ASA Philippines' Water and Sanitation Financing Program: Leveraging A Quality of Life Financing to Obtain Financial Gain

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Background: ASA Philippines Foundation is a not-for-profit organization devoted to helping an increasing number of poor Filipino families rise out of poverty by providing microfinance to help them establish or improve their own microenterprises. This shall hopefully result in increased family income and savings, while giving them greater access to life support goods and services in the most cost-effective and sustainable manner. Established in 2004, ASA Philippines serves more than 1.8 million underprivileged clients through its more than 1,650 branches spread across all 82 provinces of the Philippines. The Foundation offers various types of financing including regular microbusiness, agriculture, Shari'ah, education, home, and solar home system.

The Foundation's branches are grouped into four main operating areas:

- Luzon 1 covers all areas north of Metro Manila,
- Luzon 2 covers Metro Manila, Cavite, Laguna, Batangas, Rizal, Quezon, Bicol, Mindoro, Marinduque, Romblon and Palawan,
- Visayas covers all provinces in Visayas, and
- Mindanao covers all provinces in Mindanao.

Water.Org

Water.org is a U.S. based non-governmental organization working to increase access to water, sanitation and hygiene ("WASH") services for low-income households. Through its WaterCredit Initiative, Water.org partners with financial institutions, such as microfinance institutions, to develop loan products to finance construction of WASH facilities. Since 2003, Water.org has empowered 22 million people across 13 countries with access to safe water and sanitation through affordable financing.

Philippine Water and Sanitation Situation

The World Health Organization/UNICEF Joint Monitoring Programme ("JMP") for Water Supply, Sanitation and Hygiene is the official United Nations mechanism tasked with establishing country, regional and global baseline estimates for the Sustainable Development Goal targets and indicators relating to universal and equitable access to drinking water, sanitation and hygiene. The JMP report, "Progress on Drinking Water, Sanitation and Hygiene: 2017 Update and Sustainable Development Goal Baselines", presented the first global assessment of safely managed drinking water and sanitation services, i.e. drinking water free from contamination that is available at home when needed, and toilets whereby excreta are treated and disposed of safely.The report estimates that some 3 in 10 people worldwide, or 2.1 billion, lack access to safe, readily available water at home, and 6 in 10, or 4.5 billion, lack safely managed sanitation[1]. In the Philippines, 91% of the country's estimated 100.7 million population have access to at least basic water services [2]. This means that 9% or at least 9 million Filipinos lack access to safe & sustainabledrinking water. Meanwhile, some 20 million Filipinos lack access to basic sanitation facilities, and around 6 million still practice open defecation. Open defecation refers to the practice whereby people go out and dispose of their feces in fields, forests, bushes, bodies of water, beaches, or get rid of their feces along with solid waste. With the re-emergence of the infectious disease polio in the country in 2019, the Philippine Department of Health ("DOH") has called on local government units to intensifytheir efforts to attainzero open defecation. The DOH estimates that at least 3.5 million toilets are needed to address the problem [3].

Synergy

In 2014, Water.org Philippines approached ASA Philippines to explore the possibility of collaborating under its WaterCredit Initiative in order to address the need of poor Filipinos for sanitary toilet facilities and clean water for drinking, cooking, bathing and washing. A major stumbling block for these impoverished Filipino families is their limited access to financing related to water and sanitation. According to Water.org, there is strong demand for water and sanitation loans in the Philippines. Seventy-five percent (75%) of surveyed Filipinos expressed an interest in such a loan. ASA Philippines welcomed the opportunity to address this important yet often overlooked need of poor households, and expand its services to its clients. The two entities signed a cooperation and service agreement whereby Water.org provided technical support in the form of market research, training, product development support and materials development while ASA Philippines reached out to its clients. With Water.org's technical assistance, ASA Philippines designed and developed a Water and Sanitation Financing ("WaSaFin") program – its very own brand of WaterCredit. In order to meet the water and sanitation financing needs of as many interested clients as possible, ASA Philippines floated a ₱2 billion (US$40,000,000 equivalent) corporate notes issue which was partially guaranteed by the Credit Guarantee & Investment Facility. Successfully piloted in 2015, WaSaFin was then aggressively rolled-out starting in January 2016 to all branches of ASA Philippines nationwide. When the collaboration agreement was signed in 2016, ASA Philippines committed to a target of reaching 200,000 clients. By the end of the collaboration in 2017, it had surpassed this target having reached more than 225,000 clients. A second collaboration agreement was signed in 2018 whereby the Foundation committed to reach a total of 240,000 WaSaFin clients within two years.

The Wasafin Program

1. WaSaFin loans are intended for WASH purposes. They are to be used for the construction, rehabilitation, improvement, and/or purchase of:

    - Tube Well and Water Pump
    - Water Connection
    - Water Tank
    - Water Filter
    - Toilet

2. Clients who are on their 2nd loan cycle and onwards are qualified to borrow provided that they are in good credit standing.
3. ASA Philippines staff shall conduct a client home visitation prior to loan approval.
4. For water connections, clients must submit an approved application from a water service provider. For installation of tubewells or deep wells, clients must choose an installer. For new construction of toilets, clients must choose among three specified toilet model options and select a mason. The mason chosen by the client is required to watch a mason instruction guide video presentation at an ASA Philippines branch.
5. Proper client orientation at the branch is required before loan disbursement.
6. ASA Philippines staff shall conduct periodic site visits (before, during and after construction) to document the loan facility and to ensure that key performance indicators are met.
7. WaSaFin loan payments shall be paid weekly and are payable in 46 weeks.

Impact Assessment Survey hypotheses

As the WaSaFin program had reached a significant scale, ASA Philippines set about determining the impact of the program on the lives of its clients. An impact assessment survey was undertaken jointly by Water.org and ASA Philippines to determine the benefits generated by the program to clients and their families.

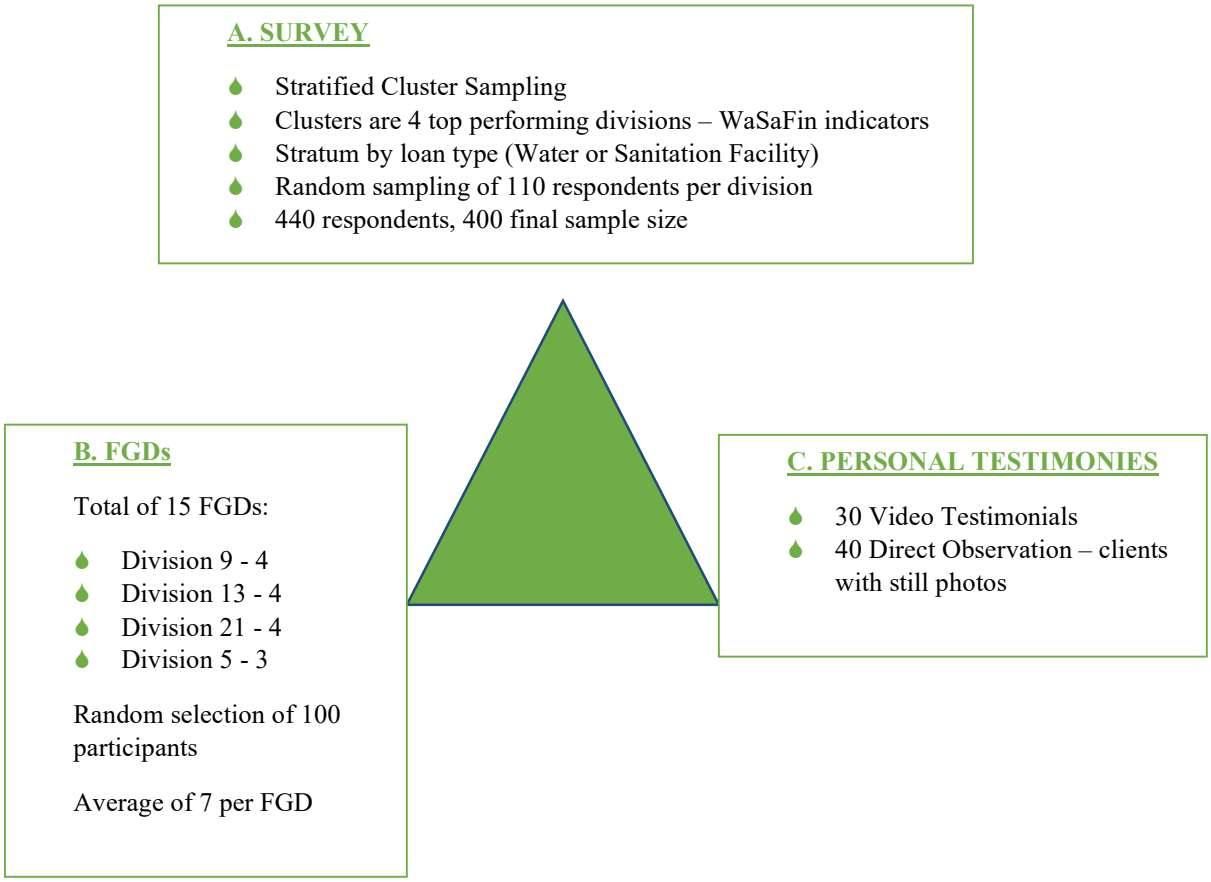
The proposedimpact assessment hypotheses to be tested are as follows:

1. ASA Philippines Foundation's WaSaFin program provided a meaningful intervention (access to water and sanitation) to its client base where more than 90% found it useful and appropriate to their needs.
2. ASA Philippines Foundation's WaSaFin program resulted in a wide spectrum of benefits to more than 90% of its WaSaFin client base.

Impact Assessment Methodology

The impact assessment survey used various sampling methods to come up with a triangulation of datain order to verify results. A Sample Survey, Focused Group Discussions ("FGDs") and Personal Testimonies were employed:

Figure 1. Triangulation of Information Method Used in the Impact Assessment Survey



With a margin of error of 5% and a confidence level of 95%, the required sample size is 384 households. To provide allowance for faulty responses, the target number of survey samples was set at 440 respondents. The final number of respondents included in the sample was 400.

Several sampling methodologies were used to generate the sample 440 respondents. First, a stratified cluster sampling was used to identify the fouroperating divisions from which an equal number of respondents were selected. Only top performing divisions from Luzon 1, Luzon 2, Visayas and Mindanao were included. Then four to five branches (each with a sufficient number of WaSaFin clients) within each division were selected. Stratified sampling was used wherein WaSaFin clients were divided into two non-overlapping strata based on type of loan, i.e. water or sanitation facility. Simple random sampling was employed to select the respondents in each stratum. The simplest type of probability sample, the simple random sample, where every possible sampling unit in the entire WaSaFin client population had an equal chance of being selected from the list provided by each of the identified operating divisions, was used. Simple random respondent samples were drawn using an Excel-based random sample generator. The same sampling methodology was used for the FGD participants.

Table 1 shows the distribution of respondents for the individual interviews and the actual number of FGDs per sampled operating division:

Table 1. Distribution of Target Sample Respondents Per Operation Division

	LUZON 1	LUZON 2	VISAYAS	MINDANAO	TOTAL
DIVISION	Division 21	Division 5	Division 9	Division 13	
PROVINCE	Tarlac, Pangasinan	Rizal, Quezon	Leyte	Misamis Oriental, Bukidnon	
TARGET NO. OF SURVEYSAMPLES	112	108	111	112	**443**
NUMBER OF FGDS	4	3	4	4	**15**
NO. OF FGD PARTICIPANTS	28	20	25	27	**100**

Although the target number of survey samples was 440 respondents, a total of 443 were interviewed. In addition to the sample survey, 15 FGDs were done. In Division 5, only 3 FGDs were done instead of the target 4 as it was difficult to mobilize participants due to the election campaigns in the areaat the time of the fieldwork. Each FGD group had a target of 4-9 participants. Total actual number of FGD participants was 100 with an average of 7participants per FGD. The purpose of the FGD was to gather deeper insights as well as to try to corroborate the data from the sample survey.

Table 2 shows the distribution of clients' personal testimonies withvideosand still photos to be taken for direct observation of their water and sanitation facilities. A maximum of 24 taped interviews were targeted (6 persons x 4 major operating areas), though the actual number captured was 30. The taped interview focused on what the household gained from its WaSaFin loan. Also, 40 still photos were targeted to be taken so as to be able to directly observe the water or sanitation facility that was financed by a WaSaFin loan.

Table 2. Distribution of Clients' Testimonies in Video Content and Still Photos

OPERATING DIVISION	VIDEO CONTENT	STILL PHOTOS
DIVISION 5	6	10
DIVISION 9	8	10
DIVISION 13	6	10
DIVISION 21	10	10
TOTAL	**30**	**40**

Responses during the interviews were based on clients' recall, estimation, opinion and personal experiences in using their water or sanitation facility. In cases where respondents were asked to give quantitative information like income and loan amount, best efforts were done to ensure that figures recalled approached the real values. Income was estimated as household cash inflow from multiple sources. Clients with daily sales were asked to recall their most recent average amount.

A survey questionnaire was developed and field-tested to improve its fit and ensure that it satisfied the data requirements needed to attain the objectives of the impact assessment survey. The FGD questions were prepared based on key questions from the survey questionnaire, though with a lesser number.

Client distribution And Demographics
WaSaFin Client Interview Distribution

A total of 400 respondents drawn from the four operation divisions were included in the data processing and analysis. Each operation division had 100 respondents.

Table 3. Distribution of Sample Respondents Per Operation Division

DIVISION	NUMBER OF RESPONDENTS
DIVISION 5	100
DIVISION 9	100
DIVISION 13	100
DIVISION 21	100
TOTAL	**400**

The four divisions cover seven provinces in the Philippines. Leyte, under Division 9, had the largest number with 25% of respondents. See Table 4.

Table 4. Distribution of WaSaFin Respondents Per Province

OPERATION DIVISION	PROVINCE	NO. OF RESPONDENTS	PERCENT
5	Quezon	56	14%
	Rizal	44	11%
9	Leyte	100	25%
13	Bukidnon	54	14%
	Misamis Oriental	46	11%
21	Pangasinan	68	17%
	Tarlac	32	8%
TOTAL		400	100%

WaSaFin Client Demographics

Most WaSaFin clients are married women who are engaged in the micro-retail trade, are in their prime years of economic productivity, and have other sources of income apart from their main source. Most are either high school graduates or have attended some high school. Without a college degree, getting employment may have been a challenge, thus they resorted to self-employment. Most of them have over the years invested in building a house made of durable materials such as concrete or a mix of concrete and wood. They live in urban or semi-urban or rural areas where the chance of earning a daily income is greater.

Majority of WaSaFin clients (97%) are married, with only 1% reporting single civil status, while the rest (2%) are widows.

In terms of number of household members, the average size for WaSaFin clients is 4.9 members. The Philippine Statistics Authority 2017 Annual Poverty Indicators Survey reportedan average family size of 4.3 persons as of July 2017. Figure 2 belowshows that more than half of WaSaFin respondents (54%) have a household size above the national average – between 5 to 12 members. This situation may have been a contributing factor to clients'strong motivation to secure access to improved water and sanitation facilities.

Figure 2.WaSaFin Clients' Household Size Distribution

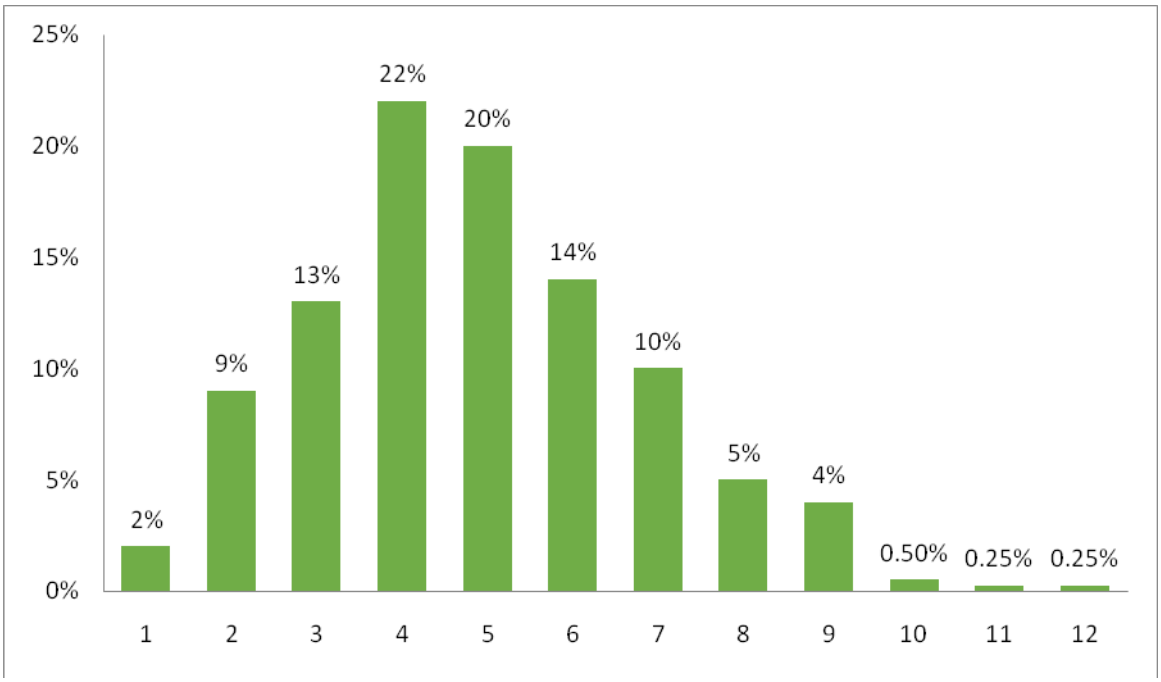


Figure 3 shows that in terms of age distribution, 54% of clients are young married women who are in their prime years of earning capacity. Twenty-five percent (25%) are middle-aged married women who continue to earn a living.

Figure 3. WaSaFin Clients' Age Distribution

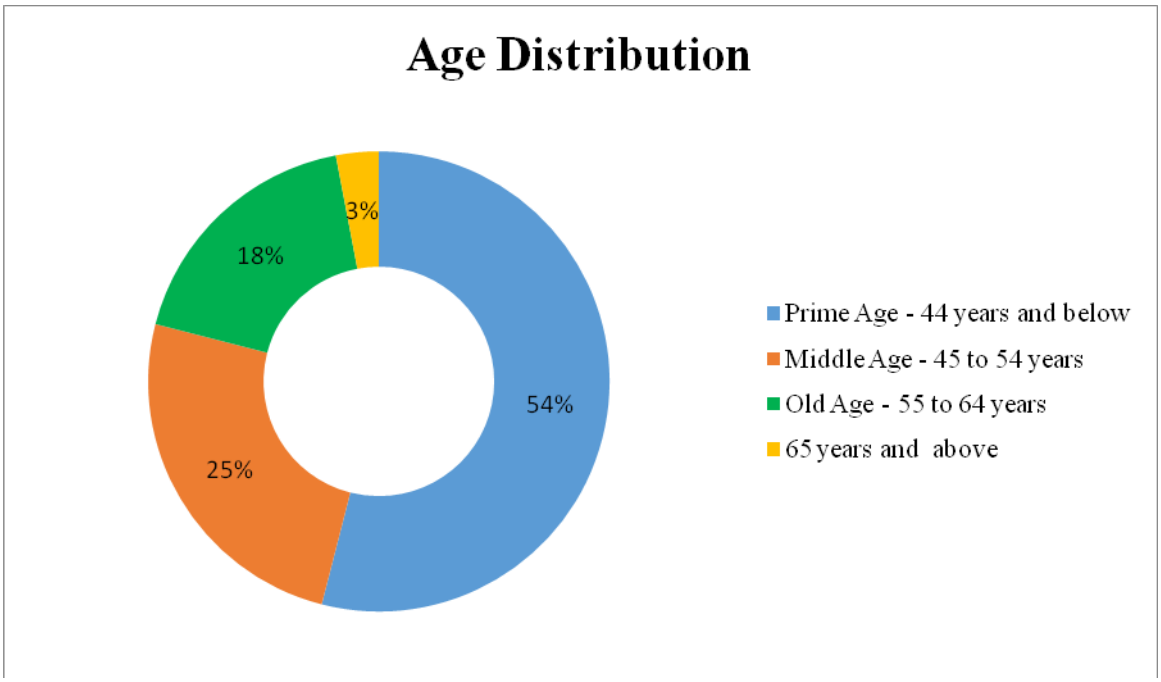
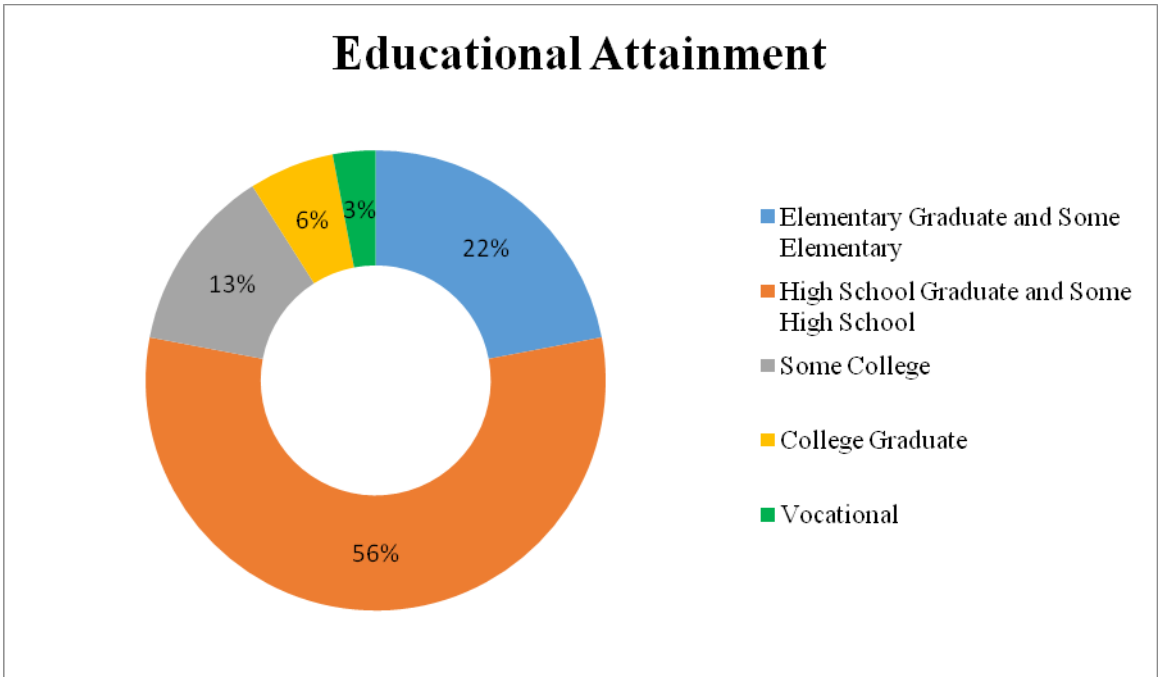


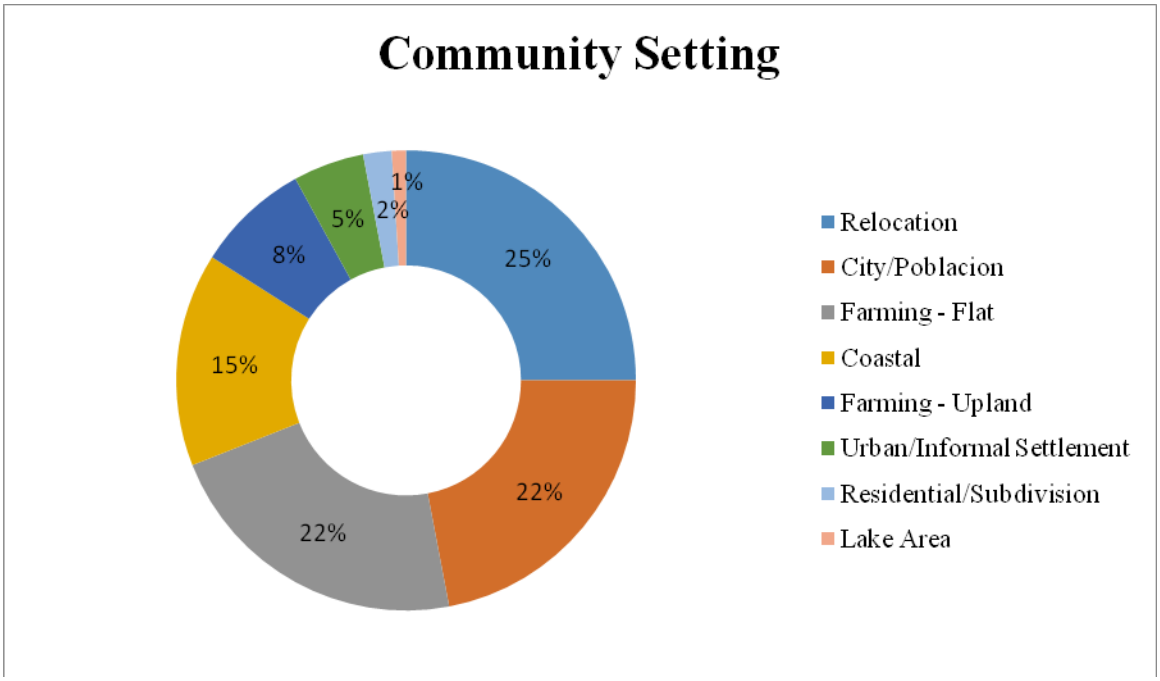
Figure 4 shows that 22% of clients have attended only elementary school. More than half or 56% of respondentsattained at most a high school diploma or had some years of exposure to high school. Only 6% had a college degree while 13% had some exposure to college. The balance of 3% had vocational education. Given this profile of educational attainment, employment in the formal labor market proved difficult for them thus they opted to engage in self-employment. This is typical of microfinance clients.

Figure 4. WaSaFin Clients' Educational Attainment



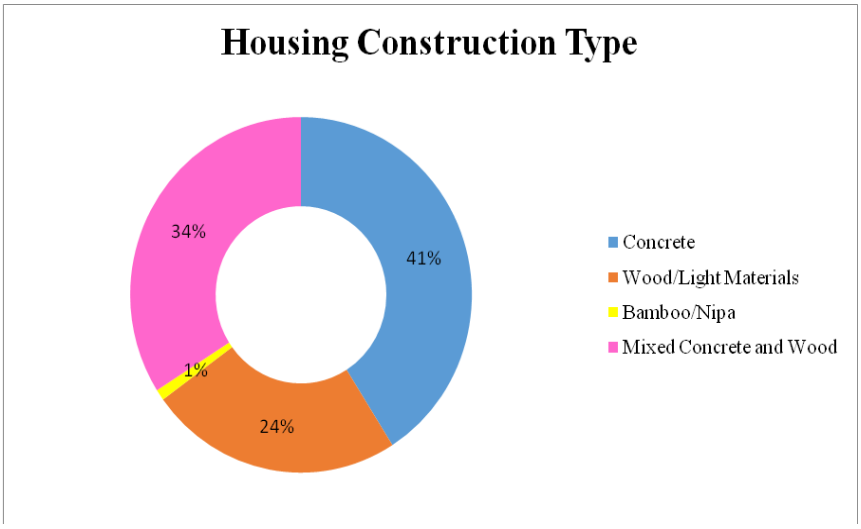
Majority of those interviewed live in community settings where access to sanitation and water facilities is quite difficult. Figure 5 shows that 25% of clients live in relocation sites. Forurban areas, 22% live in city centers while 5% live in informal settlements. As forrural areas, 22% live in flat lowland farming areas, 8% live in upland farming areas, and 15% live in coastal settings. Most relocation sites have semi-completed if not bare sanitation facilities, and in some cases 9 families share a common sanitation facility substructure. Water supply in high density urban city centers is unreliable and does not meet the standard performance of 24 hours availability.

Figure 5. WaSaFin Clients' Community Setting



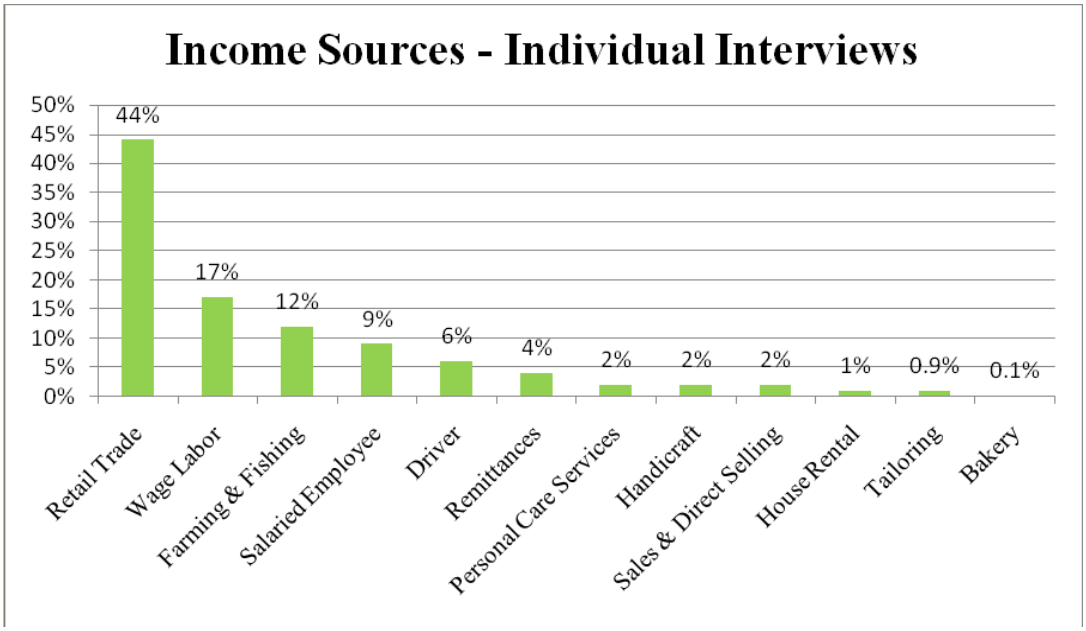
Majority of the clients have dwellings made of durable materials. Figure 6 shows that 41% have housing made of concrete while 34% have dwellings that are a mix of concrete and wood. Housing made with such durable materials would have required sizeable amounts of funds, and would have taken clients a lengthy time to build. After building such dwellings, clients then focused on improving their water or sanitation facilities.

Figure 6. WaSaFin Clients' Housing Construction Type



Quite a number of WaSaFin clients, 44%, are engaged in the retail trade such as sari-sari (local variety) store, food vending, and buy and sellbusinesses. These businesses generate daily cash flows for the clients' households. Another income source, wage labor, was reported by 17% of clients. Figure 7 shows the list of income sources for households. These income sources generate small but steady cash flows for households. Since the amounts are small, it is difficult for clients to invest in assets that require a large outlay of cash such as a toilet. The WaSaFin program helps them overcome this mismatch between cash inflows and outflows.

Figure 7. WaSaFin Clients' Income Sources Based on IndividualInterviews



Focused Group Discussions showed similar results. Figure 8 shows that 65% of client households draw income from the retail trade, 9% from wage labor, 7% from employee salaries, 4% from driving passenger utility vehicles, and so on.

Figure 8. WaSaFin Clients' Income Sources Based on FGD Results

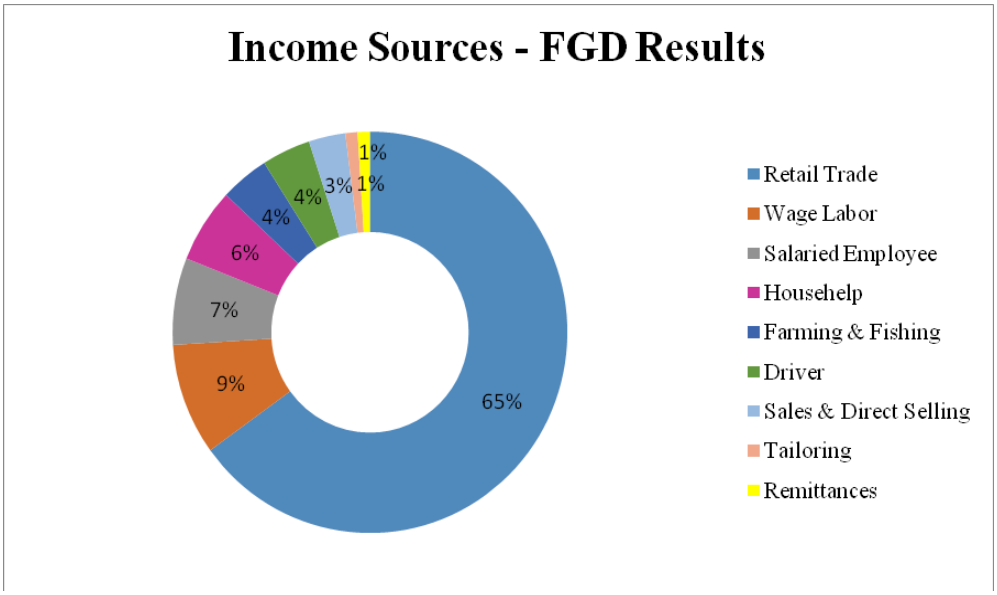
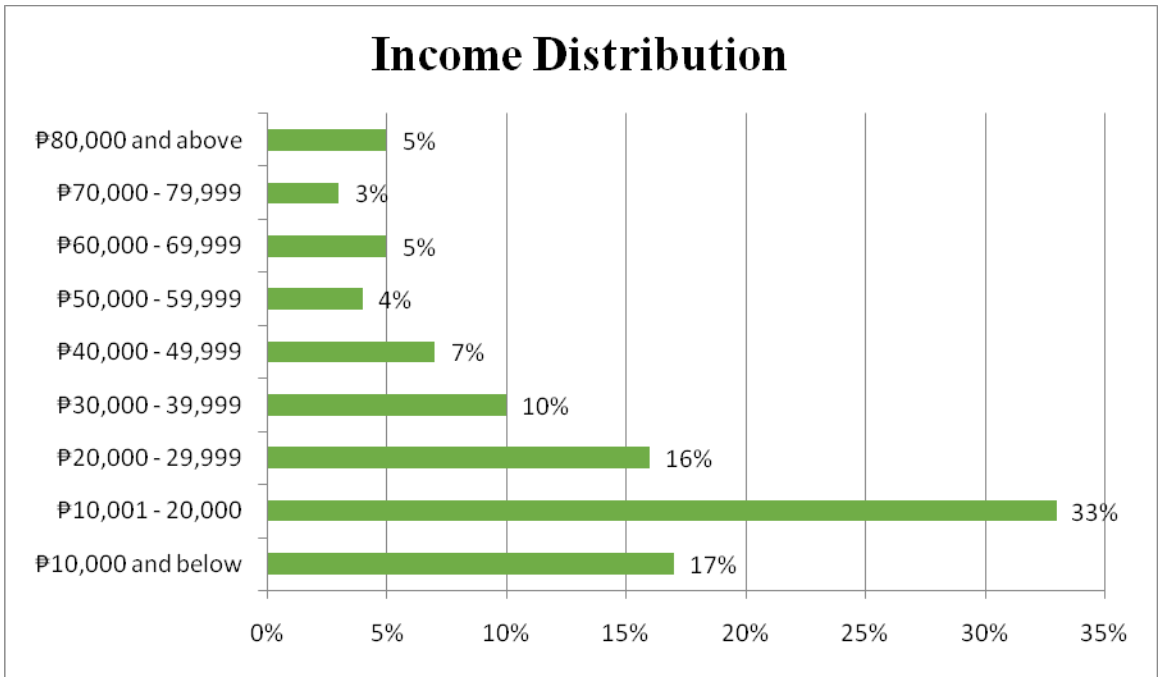


Figure 9 shows total estimated gross monthly income of WaSaFin clients from various sources. Half (50%) of the clients live on US$2 (exchange rate of ₱52/US$1) or below per capita per day. It shows that WaSaFin is reaching the impoverished segment of the population.

Figure 9. WaSaFin Clients' Gross Monthly Income Distribution



The median monthly gross income of WaSaFin clients is ₱20,523 or US$395 while the mode is ₱20,000 or US$385. For both median and mode, this amounts to a daily per capita income of less than US$3.See Table 5.

Table 5. WaSaFin Clients' Daily Per Capita Income

	Monthly Gross Income (₱)	Monthly Gross Income (US$)	Daily Per Capita Income (US$)
Median	20,523	395	2.68
Mode	20,000	385	2.62

(Exchange rate of ₱52/US$1)

Survey Results and Analyses
Hypotheses Acceptance

First Hypothesis

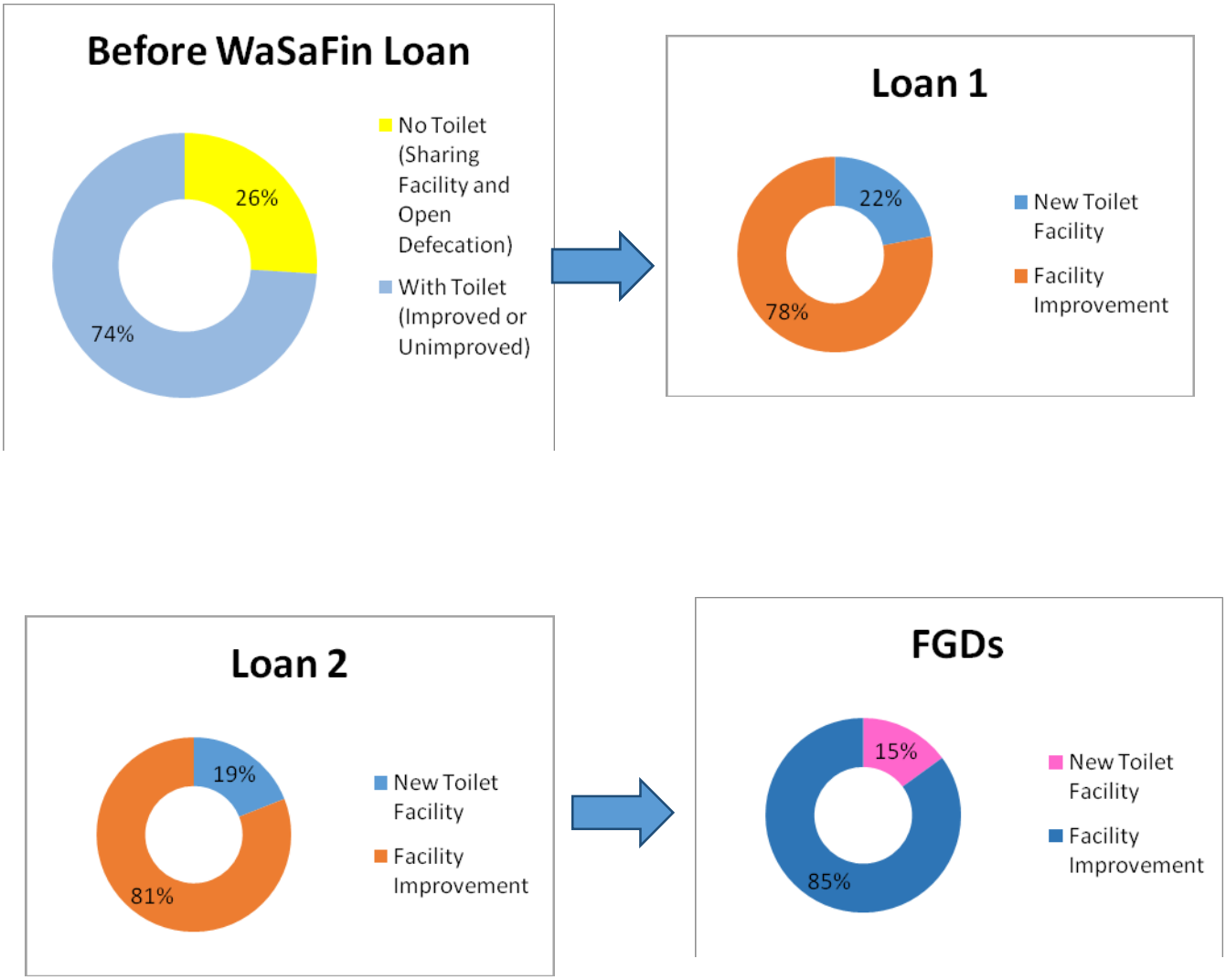
ASA Philippines Foundation's WaSaFin program provided a meaningful intervention (access to water and sanitation) to its client base where more than 90% found it useful and appropriate to their needs.

Majority were able to access improved sanitation facilities

Figure 10 shows that before getting WaSaFin loans, 74% of clients reported having sanitation facilities, however, these were mostly beyond their useful life, bare, made of light materials and/or needed improvement (e.g. no roof or door or lock, walls were too low, poor lighting, slippery floor). The rest, 26%, did not have toilets. Looking at how WaSaFin loans were used, it can be deduced that the loans were utilized to meet clients' needs. For

clients on their first WaSaFin loan, 78% used the proceeds for facility improvement while 22% used the funds to build a new toilet. For those with a second WaSaFin loan, 81% used the proceeds for facility improvement while 19% used the funds for a new toilet. FGDs yielded a similar result. Based on the results of the survey and the FGDs, it can be said that clients were able to use their WaSaFin loans to meet their need for improved sanitation facilities.

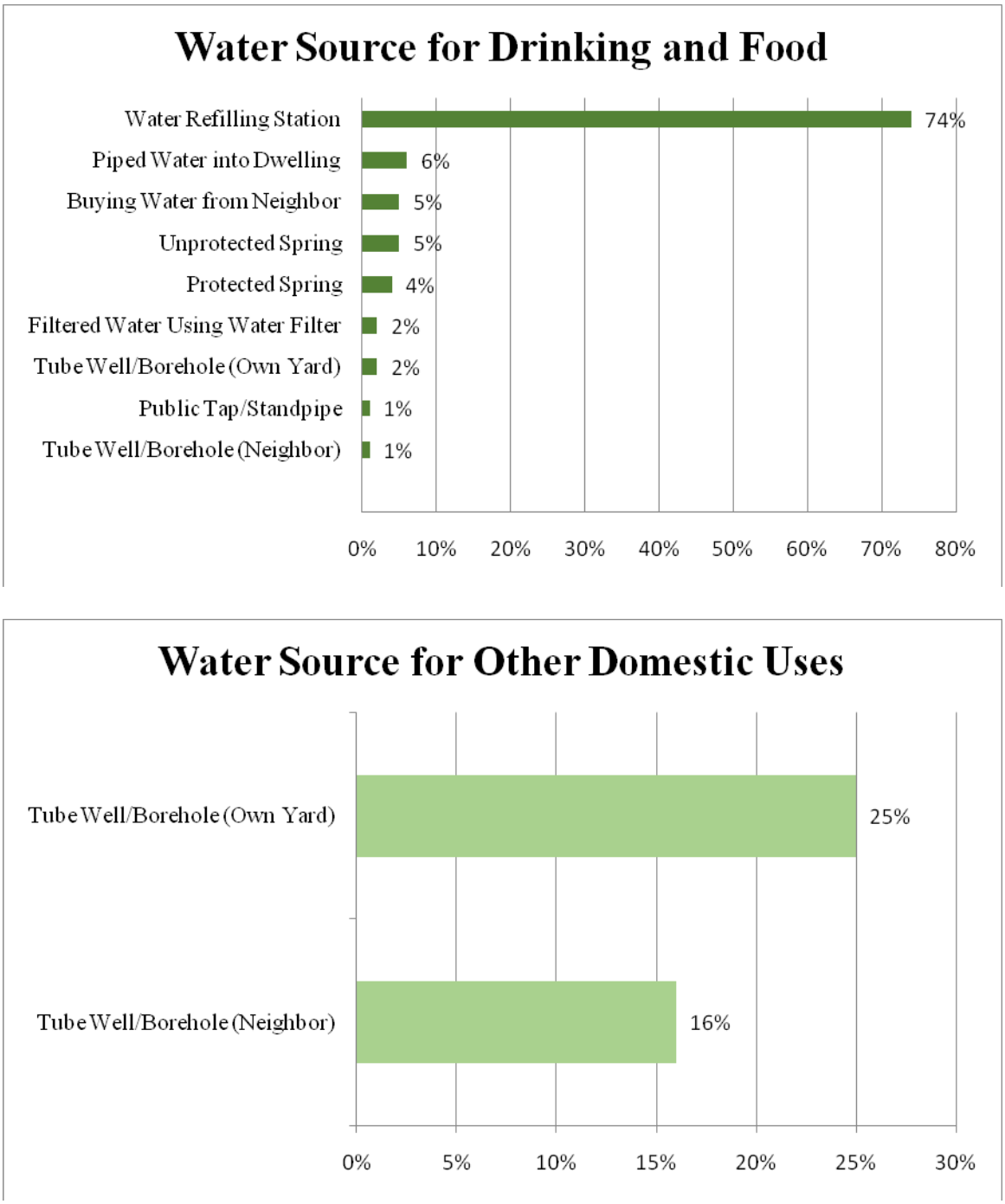
Figure 10. Comparison of Respondents' Pre-WaSaFin Situation and Their WaSaFin Loan Usage



Clients were able to meet their needs for better access to water

Before taking out WaSaFin loans, a vast majority of 74% of clients sourced water for their drinking and food preparation needs from water refilling stations, 6% relied on water piped into dwellings, 5% purchased water from their neighbors, 5% sourced water from unprotected springs, while 4% sourced water from protected springs. As for water used for other domestic purposes, 25% sourced water from their own tube well/borehole while 16% relied on their neighbors' tube well/borehole. See Figure 11.

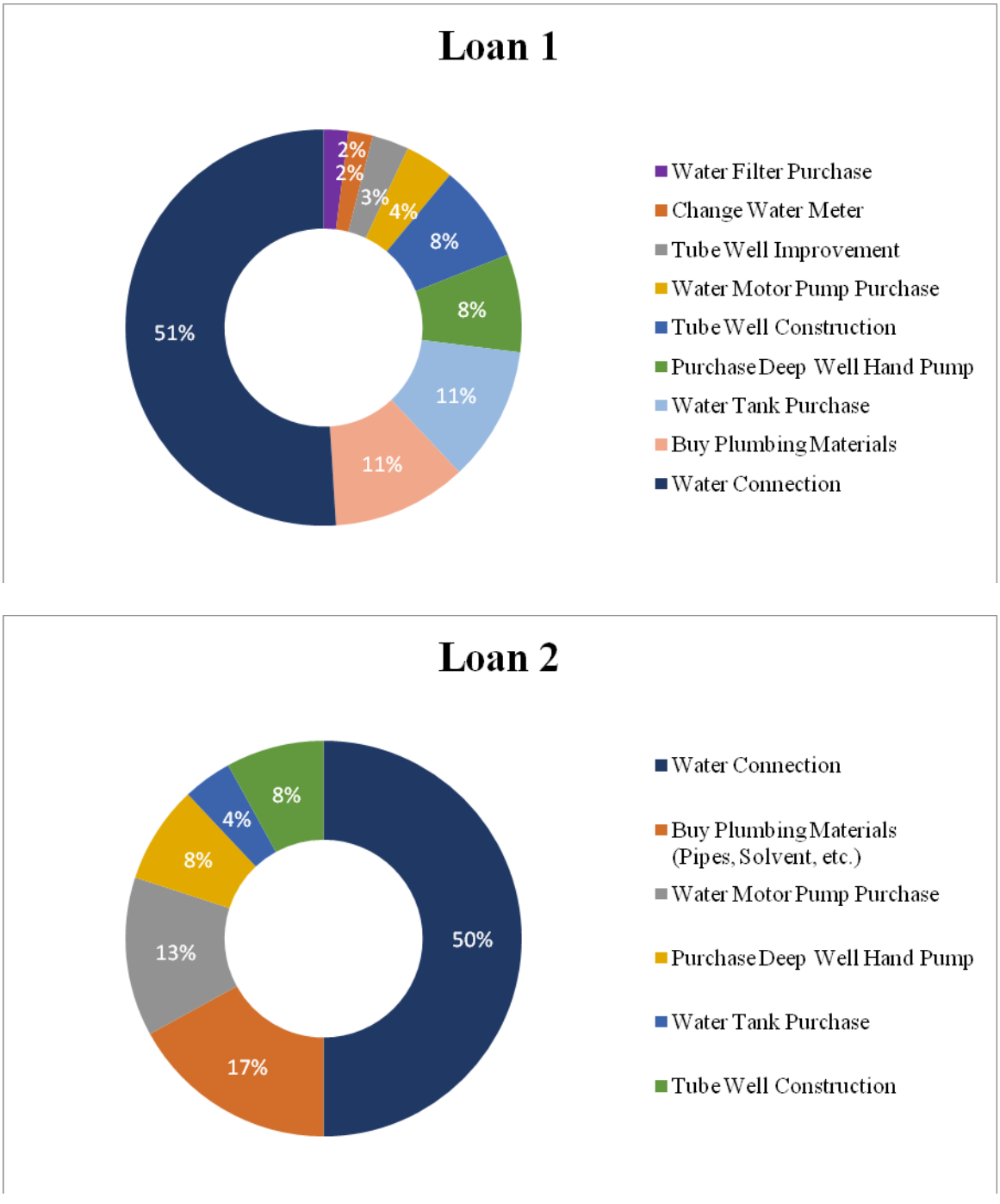
Figure 11. Clients' Main Sources of Water Before WaSaFin Loans



It can be seen from Figure 12 that majority of WaSaFin clients were able to meet their need for improved water facilitiesby using their loans to access improved sources of water. For both loan cycles 1 and 2, at least 50% used their loans for water connection. In terms of the water technology ladder, this represents the most improved, safest and most convenient source of water for households. Clients mentioned that they used to buy water from their neighbors, but this was inconvenient and expensive. On average, they had to pay ₱20 per day per household. Many clients cited that they now use tap water for drinking and food preparation. The use of their loans to access piped

water into their dwellings shows that clients were trying to shift to a more convenient and cheaper source of water. The shift to water connection also shows that clients are able to invest in accessing the services of local water utilities.

Figure 12. WaSaFin Loan Use for Water Facilities Improvement



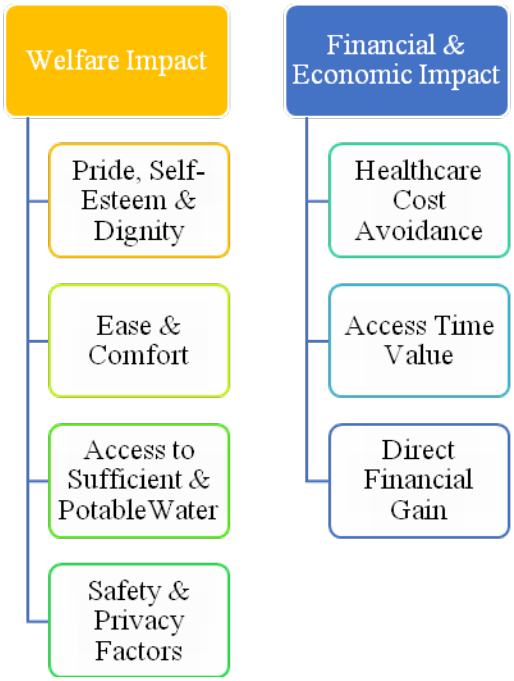
Overall then, we can say that ASA Philippines Foundation's WaSaFin program provided a meaningful intervention to its client base where more than 90% found it useful and appropriate to their needs as the loans enabled clients to acquire the water and sanitation facilities that they needed.

Second Hypothesis

ASA Philippines Foundation's WaSaFin program resulted in a wide spectrum of benefits to more than 90% of its WaSaFin client base.

The results of the impact assessment survey show thatthe clients derived a broad range of benefits from the program whichfall within two broad impact domains. The first impact domain refers to the intangibles, the welfare impact which results in improved mental and social well-being. The second domain deals with the financial and economic impact – financial impact has a short-term impact on the economic activities of a household while economic impact has a longer-term impact on a household's economic activities. See Figure 13.

Figure 13. Broad Impact Domains of Water and Sanitation Improvements on Households



The World Health Organization defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Therefore, the impact of water and sanitation improvements on clients' well-being should not only be limited to the physical or disease prevention aspect, but should also encompass the intangible welfare aspects of mental and social well-being. Intangibles are determinants of personal welfare such as safety, privacy, convenience, comfort, status and prestige.[4] For instance, there is a feeling of pride among households that own a toilet as (1) they no longer have to feel the shame or embarrassment of asking to use the toilet of a neighbour, (2)having a private toilet elevates their social status in the community, and (3) they have greater confidence inviting guests to their homes now that they have a private toilet. WaSaFin clients have in fact identified the welfare impact as one of the main benefits derived from improved water and sanitation. During the personal interviews, FGDs, and personal testimonies, clients expressed their sense of mental and social well-being as follows:

Dignity	A sense of pride in oneself; self-respect; self-worth; self-esteem
Free From Shame	Freedom from a social emotion caused by intense humiliation due to "wrong" behaviour
Not Embarrassed	Freedom from an emotion caused by a sense of self-consciousness or discomfort with oneself. Not being able to host others in one's home
Comfort	A sense of ease and freedom from physical exhaustion. An ambiance where one can "sleep inside the toilet"
Free From Anxiety	Freedom from an emotion where one experiences relentless worry, nervousness and/or unease. Freedom from anxiety whenever hosting visitors
Free From Fear	Freedom from an emotion caused by the sense that someone or something is dangerous or will lead to harm, be it physical or social. Fear of going out especially at night to defecate in open fields
Safety	A state of being where one is protected from physical harm and gender-based assault and violence
Privacy	Keeping strangers from accessing inner spaces of one's home. Being able to feel free from observation or disturbance by others. Not being seen going to the toilet

Clients clearly obtained intangible welfare benefits from access to improved water and sanitation facilities

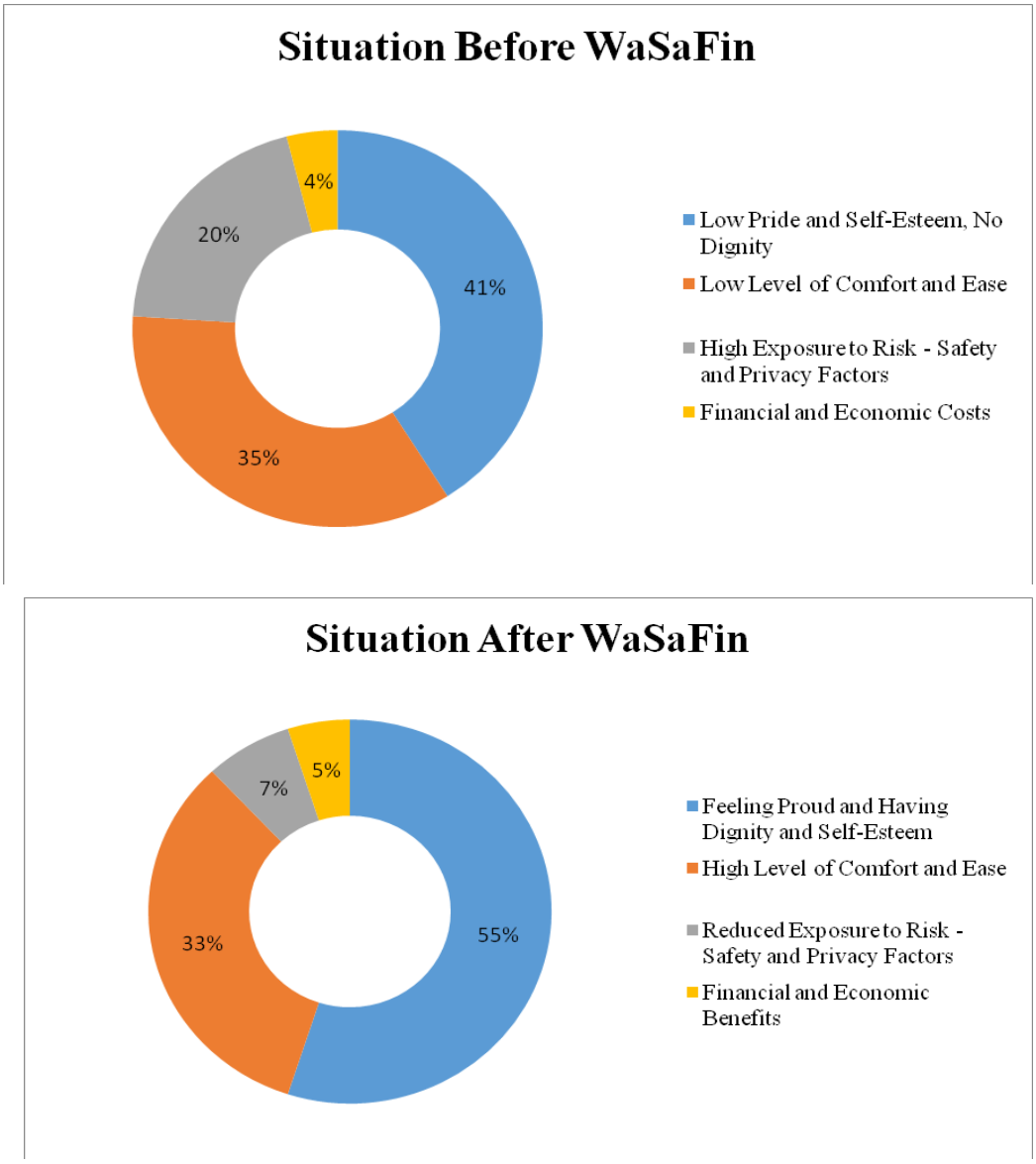
For clients who used their loans to improve their sanitation facilities, prior to participating in the WaSaFin program they faced difficulties and challenges in their sanitation situation such that 41% said they had low pride and self-esteem and no dignity, 35% cited a low level of comfort and ease, 20% said they had high exposure to risk in terms of safety and privacy, and 4% cited financial and economic loss (e.g. they were in constant danger of getting sick due to poor sanitation-related diseases, they had to interrupt their business and household chores in order to look for a place to defecate or share a toilet). See Figure 14. After using their WaSaFin loans to improve their sanitation facilities, 55% reported feeling proud and having dignity and self-esteem, 33% stated that they are now enjoying a high level of comfort and ease, 7% cited having reduced their safety and privacy factor risk, while 5% are enjoying financial and economic benefits.Their financial and economic benefits come from saving money by avoiding getting sick due to poor sanitation (4%), saving money by complying with local government unit sanitary regulations and thus avoiding fines imposed on violators (1%), and renting out their toilets to provide additional income (0.16%).Many respondents, when asked whether they were able to earn money by renting out their toilet,

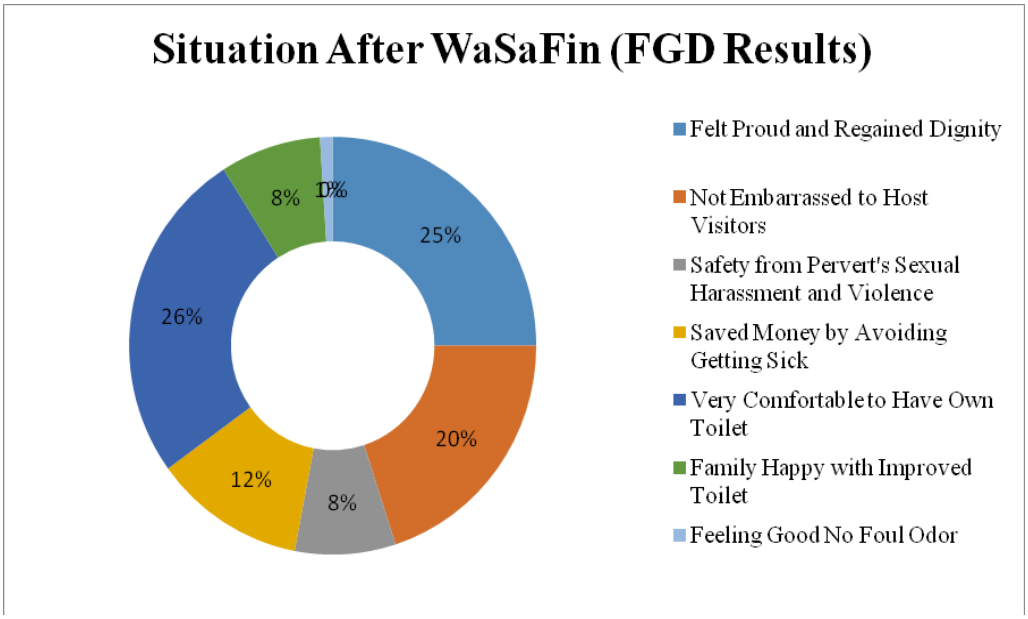
mentioned that they have no intention of doing so given that their toilet is a private facility and it is for their own use.

The FGD results show that those who felt proud and have regained their dignity (25%) + those who are no longer embarrassed to host visitors (20%) total 45%. See Figure 14. This number can be compared with the survey result of those feeling proud and having dignity and self-esteem of 55%. The FGD results show that those who were very comfortable to have their own toilet (26%) + those whose families were happy to have their improved toilet (8%) + those who felt relieved that they were able to address the problem of having foul odors and thus avoid conflict with neighbors (1%) total 35%. This number can be compared with the survey result of those feeling a high level of comfort and ease of 33%. FGD results show that 8% cited safety as a benefit. This number can be compared to the 7% reported in the survey result. The FGD results show a financial and economic benefit of 12%. This is somewhat different from the survey result of 5%.

Inboth survey and FGD results, clients who improved their sanitation facilities cited much bigger gains in intangible social welfare benefits as compared to gains in financial and economic benefits.

Figure 14. Impact of Access to Improved Sanitation Facilities





The results of the impact assessment survey are in line with the list of stated benefits of improved sanitation cited in a UNDP Human Development Report[5] such as:

- Increased comfort
- Increased privacy
- Increased convenience
- Increased safety for women, especially at night, and for children
- Dignity and social status
- Being modern or more urbanized
- Cleanliness
- Lack of smell and flies
- Less embarrassment with visitors
- Reduced illness and accidents
- Reduced conflict with neighbors

For those clients who used their loans to access improved water facilities, prior to participating in the WaSaFin program, a majority ofthem,68%, stated that they had limited access to sufficient water and suffered from personal burden, 21% reported that they were burdened with real and potential financial and economic loss, and 11% had difficulties in accessing good quality and potable water. See Figure 15. The context situation of clients pre-WaSaFin was that they:

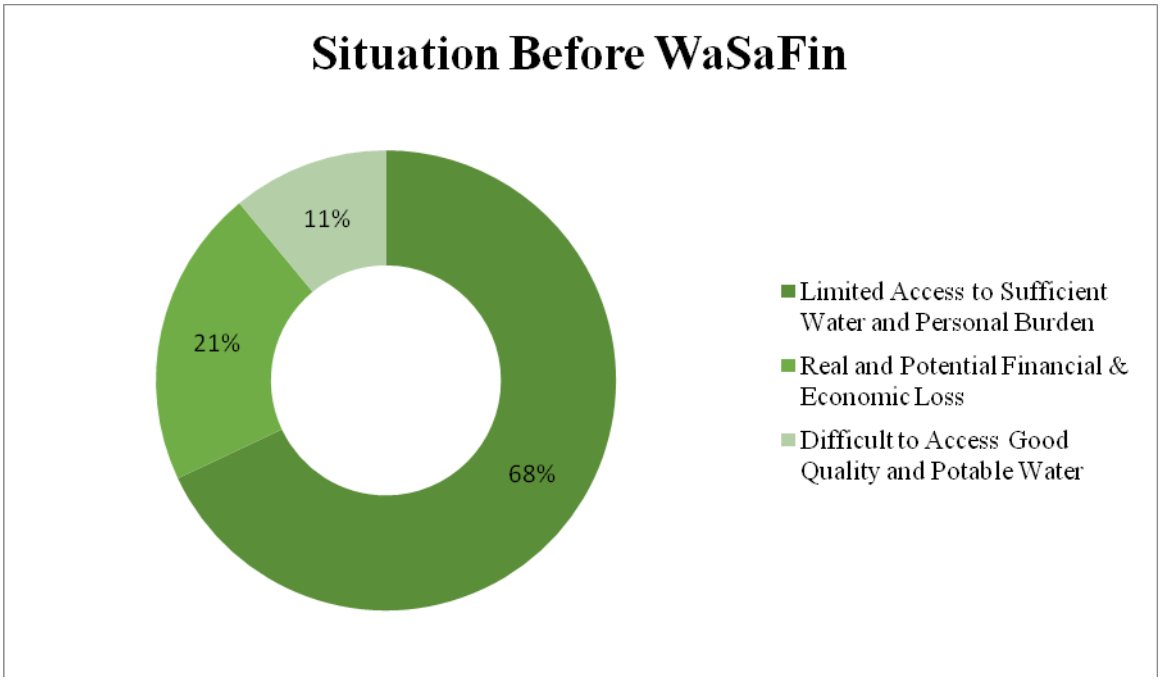
- experienced limited access to sufficient water and it was a personal burden especially on the part of women
- had to economize and limit the use of water because aside from the cost of purchasing water, they also had to allot time to fetch water
- experienced times when water was not readily available and sometimes had to wait for their turn to access water in communal wells and faucets
- suffered the inconvenience of getting water when they ran out of it at night
- experienced having to wait and spend long hours to access water
- found it difficult and embarrassing to ask favors from their neighbors for water
- spent a lot of money to buy water from neighbors
- had to make do with poor water quality (color, taste, odor, smell, clarity)

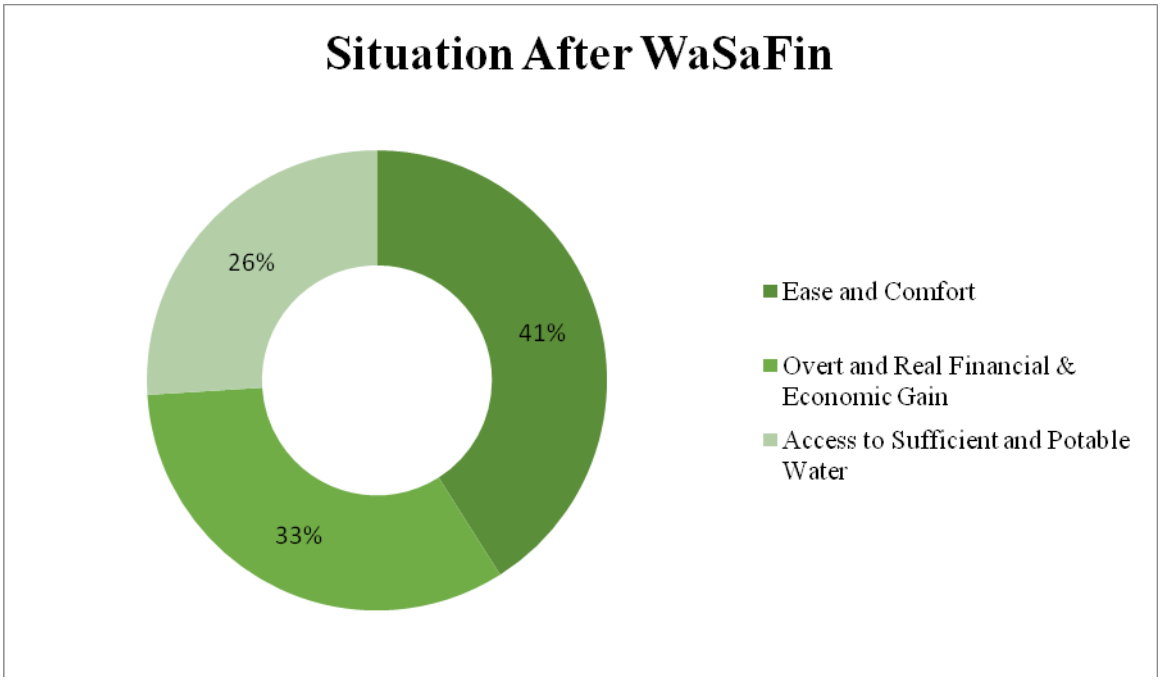
After clients used their loans to access improved water facilities, 41% of those surveyed cited enjoying ease and comfort, 33% reported having overt and real financial and economic gain, while 26% cited having access to sufficient and potable water.

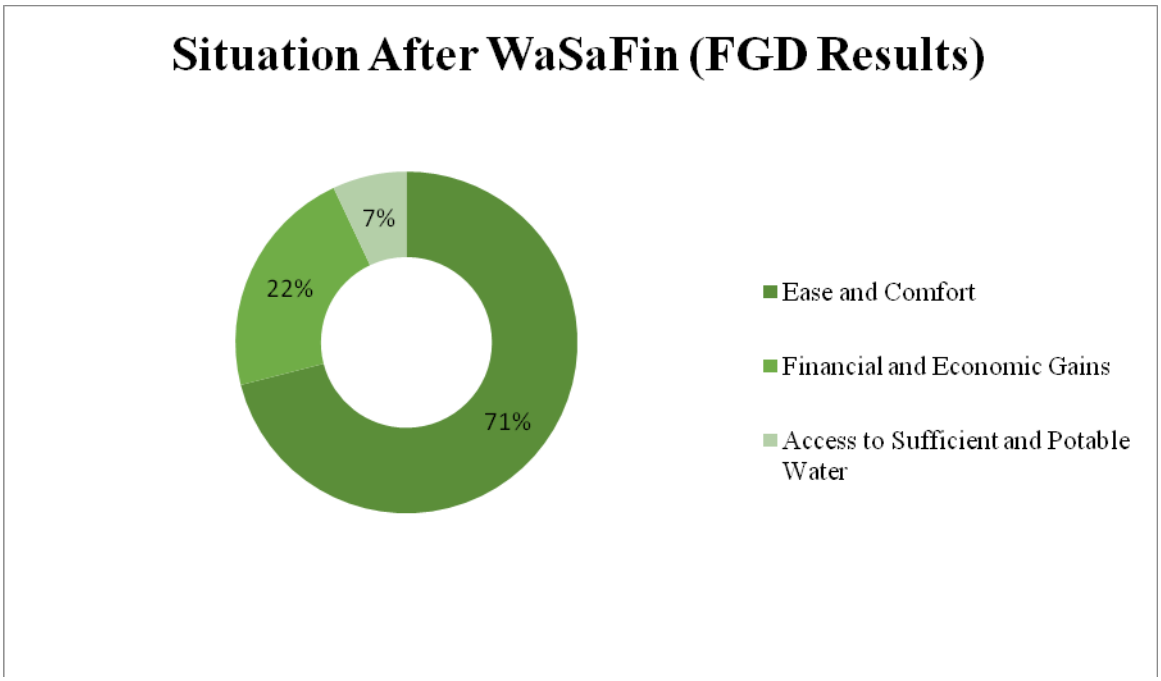
The FGD results show that for clients who improved their water facilities, a majority of 71% cited ease and comfort of having water right in their homes, 22% reported financial and economic gains, while 7% stated that they had

access to sufficient and potable water. See Figure 15. Those who improved their water facilities cited a bigger financial and economic gain compared to those who used their loan proceeds to improve their sanitation facilities.

Figure 15. Impact of Access to Improved Water Facilities







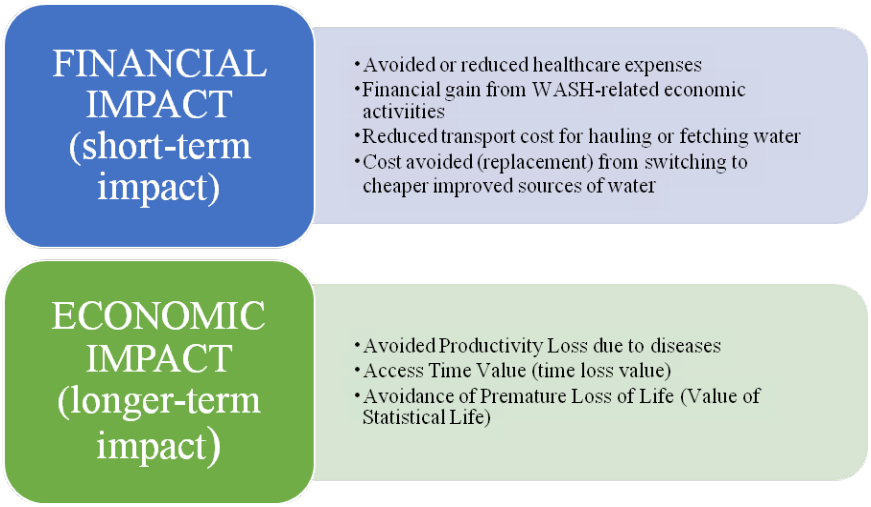
The savings from health-related costs and direct financial and economic benefits due to clients' improved water and sanitation facilities prove that WaSaFin is significantly beneficial.

Before having access to improved water and sanitation facilities, WaSaFin clients incurred financial and economic costs/loss. This was cited by 4% of clients who obtained a WaSaFin loan for sanitation purposes and 21% of clients who obtained a loan to improve their water facilities. See Figures 14 and 15.

After participating in the WaSaFin program, 5% of those with improved sanitation facilities reported financial and economic benefits while 33% of those with improved water facilities reported overt and real financial and economic gain.

The survey showed that clients who participated in the WaSaFin program were able to avert or avoid all of the estimated financial and economic costs related to poor water and sanitation situations. These avoided financial and economic costs were either savings on the part of households or direct financial gain that accrued. See Figure 16.

Figure 16. Financial and Economic Impact on Households



The summary of the financial and economic benefits for WaSaFin clients who used their loans for improved water or sanitation facilities is laid outin Table 6. Financial and economic costs that are reduced, avoided or averted represent quantified savings of households. The estimated gains per household are on an annual basis. The financial and economic benefitsoccur especially when households move from open defecation to setting up their own toilets orswitch to piped household water connection.

Table 6. Estimated Annual Financial and Economic Benefits Per Client Household

A. IMPROVED SANITATION FACILITY	**AMOUNT (₱)**	**PERCENT**
1. Health-Related Costs Avoided (Savings)	**19,423.83**	**61%**
i. Reduced Healthcare Expenses (In-Patient)	11,615.30	
ii. Avoided Productivity Loss (Patient + 1 Carer)	3,821.53	
iii. Avoidance of Premature Loss of Life (Value of Statistical Life – VSL Estimate)	3,987	
2. Access Time Value (Value of Time Loss)	**9,320.80**	**29%**
3. Direct Financial Gain (Income Earned)	**3,360.00**	**10%**
TOTAL	**32,104.63**	**100%**
B. IMPROVED WATER FACILITY	**AMOUNT (₱)**	**PERCENT**
1. Health-Related Costs Avoided (Savings)	**3,898.13**	**5%**
i. Reduced Healthcare-Related Expenses (Out-Patient)	460.00	
ii. Avoided Productivity Loss (Patient Only)	466.04	
iii. Avoidance of Premature Loss of Life (Value of Statistical Life-VSL Estimate)	2,972.09	
2. Access Time Value (Time Loss Value in Fetching Water)	**14,855.03**	**19%**
3. Direct Financial Gain (Income Earned + Costs Avoided)	**58,456.09**	**76%**
i. Selling Water and Water-Related Products	25,797.33	

ii. Water Access Transport Cost Saved	22,508.33	
iii. Reduced Cost from Buying Refilled Water for Drinking	2,972.09	
iv. Averted Cost from Buying Water from Neighbor	7,178.33	
TOTAL	**77,209.25**	**100%**

The total estimated annual financial and economic benefit for WaSaFin clients who use improved sanitation facilities amounts to ₱32,104.63. Of this amount, the largest share at ₱19,423.83 or 61%, is household savings from avoiding health-related costs. This is composed of reduced healthcare expenses (in-patient medical expenses) amounting to ₱11,615.30, avoided productivity loss amounting to ₱3,821.53, and avoidance of premature loss of life amounting to ₱3,987. For access time value which is the opportunity loss of finding a place to defecate (be it open defecation or sharing toilets with relatives/neighbors or using public toilets), the estimated amount is ₱9,320.80, which is 29% of the total. Direct financial gain is the income earned from renting out the toilet, and it amounts to ₱3,360 or only 10% of the total.

For WaSaFin clients who use improved water facilities, the total estimated annual financial and economic benefit amountsto ₱77,209.25. Of this amount, the highest contributing factor is direct financial gain which amounts to a massive ₱58,456.09 or 76% of the total. Of the ₱58,456.09, ₱25,797.33 is attributable to clients selling water and water-related products (ice, ice candy). Many clients have a sari-sari (local variety) store or are engaged in a buy-and-sell business where they have the opportunity to supplement the products they sell withwater andwater-related products and thus are able to earn additional income. Table 7 shows the average income earned by households who engage in selling water and water-related products. The annual average of ₱25,797.33is close to 10% of the average annual family income of Filipino families of approximately₱267,000.[6]

Table 7. Estimated Additional Income FromWater and Water-Related Products Per Household

	DAILY INCOME	NO. OF DAYS SALE PER WEEK	INCOME PER WEEK	INCOME PER MONTH	INCOME PER YEAR
AVERAGE IN ₱	77	7	537	2,150	25,797.33
AVERAGE IN USD ($1 = ₱52)	1.48	7	10.34	41.34	496.10

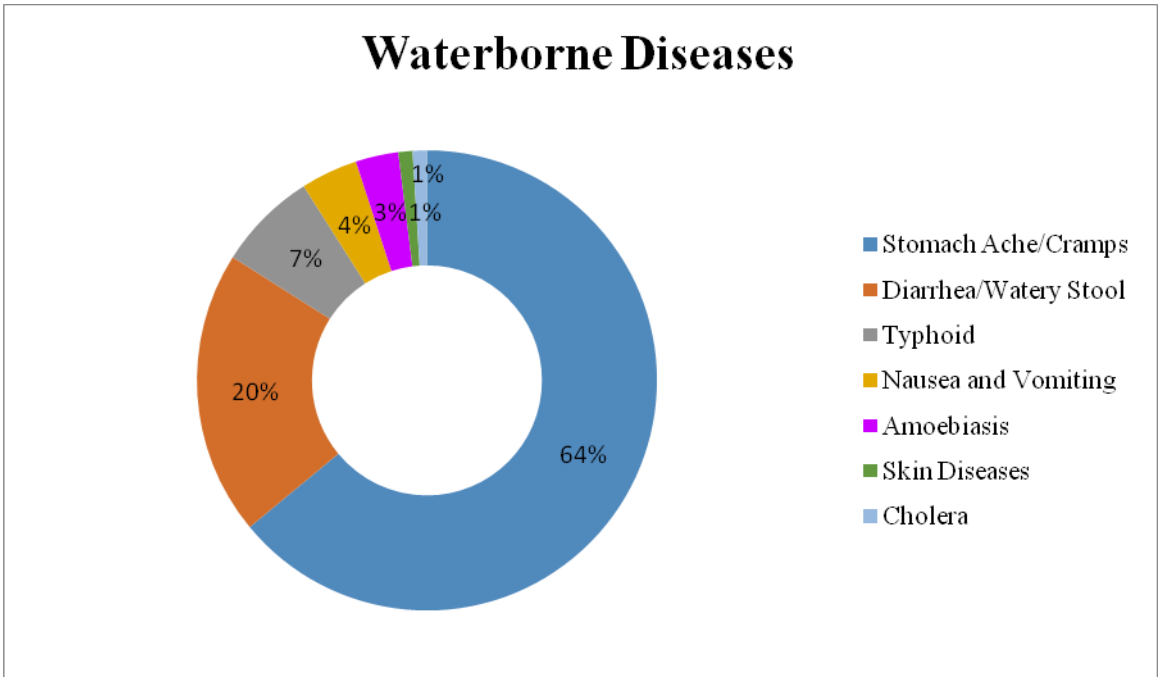
Clients saved money from not having to fetch water. The average transport cost of fetching water per day is ₱61.67 per household or ₱22,508.33 on an annual basis.

The next largest contributing factor to total estimated annual financial and economic benefitof ₱77,209.25 is access time value (time loss value in fetching water) which accounts for₱14,855.03 or 19% of the total. Majority of the clients stated that as a result of improved water facilities, they do not have to spend time fetching water thus they have extra time which they can spend to earn more or have gainful employment. It was estimated that on average households can save about 43 minutes per day. Ifthis extra time is valued usingthe average daily minimum wage rate, the amount saved would be ₱1,238 per month or ₱14,855 annually per household. The last factor is health-related costs avoided which amountsto ₱3,898.13 or 5%of the total.

It is noteworthy that thepercentage pattern of financial and economic benefits from improved sanitation facilities is the reverse of the percentage pattern from improved water facilities. Improved water facilities derive their financial and economic benefits mostly from direct financial gain (a weighty 76%) and very little from health-

relatedsavings (a mere 5%). Improved sanitation facilities, on the other hand, derive most of their financial and economic benefits from health-related costs avoided (61%), with very little due to direct financial gain (only 10%). Figure 17 shows the health impact of the lack of safe water and sanitation systems brought about by waterborne diseases. Before joining the WaSaFin program, a majority 64% of clients reported that they suffered from waterborne-related stomach ache/cramps while 20% suffered diarrhea/watery stool. Thus the impact on healthcare-related savings can indeed be significant.

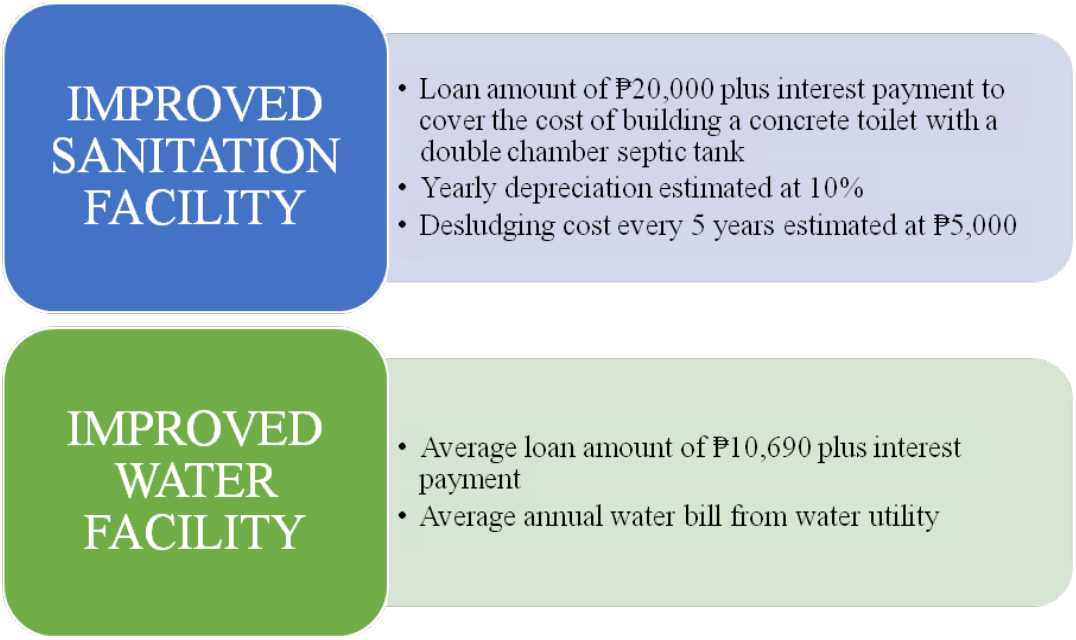
Figure 17. Waterborne Diseases Cited By RespondentsBefore Accessing Improved Water and Sanitation Facilities



The Benefit-Cost ("B/C") and cost-effectiveness analysis shows that the WaSaFinprogram providesfavorable economic benefits per peso invested by clients with positive Net Present Value ("NPV") of net benefits.

To determine the financial and economic impact of WaSaFinon clients, Benefit-Cost ratios and cost-effectiveness per person were calculated based on the monetary stream of benefits (financial and economic costsavoided and gains) and costs (investment in and maintenance of water and sanitation facilities) over a 15-year period. Amounts were discounted using the5-year average inflation rate from 2014-2018. The results included (a) the net present value of net benefits and the B/C ratio, as well as (b) expected economic return (return per peso invested).If the NPV is greater than zero,this means that the investment in an improved sanitation or water facility results in a positive return.If the B/C ratio is greater than one, this means that the accrued WaSaFin financial and economic benefits are greater than the costs of setting up and maintaining a sanitation facility or a water facility, therefore the investment is beneficial.

For the purpose of this analysis the benefits included were the previously identified financial and economic benefits while the costs considered were as follows:



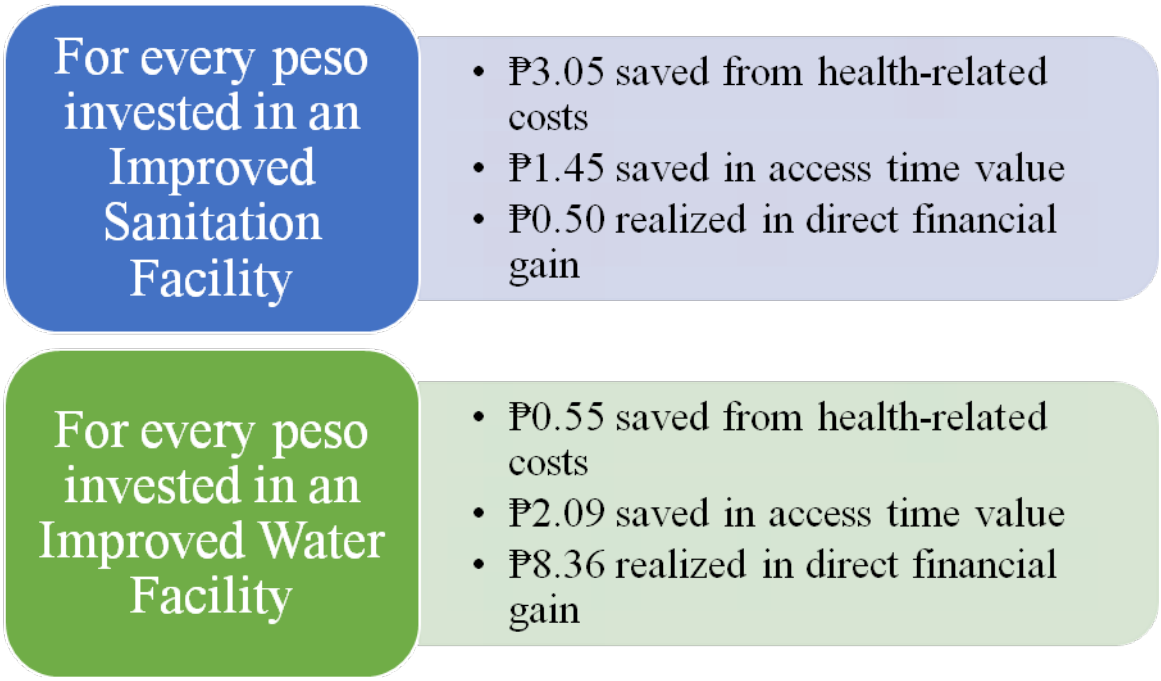
The benefit-cost measures as shown in Table 8 indicate that the WaSaFin program has positive financial and economic benefits for households. The estimated net present value of benefits less costs per household is positive at ₱224,569 for an improved sanitation facility and ₱732,573 for an improved water facility. On a per capita or cost-effectiveness per person basis, the figures are ₱45,830 for an improved sanitation facility and ₱149,505 for an improved water facility. The result of the benefit-cost ratio analysis for an improved sanitation facility shows that for each ₱1 invested by a household, the expected financial and economic benefit is ₱5. For an improved water facility, the benefit for each ₱1 invested is a higher ₱11.

Table 8. Estimated Annual Financial and Economic Benefits of Household

BENEFIT-COST MEASURES	AMOUNT (₱)	PER CAPITA (₱)*
A. IMPROVED SANITATION FACILITY		
Net Present Value of Benefits	277,566	56,646
Net Present Value of Costs	52,997	10,816
Net Present Value of Net Benefits	224,569	45,830
Benefit-Cost Ratio	**5**	
B. IMPROVED WATER FACILITY		
Net Present Value of Benefits	808,485	164,997
Net Present Value of Costs	75,912	15,492
Net Present Value of Net Benefits	732,573	149,505
Benefit-Cost Ratio	**11**	

* The per capita or cost-effectiveness per person is calculated based on an average household size of 4.9.

When the distribution of financial and economic benefits per peso investedis calculated using the percent breakdown in Table 6, the projected benefits are as follows:



The results clearly show the reverse pattern of financial and economic benefits for clients who invested in improved sanitation facilities as compared to clients who invested in improved water facilities, as previously detailed in Table 6. The savings from health-related costs of ₱3.05 for improved sanitation is the highest value while direct financial gain of ₱0.50 is the lowest.For improved water facilities, the most significant benefit, ₱8.36 out of a total ₱11.00, is from direct financial gain –this includes the opportunity to earn additional income from water and water-related products and the reduction in direct expenses (e.g. buying water from refilling stations or from neighbors, incurring cost for hauling water). Households with the lowest levels of access to improved, safe and sustainable water supply frequently pay more for their water than do those who are connected to a piped water system.

Conclusion

The results of the impact assessment survey show that WaSaFin clients derive a wide range of benefits falling within two broad impact areas or domains. First, they gained intangible welfare benefits which resulted in improved mental and social well-being. Intangible benefits include clients:

- Feeling proud, improving their self-esteem, and regaining their dignity,
- Enjoying a high level of ease and comfort,
- Having access to sufficient and potable water, and
- Reducing their exposure to risk in terms of safety and privacy.

Second, clients experienced financial and economic benefits. These benefitsinclude:

- Direct financial gain (income earned, costs avoided),
- Savings from avoiding health-related costs, and
- Access time value avoided (time loss value).

Of those clients who improved their sanitation facilities:

- Ninety-five percent (95%) stated that they experienced intangible welfare benefits.
- Five percent (5%) stated that they experienced financial and economic benefits.

Of thoseclients who improved their water facilities:

- Sixty-seven percent (67%) reported that they experienced welfare benefits.
- Thirty-three percent (33%) reported that they experienced financial and economic benefits.

Clients who improved their water facilities cited a bigger financial and economic gain (33%) compared to clients who used their loan proceeds to improve their sanitation facilities (5%). The 5% in financial and economic benefits cited by clients who improved their sanitation facilities come from saving money by avoiding getting sick due to poor sanitation (4%), saving money by complying with local government unit sanitary regulations and thus avoiding fines imposed on violators (1%), and renting out their toilets to provide additional income (0.16%). The negligible 0.16% indicates that most respondentsare averse to renting out their toilets to earn money. They consider their toilets to be a private facility, solely for the use of their family and guests. Clearly, their loans were intended to be a purely quality of life financing. They did not envision trying to financially capitalize from their loans. As a result, the benefits they experienced were overwhelmingly intangible welfare benefits (95%).

For clients who improved their sanitation facilities, of the total financial and economic benefits estimated (₱32,104.63 on an annual basis):

- Sixty-one percent (61%) were health-related costs avoided or saved
- Twenty-nine percent (29%) was access time value avoided
- Ten percent (10%) was direct financial gain

For clients who improved their water facilities, of the total financial and economic benefits estimated (₱77,209.25 on an annual basis):

- Five percent (5%) were health-related costs avoided or saved
- Nineteen percent (19%) was access time value avoided
- Seventy-six percent (76%) was direct financial gain

Savings on health-related costs (61% or ₱19,423.83) provided the biggest financial and economic impact to clients who improved their sanitation facilities. On the other hand, direct financial gain (76% or ₱58,456.09) provided the biggest financial and economic impact to clients who improved their water facilities. Of the ₱58,456.09 in direct financial gain, the biggest contribution came from clients selling water and water-related products (44% or ₱25,797.33). Clients took the opportunity to sell products such as water, ice and ice candy in their local variety stores or buy-and-sell businesses. It was surprising to see how clients were able to turn their quality of life financing (a non-business related financing) into an opportunity to obtain financial gain. And what an income generating opportunity it turned out to be! Table 9 shows that the income from selling water and water-related products is equivalent to 9.7% or nearly 10% of the average annual family income of Filipino families of approximately ₱267,000. The direct financial gain resulting from an improved water facility amounts to 21.9% of the average annual family income of Filipino families, while total financial and economic benefits from an improved water facility is equivalent to 28.9% of the average annual family income of Filipino families. With these percentages, the WaSaFin program can perhaps be used as one avenue to break the cycle of poverty.

Table 9. Estimated Annual Benefits for a Household with an Improved Water Facility

IMPROVED WATER FACILITY	AMOUNT	% OF AVERAGE ANNUAL FAMILY INCOME (₱267,000)[6] OF FILIPINO FAMILIES
Selling Water-Related Products	₱25,797.33	9.7%
Direct Financial Gain	₱58,456.09	21.9%
Financial and Economic Benefits	₱77,209.25	28.9%

The Benefit-Cost analysis yielded results that are greater than one indicating that an investment in WaSaFin is beneficial to clients:

- For an improved sanitation facility, for each ₱1 invested by a household, the expected financial and economic benefit is ₱5.

- For an improved water facility, for each ₱1 invested by a household, the expected financial and economic benefit is ₱11.

Given the wide range of benefits provided by the WaSaFin program to clients, it is not surprising that clients gave a very high satisfaction rating to the program. Clientsgained intangible welfare benefits --regaining their dignity, raising their social status, increasing their safety and privacy, and enjoying convenience and comfort. Clients also experienced financial and economic benefits, both expected and unexpected -- income generation, a reduction in healthcare expenses, and the avoidance of productivity loss. ASA Philippines Foundation's Water and Sanitation Financing program truly gives credence to the saying that "Water is life, toilet is dignity."

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