Barriers to Water and Sanitation Access for the Urban Poor
Looking through a Gender and Social Inclusion Lens

Baseline study and pilot concept

Prepared by: A Single Drop for Safe Water inc.
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Data Gathering Team:
Annie Pascual (Team Lead)
Anicito Hilot
Hussein Endaila
Verlia Sobebe
Jera Lota
Realyn Manaloto

Assistance Camile Adle (Oxfam)

Author Kevin Lee

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1. Executive Summary

This project was commissioned so that LGUs, Water Service Providers and CSOs would have a better understanding of the barriers to Water and Sanitation facing the urban poor, particularly those families containing someone that is disabled, or women-headed households.

Various high level stakeholders were brought together at the beginning of the project to review the theory of change and design research so as to validate the theory of change and design inclusive pilot programs for scale. A household survey was done in areas where Informal Settler Families (ISF) resided, to gather baseline data which included the living and economic conditions that these families faced. In addition, data about the cost and availability of services were also gathered and analyzed to identify bottlenecks and opportunities. During this process the research team worked hand in hand with city and barangay LGUs allowing an opportunity to see local governance at work.

In Pasig there are only few ISF areas and the urban poor are more affluent. However, in Manila city where the FHSIS numbers show the largest populations in NCR with limited access to water and sanitation, the poverty is markedly more prevalent in the areas targeted, which were in and around the Smokey Mountain area.

In Manila 70% of the families in the surveyed area made less than 14,000php per month which is the poverty threshold. Women headed households overall made between 1,500-2,300 per month less than their male counterparts. In both areas an average of 90% of their income is spent on basic needs with limited capacity to accrue wealth. Food accounts for over 60% of the basic expenses.

During the interview process determination of disability was done through a series of questions about ability in different aspects of living. Based on this, 14.4% in Pasig and 18.1% in Manila had a family member with disability. Women headed households averaged between 17.4% and 19.3% in Pasig and Manila respectively. Though there is a gender pay gap, having a disabled family member does not reduce family income respective to the rest of the population.

Water and sanitation access does not seem to differentiate between men and women headed households or those with disabled members. In actual fact both women headed households and those families with disabled members actually had slightly better access to both water and sanitation. This shows that these sectors are more aware of the importance, and prioritize access.

Water access is the most critical issue for both communities. Per person usage rates in both communities is about 12-13 liters per day, markedly below even Sphere Standards for emergencies and well below the 20/40/80 liter per the DILG's stated "normative content of the right to water"[1]. This is a combination of infrastructure limiting supply, and high unit/monthly cost. For 10 cubic meter minimums Manila Water and Maynilad charge 88 to 130Php per month whereas the community is paying between 500 to 900 per month to both formal and informal

[1] Karapatan at Kakayanan Sa Katubigan, Operationalizing the Rights Based the Local WatSan Governance Framework, Pg 44

suppliers for less than 3.6 cubic meters, which they often have to fetch. This cost represents between 6-11% of their basic expenses. In Focal Group discussions this cost as well as cost of electricity were said to be major burdens. This high rate cost of water modifies their hygiene behaviors as they have to ration the water that they access.

Water access through informal supplier's accounts for 89% of the water accessed in the Manila barangays surveyed, with 60% of the population in these areas fetching water from supply points at a cost. These percentages are lower in Pasig but still significant. When asked why the residents were not connected to formal suppliers it was more about not being able to meet the requirements, rather than capital cost.

Sanitation access is low in the Manila surveyed barangays with Open Defecation rates at about 27%. The main differences between the two locations is the types of dwelling. In Pasig the structures are much more permanent where the household has invested more and they are more likely to build toilets. In Manila the houses are makeshift or light materials with minimal investment. This is partly due to uncertainty over permanence and lack of resources.

Land Tenure is an overarching issue that impacts decisions of households for investment in shelter and WaSH. It also limits formal supplier's investment plans. There are two main types of informal settlements, one is with private landowners and the other is "with permission of the LGU". The latter are often in vulnerable areas such as shoreline, river banks, or disused dump sites. With Private Land it's always subject to the potential of being sold, or developed for commercial or higher end residential communities. However, it seems that there is more allowance for building more permanent structures and toilets on privately owned areas. With the LGU permitted areas there are always discussions and rumors of relocation. Often when relocations are made, some of the residents return due to livelihood and basic service access.

LGU's do not prioritize WaSH. This is because of their perception that the concessionaires are responsible for these services, particularly water. Unlike areas outside of NCR, there seems to be limited investment by LGU's in toilet subsidies or any proactive sanitation programs. This may be changing as there seems to be some political will for environmental clean-up and there are now national policies that clearly articulate standards. The relationship between the Urban Poor and in particular the ISF communities and the local governments is complicated with perceptions and misconceptions often dominating how the two entities interact in a combative way. LGU's do provide direct assistance to the population with a third being involved in the 4P's program and significant access to medical assistance. Also in times of emergency, food and shelter assistance is provided.

The original problem statement was "**The marginalized and poor sectors of our communities do not prioritize WaSH as a survival/thriving need, or lack the means to invest sufficient capital for WaSH service connection or construction of WaSH facilities"**

Based on the findings this could be modified to "**The high cost of water for the marginalized and poor sectors of our communities combined with uncertainty of land tenure limits the opportunities for prioritizing hygiene and sanitation behaviors"**

These sectors pay for water, it is prioritized, and they pay significant amounts. When they live in areas that have certainty of tenure they invest more in dwellings and the number of household toilets are significantly higher. Hygiene practices are limited by cost of water.

In the framework of Demand, Supply and Governance, the gaps in communication and proactive LGU programming combined with limited supply driving up costs, cannot meet the existing demand.

Governance

Any pilot programming will need to include governance components and not just in WaSH. It must include strategic and realistic projections on relocations so that communities and service providers can determine the value of investment. It must take accountability for areas where people are living with permission of the LGU and hold land owners accountable in private informal settlements. Noting that most LGU direct assistance to these communities is medical in nature the improvement of overall health will reduce those costs, additionally, with certainty comes stability, and improvement of quality of life increases the income generation capacity of the community. Water and Sanitation is a tangible commitment to this improvement where there is a sharing of investment between government, household and the private sector.

Water Supply the Number 1 Issue

Quantifying the water shortage and interpolating the capacity to pay, along with more certainty allows both the formal and informal water service providers to invest in better and more efficient service delivery. By leveraging and legitimizing the Informal water supply industry it would allow investment and improvement in service delivery and reduction of unit cost which is beneficial for all. Using this strategy rather than trying to replace the existing informal sector, provides these actors a chance to move from exploitive practices to being more service oriented, while still making a profit. This increases flexibility for formal suppliers to work with these groups and limits potential conflicts if they are forced out of business. Water rates don't have to be the same as the rest of Metro Manila, but the monthly cost needs to be comparative, accounting for the increased cost for reaching these areas. Remember there is capacity to pay so that's not an issue and the partnering with existing informal suppliers eases the requirements for connection.

More safe water to these families will result in improved hygiene practices, increase investment in toilets, and move behaviors in a more positive direction. By communicating and leveraging the existing systems, conflict and opposition to this development will be mitigated.

Sanitation Improvement

Population densities, geographical location, vulnerability to hazards and access are factors that impact sanitation solutions. There is no one technical solution and no single way of investment. Unlike water or electricity which are technically easy to solve, this will require flexibility and a combination of interventions.

- Solution development.
    - For each situation there are different technical solutions. These communities can access the materials and the skill sets to implement all of these solutions.
    - For households wanting individual toilets the different approved designs can be disseminated so that they can then purchase materials and direct trades people to build.
    - For areas that need communal systems (toilets or septic tanks to toilets in houses) the design needs to account for regular maintenance and management.
    - Desludging and sludge processing must be part of the design solution
- Governance
    - The LGU needs to take the lead in the development of solutions and work with service providers for desludging and processing.
    - Note that it needs to be tied into water supply and there is potential to maximize the services of new water service providers to include toilet maintenance and management along with sludge processing.
    - Equity support will be needed for the more vulnerable sectors. As can be seen, women headed households have less resources available for investment. Families with disabled members have greater needs and may have special requirements. Seniors will also need financial assistance.
    - Note that along with the Equity Support Program there is an opportunity for the LGU to work with communities to ensure that they avail of all benefits due to their vulnerabilities, ie. Ensuring that all PWD's have an opportunity to get their ID's
    - Equity support programs are not limited to cash transfer or in-kind handouts, but can include blended options with local finance institutions.
- Demand Creation
    - In areas where Open Defecation are present, there will still be a need for changing the social norms. Both local governments, CSO's and volunteer community groups can work together to change the behavior of individuals and use that peer pressure to make open defecation unacceptable.
    - These behavior change programs can also serve to mobilize communities through their local mechanisms to monitor and hold accountable service providers as well as serving as a conduit for LGU WaSH related communications and dialogue.

Next steps would be to detail design a pilot program with the LGU and formal service providers in pilot areas. This design phase would include the steps above and allocation of funding for implementation as well as sourcing capacities where they are lacking in the collaborators. All of this would be done in conjunction with developing a real time monitoring, evaluation and learning framework that looks for scalable solutions.

This is a solvable problem and the SDG deadline is less than 10 years away.

2. Summary of Findings

2.1 Poverty

These barangays represent the poorest of the poor. The difference between the barangays in Manila and Pasig is stark. Using the poverty threshold of 14,000PhP 69% of the Manila residents in these areas are below that income line while 51% is below the line in Pasig. Taking into account expenses, the capacity for families to save for improvement or resilience is much lower in Manila and on average most of the people in these areas are living day to day. On average, over 60% of their expenses goes to food security.

When women are the main income earners there is a significant income gap in comparison to male counterparts with women earning 84-87% in comparison to men.

Families that had members with disabilities, that they perceived as serious, did not face disparities when it came to income generation.

The costs of water supply and electricity were raised as one of the biggest issues, and cost of water cited as guiding hygiene behaviors. The cost of water for both areas is high in comparison to the official water costs for wealthier residents and electricity costs for those who have connections is also a significant cost and per kwh is higher.

Key Points:

- Manila City has the largest poorest population.
- The majority of the urban poor in these types of barangays are under the poverty threshold
- For the urban poor the cost of basic services, particularly water and electricity is higher than for higher income earners still within NCR
- Women headed households earn less
- Food Security is borderline for the majority, particularly those without regular employment

2.2 Land Tenure and Housing

Land tenure and the types of housing gives an indication of household investment and commitment/perception of permanence that the residents have. Informal settlers are those that live on vacant lands with permission of the owner or permitted by the LGU. This permission in large settlements or in vulnerable areas is more than likely closer to tolerance rather than official acknowledgement that they can live there.

Again, the largest informal settlements are located in Manila with 71% of the residents surveyed, in private or LGU permitted settlements (51% in LGU). This lack of permanence is also reflected in building construction with only 34% made of concrete and light materials and 37% classified as temporary makeshift shelters.

In Pasig 44% are located in LGU permitted areas and 25% with private landowner permission. However, there is more permanence with 55% in concrete/light material houses and only 13% in temporary shelters.

Key Points:

- Informal Settlers on private and LGU permitted settlements is about the same percentage in Manila.
- In Pasig there is more stability and investment by residents in their homes which is reflected in the types of dwellings constructed.
- LGU's are perceived as providing permission to the majority of informal settlers to be living in those areas.

2.3 Water Supply

In both Pasig and Manila, the quantity of water used by the urban poor is well below recommended levels. There is a mix of formal water supply through Manila Water and Maynilad and informal suppliers that generally tap into these formal suppliers and mark it up for residents. Even though these formal supplies are present, the quantities available are perceived to be low. The lack of consistent supply and cost of this water is modifying hygiene behaviors. Note that the DILG standard for level I users, which is the minimum, is 20 liters per day per person. Use per person in these areas is much lower than this.

The monthly cost of water is well above the standard cost for water from formal suppliers for the residents living outside of these areas throughout NCR, for much less water. The costs as a percentage of income is above the DILG recommendation for water and sanitation services which is 5%, whereas in these situations it is a significant cost being between 6 and 11% of expenses.

In Pasig, 50% get their water from formal suppliers, while informal suppliers are responsible for most of the balance. In Manila only 9% gets their water from a formal supplier with 89% getting water from informal suppliers. In Manila 70% buy drinking water from refilling stations and 66% of residents have to fetch their water from their suppliers.

Depending on location and supplier the price families pay for insufficient water is between 550 and 600PhP per month in Pasig and 900-1000PhP per month in Manila.

When asked why they don't have connection to a formal supplier the biggest issue is the requirements for connection as these cannot be met. Large percentages also talk about the capital cost to connect as being problematic as well. Additionally, in FGDs there was discussions that the formal suppliers are perceived to be struggling to provide sufficient water to these areas or may not have networks close enough to effectively supply.

Key Points

- The urban poor has a water shortage and this is impacting hygiene behaviors. The shortage is mostly due to high costs of water.
- The cost of water per liter for the urban poor is much higher than elsewhere
- Water access for women headed households as well as households containing members with disabilities, actually avails of water supplies in higher percentages than population at large.
- The monthly cost of water is almost twice that for other residents (for less water).
- Water available per family due to cost is ¼ of that available to other residents using minimums.
- In Manila the informal water supply sector is large and entrenched.

The Cost of Water

For **Manila Water** the cost structure for 10 cubic meters per month is:

Basic Charge	63.16
FCDA*	1.53
Environmental Charge	12.49
Maintenance Charge	1.50
VAT	9.50
TOTAL	**88.63**

For **Maynilad**

Basic Charge	96.32
FCDA*	-0.34
Environmental Charge	19.20
Maintenance Charge	1.50
VAT	14.00
TOTAL	**130.86**

*FCDA is Foreign Currency Differential Adjustment, varies but for 3rd quarter 2019 2.43% applied to basic charge



2.4 Sanitation Situation

Eighty Percent of residents in Pasig areas surveyed, have toilets with an overall open defecation rate of 2%. Conversely in Manila areas surveyed, only 49% have toilets and of those without toilets 53% defecate in the open or in waterways resulting in an overall open defecation rate of 27%.

Toilet ownership by women headed households or families with disabled members is in line with the general population.

Surprisingly houses that are rented in Pasig have lower toilet rates than those that are squatting on public or private land. In Manila the rate for dwellings on private land have a higher toilet ownership level.

For bathing in Manila 30% of the household's bathe in the open, no doubt near water sources.

For residents interviewed, water borne diseases are a minor issue, even though it's in the top ten morbidity rates.

Key Points

- Open defecation is a major issue in the urban poor communities in Manila. Open Defecation is more acceptable in Manila with few people sharing toilets.
- Where people invest more in their housing, the more likely they are to have toilets.
- Bathing in the open is linked to the fact that they fetch water so they choose to bathe near the sources.
- Access to toilets is higher for women headed households and those with disabilities which recognizes needs and that they prioritize this more.
- Reduction of water borne diseases is not a high priority of the residents as it is a minor issue relative to other illnesses.

2.5 Governance

Main form of government interaction is through either medical missions and/or getting assistance dealing with medical issues. Most of the contact is through the barangays. Additionally, a third of the households participate in the 4Ps program.

Local government policy in other areas has indirect impact on the living conditions in the areas. The current clearing operations of many of the street vendors is taking away their livelihoods, relocation programs and lack of direct information and timelines creates uncertainty. For relocation programs many relocated residents return, due to income generation opportunities.

Safety and security is an issue. For government and non-government interventions there needs to be clear planning and coordination with Barangay officials. This also impacts ease of access for service

providers with vandalism rates for pipelines high, and the rise of informal water suppliers with extortive rates.

There have been interventions from formal water suppliers to connect more of the urban poor, but this is limited by infrastructure capacity along with the requirements for connections. Some NGO's and CSO's are also implementing WaSH access projects in these areas. There is a high concentration of these CSO's in the Manila Smokey Mountain area.

At the city level there is little strategic WaSH development focus. Primarily this is due to the presence of Manila Water and Maynilad, as well as no clear national mandates on Sanitation. However, with the passing of the PhATSS (Philippine Approach To Sustainable Sanitation) policy there now is a framework and the new administrations are now starting to focus on sanitation from an environmental view.

For Manila, scale is an issue. The LGU itself is large and compartmentalized. For CSO interaction and program development there has to be political will combined with a concentrated effort to include all relevant departments in determining strategic plans and implementation. The barangays themselves are also large with their own limitations as far as capacity to implement and strategic development of plans.

In both locations there is increasing political will.

Key Points:

- The LGU's need to rationalize WaSH development with their plans for relocation of ISF so that they can clearly articulate the future to ISF and target those that are more permanent with effective programming.
- LGU's are not familiar with the PhATSS (Phased Approach to Sustainable Sanitation) policy and implementation methodologies that have been developed by DOH.
- WaSH related structures in the CLGU needs to be reviewed and coordinated to improve strategic effectiveness.
- Closer coordination between water service suppliers and LGU would be key to strategically expand services.

3. Bottlenecks for WaSH Access and Quality of Life Improvement

3.1 Access to Water

- Issue
  - Cost of Water is higher than for other sectors on a monthly and especially on a quantity basis
  - Availability of water from formal suppliers limited by infrastructure
  - In Manila, Informal Water Suppliers command majority of market
  - Water consumption is about 60% of the minimum requirements and less than that of the sphere standard for emergencies. This directly impacts hygiene practices due to rationing water for bathing.
  - The unpredictability of relocation policies of LGU's reduces potential for investment in these areas by suppliers.
- Misconceptions
  - Capacity and willingness to pay. People are already paying twice as much for ¼ of the water volume from formal suppliers.
  - For connection to formal water systems, the requirements are as much of a barrier as is the capital cost, if not more.
- Opportunities
  - For formal suppliers, this is a large untapped market.
  - Where there is uncertainty regarding permanence, formal suppliers could leverage work with informal suppliers to improve access, reduce costs to the consumers without large infrastructure investment
  - Linking water supply to sanitation access to PhATSS

3.2 Access to Sanitation

- Issue
  - Open Defecation is large problem in Manila. This corresponds to the types of dwellings being more transitional in nature with minimal investment by residents due to level of income as well as less of a sense of permanence.
  - There is no strategic government intervention for sanitation such as subsidies, outside of providing toilet bowls
  - Limited access to water for flushing with 60% in Manila having to fetch water.
  - Technical low cost options not readily known about for people to invest in.
- Misconceptions
  - Toilet access is actually higher in areas where people are informally settled on private land compared to areas where people are living with "LGU Permission"
- Opportunities
  - The majority of the open defecation issues are in areas that are under LGU control so land owner permission is not an issue. The LGU also has control over the long term use of this land.
  - If water access is improved, then sanitation investment by households will increase
  - PhATSS is a guiding framework that can anchor sanitation programming
  - Moving from reactive to proactive interactions with the residents could reduce load on medical budgets for LGU's

3.3 Hygiene and Public Health Risks

- Issue
  - Hygiene Practices are actually being modified due to the cost of water.
  - Water borne diseases rank low in public awareness particularly in comparison to the common cold, fever and other common health issues.
- Misconceptions
  - People in this situation don't care about hygiene, yet spending on hygiene products are significant, but the cost of water means rationing and inability to perform on daily basis.
- Opportunities
  - Improvement of access to water and reduction in cost will significantly change behaviors with rapid changes that can be seen by residents spurring more permanent behavior change.
  - Hygiene does not just contribute to water borne diseases but also malnutrition and resistance to common diseases. Improvement of hygiene status will reduce health care costs.

3.4 Governance

- Issue
  - WaSH is not a priority for City LGU's in NCR. This is due to the fact that the water concessionaires are thought to be responsible for water supply, sewage and septage management.
  - Cities are large and bureaucracy is also large, but they do have a sanitation bureau. We were not able to ascertain if there is a strategic plan for WaSH development that crosses multiple departments and believe that much of the functionality is regulatory in nature.
  - For ISF communities there is always plans for relocation and hence an overall understanding that investment would be a waste of time.
  - The sanitation issue is not a high priority manifesting in minimal allocation of resources
- Misconceptions
  - Under the DILG code, LGU's do have responsibility in facilitating water and sanitation services. The PhATSS policy provides a cohesive sanitation implementation framework.
  - That "Squatters" are on private land and land owners won't allow construction of permanent structures. However, the largest portions are living on land where they believe that they have LGU permission to be there.
  - That residents are not willing to pay for services. They are.
- Opportunities
  - After the last election there has been a recognition of the sanitation issue and political will can be generated and strengthened.
  - By using PhATSS and working with formal and informal water suppliers the LGU's can strengthen community engagement processes which can translate into other aspects of LGU service delivery.

4. Programming Options for Piloting

Informal Settlers and the urban poor have inadequate access to water and sanitation services. This is particularly relevant in the areas surveyed.

4.1 Cost of water is the highest barrier to improved quality of life

The cost of water per liter for these poorest of the poor is 8 times the cost for others that live in areas serviced by the 2 concessionaires. This cost and lack of access is driving unhealthy hygiene behaviors and limiting the use of toilets, while still being a significant cost of living expense.

"The highest priority is to increase quantity of safe water while reducing the cost per liter"

Current Stakeholders

- Formal Service Providers
  - Manila Water Company, Inc.
  - Maynilad Water Services, Inc.
  - (MWSS)
- Informal Service Providers
  - Point sources connected to formal water service provide and selling by containers to residents
  - Distribution from a meter connected to formal service provider or from their own source
  - Neighbors with a connection selling through distribution piping or as a point source.
- Community and community representatives
  - Barangay Council
  - Peoples organizations and CSO's operating in the area
  - Households

Assets

- Existing concessionaire infrastructure that is near or within target areas
  - Need to determine capacity of this and work on reducing the gap for projected quantities
- Informal Service providers have infrastructure, management and billing systems
  - Can identify largest players and also numbers of houses that serve as suppliers.
  - Review of their infrastructure where it exists
- Community that has demand and has shown capacity to pay.

Minimal Performance Targets

- 40 liters per day per person (family of 6 = 7.2 cubic meters per month)
- Within 100 m of household for fetching
- Monthly cost for minimum should be less than 250PhP (35PhP/cubic meter calculated on a monthly cost being 50% of current costs for correct amount of water based on use not 10cum minimum)
  - Maynilad (10cum minimum 130.68 = 14PhP/cubic meter)
  - Manila Water (10cum minimum = 88.63 – 9PhP/cubic meter)
- Quality meets the 2017 "Drinking Water Quality Standard"

Potential Strategies and Action Points

- Identify target areas. Suggested Criteria:
  - No planned relocation within the next 5 years
  - Concessionaire infrastructure is in proximity.
  - Presence of informal suppliers
  - Secondary criteria
    - ISF in Public Spaces
    - Open Defecation present
  - Once area identified, start education Program for residents and informal water suppliers about pilot program to start community engagement and dialogue with informal suppliers. (note that this will require information on relocation status etc.)
- Specify Water needs
  - Determine quantities required to meet minimum standard based on population
- Determine current supply environment
  - Map current formal supplier capacity
  - Map Informal supplier capacity
  - Start dialogue with informal suppliers
- Based on the needs vs capacity determine bulk water solutions maximizing both formal and informal capacities
- From the Bulk water solutions determine the distribution solutions:
  - Improvements to existing set up to match capacities
  - Fetching versus distribution or strategic phasing of distribution
  - Tariff determination
    - Investment sharing (Formal, Informal, Government)
    - ROI determination
  - Community engagement programming
- Choose one area and if needed, set up one Informal Water Service Provider and implement
  - Set up monitoring and evaluation of program.
    - Tracking of investment by all parties
    - Household tracking of sample population
      - Quantities used
      - Cost of water monthly
      - Expense tracking
      - Investment in WaSH
    - Income of Water Suppliers tracking (ROI)
    - Tracking of local health statistics and costs

4.2 Open Defecation is the largest public health risk

Not only is it a public health risk, but with the advent of the PhATSS policy this is a measurable indicator of LGU performance.

Elimination of Open Defecation will reduce morbidity, and caregiving burdens while increasing income generation opportunities and improving the general environmental living conditions for all.

Current Stakeholders

- Formal Duty Bearers/Service Providers
    - Manila Water Company, Inc.
    - Maynilad Water Services, Inc.
    - (MWSS)
    - CLGU
- Informal/Formal Service Providers
    - Pozo Negro operators (desludgers)
    - Those operating public and pay toilets
    - Neighbors sharing toilets
- Community and community representatives
    - Barangay Council
    - Peoples organizations and CSO's operating in the area
    - Households

Assets

- Some existing toilets and systems that can be used to identify good working models and/or issues in the context.
- Governance structures within the LGU's that are mandated specifically for sanitation
- PhATSS as a framework
- Potential funding and DOH programs for equity support
- Increasing political will for environmental cleanliness.

Minimal Performance Targets

- G1 as per PhATSS Policies

Potential Strategies and Action Points

- Identify target areas
    - No planned relocation within the next 2 years
    - ISF in Public Spaces
    - Open Defecation at scale
    - Water is accessible and affordable or best as part of water target site.

- Baselining and Preparation
    - Survey the technical needs and existing options
    - Design with the community options that are most appropriate including costings
        - Develop designs and dissemination so that communities can access the information easily and local tradespeople can build.
    - Review the sanitation chain in the local context
    - Work with City and Barangay LGU's to develop program for implementation
    - Note that there are many options ie. Household with septic tank, household with communal septic tank, communal toilets etc. [2]
- Program Implementation
    - Once the costs and alternatives are determined, review the ability to pay options by fine tuning the data in this study specific to the area.
    - Design and implement Behavior Change Programming to:
        - Change the Social Norm so Open Defecation is unacceptable
        - Working together, communities can help themselves to improve the situation
        - Can be implemented by B/CLGU and CSO's working in the field under a common framework.
    - Develop Equity Support systems and funding streams from National Government
        - Targeting Women Headed households due to income generation disparity
        - Targeting households with self-declared disabled members due to increased need.
            - Use this to also inform the community at large about how to be registered as disabled so that they can avail of assistance through government programs that exist.
        - Tie in to 4Ps programming as part of the conditions for cash transfer
        - Maximize government resources such as blended finance.
            - Working with local micro-finance and other financial institutions for access to WaSH loans
    - For construction of household sanitation system, the key is the information developed regarding options. The construction of the toilets would be done by the same tradespeople that build houses, either the residents themselves or local construction labor. See note on sanitation marketing programming.
    - Development and implementation of sludge collection and treatment programs. This can include local desludgers using manual pumps, drums and small vehicles for access issues.
    - Set up monitoring and evaluation of program.
        - Tracking of investment by all parties
        - Household tracking of sample population
            - Investment made
            - Expense tracking, particularly for medical costs
        - Tracking of local health statistics and costs

[2] IFC World Bank Report on Expanding Access to Improved Sanitation for the Urban Poor examines this in more detail from a Sanitation Marketing perspective

Sanitation Marketing as an Option

Looking at the Labor Market the development of specific sanitation entrepreneurs does not seem to be a viable option. This is due to the development of the entrepreneur side with participants that are living day to day. Note that there is competition with existing labor opportunities and they will have the applicable skill sets so if households have information that they understand, then they can direct the implementation of the sanitation option.

Barangay LGU's and CSO's can also act as advisors to households as they implement systems, especially those tied to equity support.

4.3 Effective WaSH Governance is required for Systemic Development to meet the SDG and Philippine Development Plan Targets

The most basic indicators in the SDG's are that by 2030 there will be universal access to safe water and adequate sanitation. To do this, the government, through its local government units must invest and facilitate the process in a systemic manner.

The pilots for Water Supply and Sanitation will fail if the WaSH governance of the participating LGU's is not systemically strengthened so that there is not only a concise strategy for the pilot programs but for WaSH as a whole. This governance strengthening can use the national governments DILG iWaSH program as well as DOH's PhATSS policy as a guideline to develop its most effective mechanisms. This includes the following:

1. Rationalizing a WaSH governance structure so that all water, sanitation and hygiene concerns are managed by a single structure in an integrated manner (iWaSH)
2. Strategic Planning which sets goals, targets and indicators so as to manage implementation and develop investment and implementation plans. (PhATSS targets and indicators)
3. Investment and Implementation planning based on strategic plans as part of Annual Investment Plans for LGU's and expansion investment plans of service providers.
4. Monitoring and evaluation systems to monitor implementation of the strategic plan.

5. Current Situation in Detail

Initially 3 cities were chosen as targets for the baseline survey. Manila, Quezon City and Pasig City. However due to time constraints there was no opportunity to work in Quezon City. Looking at the data from the household surveys in Pasig and Manila the results of the household surveys were similar and key points would more than likely be relevant to most urban poor communities in the National Capital Region.

The cities were chosen based on the numbers of households that were reported as having limited water and sanitation access as well as the results of the last elections resulting in changes in administrations that may be more likely to pursue health and environmental programs more aggressively. Specific Barangays were selected in the 2 cities in conjunction with the City LGU's identifying the areas that had the most critical water and sanitation situations. In Pasig 397 households were interviewed and in Manila 580. Key informant interviews were done with Barangay and City officials as well as service providers and some key CSO's.

5.1 Household Survey Barangays

For both cities the barangays selected were based on having high percentages of poor residents. In Pasig the amount of Informal Settler Families (ISF) are low in comparison to Manila.

In Manila 4 barangays selected were

- Bgy. 649 (BASECO) - the largest barangay, also with highest IRA of 49M last year.
- Bgy. 20 - This is where Isla Puting Bato and Parola communities are, there is only one entrance or exit road to Isla Puting Bato (this is not an island though). Based on conversation with the Barangay Chairman, this barangay is home to lawless elements (guns for hire, drugs, snatchers, etc.) from previous years, though there is a lot of improvement now, due to Oplan Tokhang. In fact, according to the brgy captain most previous Captains were gunned down.
- Bgy. 105 (HAPPY LAND)- Temporary holding site of garbage before these are sorted out and shipped to permanent dumping site in Cavite. That is why, many urban poor families here live on "pagpag".
- Bgy. 128 - (SMOKEY MOUNTAIN)- No longer a dumping site but the smokey mountain is home to more than 800 ISF families, the area itself is disputed by 2 interested corporations who want to privatize or commercialize the area. The whole barangay is owned and supervised by the National Housing Authority. It has 30 mid-rise buildings for ISF resettlement. However, some unit houses 2 or 3 families. They have barangay council, but the governance is still sanctioned by NHA.

Pasig is a much smaller city and there are limited pockets of ISF communities within wealthier barangays.

- The barangays selected in Pasig are Pinagbuhatan, West Bank Maybunga, Pineda, San Miguel, Kapitolyo, Pineda and Palatiw.
- The ISF communities in Bgy. San Miguel in Tuazon and Tambakan Alley we observed are the most depressed.
    - Tuazon was once owned by a trucking company and when it folded, the employees stayed in the place and are the present occupants. There is already a negotiation with LGU and land-owners to award this to the actual occupants and this is what the community are hoping for. Most of these people are really Pasiguenos.

5.2 Surveyed Population Demographics

Description	Pasig	Manila
Average Family Description		
Average Family Size	5.70	5.48
Age Desegregation		
0-5	14.0%	16.5%
6-17	25.5%	29.1%
18-59	56.1%	49.1%
60+	4.4%	5.4%
Families with member with severe Disability*	14.4%	18.1%
Female Main Income Earner**	17.4%	19.3%

* Where the interviewee self declares that they have a family member that has serious difficulty or cannot do one of several functions, including physical, mental, sight and hearing

** Where the Mother or Daughter is listed as the main income earner for the family.

For families with self-declared disabilities, only 2.76% have IDs in Pasig and 1.37% in Manila, indicating difficulty with these families availing of the ID's or not being aware of the benefits. Conversely the percentages of households with Senior Citizen ID's are 11% and 17% contradicting the age data collected. Based on the household surveys the interviewees were asked about their primary and secondary sources of income. The values listed below are based on their total income as per respondent's estimates.

Pasig interviewees generally earn more income with 51% below the poverty threshold of 14,000PhP per month, while in Manila 69% are below the poverty line. Female bread winners earned between 13-16% less than their male counterparts, however families that have disabled members earned the same as families who self-determined that all their members were non-disabled. This is determined by

calculating the medians rather than the averages which is more representative of the bulk of the surveyed population
The 4Ps program from DSWD targets those living below the poverty threshold with conditional cash transfer. In Pasig this was provided to 31% of the interviewees and 38% in Manila.

The table on the following page shows income and disparities according to location, gender and disability

Description		Pasig	Manila
Family Income Status			
Total Income Monthly Averages			
	<999	0.5%	0.9%
Below Poverty Threshold	1000-14000	50.9%	68.3%
	14001-20000	18.9%	19.7%
	20001>	29.7%	11.2%
Income Disparity Mean			
	Male Bread winner Income	14,300	11,440
	Female Bread Winner Income	12,000	9,900
	Families with Disability	13,750	11,000
	Families without disability	13900	11,000
Pay Period			
	Daily	56%	72%
	Weekly	12%	16%
	Monthly	32%	12%
Main Income Generation Activities			
	Labor *	37%	45%
	Employee Govt or Private Sector	31%	15%
	Driver	12%	8%
*Labor includes household, construction, all general unskilled activities, usually on daily paid basis			
Secondary Income Generation Activities			
	Labor *	32%	42%
	Employee Govt or Private Sector	35%	10%
	Sarisari store	9%	9%
	Food Vendor	10%	11%
	Other small business	5%	14%

Pay Periods and types of income are generally linked. In Manila income is lower due to the fact that more of it is based on daily labor and so is inconsistent and low paying. The more people who are in regular jobs the higher the income.

Income is only half of the equation. Expenses are of course limited by income and need. According to PSA the lowest decile is in a constant debt cycle where their expenses are generally more than their income, allowing no savings for capital improvement or resilience in case of emergency.

On average the expenses for basic needs is about 90% of their income with the largest component being Food, typically over 60%. Schooling expenses for children is between 10-14% for all families. Sixty-Five percent have an electrical connection which maybe formal or through sub-meters which is a large expense 11% and those that rent spend about 17-18%.

Water and hygiene supplies make up 15-17% of their expenses. With Water being a much larger cost in Manila compared to that in Pasig. Note that DILG states that 5% of income/expenses should be water and sanitation related.

Based on Income, those in Pasig have more capacity to save money, however the total savings possible on average is small without accounting for other needs such as clothing, transport, communications etc.

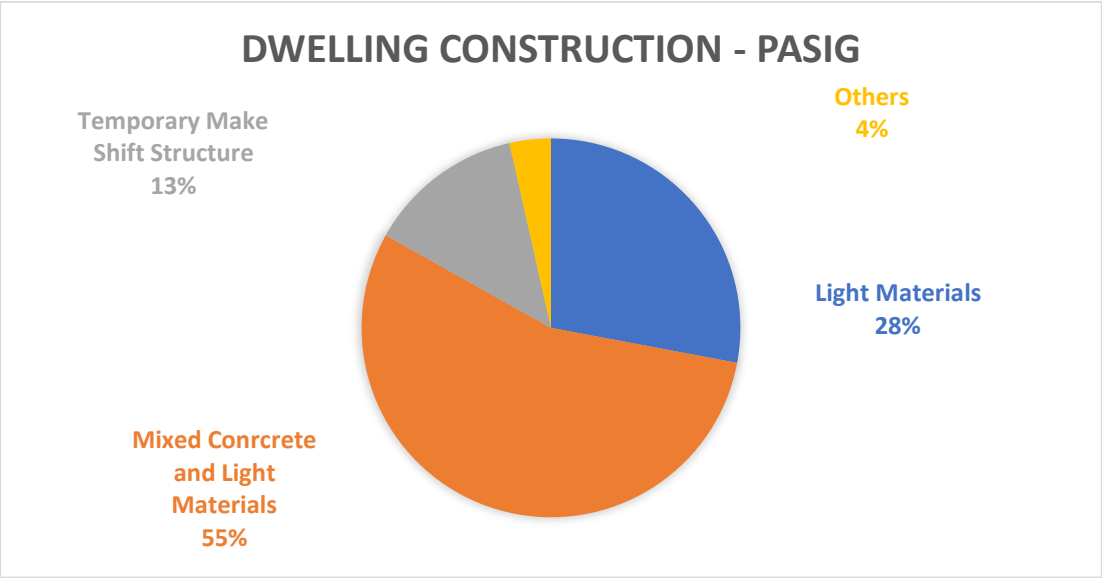
Average Household expenses	**15,080**	**12,423**
As a percentage of Average income	88%	91%
Expenditures common basic needs as %ge of total expenditures		
Food	61%	64%
Water	6%	11%
School	13%	10%
Medicines	4%	2%
Hygiene	9%	6%
Average Household basic needs expenses	15,080	12,423
As a percentage of average income		
Food		
0-10,000	69.01%	77.84%
10,001-20,000	29.43%	21.82%
20,001+	1.56%	0.35%
Water		
1-250	6.75%	2.84%
251-1000	36.59%	53.29%
1001-5000	9.32%	41.74%
5001+	0.14%	2.13%
Rent		
%ge renting (based on expense survey)	21.91%	7.24%
Average cost per renter	2,631	2,258.5
%ge based on average expenses	17%	18%
Electricity		
%ge with electrical connection	64.99%	65.52%
Average cost per connection	1,706	1,422
	11.32%	11.44%
Families with Capacity to Save based on living expenses vs income	56.42%	45.34%
Average Savings after basic needs met	2,142	1,232

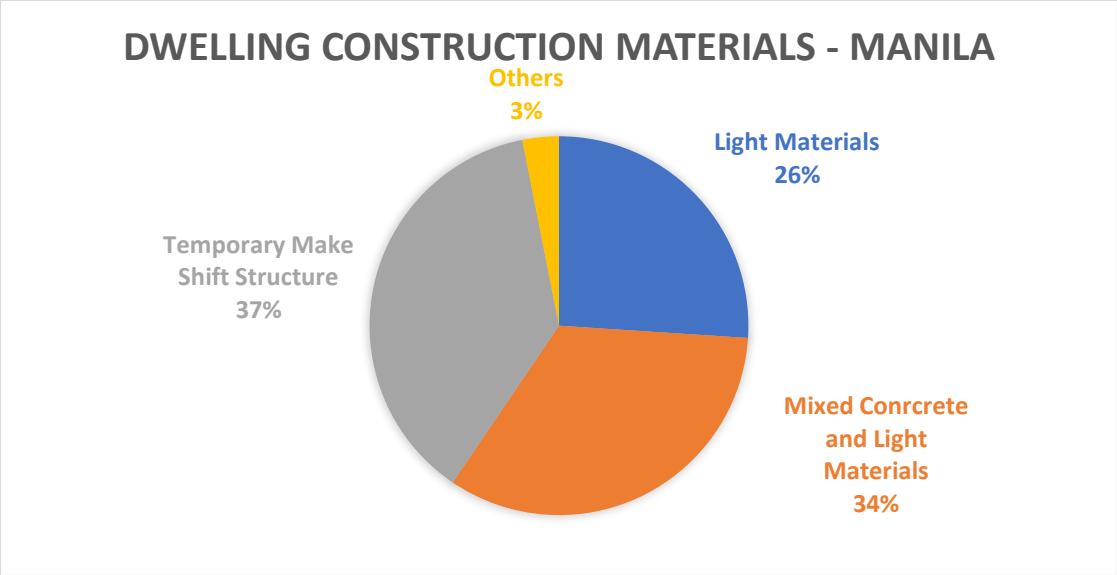
For the urban poor they mostly do not own the land that they live on. Renters are a small component whereas most of the population informally settle either on private land with permission of the owners or on other public lands with permission of the local government unit. Much of both the private and public land are in areas of high vulnerability ie. River banks, sea shores, stilt housing over water bodies or in the Smokey Mountain case on existing or old landfills. Additionally, the materials that the houses are built with represent the investment that families have made in living in this area as well as their capacity to afford this construction. Certainty over their land tenure also impacts this investment and so those living on private properties are less likely to invest, whereas those living in public lands also share similar uncertainties.

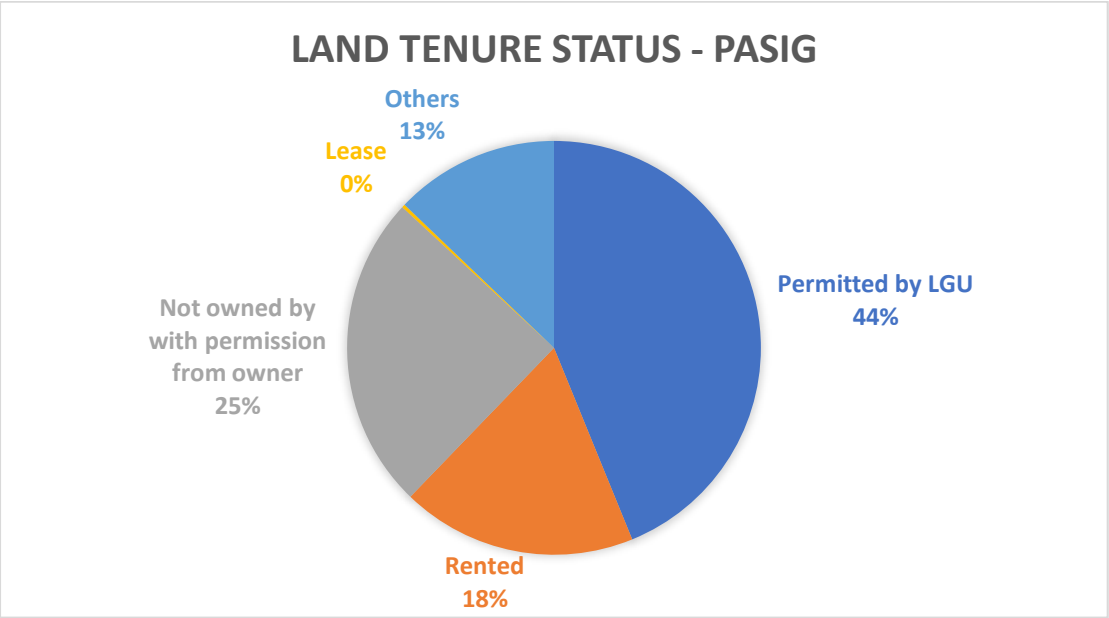


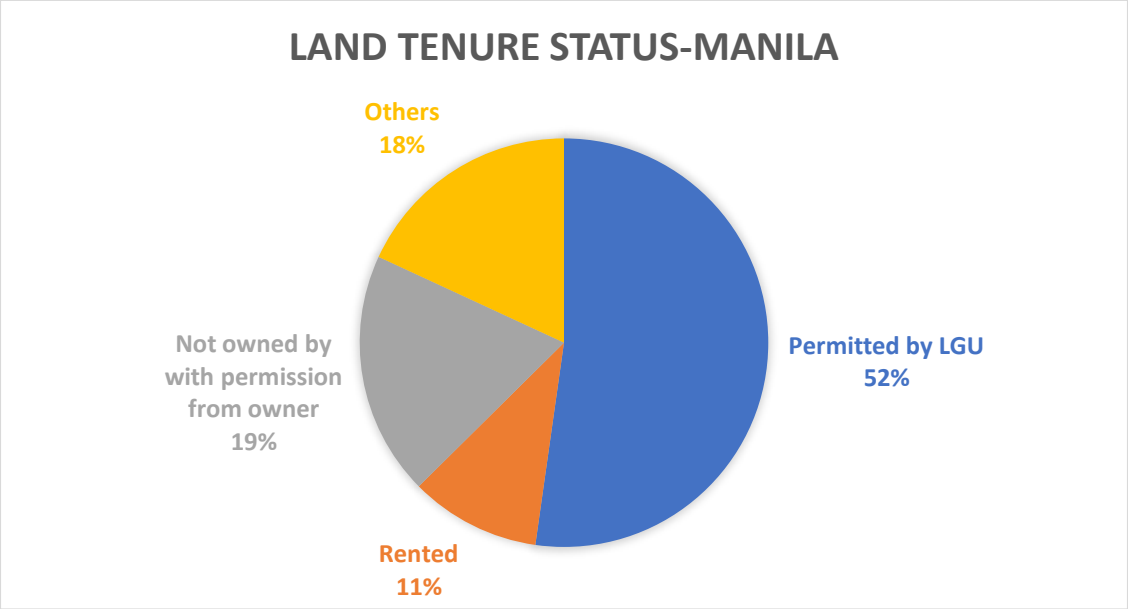
As the government tries to alleviate the informal settlers issue with relocation subdivisions, often the relocated populations return to their original locations, due to livelihood, access to services, particularly schools as well as familiarity with neighbors and community at large. As can be seen below, the residents of Pasig are in a much more favorable situation with more permanent type housing in more stable land tenure situations.

In Manila, 52% of the families are settled on sites with LGU permission and in Pasig this is 44%. This shows that there is LGU control over almost half of the land tenure issues. IN Pasig, the types of houses show that the residents are investing in more long term settlement whereas in Manila, residents are more transitional in attitude and expect to be moved, or cannot invest in permanence.


DWELLING CONSTRUCTION - PASIG
Temporary Make Shift Structure 13%
Others 4%
Light Materials 28%
Mixed Conrcrete and Light Materials 55%


DWELLING CONSTRUCTION MATERIALS - MANILA
Others 3%
Light Materials 26%
Temporary Make Shift Structure 37%
Mixed Conrcrete and Light Materials 34%


LAND TENURE STATUS - PASIG
Others
13%
Lease
0%
Permitted by LGU
44%
Not owned by
with permission
from owner
25%
Rented
18%


LAND TENURE STATUS-MANILA
Others
18%
Not owned by
with permission
from owner
19%
Permitted by LGU
52%
Rented
11%

5.3 WaSH Situation

5.3.1 Water Supply

Most residents get water from a formal or informal water supplier. Informal water suppliers are usually connected to formal water supplies and either sell water in bulk containers, which are collected by the household, or piped to the residents. Some of these are sub metered or they pay fixed rates determined by the informal supplier. This can be a single household supplying neighbors to small businesses with their own distribution systems running along the streets. In Manila areas surveyed, almost 90% are getting water from informal suppliers, whereas in Pasig 50% actually are accessing formal supplies. Note that in relation to women headed households and those with disabled families the accessing of formal water supplies is slightly higher than overall averages.

Description	Pasig	Manila
Informal vs Formal Water Suppliers (ie. Submeter etc)		
Formal Water Supplier	50%	9%
Informal Water Suppliers	45%	89%
Wells, pumps or tanker	5%	2%
Families with Disabled Members that have access to formal water supplier	55%	12%
Women as major income earlier access to formal water supplier	59%	20%
		`

Though residents have access to water this amount available/affordable is insufficient. In the FGDs there was discussion about rationing water for hygiene purposes. Note that the DILG minimum per person is 20 liters per day. The other standard is that Maynilad/Manila Water both have 10 cubic meter minimums which corresponds to about 300 liters per day or 50 liters per person for a family of 6.

Consumption liters per family per day		
0-20	5%	2%
20-70	66%	82%
70+	28%	15%
For 70 liters per day per family the individual use =	12.29	12.78
Note that DILG standard is minimum of 20 liters per day deficit is	7.71	7.22
%ge of minimum people are typically using.	61%	64%

Note also that in Manila 70% of residents purchase their drinking water from refilling stations while in Pasig 49% do.

Part of the issue with trying to increase water consumption is that if the family has to fetch water this increases burden on fetchers in terms of time and physical effort. In Pasig only 30% have to fetch water, while in Manila 66% fetch water and 61% of the fetching is done by mothers and children.

Those that are not connected to the formal system are not connected due to the connection process and cost of connecting. Within Manila all of those connected to informal suppliers wish to connect to a formal supplier but cost and requirements are prohibiting this. The study did not determine if service was available in these areas and there were discussions that said that the formal water suppliers in many cases were not able to provide sufficient quantities during peak periods and were often the first to be shut down during times of water shortage in dry season when rationing is implemented. However, the requirements for connections outweighs costs as the reason for not connecting.

Reasons for not connecting to formal water provider	Pasig	Manila
Inability to comply with requirements	56%	52%
Unaffordability of connection fees	24%	47%
Happy with current set up	20%	1%

Connection requirements

1. Accomplished application form and contract
2. Copy of building and Plumbing permit
3. Copy of at least2 gov't issued IDs
4. Barangay certificate/clearance
5. Proof of billing
6. Copy of BIR form with TIN
7. Letter of authorization for the person who will facilitate application
8. Original copy of signed request for ROW if line will pass thru private property.
9. Procurement and payment of necessary excavation permit.
10. Clearance from previous MWSI or MWCI
11. Payment of cost assessment for the applied water service connection

Land Tenure as a reason for limited access to formal water supplies was reviewed and it is found that in Manila, access to formal vs informal was similar to the overall access figures regardless of the tenure situation. However, in Pasig those that lived on private land was 20% less likely to access a formal water supplier.

As a monthly cost, the cost of water per household is at least twice as much as for families using the minimum from Manila Water or Maynilad, however their consumption rates are also much lower ie. 25% of minimums so in actuality the cost of water per liter is a factor of 8 higher.

Cost of Water per family per month	Pasig	Manila
0-250	6.75%	2.84%
251-1000	36.59%	53.29%
1001-5000	9.32%	41.74%
5001+	0.14%	2.13%
Cost of Water		
Formal		
Average	747.36	1,305.77
Median (Best approximation for what people pay)	550.00	1,000.00
Mode (most common amount paid)	500.00	500.00
Informal		
Average	754.98	1,261.56
Median (Best approximation for what people pay)	600.00	900.00
Mode (most common amount paid)	600.00	600.00

The cost varies with location, where in Pasig the cost of water for the formal supplier is closer to the normal cost than in Manila. In both situations the cost for informal water is similar to the formal supplier cost of water. In Manila the cost of informal supplier is lower than for formal, but this could be due to the fact that there are few formal connections and they may be supplying neighbors and the informal networks are charging high rates per liter and people are using less due to access and cost.

5.3.2 Sanitation Situation

Eighty percent of residents in Pasig areas have their own toilets whereas in Manila it's 49%.

Of the 51% in Manila that do not have toilets, 53% practice open defecation which corresponds to an overall open defecation rate of 27% which is a public health issue of magnitude. Conversely in Pasig the overall rate is 2%.

Land Tenure is often cited as an issue for sanitation.

Toilets based on land tenure	Pasig	Manila
Overall	80%	49%
LGU permitted	89%	49%
Private permitted	76%	60%
Rent	66%	53%

Rentals are a small segment in the market, however toilet access in rentals is problematic. Toilet access in private and LGU permitted informal settlements, the percentage of the population with access to toilets is close to the averages overall.

Toilet ownership for females as main income earners and families with disabled family members shows no disparity compared to the overall access rates.

	Pasig	Manila
Overall	80%	49%
Toilet Ownership for familys with disabled members	80%	56%
Toilet Ownership for Women As Main Income earners	87%	48%

For bathing, the access to water and privacy are markedly different between the two cities.

Bathing Options	Pasig	Manila
Home cubicle	84%	57%
Shared cubicle	4%	12%
In the Open	12%	30%
River/Beach	0%	0%

Water Borne diseases rank in the top 10 of both cities morbidity statistics, however during interview the most common illnesses recalled are colds and fever where water borne diseases are recalled as a major or secondary illness less than 3% of the time.

5.3.3 Governance Interactions

In Pasig 77% of the residents receive some form of assistance whereas in Manila its 56%. In both cities, the majority of that support on a regular basis is medical support. Other support is varied but the food, shelter and financial support is mostly provided in times of emergency ie. post typhoon, fire or flooding.

The amount of interaction with government outside of these interactions is limited and the support given is responsive and there is minimal proactive support to improve the current living conditions. The table below shows the different levels of government and types of support provided. Water and Sanitation support is minimal.

Description	**Pasig**	**Manila**
Government/Community Interaction		
%ges Of residents receiving assistance from Government		
Barangay Level	76.57%	55.69%
City Level	61.21%	18.28%
National Level	13.35%	22.76%
From more than 1 level of government	53.15%	23.28%
Top Assistance Categories by Government Level		
Barangay		
Different forms of Medical support	72.08%	49.34%
Food Subsidy	16.23%	34.43%
Shelter Support	2.15%	5.26%
Water and Sanitation Support	1.19%	0.22%
City		
Different forms of Medical support	28.30%	19.20%
Food Subsidy	30.46%	14.40%
Financial Assistance	3.50%	42.40%
Uniform Assistance	15.90%	9.60%
Educational Assistance	13.75%	5.60%
Water and Sanitation Support	2.16%	0.00%
National		
Different forms of Medical support	56.06%	26.79%
Food Subsidy	12.12%	1.19%
Financial Assistance	7.58%	41.07%
Educational Assistance	7.58%	14.29%
Disability/Elder Support	12.12%	11.31%
Water and Sanitation Support	1.52%	0.00%

Water and Sanitation governance in Manila and Pasig

There is a marked difference in size between these 2 cities. Manila has 896 barangays and the LGU only has 66 sanitary inspectors under the Division of Sanitation within the umbrella of the Manila Health Department. The PhATSS policy was launched in BASECO on November 19, 2020. However, the city itself has just started household toilet surveillance in September 2019, with 72 barangays surveyed as of the period this study was being conducted. There was no strategic program for improving water access and sanitation as this was deemed a function of Maynilad Water Services, Inc. In 2015, MWSI developed toilet design appropriate for the ISF, but this was never implemented.

Pasig has 30 barangays with 19 sanitary inspectors in the Sanitary Permit Section under the City Health Office. This section regularly monitors 91 water sampling points in the city and has implemented projects on sanitation improvement. One such project was the provision or construction of communal toilets in ISF areas. The toilet design is developed by the City Engineering Department. The challenge for this project however lies in the operation and maintenance of the facilities.