children | | | | 17 | | | | | 1 | 1 | | | **19** |
| Urban children | | | | 7 | | | | | | | | | **7** |
| Adolescent boys | 3 | 1 | 3 | 14 | | | | | 1 | | 3 | | **25** |
| Adolescent girls | 3 | 1 | 3 | 17 | 1 | | | | 1 | | 3 | | **29** |
| Women | 4 | 6 | 25 | 5 | | | | | | | 3 | | **43** |
| Rural women | 7 | 30 | 12 | 12 | | 2 | | | | | | | **63** |
| Urban women | | 9 | 5 | 8 | | 2 | | | | | 2 | | **26** |
| Men | | 3 | 5 | 3 | | | | | | | | | **11** |
| Rural men | 3 | | | 4 | | | | | | | 1 | | **8** |
| Urban men | | | | 2 | | | | | | | | | **2** |
| Transgender | | | | | | | | | | | | | |
| Senior citizens | | | 4 | | | | | | | | | | **4** |
| PLHIV | | | | 7 | 1 | 2 | | | | | | | **10** |
| Disabled | | | 11 | | | | | | 2 | | | | **13** |
| **Total** | **20** | **51** | **73** | **114** | **3** | **6** | | | **8** | **1** | **12** | | **288** |
| **Grand Total** | **39** | **89** | **93** | **216** | **22** | **7** | **3** | **2** | **15** | **3** | **17** | **4** | **510** |

**Table S 2: Count of observations for WASH strategies for GSS by region**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | |
| Poor & low income | 4 | | 10 | | 1 | | | 2 | | | | | **17** |
| Rural | 10 | 40 | 4 | 85 | 29 | 45 | 16 | 6 | 25 | 6 | 4 | 12 | **282** |
| Urban | 7 | 7 | | 18 | 6 | 13 | 9 | | 23 | | 2 | 9 | **94** |
| Rural poor & low income | | 4 | 6 | 2 | | | | 2 | | | | | **14** |
| Urban poor & low income | 2 | 4 | 1 | 3 | 3 | | | 10 | 6 | 1 | | 1 | **31** |
| Vulnerable by occupation | | | 2 | | | | | | | | | | **2** |
| Migrants & Pastoralists | | | | | | | | | | | | | |
| Caste | | 6 | 16 | | | | | | 1 | | | | **23** |
| Ethnicity | | 4 | 21 | | | | | | 1 | | | | **26** |
| **Total** | **26** | **65** | **60** | **108** | **39** | **58** | **25** | **20** | **56** | **7** | **6** | **22** | **489** |
| **Africa** | | | | | | | | | | | | | |
| Poor & low income | | | 7 | | | | | | | | | | **7** |
| Rural | 26 | 24 | 2 | 121 | 49 | 53 | 18 | 3 | 33 | 23 | 17 | 18 | **387** |
| Urban | 17 | 7 | | 52 | 12 | 62 | 29 | | 34 | 5 | 5 | 14 | **237** |
| Rural poor & low income | | | 1 | | | | | | | | | | **1** |
| Urban poor & low income | | 2 | 4 | 2 | | | 3 | 2 | | 2 | | | **15** |
| Vulnerable by occupation | | | | | | | | | | | | | |
| Migrants & Pastorals | | | 5 | 4 | 2 | | | | 4 | | | | **15** |
| Caste | | | | | | | | | | | | | |
| Ethnicity | | | 3 | | | | | | | | | | **3** |
| **Total** | **43** | **33** | **22** | **179** | **63** | **115** | **50** | **5** | **71** | **30** | **22** | **43** | **665** |
| **Grand Total** | **66** | **98** | **82** | **287** | **102** | **173** | **75** | **25** | **127** | **37** | **28** | **54** | **1154** |
| | | | | | | | | | | | | | |
| **Universal (Asia)** | 3 | 5 | | 10 | 3 | 5 | | 4 | 2 | 2 | 4 | 4 | **42** |
| **Universal (Africa)** | 6 | 7 | | 12 | 9 | 14 | 1 | | 8 | 3 | | 11 | **71** |

**Table S 3:Count of observations of strategies for LCS in the water sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Children | | | | 7 | | | 1 | | 1 | | | 1 | **10** | **16** |
| Rural children | | | | 5 | | | | | 1 | 1 | | | **7** | **10** |
| Urban children | | | | 1 | | | | | | | | | **1** | **1** |
| Adolescent girls | | | | 2 | | | | | | | | | **2** | **9** |
| Adolescent boys | | | | | | | | | | | | | | **8** |
| Women | 7 | 4 | 2 | 1 | | | | 1 | 1 | | | | **16** | **32** |
| Rural women | 1 | 10 | 4 | | | | | | | | | | **15** | **43** |
| Urban women | 2 | 1 | 1 | | | 1 | | | | | | | **5** | **13** |
| Men | | | | 1 | | | | | | | | | **1** | **4** |
| Rural Men | | | | | | | | | | | | | | **3** |
| Urban men | 1 | | | | | | | | | | | | **1** | **1** |
| Transgender | | | | | | | | | | | | | | |
| Senior Citizens | | | | | | | | | | | | | | **2** |
| Disabled | | | 1 | | | | | | | | | | **1** | **6** |
| PLHIV | | | | | | | | | | | | | | **1** |
| **Total** | **11** | **15** | **8** | **17** | | **1** | **1** | **1** | **3** | **1** | | **1** | **59** | |
| **Africa** | | | | | | | | | | | | | | |
| Children | | | 1 | 3 | 1 | | | | 1 | | | | **6** | **16** |
| Rural children | | | | 3 | | | | | | | | | **3** | **10** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban children | | | | | | | | | | | | | | **1** |
| Adolescent boys | 1 | | 1 | 4 | | | | | | | 1 | | **7** | **9** |
| Adolescent girls | 1 | | 1 | 4 | 1 | | | | | | 1 | | **8** | **8** |
| Women | 3 | 2 | 9 | 1 | | | | | | | 1 | | **16** | **32** |
| Rural women | 4 | 15 | 5 | 3 | | 1 | | | | | | | **28** | **43** |
| Urban women | | 3 | 2 | 1 | | 1 | | | | | 1 | | **8** | **13** |
| Men | | 1 | 2 | | | | | | | | | | **3** | **4** |
| Rural men | 1 | | | 1 | | | | | | | 1 | | **3** | **3** |
| Urban men | | | | | | | | | | | | | | **1** |
| Transgender | | | | | | | | | | | | | | |
| Senior citizens | | | 2 | | | | | | | | | | **2** | **2** |
| Disabled | | | 4 | | | | | | 1 | | | | **5** | **6** |
| PLHIV | | | | 1 | | | | | | | | | **1** | **1** |
| **Total** | **10** | **21** | **27** | **21** | **2** | **2** | | | **2** | | **5** | | **90** | |
| **Grand total** | **21** | **36** | **35** | **38** | **2** | **3** | **1** | **1** | **5** | **1** | **5** | **1** | **149** | |

**Table S 4:Count of observations of strategies for GSS in the water sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Poor & low income | 1 | | 4 | | 1 | | | 1 | | | | | **7** | **9** |
| Rural | 5 | 18 | 2 | 22 | 10 | 20 | 8 | | 16 | 1 | 1 | 6 | **109** | **257** |
| Urban | 3 | 3 | | 5 | 2 | 8 | 3 | | 11 | | 1 | 4 | **40** | **131** |
| Rural poor & low income | | 1 | 3 | | | | | | | | | | **4** | **5** |
| Urban poor & low income | 2 | 2 | | 1 | 1 | | | 5 | 1 | | | 1 | **13** | **20** |
| Caste | | 3 | 9 | | | | | | 1 | | | | **13** | **13** |
| Ethnicity | | 2 | 12 | | | | | | 1 | | | | **15** | **16** |
| Vulnerable occupation | | | | | | | | | | | | | | **5** |
| Migrants & Pastoralists | | | | | | | | | | | | | | |
| **Total** | **11** | **29** | **30** | **28** | **14** | **28** | **11** | **6** | **30** | **1** | **2** | **11** | **201** | |
| **Africa** | | | | | | | | | | | | | | |
| Poor & low income | | | 2 | | | | | | | | | | **2** | **9** |
| Rural | 11 | 12 | 1 | 36 | 14 | 22 | 10 | 1 | 16 | 10 | 8 | 7 | **148** | **257** |
| Urban | 7 | 4 | | 9 | 2 | 30 | 13 | | 18 | | 1 | 7 | **91** | **131** |
| Rural poor & low income | | | 1 | | | | | | | | | | **1** | **5** |
| Urban poor & low income | | 1 | 2 | | | | 3 | 1 | | | | | **7** | **20** |
| Caste | | | | | | | | | | | | | | **13** |
| Ethnicity | | | 1 | | | | | | | | | | **1** | **16** |
| Vulnerable occupation | | | 2 | 1 | | | | | 2 | | | | **5** | **5** |
| Migrants & Pastoralists | | | | | | | | | | | | | | |
| **Total** | **18** | **17** | **9** | **46** | **16** | **52** | **26** | **2** | **36** | **10** | **9** | **14** | **255** | |
| **Grand total** | **29** | **46** | **39** | **74** | **30** | **80** | **37** | **8** | **66** | **11** | **11** | **25** | **456** | |
| | | | | | | | | | | | | | | |
| **Universal (Asia)** | 1 | 2 | | 2 | | 4 | | 1 | | | 1 | 1 | **12** | **37** |
| **Universal (Africa)** | 2 | 3 | | 4 | 2 | 5 | 1 | | 4 | | | 4 | **25** | **37** |

**Table S 5:Count of observations of strategies for LCS in the sanitation sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | | |
| Children | | | | | 8 | 2 | | 1 | | 1 | | | 1 | **13** | **26** |
| Rural children | | | | | 8 | 3 | | | | 1 | 1 | | | **13** | **19** |
| Urban children | | | | | 1 | | | | | | | | | **1** | **5** |
| Adolescent boys | | | | | 2 | 1 | | | | | | | | **3** | **13** |
| Adolescent girls | | | | 1 | 3 | 1 | | | | | | 1 | | **6** | **17** |
| Women | 4 | 4 | | 2 | 3 | 2 | | | 1 | | | | | **16** | **33** |
| Rural women | 1 | 14 | | 2 | 3 | | | | | 1 | | 1 | | **22** | **44** |
| Urban women | 1 | 1 | | 2 | | | | | | | | | | **4** | **14** |
| Men | | | | | 1 | 2 | | | | | | | 1 | **4** | **8** |
| Rural men | | 1 | | | | | | | | | | | | **1** | **4** |
| Urban men | | | | 1 | | | | | | | | | | **1** | **2** |
| Transgender | | | | | | | | | | | | | | | |
| Senior citizens | | | | 1 | | | | | | | | | | **1** | **2** |
| Disabled | | | | 1 | | | | | | | | | | **1** | **6** |
| PLHIV | | | | | | | | | | | | | | | **6** |
| **Total** | **6** | **20** | | **10** | **29** | **11** | | **1** | **1** | **3** | **1** | **2** | **2** | **86** | |

| | **Africa** | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Children | | 1 | | 2 | 8 | | | | | 2 | | | | **13** | **26** |
| Rural children | | | | | 5 | | | | | 1 | | | | **6** | **19** |
| Urban children | | | | | 4 | | | | | | | | | **4** | **5** |
| Adolescent boys | 1 | 1 | | 1 | 5 | | | | | 1 | | 1 | | **10** | **13** |
| Adolescent girls | 1 | 1 | | 1 | 6 | | | | | 1 | | 1 | | **11** | **17** |
| Women | 1 | 2 | | 10 | 3 | | | | | | | 1 | | **17** | **33** |
| Rural women | 2 | 10 | | 4 | 5 | | 1 | | | | | | | **22** | **44** |
| Urban women | | 4 | | 2 | 2 | | 1 | | | | | 1 | | **10** | **14** |
| Men | | 1 | | 2 | 1 | | | | | | | | | **4** | **8** |
| Rural men | 1 | | | | 2 | | | | | | | | | **3** | **4** |
| Urban men | | | | | 1 | | | | | | | | | **1** | **2** |
| Transgender | | | | | | | | | | | | | | | |
| Senior citizens | | | | 1 | | | | | | | | | | **1** | **2** |
| Disabled | | | | 4 | | | | | | 1 | | | | **5** | **6** |
| PLHIV | | | | | 4 | 1 | 1 | | | | | | | **6** | **6** |
| **Total** | **6** | **20** | | **27** | **46** | **1** | **3** | | | **6** | | **4** | | **113** | |
| **Grand Total** | **12** | **40** | | **37** | **75** | **12** | **3** | **1** | **1** | **9** | **1** | **6** | **2** | **199** | |

**Table S 6:Count of observations of strategies for GSS in the sanitation sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Poor & low income | 3 | | 3 | | | | | 1 | | | | | **7** | **10** |
| Rural | 5 | 17 | 1 | 35 | 15 | 20 | 7 | 6 | 8 | 5 | 3 | 4 | **126** | **291** |
| Urban | 3 | 3 | | 6 | 3 | 3 | 5 | | 12 | | 1 | 4 | **40** | **148** |
| Rural poor & low income | | 2 | 3 | 1 | | | | 2 | | | | | **8** | **8** |
| Urban poor & low income | | 2 | 1 | 1 | 2 | | | 5 | 5 | 1 | | | **17** | **23** |
| Vulnerable by occupation | | | 2 | | | | | | | | | | **2** | **2** |
| Migrants & pastoralists | | | | | | | | | | | | | | **5** |
| Caste | | 3 | 5 | | | | | | | | | | **8** | **8** |
| Ethnicity | | 2 | 7 | | | | | | | | | | **9** | **10** |
| **Total** | **11** | **29** | **22** | **43** | **20** | **23** | **12** | **14** | **25** | **6** | **4** | **8** | **217** | |
| **Africa** | | | | | | | | | | | | | | |
| Poor & low income | | | 3 | | | | | | | | | | **3** | **10** |
| Rural | 12 | 10 | 1 | 47 | 23 | 24 | 7 | 1 | 14 | 11 | 8 | 7 | **165** | **291** |
| Urban | 8 | 3 | | 21 | 6 | 28 | 14 | | 15 | 4 | 3 | 6 | **108** | **148** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rural poor & low income | | | | | | | | | | | | | | **8** |
| Urban poor & low income | | 1 | 2 | | | | | 1 | | 2 | | | **6** | **23** |
| Vulnerable by occupation | | | | | | | | | | | | | | **2** |
| Migrants & Pastorals | | | 2 | 1 | 1 | | | | 1 | | | | **5** | **5** |
| Caste | | | | | | | | | | | | | | **8** |
| Ethnicity | | | 1 | | | | | | | | | | **1** | **10** |
| **Total** | **20** | **14** | **9** | **39** | **30** | **52** | **21** | **2** | **30** | **17** | **11** | **13** | **288** | |
| **Grand total** | **31** | **43** | **31** | **112** | **50** | **75** | **33** | **16** | **55** | **23** | **15** | **21** | **505** | |
| | | | | | | | | | | | | | | |
| **Universal (Asia)** | 1 | 2 | | 3 | 3 | 1 | | 2 | 2 | 2 | 2 | 2 | **20** | **54** |
| **Universal (Africa)** | 3 | 2 | | 6 | 6 | 6 | | | 4 | 2 | | 5 | **34** | **54** |

**Table S 7: Count of observations of strategies for LCS in the hygiene sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Children | | | | 13 | 1 | | 1 | | 1 | | | 1 | **17** | **26** |
| Rural children | | | | 11 | 3 | | | | | | | | **14** | **24** |
| Urban children | | | | 3 | | | | | | | | | **3** | **6** |
| Adolescent boys | | | | 5 | 1 | | | | | | | | **6** | **14** |
| Adolescent girls | | | | 9 | 1 | | | | | | 2 | | **12** | **22** |
| Women | 1 | | 1 | 2 | 1 | | | | | | | | **5** | **15** |
| Rural women | 1 | 3 | 1 | 7 | | | | | | | 1 | | **13** | **26** |
| Urban women | | | | 1 | | | | | | | | | **1** | **9** |
| Men | | | | 1 | 1 | | | | | | | | **2** | **6** |
| Rural men | | | | 3 | | | | | | | | | **3** | **5** |
| Urban men | | | | 1 | | | | | | | | | **1** | **2** |
| Transgender | | | | | | | | | | | | | | |
| Senior citizens | | | | | | | | | | | | | | **1** |
| Disabled | | | | | | | | | | | | | | **3** |
| PLHIV | | | | | | | | | | | | | | **3** |
| **Total** | **2** | **3** | **2** | **56** | **8** | | **1** | | **1** | | **3** | **1** | **77** | |
| **Africa** | | | | | | | | | | | | | | |
| Children | | | 2 | 7 | | | | | | | | | **9** | **26** |
| Rural children | | | | 9 | | | | | | 1 | | | **10** | **24** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban children | | | | 3 | | | | | | | | | **3** | **6** |
| Adolescent boys | 1 | | 1 | 5 | | | | | | | 1 | | **8** | **14** |
| Adolescent girls | 1 | | 1 | 7 | | | | | | | 1 | | **10** | **22** |
| Women | | 2 | 6 | 1 | | | | | | | 1 | | **10** | **15** |
| Rural women | 1 | 5 | 3 | 4 | | | | | | | | | **13** | **26** |
| Urban women | | 2 | 1 | 5 | | | | | | | | | **8** | **9** |
| Men | | 1 | 1 | 2 | | | | | | | | | **4** | **6** |
| Rural men | 1 | | | 1 | | | | | | | | | **2** | **5** |
| Urban men | | | | 1 | | | | | | | | | **1** | **2** |
| Transgender | | | | | | | | | | | | | | |
| Senior citizens | | | 1 | | | | | | | | | | **1** | **1** |
| Disabled | | | 3 | | | | | | | | | | **3** | **3** |
| PLHIV | | | | 2 | | 1 | | | | | | | **3** | **3** |
| **Total** | **4** | **10** | **19** | **47** | | **1** | | | | **1** | **3** | | **85** | |
| **Grand total** | **6** | **13** | **21** | **103** | **8** | **1** | **1** | | **1** | **1** | **6** | **1** | **162** | |

**Table S 8:Count of observations of strategies for GSS in the hygiene sector**

| Strategies | Beneficiary Participation | Decentralisation of service delivery | Equity in WASH service provision | IEC | Improving Demand | Institutional strengthening and capacity building | Project Management | Provision of financial incentives | Provision of WASH facilities | Sanitation marketing | Skill development of community | Stakeholder Participation | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Asia** | | | | | | | | | | | | | | |
| Poor & low income | | | 3 | | | | | | | | | | **3** | **5** |
| Rural | | 5 | 1 | 28 | 4 | 5 | 1 | | 1 | | | 2 | **47** | **121** |
| Urban | 1 | 1 | | 7 | 1 | 2 | 1 | | | | | 1 | **14** | **52** |
| Rural poor & low income | | 1 | | 1 | | | | | | | | | **2** | **2** |
| Urban poor & low income | | | | 1 | | | | | | | | | **1** | **3** |
| Vulnerable by occupation | | | | | | | | | | | | | | |
| Migrants & Pastoralists | | | | | | | | | | | | | | **5** |
| Caste | | | 2 | | | | | | | | | | **2** | **2** |
| Ethnicity | | | 2 | | | | | | | | | | **2** | **3** |
| **Total** | **1** | **7** | **8** | **37** | **5** | **7** | **2** | **1** | **1** | | **1** | **3** | **71** | |
| **Africa** | | | | | | | | | | | | | | |
| Poor & low income | | | 2 | | | | | | | | | | **2** | **5** |
| Rural | 3 | 2 | | 38 | 12 | 7 | 1 | 1 | 3 | 2 | 1 | 4 | **74** | **121** |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Urban | 2 | | | 22 | 4 | 4 | 2 | | 1 | 1 | 1 | 1 | **38** | **52** |
| Rural poor & low income | | | | | | | | | | | | | | **2** |
| Urban poor & low income | | | | 2 | | | | | | | | | **2** | **3** |
| Vulnerable by occupation | | | | | | | | | | | | | | |
| Migrants & Pastoralists | | | 1 | 2 | 1 | | | | 1 | | | | **5** | **5** |
| Caste | | | | | | | | | | | | | | **2** |
| Ethnicity | | | 1 | | | | | | | | | | **1** | **3** |
| **Total** | **5** | **2** | **4** | **64** | **17** | **11** | **3** | **1** | **5** | **3** | **2** | **5** | **122** | |
| **Grand total** | **6** | **9** | **12** | **101** | **22** | **18** | **5** | **1** | **6** | **3** | **2** | **8** | **193** | |
| | | | | | | | | | | | | | | |
| **Universal (Asia)** | 1 | 1 | | 5 | | | | 1 | | | 1 | 1 | **10** | **22** |
| **Universal (Africa)** | 1 | 2 | | 2 | 1 | 3 | | | | 1 | | 2 | **12** | **22** |

**Table S 9:Strategies that worked and did not work for LCS segments**

| S. No. | Segment | Strategies | Worked & Did not work | Reasons why strategies worked and did not work | No. of P&P that contributed to the observations |
|---|---|---|---|---|---|
| 1 | Rural women | Beneficiary Participation | Worked | Involvement of women in all levels of the project. | 3 |
| | | Provision of WASH facilities | Worked | Reduction of time spent and distance covered to access facilities resulted in women spending time on income generating activities. | 4 |
| | | | Did not work | Introduction of flush latrines increased water demand for the family and indirectly added to the work load to fetch more water to keep the latrines clean. | 1 |
| | | IEC | Worked | Recruitment of female staff to work with the community and conducting awareness campaigns highlighted gender needs and the adoption of safe WASH practices. | 1 |
| | | Skill development | Worked | Women led sanitary marts led to increase in household latrines as materials were available locally. | 1 |
| | | Demand Management | Worked | By including SLTS and CLTS the project was able to balance its focus between adults and children. | 1 |
| | | Project Management | Worked | Project staff maintained healthy gender balance and use of women was community resource persons. | 1 |
| 2 | Adolescent girls | Provision of WASH facilities | Worked | Saved time, ensured privacy for girls and teachers and improved daily life of girls by reducing distance travelled. | 4 |
| | | | Did not work | Sanitation facilities were not maintained and needed more water which increased burden on girls, women. Structure of building housing WASH facilities was weak. | 3 |
| | | IEC | Worked | Use of community based participatory approach and school led total sanitation approach. | 2 |

| S. No. | Segment | Strategies | Worked & Did not work | Reasons why strategies worked and did not work | No. of P&P that contributed to the observations |
|---|---|---|---|---|---|
| 3 | Rural children | Provision of WASH facilities | Worked | Reduction of time spent and distance covered lead to better health for children. Ensured privacy for children in school. | 4 |
| | | | Did not work | Lack of regular maintenance of sanitation facilities in school. | 1 |
| | | IEC | Worked | Sensitisation of children improved household hygiene and sanitation practices. | 4 |

**Table S 10: Strategies that worked and did not work for GSS segments**

| S. No. | Population Segment | Strategies | Worked & Did not work | Reasons why strategies worked and did not work | No. of P&P that contributed to the observations |
|---|---|---|---|---|---|
| 1 | Rural | IEC | Worked | Capacity building of local community that created willingness to participate in local committees, awareness campaigns resulted in adoption of safe WASH practices, use of community health volunteers in promotion of safe WASH practices. | 11 |
| | | | Did not work | Beneficiaries could not afford the high price of water and soap. | 2 |
| | | Decentralisation | Worked | Ensured community ownership and transparency in management of facilities. | 5 |
| | | | Did not work | Capacity of local governments and agencies needed to be built during project implementation which lead to delays. | 1 |
| | | Project Management | Worked | Direct transfer of cash to the Union Parishads eliminated procedural delays, treatment of sanitation and water as separate project components with a development strategy. | 3 |
| | | | Did not work | Organisational constraints, unrealistic time schedules and reluctance of the community to ensure sustainability of project after completion. | 5 |

| | | | | | |
|---|---|---|---|---|---|
| | | Provision of WASH facilities | Worked | Improved living conditions of beneficiaries, reduction in time spent and distance covered in accessing facilities. | 5 |
| | | | Did not work | Maintenance of facilities was not conducted and there was inadequate water for sanitation and hand washing. | 2 |
| | | Beneficiary Participation | Worked | Beneficiaries understood why they had to pay for services. | 5 |
| | | | Did not work | Communities had to be resettled after war and majority of them did not come back. | 2 |
| 2. | Urban | IEC | Worked | Hand washing practices increased after awareness campaigns, involvement of community health workers in sensitisation campaigns led to adoption of improved WASH practices. | 5 |
| | | | Did not work | Technologies such as ecosan were not popular due to stigma around use of composted faecal matter and beneficiaries faced high costs in replicating the technology locally. | 2 |
| | | Provision of WASH facilities | Worked | Reduction in time spent and distance travelled. | 2 |
| | | | Did not work | Confusion in ownership and maintenance of public sanitation facilities and quantity of water was inadequate to sustain hygiene and sanitation practices. | 2 |
| | | Institutional Strengthening and Capacity Building | Worked | Reform of the water sector, thorough assessment of local context and service provider took responsibility for operation and maintenance. | 4 |
| | | Beneficiary Participation | Did not work | Community did not trust the local government or service provider which prevented them from contributing to maintenance fund. | 1 |

## Appendix T: Count of benefits from P&P by sector, segments and region and location of WASH facilities

**Table T 1: Count of observations for WASH benefits for LCS by region**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Children | 30 | 10 | | 3 | **43** |
| Rural children | 28 | 13 | 6 | 6 | **53** |
| Urban children | 2 | 2 | | 2 | **6** |
| Adolescent boys | 12 | 8 | | 1 | **21** |
| Adolescent girls | 24 | 15 | 2 | 3 | **44** |
| Women | 19 | 13 | 5 | 1 | **38** |
| Rural women | 14 | 11 | 5 | 3 | **33** |
| Urban women | 2 | 2 | | 2 | **6** |
| Men | 9 | 6 | 3 | | **18** |
| Rural men | 6 | 5 | | | **11** |
| Urban men | 2 | 2 | | 2 | **6** |
| Transgender | | | | | |
| Senior Citizens | | | | | |
| Disabled | 11 | 10 | 2 | 2 | **25** |
| PLHIV | | | | | |
| **Total** | **159** | **97** | **23** | **25** | **304** |
| **Africa** | | | | | |
| Children | 37 | 15 | | 10 | **62** |
| Rural children | 32 | 15 | | 2 | **49** |
| Urban children | 10 | 9 | | 3 | **22** |
| Adolescent boys | 24 | 18 | | 4 | **46** |
| Adolescent girls | 28 | 22 | | 5 | **55** |
| Women | 5 | 5 | | 3 | **13** |
| Rural women | 12 | 17 | | 2 | **31** |
| Urban women | 20 | 18 | 1 | 3 | **42** |
| Men | | | | | |
| Rural men | 9 | 9 | | 1 | **19** |
| Urban men | 8 | 8 | | | **16** |
| Transgender | | | | | |
| Senior Citizens | 1 | 1 | | | **2** |
| Disabled | 21 | 18 | | 6 | **45** |
| PLHIV | 1 | 1 | | | **2** |
| **Total** | **208** | **156** | **1** | **39** | **404** |
| **Grand Total** | **367** | **253** | **24** | **64** | **708** |

**Table T 2: Count of observations for WASH benefits for GSS by region**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Poor & low income | 13 | 5 | 6 | 1 | **25** |
| Rural | 126 | 37 | 12 | 23 | **198** |
| Urban | 49 | 15 | 3 | 11 | **78** |
| Rural poor & low income | 10 | 2 | 6 | 5 | **23** |
| Urban poor & low income | 21 | 1 | 3 | 1 | **26** |
| Vulnerable by occupation | | | | | |
| Migrants & pastoralists | | | | | |
| Caste | 3 | 1 | 5 | | **9** |
| Ethnicity | 6 | | 5 | 1 | **12** |
| **Total** | **228** | **61** | **40** | **42** | **371** |
| **Africa** | | | | | |
| Poor & low income | 10 | 4 | | | **14** |
| Rural | 168 | 40 | 4 | 24 | **236** |
| Urban | 112 | 22 | | 7 | **141** |
| Rural poor & low income | 3 | 1 | | | **4** |
| Urban poor & low income | 30 | 8 | 8 | 4 | **50** |
| Vulnerable by occupation | | | | | |
| Migrants & Pastoralists | 7 | 1 | | | **8** |
| Caste | | | | | |
| Ethnicity | | | | | |
| **Total** | **330** | **76** | **12** | **35** | **453** |
| **Grand Total** | **558** | **137** | **52** | **77** | **824** |
| | | | | | |
| **Universal (Asia)** | 15 | 1 | 3 | | **19** |
| **Universal (Africa)** | 26 | 10 | 3 | 7 | **46** |

**Table T 3:Count of observations of benefits for LCS in the water sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 9 | 3 | | 2 | **14** | **33** |
| Rural children | 7 | 3 | 1 | 3 | **14** | **20** |
| Urban children | | | | | | |
| Adolescent boys | 1 | | | 1 | **2** | **5** |
| Adolescent girls | 1 | | | 1 | **2** | **8** |
| Women | 7 | 6 | 2 | | **15** | **21** |
| Rural women | 2 | 2 | | 1 | **5** | **21** |
| Urban women | | | | | | **17** |
| Men | 3 | 2 | 1 | | **6** | **6** |
| Rural men | | | | | | **5** |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | | | | | | **2** |
| PLHIV | | | | | | |
| **Total** | **30** | **16** | **4** | **8** | **58** | |
| **Africa** | | | | | | |
| Children | 11 | 4 | | 4 | **19** | **33** |
| Rural children | 4 | 1 | | 1 | **6** | **20** |
| Urban children | | | | | | |
| Adolescent boys | 2 | | | 1 | **3** | **5** |
| Adolescent girls | 3 | 2 | | 1 | **6** | **8** |
| Women | 2 | 3 | | 1 | **6** | **21** |
| Rural women | 5 | 10 | | 1 | **16** | **21** |
| Urban women | 6 | 7 | 1 | 3 | **17** | **17** |
| Men | | | | | | **6** |
| Rural men | 2 | 2 | | 1 | **5** | **5** |
| Urban men | | | | | | |
| Transgender | | | | | | |
| Senior citizens | | | | | | |
| Disabled | 1 | | | 1 | **2** | **2** |
| PLHIV | | | | | | |
| **Total** | **36** | **29** | **1** | **14** | **80** | |
| **Grand total** | **66** | **45** | **5** | **22** | **138** | |

**Table T 4:Count of observations of benefits for GSS in the water sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | 6 | 3 | 2 | | **11** | **16** |
| Rural | 65 | 20 | 3 | 13 | **101** | **226** |
| Urban | 25 | 7 | 1 | 7 | **40** | **126** |
| Rural poor & low income | 4 | | | 3 | **7** | **10** |
| Urban poor & low income | 10 | | 1 | 1 | **12** | **43** |
| Caste | 3 | 1 | 1 | | **5** | **5** |
| Ethnicity | 4 | | 1 | | **5** | **5** |
| Migrants & Pastoralists | | | | | | **5** |
| Vulnerable by occupation | | | | | | |
| **Total** | **117** | **31** | **9** | **24** | **181** | |
| **Africa** | | | | | | |
| Poor & low income | 4 | 1 | | | **5** | **16** |
| Rural | 86 | 20 | 2 | 17 | **125** | **226** |
| Urban | 66 | 14 | | 6 | **86** | **126** |
| Rural poor & low income | 2 | 1 | | | **3** | **10** |
| Urban poor & low income | 17 | 5 | 7 | 2 | **31** | **43** |
| Caste | | | | | | **5** |
| Ethnicity | | | | | | **5** |
| Migrants & Pastoralists | 4 | 1 | | | **5** | **5** |
| Vulnerable by occupation | | | | | | |
| **Total** | **179** | **42** | **9** | **25** | **255** | |
| **Grand total** | **296** | **73** | **18** | **49** | **436** | |
| | | | | | | |
| **Universal (Asia)** | 3 | | 1 | | **4** | **21** |
| **Universal (Africa)** | 10 | 3 | 1 | 3 | **17** | **21** |

**Table T 5:Count of observations of benefits for LCS in the sanitation sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 9 | 4 | | | **13** | **44** |
| Rural children | 17 | 8 | 4 | 2 | **31** | **62** |
| Urban children | 1 | 1 | | 1 | **3** | **20** |
| Adolescent boys | 8 | 6 | | | **14** | **47** |
| Adolescent girls | 12 | 8 | 1 | | **21** | **57** |
| Women | 9 | 6 | 2 | 1 | **18** | **23** |
| Rural women | 5 | 4 | 4 | 1 | **14** | **25** |
| Urban women | 1 | 1 | | 1 | **3** | **22** |
| Men | 5 | 4 | 1 | | **10** | **10** |
| Rural men | 3 | 2 | | | **5** | **15** |
| Urban men | 1 | 1 | | 1 | **3** | **13** |
| Transgender | | | | | | |
| Senior citizens | | | | | | **2** |
| PLHIV | | | | | | **2** |
| Disabled | 8 | 7 | 2 | 1 | **18** | **52** |
| **Total** | **79** | **52** | **14** | **8** | **153** | |
| **Africa** | | | | | | |
| Children | 18 | 9 | | 4 | **31** | **44** |
| Rural children | 20 | 10 | | 1 | **31** | **62** |
| Urban children | 8 | 7 | | 2 | **17** | **20** |
| Adolescent boys | 17 | 14 | | 2 | **33** | **47** |
| Adolescent girls | 18 | 15 | | 3 | **36** | **57** |
| Women | 2 | 2 | | 1 | **5** | **23** |
| Rural women | 5 | 5 | | 1 | **11** | **25** |
| Urban women | 11 | 8 | | | **19** | **22** |
| Men | | | | | | **10** |
| Rural men | 5 | 5 | | | **10** | **15** |
| Urban men | 5 | 5 | | | **10** | **13** |
| Transgender | | | | | | |
| Senior citizens | 1 | 1 | | | **2** | **2** |
| PLHIV | 1 | 1 | | | **2** | **2** |
| Disabled | 16 | 15 | | 3 | **34** | **52** |
| **Total** | **127** | **97** | | **17** | **241** | |
| **Grand total** | **206** | **149** | **14** | **25** | **394** | |

**Table T 6:Count of observations of benefits for GSS in the sanitation sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | 6 | 2 | 3 | 1 | **12** | **21** |
| Rural | 56 | 15 | 7 | 10 | **88** | **180** |
| Urban | 22 | 7 | 1 | 4 | **34** | **83** |
| Rural poor & low income | 4 | 1 | 6 | 1 | **12** | **13** |
| Urban poor & low income | 11 | 1 | 2 | | **14** | **33** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | | | | | | **2** |
| Caste | | | 4 | | **4** | **4** |
| Ethnicity | 2 | | 4 | 1 | **7** | **7** |
| **Total** | **101** | **26** | **27** | **17** | **171** | **373** |
| **Africa** | | | | | | |
| Poor & low income | 6 | 3 | | | **9** | **21** |
| Rural | 67 | 18 | 2 | 5 | **92** | **180** |
| Urban | 40 | 8 | | 1 | **49** | **83** |
| Rural poor & low income | 1 | | | | **1** | **13** |
| Urban poor & low income | 13 | 3 | 1 | 2 | **19** | **33** |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | 2 | | | | **2** | **2** |
| Caste | | | | | | **4** |
| Ethnicity | | | | | | **7** |
| **Total** | **129** | **32** | **3** | **8** | **172** | |
| **Grand total** | **230** | **58** | **30** | **25** | **343** | |
| | | | | | | |
| **Universal (Asia)** | 8 | | 1 | | **9** | **30** |
| **Universal (Africa)** | 12 | 5 | 1 | 3 | **21** | **30** |

**Table T 7:Count of observations of benefits for LCS in the hygiene sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Children | 12 | 3 | | 1 | **16** | **28** |
| Rural children | 4 | 2 | 1 | 1 | **8** | **20** |
| Urban children | 1 | 1 | | 1 | **3** | **8** |
| Adolescent boys | 3 | 2 | | | **5** | **15** |
| Adolescent girls | 11 | 7 | 1 | 2 | **21** | **34** |
| Women | 3 | 1 | | | **4** | **6** |
| Rural women | 7 | 5 | 1 | 1 | **14** | **18** |
| Urban women | 1 | 1 | 1 | 1 | **4** | **10** |
| Men | 1 | | 1 | | **2** | **2** |
| Rural men | 3 | 3 | | | **6** | **10** |
| Urban men | 1 | 1 | | 1 | **3** | **9** |
| Transgender | | | | | | |
| Disabled | 3 | 3 | | 1 | **7** | **16** |
| Senior citizens | | | | | | |
| PLHIV | | | | | | |
| **Total** | **50** | **29** | **5** | **9** | **93** | |
| **Africa** | | | | | | |
| Children | 8 | 2 | | 2 | **12** | **28** |
| Rural children | 8 | 4 | | | **12** | **20** |
| Urban children | 2 | 2 | | 1 | **5** | **8** |
| Adolescent boys | 5 | 4 | | 1 | **10** | **15** |
| Adolescent girls | 7 | 5 | | 1 | **13** | **34** |
| Women | 1 | | | 1 | **2** | **6** |
| Rural women | 2 | 2 | | | **4** | **18** |
| Urban women | 3 | 3 | | | **6** | **10** |
| Men | | | | | | **2** |
| Rural men | 2 | 2 | | | **4** | **10** |
| Urban men | 3 | 3 | | | **6** | **9** |
| Transgender | | | | | | |
| Disabled | 4 | 3 | | 2 | **9** | **16** |
| Senior citizens | | | | | | |
| PLHIV | | | | | | |
| **Total** | **45** | **30** | | **8** | **83** | |
| **Grand total** | **95** | **59** | **5** | **17** | **176** | |

**Table T 8:Count of observations of benefits for GSS in the hygiene sector**

| Benefit | Availability | Physical Accessibility | Affordability | Quality & Safety | Total | Total for Asia and Africa |
|---|---|---|---|---|---|---|
| **Asia** | | | | | | |
| Poor & low income | 1 | | 1 | | **2** | **2** |
| Rural | 5 | 2 | 2 | | **9** | **28** |
| Urban | 2 | 1 | 1 | | **4** | **10** |
| Rural poor & low income | 2 | 1 | | 1 | **4** | **4** |
| Urban poor & low income | | | | | | |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | | | | | | **1** |
| Caste | | | | | | |
| Ethnicity | | | | | | |
| **Total** | **10** | **4** | **4** | **1** | **19** | |
| **Africa** | | | | | | |
| Poor & low income | | | | | | **2** |
| Rural | 15 | 2 | | 2 | **19** | **28** |
| Urban | 6 | | | | **6** | **10** |
| Rural poor & low income | | | | | | **4** |
| Urban poor & low income | | | | | | |
| Vulnerable by occupation | | | | | | |
| Migrants & Pastoralists | 1 | | | | **1** | **1** |
| Caste | | | | | | |
| Ethnicity | | | | | | |
| **Total** | **22** | **2** | | **2** | **26** | |
| **Grand Total** | **32** | **6** | **4** | **3** | **45** | **59** |
| | | | | | | |
| **Universal (Asia)** | 4 | 1 | 1 | | **6** | **14** |
| **Universal (Africa)** | 4 | 2 | 1 | 1 | **8** | **14** |

**Table T 9:Count of observations for location of WASH facilities for LCS**

| Segments | Public | Household | Shared | Total | Total for Asia and Africa |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Children | 24 | | | **24** | **55** |
| Rural children | 26 | | | **26** | **63** |
| Urban children | 2 | | | **2** | **11** |
| Adolescent boys | 12 | | | **12** | **35** |
| Adolescent girls | 22 | 1 | | **23** | **48** |
| Women | 8 | 3 | | **11** | **12** |
| Rural women | 8 | 5 | | **13** | **24** |
| Urban women | 2 | | | **2** | **18** |
| Men | 4 | | | **4** | **4** |
| Rural men | 6 | | | **6** | **14** |
| Urban men | 2 | | | **2** | **10** |
| Transgender | | | | | |
| Senior citizens | | | | | |
| Disabled | 10 | 2 | | **12** | **1** |
| PLHIV | | | | | |
| **Total** | **126** | **11** | | **137** | |
| **Africa** | | | | | |
| Children | 31 | | | **31** | **55** |
| Rural children | 26 | 1 | | **27** | **63** |
| Urban children | 8 | 1 | | **9** | **11** |
| Adolescent boys | 21 | 2 | | **23** | **35** |
| Adolescent girls | 23 | 2 | | **25** | **48** |
| Women | | 1 | | **1** | **12** |
| Rural women | 11 | | | **11** | **24** |
| Urban women | 10 | 6 | | **16** | **18** |
| Men | | | | | **4** |
| Rural men | 8 | | | **8** | **14** |
| Urban men | 7 | 1 | | **8** | **10** |
| Transgender | | | | | |
| Senior citizens | | | | | |
| Disabled | 14 | 2 | | **16** | **1** |
| PLHIV | 1 | | | **1** | |
| **Total** | **160** | **16** | | **176** | |
| **Grand total** | **286** | **27** | | **313** | |

**Table T 10:Count of observations for location of WASH facilities for GSS**

| Segments | Public | Household | Shared | Total | Total for Asia and Africa |
|---|---|---|---|---|---|
| **Asia** | | | | | |
| Poor & low income | | 4 | | **4** | **10** |
| Rural | 31 | 50 | 2 | **83** | **166** |
| Urban | 8 | 25 | 1 | **34** | **84** |
| Rural poor & low income | 4 | 6 | | **10** | **13** |
| Urban poor & low income | 6 | 6 | 3 | **15** | **38** |
| Vulnerable by occupation | | | | | |
| Migrants & pastoralists | | | | | |
| Caste | 1 | 4 | | **5** | **5** |
| Ethnicity | 1 | 4 | | **5** | **5** |
| **Total** | **51** | **99** | **6** | **151** | |
| **Africa** | | | | | |
| Poor & low income | 4 | 2 | | **6** | **10** |
| Rural | 46 | 36 | 1 | **83** | **166** |
| Urban | 30 | 20 | | **50** | **84** |
| Rural poor & low income | 3 | | | **3** | **13** |
| Urban poor & low income | 11 | 12 | | **23** | **38** |
| Vulnerable by occupation | | | | | |
| Migrants & pastoralists | | | | | |
| Caste | | | | | **5** |
| Ethnicity | | | | | **5** |
| **Total** | **94** | **70** | **1** | **165** | |
| **Grand total** | **145** | **169** | **7** | **321** | |
| | | | | | |
| **Universal (Asia)** | | 5 | | **5** | **20** |
| **Universal (Africa)** | 10 | 5 | | **15** | **20** |

# Appendix U: P&P Robustness

**Figure U 1: LCS robustness in P&P**

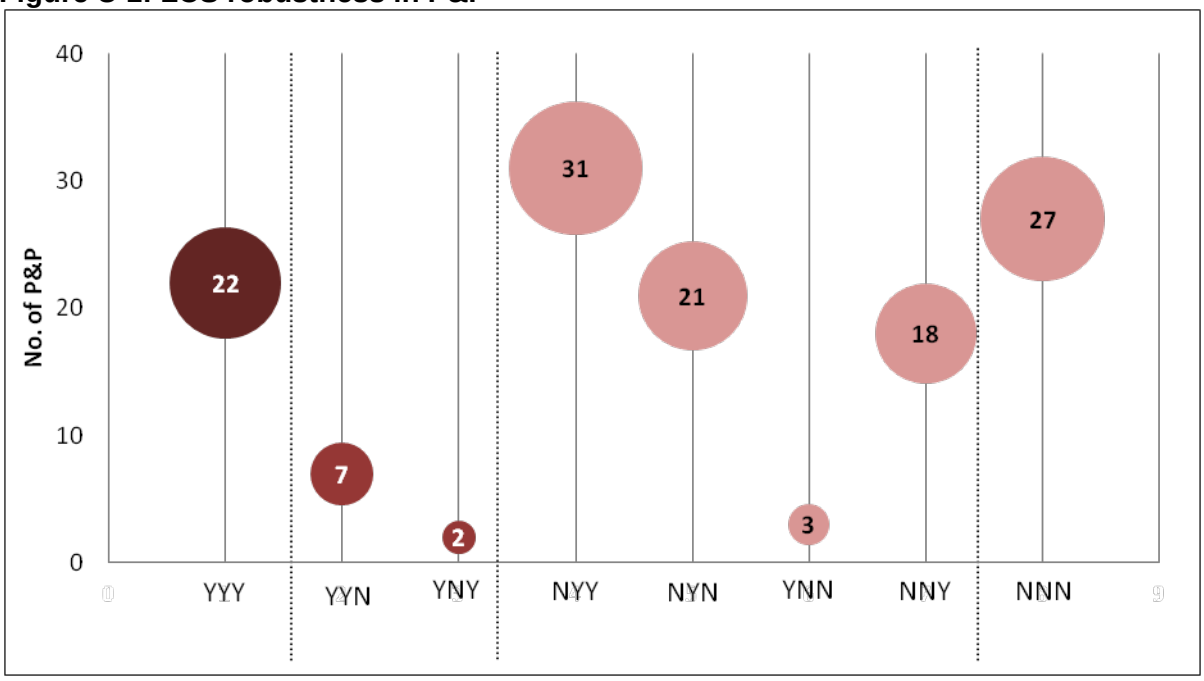



**Figure U 2: LCS robustness score in Asian and African P&P**

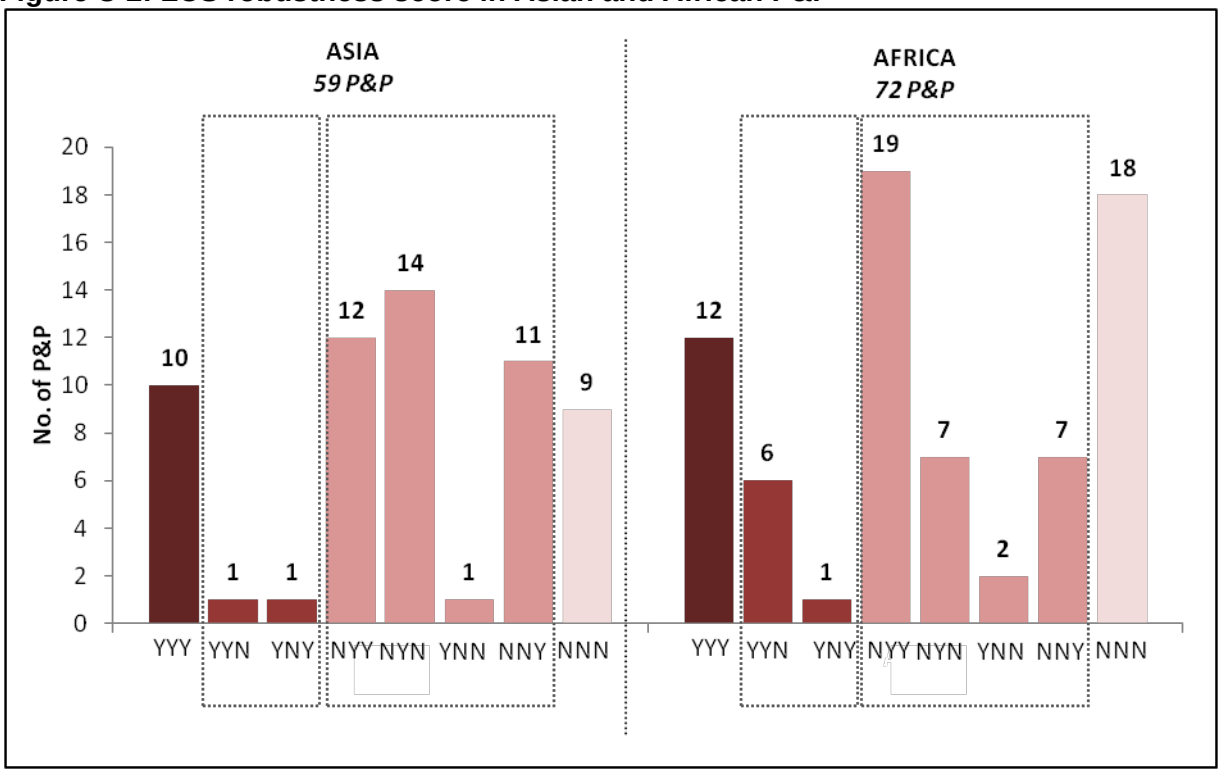


**Figure U 3: GSS robustness in P&P**

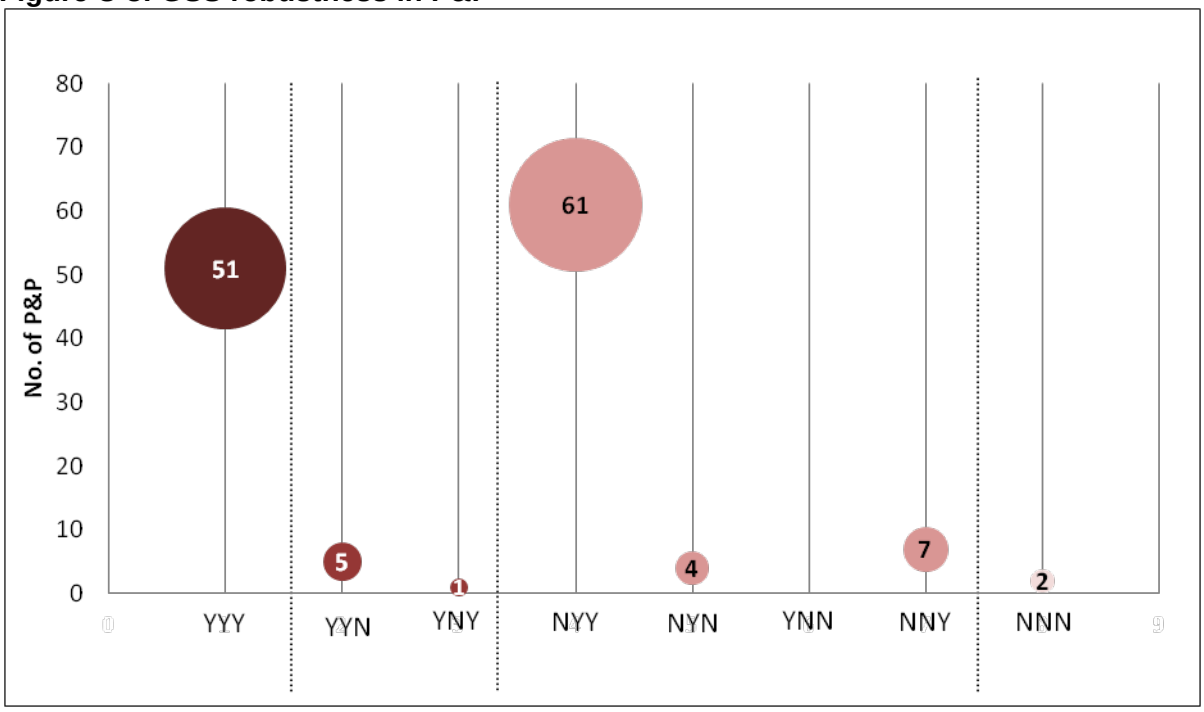
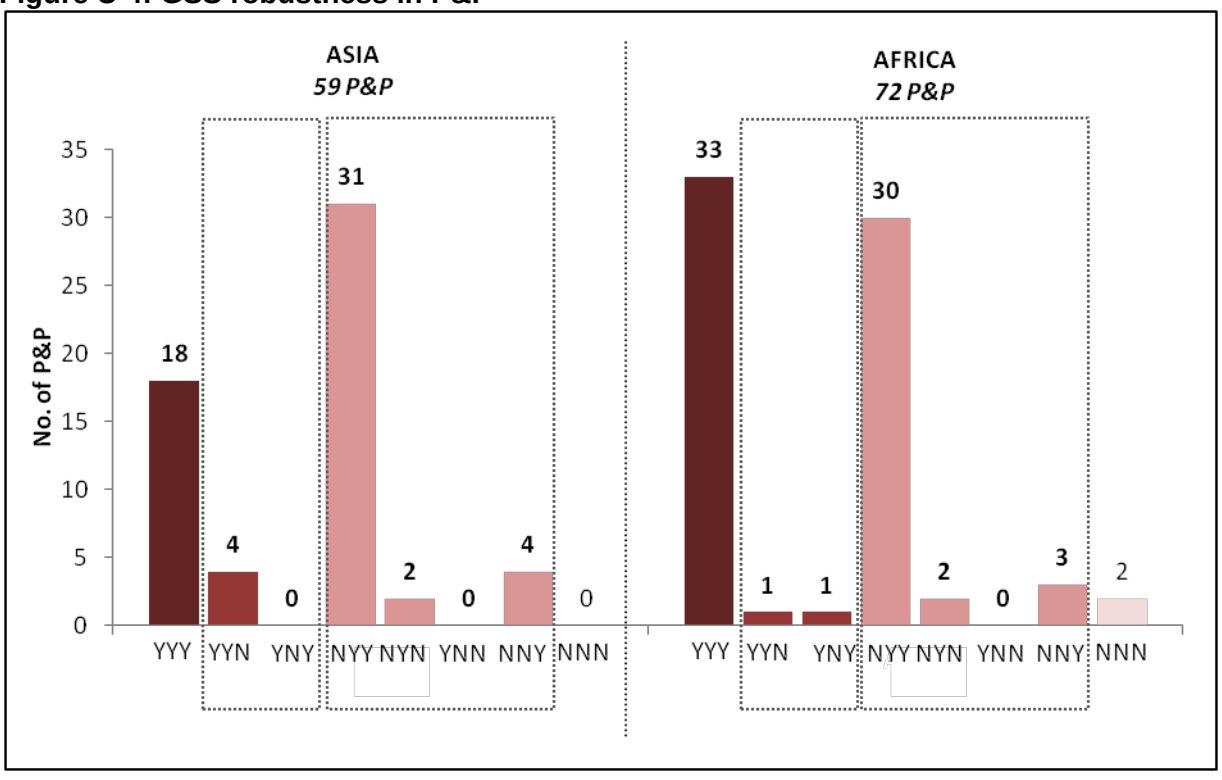



**Figure U 4: GSS robustness in P&P**



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