**Stakeholders’ Attitudes and Participation on Water Sanitation and Hygiene (Wash) in Barangays of San Roque, Northern Samar, Philippines**

**ABSTRACT**

Access to Water, Sanitation, and Hygiene (WASH) in schools remains a major issue, especially in developing countries, impacting children's health, attendance, and learning. Prevalence of handwashing with soap after using the toilet was recognised among 52% of the students. This study examined the Stakeholders’ Attitudes and Participation on WASH in geographically isolated and disadvantaged (GIDA) schools in San Roque, Northern Samar, Philippines. The study aimed to find the stakeholders’ attitudes and participation in the WASH Program in these schools. The respondents of this study include school heads, teachers, barangay officials, as well as a representative sample of students and parents. 30% of the total population of students and parents were included as respondents in this study. A descriptive-correlational research design was employed to guide the study. The data on the profile of the respondents were analysed using descriptive statistics such as frequency counts and percentages. Findings revealed that most of these schools offer complete elementary and junior high school education and are classified as small-sized institutions. The lone high school employed the most teaching staff, while the rest had similar personnel numbers. Despite minimal training and limited WASH-related programs, stakeholders’ favourable attitudes toward the WASH Program, with high participation levels reported across all implementation phases. There is a high stakeholder participation in project monitoring and evaluation, with an overall mean of 3.62. Stakeholders actively help prepare work plans (3.61), and project managers consistently share progress reports (3.66), reflecting strong collaboration and communication. The stakeholders also actively identify needs (3.53), review deliverables (3.54), set timelines (3.57), and consult on funding (3.69). Their strongest involvement is in identifying required personnel and materials (3.77). There was a significant relationship between the school profile, specifically on the number of WASH programs and projects implemented in these schools and stakeholders’ attitudes towards the WASH program. No significant relationships surfaced between the stakeholders’ attitudes towards the WASH program and their level of participation.

**KEYWORDS:***wash program, stakeholders’ attitudes, participation, biological science*

**INTRODUCTION**

[[1]](#footnote-1)

The practice of hand hygiene includes cleansing of the hands by rubbing both hands together using an alcohol-based hand sanitiser or washing both hands with soap and water to prevent microbial growth. Despite the simplicity of this procedure, compliance has been poor (Abiodun et al., 2022). Access to Water, Sanitation, and Hygiene (WASH) in schools remains a major issue, especially in developing countries, impacting children's health, attendance, and learning. Prevalence of handwashing with soap after using the toilet was recognised among 52% of the students (Almoslem et al. 2021; Hasan et al., 2021). Non-uptake of WASH and poor toilet use stem from inadequate facilities, unclean conditions, cultural norms, and limited health education. (Scotford et al. 2022). There is also widespread open defecation in low- and middle-income countries (LMIC) due to inadequate toilet facilities and underutilization of available facilities (Lampard-Scotford et al., 2022). Addressing these gaps is important for promoting safe and inclusive learning environments (Mier et al., 2025).

According to UNICEF, 77% of schools worldwide have basic drinking water services, leaving approximately 447 million children without access to safe drinking water at school. Similarly, 78% of schools provide basic sanitation services, meaning 427 million children still lack proper sanitation facilities. Furthermore, only 67% of schools offer basic hygiene services, leaving 646 million children globally without sufficient hygiene support (UNICEF & World Health Organisation, 2024).

WASH challenges are especially pronounced in remote areas, where geographically isolated and disadvantaged areas (GIDAs) face significant implementation difficulties (Collado, 2019; Bennett, 2012). GIDAs refer to regions in the Philippines where the community’s population are marginalised and socio-economically separated from mainstream society (Delorino, 2017; Molina et al., 2021). The last mile schools’ challenge in WASH is particularly evident in the poorest regions, where even basic water and sanitation services are lacking. This highlights the need to improve services for vulnerable populations (Ulep et al., 2024; Dalisay et al., 2024).

Challenges include deworming hesitancy, disruption of services due to pandemics and disasters, difficulties in sustainable financing of facilities and supplies, inclusive infrastructure, reaching Last Mile schools in Geographically Isolated, Disadvantaged, and Conflict Areas, and the need to connect WinS, community WASH, and other health programs (Dalisay et al., 2024). Understanding the factors influencing WASH uptake and provision is critical for successful programme design, implementation, and monitoring. These rationales include public health impact, SDGs, equity and social justice, economic productivity, environmental sustainability, and policy and programme interventions (John & Ajibade, 2024; Wilbur et al., 2024).

Implementation of WASH programs in GIDAs varies. Schools in isolated areas like San Roque, Northern Samar, face challenges in establishing and maintaining WASH infrastructure due to limited funding, logistical issues, and geographic constraints. Hence, this study aimed to find the stakeholders’ attitudes and participation in the WASH Program in the schools of San Roque, Northern Samar, Philippines.

**METHODOLOGY**

*Locale of the Study*

This study was conducted in four selected barangays: Lawaan, Ginagdanan, Malobago, and Pagsang-an. These barangays were chosen due to their classification as geographically isolated and disadvantaged areas (GIDAs), which face unique challenges in delivering essential services, including the implementation of effective WASH programs in schools. Each barangay hosts a public elementary school that serves not only as an educational facility but also as a focal point for community engagement.

Composed of five (5) schools, it includes four (4) elementary schools offering complete elementary education and one (1) secondary school with a complete junior high school program.

*The variables*

The study was structured using the independent and dependent framework to examine the WASH program in geographically isolated barangay schools in San Roque, Northern Samar.

Independent variables of the study are composed of the profile of the schools and stakeholders’ attitudes on the WASH Program. The dependent variable of the study includes the level of participation of stakeholders.

*Sampling Technique*

The study employed complete enumeration for school heads, teachers, and barangay officials, including RHU medical officers and nurses assigned to the selected GIDA schools and proportionate sampling, where 30% of the total population of students and parents were included as respondents in this study.

*Respondents*

Using complete enumeration, all four (4) school heads and sixty (60) teachers from the GIDA schools were included as respondents. In addition, thirty-five (35) barangay officials, one (1) municipal physician, and two (2) municipal nurses assigned to these areas were also part of the respondent group. This resulted in a total of one hundred (102) respondents for this category.

There were five hundred fifty-two (552) student and parent-respondents distributed to each school, who are also included as respondents.

Overall, there are 654 respondents in total who are included in this research study.

*Instrument*

An adopted survey questionnaire was used to evaluate stakeholders’ attitudes and participation regarding the Water, Sanitation, and Hygiene (WASH) Program. All items of the questionnaire were based on DepEd Order No. 10, s. 2016: Policy Guidelines for the Comprehensive Water, Sanitation, and Hygiene in Schools (WinS) Program. The attitude consists of 16 items. Stakeholders’ participation in the WASH Program with 24 items for a total of 40 survey questionnaires.

*Validation of Instrument*

The items in the survey questionnaire related to stakeholders' attitudes and participation in the implementation of the WASH Program are adapted from DepEd Order No. 10, s. 2016 (Policy and Guidelines for the Comprehensive Water, Sanitation, and Hygiene (WASH). For assessing the level of participation of stakeholders, the survey questionnaire draws from the work of Wawira and Yusuf in their study titled “Stakeholders’ Participation and Performance of Water, Sanitation, and Hygiene Projects in Embu County, Kenya.”

Before conducting the pilot test, the research instrument was reviewed and evaluated by a research expert with at least five years of experience in the field. The expert assessed the questionnaire for content validity, relevance, clarity, and alignment with the study’s objectives. Based on the feedback, necessary revisions were made to improve the wording and structure of the items.

After the expert evaluation, the instrument was pilot-tested in Barangay Canjumadal, Pambujan, Northern Samar, classified as a geographically isolated and disadvantaged area. A total of 20 respondents, consisting of a mix of school heads, teachers, parents, and students, participated in the pilot test. Results indicated that all items were understood by the participants and were deemed acceptable for the main data collection.

*Scoring and Interpretation*

The data on the profile of the respondents were analysed using descriptive statistics such as frequency counts and percentages.

Stakeholders' attitudes toward the WASH Program, used following scoring and interpretation: Very Favourable (4.20 –5.00), Favourable (3.40 –4.19), Moderately Favourable (2.60 –3.39), Less Favourable (1.80 –2.59), Least Favourable (1.0 – 1.79).

Dominant problem in the implementation of the WASH Program, was determined using following scoring and interpretation: Least Challenging, (4.20 –5.00), Less Challenging (3.40 –4.19), Moderately Challenging, (2.60 –3.39), Challenging (1.80 –2.59), and Highly Challenging (1.0 – 1.79).

*Data Gathering Procedures*

The data gathering procedure for this study commenced with securing approval from the research adviser and panel members. The researcher then presented the finalised research proposal to the adviser and panel members for their review and approval to ensure alignment with the study’s objectives. Upon receiving their approval, permission was sought from the Schools Division Superintendent (SDS). A formal letter requesting permission to conduct the research, outlining the study's objectives, procedures, and timeline, was submitted to the SDS. The researcher then received the written authorisation from the Schools Division Superintendent and proceeded with the study.

The researcher sought informed consent from all participants, including parents, school heads, teachers, and students. Clear communication regarding the purpose of the study, procedures involved, and the voluntary nature of participation was provided, and participants were asked to sign consent forms. Following this, the researcher coordinated with the schools to schedule data collection sessions at times that are convenient for participants and aligned with the school’s schedule.

Data collection then began, with the researcher administering surveys. Throughout the data-gathering process, ethical guidelines were followed to ensure participants’ confidentiality and privacy. The researcher provided regular updates to the adviser and panel members on the progress of data collection, sought guidance as necessary to ensure the process remains on track.

**RESULTS AND DISCUSSION**

Table 1 shows that 80% of the GIDA schools studied were Complete Elementary Schools, while 20% were Junior High Schools. No Primary, Integrated High, or Stand-Alone Senior High Schools were included. This reflects national trends, with elementary schools more common in remote areas.

The data suggests that WASH program implementation efforts should prioritise elementary schools in GIDA areas, as they make up the majority of institutions and are likely the most affected by inadequate water and sanitation infrastructure.

Table 1: School Classification

|  |  |  |
| --- | --- | --- |
| School Classification | Frequency | Percentage |
| Complete Elementary School | 4 | 80% |
| Junior High School (G7-10) | 1 | 20% |
| TOTAL | 5 | 100% |

Table 2 shows that none of the five surveyed schools are “Very Large,” indicating low student populations and limited infrastructure. Only one school each (20%) falls under “Large” and “Medium,” while the majority (60%) are classified as “Small.” This suggests most schools operate on a small scale, likely reflecting rural, less populated areas with limited enrollment, facilities, or accessibility.

Table 2: School Size

|  |  |  |  |
| --- | --- | --- | --- |
| School | Size | Frequency | Percentage |
| School A | Large | 1 | 20% |
| School C | Medium | 1 | 20% |
| School B, D, E | Small | 3 | 60% |
| TOTAL |  | 5 | 100% |

Table 3 shows the number of teaching staff in five schools—one high school and four elementary. School A, the high school, has the most teachers (20), reflecting the subject specialisation needs. Among elementary schools, staffing ranges from 8 to 13. Only 39% of public elementary schools have lab facilities, underscoring the need for better resource allocation. This suggests that limited personnel and facilities may hinder effective teaching and learning, especially in elementary schools.

Table 3: Present Position of Respondent

|  |  |
| --- | --- |
| Schools | No. of Trainings on WASH Program |
| School A | 3 |
| School B | 1 |
| School C | 1 |
| School D | 2 |
| School E | 3 |
| TOTAL | 10 |

Table 4. Number of Trainings on WASH Program

|  |  |
| --- | --- |
| Schools | No. of Teaching Personnel |
| School A | 20 |
| School B | 8 |
| School C | 10 |
| School D | 13 |
| School E | 9 |
| TOTAL | 58 |

Table 4 shows that Schools A and E had the most WASH trainings (3 each), indicating strong engagement. Schools B and C had only one, and School D had two, showing varied participation. With a total of 10 trainings across five schools, some may need more support to ensure consistent WASH program implementation.

Table 5 shows that eight WASH-related programs were implemented across five schools. School A led with three programs, reflecting a more integrated approach, followed by School E with two. Schools B, C, and D implemented only the WinS Program. This variation suggests differences in resources, capacity, or prioritisation. Schools with fewer initiatives may need support to meet basic WASH standards and ensure a safe, healthy learning environment for all students.

Table 5. No. of Programs and Projects Implemented Related to WASH

|  |  |  |
| --- | --- | --- |
| Schools | WASH-Related Program | No. of Programs and Projects Implemented Related to WASH |
| School A | Wash in School  (WinS)  Program  Comprehensive Sexual Education Program  School Nutrition Program | 3 |
| School B | Wash in School  (WinS)  Program | 1 |
| School C | Wash in School  (WinS)  Program | 1 |
| School D | Wash in School  (WinS)  Program | 1 |
| School E | Wash in School  (WinS)  Program;  Comprehensive Sexual Education Program | 2 |
| TOTAL | | 8 |

Table 6 shows stakeholders have a generally favorable attitude toward the WASH Program, with an overall mean of 3.82. The highest-rated item was support for hygiene education (mean of 4.52), highlighting its perceived importance. Items on handwashing stations and health education also scored well. However, lower ratings on deworming programs (mean of 3.38) suggest a need for better communication. Overall, the data reflects strong support for WASH and its benefits for children's health.

The generally favourable attitudes toward the WASH program indicate strong community support, which is crucial for its success. However, the lower confidence in deworming initiatives suggests targeted efforts are needed to raise awareness and acceptance of these components to ensure comprehensive health benefits.

Table 6. Stakeholders Attitudes towards WASH Program

|  |  |  |
| --- | --- | --- |
| Stakeholders Attitudes towards WASH Program | Weighted Mean | Interpretation |
| I think hygiene education at school helps instill lifelong cleanliness habits in children. | 4.52 | Very Favorable |
| I believe schools should regularly conduct health education sessions to promote better hygiene and overall well-being among students. | 4.16 | Favorable |
| I think schools must ensure that handwashing stations are always accessible and functional. | 4.07 | Favorable |
| I believe schools should encourage daily hygiene practices like keeping nails trimmed and hair clean. | 4.05 | Favorable |
| I believe schools should teach proper handwashing techniques to students regularly. | 3.98 | Favorable |
| I feel schools should monitor and provide feedback on students' hygiene to reinforce good practices. | 3.86 | Favorable |
| I think health education should be a core part of the school curriculum to ensure children develop lifelong healthy habits. | 3.83 | Favorable |
| I believe parents should be actively involved in supporting health education initiatives in schools. | 3.82 | Favorable |
| I feel that emphasizing handwashing in schools helps reduce the spread of illnesses among children. | 3.78 | Favorable |
| I support the implementation of regular deworming programs in schools to prevent health issues in children. | 3.76 | Favorable |
| I believe that providing access to clean and safe drinking water in schools is essential for my child’s health and academic performance. | 3.68 | Favorable |
| I trust that the school’s deworming program is safe and beneficial for my child’s health. | 3.66 | Favorable |
| I feel regular communication from schools about the benefits and process of deworming helps build my confidence in the program. | 3.63 | Favorable |
| I believe that schools should regularly monitor the quality of drinking water provided to students. | 3.56 | Favorable |
| I think the availability of clean drinking water at school significantly reduces the risk of waterborne illnesses in children. | 3.42 | Favorable |
| I support the inclusion of health education and regular deworming programs in schools to ensure my child’s overall well-being. | 3.38 | Favorable |
| Overall Mean | **3.82** | **Favorable** |

Table 7 shows a high overall participation level (mean 3.69) in the WASH project identification phase. Stakeholders strongly agree that projects meet community needs (3.93) and conflicts are resolved (3.94). However, community involvement in choosing project locations scored lower (3.21), indicating room for improvement. The high participation scores suggest strong stakeholder engagement in WASH project planning, which likely improves project relevance and acceptance. However, the lower involvement in site selection points to a need for greater community input to enhance ownership and project success.

Table 7. Level of Participation in Project Identification

|  |  |  |
| --- | --- | --- |
| Level of Participation in Project Identification | Weighted Mean | Interpretation |
| During the project identification process conflicts between different stakeholders is identified and resolved | 3.94 | High Participation |
| The WASH projects developed are based on the needs and expectations | 3.93 | High Participation |
| The scope of the project is determined by the local community, the government, and the donor | 3.73 | High Participation |
| The project developer provides clarification for stakeholders | 3.63 | High Participation |
| There is community participation in determining the location of WASH | 3.21 | Moderate  Participation |
| Overall Mean | 3.69 | High Participation |

Table 8 shows high stakeholder participation in the WASH program’s planning phase, with an overall mean of 3.62. Stakeholders actively identify needs (3.53), review deliverables (3.54), set timelines (3.57), and consult on funding (3.69). Their strongest involvement is in identifying required personnel and materials (3.77), highlighting active engagement in resource planning and project design. This suggests that the strong stakeholder involvement in resource identification and key planning decisions suggests that the WASH program benefits from collaborative planning, which can lead to more effective and well-supported project implementation.

Table 8. Level of Participation in Project Planning

|  |  |  |
| --- | --- | --- |
| Level of Participation in Project Planning | Weighted Mean | Interpretation |
| Stakeholders are involved in identifying the personnel and material resources required. | 3.77 | High Participation |
| Stakeholders are consulted when planning project funding. | 3.69 | High Participation |
| There is a consultation on the objectives of the project. | 3.60 | High Participation |
| The project timelines are set and agreed upon by stakeholders. | 3.57 | High Participation |
| The project deliverables are shared with the stakeholders. | 3.54 | High Participation |
| Stakeholders identify their needs  during project design. | 3.53 | High Participation |
| Overall Mean | 3.62 | High Participation |

Table 9 shows high stakeholder participation in the WASH program implementation phase, with an overall mean of 3.59. Stakeholders are actively involved in following the project plan (3.74), setting timelines (3.71), and controlling implementation (3.60). However, incorporating stakeholder feedback into corrective actions scored lower (3.42), indicating room for improvement. Overall, collaboration is strong, but better integration of feedback could enhance project execution.

Table 9. Level of Participation in Project Implementation

|  |  |  |
| --- | --- | --- |
| Level of Participation in Project Implementation | Weighted Mean | Interpretation |
| Project managers implement the plan agreed upon by stakeholders | 3.74 | High Participation |
| The stakeholders set timelines for project implementation | 3.71 | High Participation |
| Stakeholders participate in project risk assessment | 3.63 | High Participation |
| The project implementation is controlled by the stakeholders | 3.60 | High Participation |
| The stakeholders participate in quality management | 3.45 | High Participation |
| The project manager takes corrective action recommended by the stakeholders | 3.42 | High Participation |
| Overall Mean | 3.59 | High Participation |

Table 10 shows high stakeholder participation in project monitoring and evaluation, with an overall mean of 3.62. Stakeholders actively help prepare work plans (3.61), and project managers consistently share progress reports (3.66), reflecting strong collaboration and communication. The strong stakeholder involvement in monitoring and evaluation, along with regular progress reporting, suggests effective communication and shared responsibility, which likely enhances project transparency and success.

Table 10. Level of Participation in Project Monitoring and Evaluation

|  |  |  |
| --- | --- | --- |
| Level of Participation in Project Monitoring and Evaluation | Weighted Mean | Interpretation |
| The donors provide financial resources in monitoring of the project. | 3.75 | High Participation |
| The project manager prepares periodic progress reports for the stakeholders. | 3.66 | High Participation |
| The stakeholders participated in the development of project monitoring and evaluation framework. | 3.66 | High Participation |
| The stakeholders participate in the preparation of the work plans. | 3.61 | High Participation |
| Stakeholders participate in assessing whether the WASH projects are bringing the intended benefits to community. | 3.59 | High Participation |
| There is a committee constituted by community members to monitor WASH projects in my community. | 3.42 | High Participation |
| Overall Mean | 3.62 | High Participation |

Table 11 shows that most GIDA school profile factors—such as education level, school size, number of teachers, and training—have weak, non-significant correlations with stakeholder attitudes toward the WASH program. However, the presence of active WASH programs shows a weak but significant positive correlation (0.039, p = 0.012), suggesting that visible initiatives slightly improve stakeholder perceptions. This supports findings that concrete programs enhance awareness and support.

Table 11. Test of the Relationship between the Profile of the Respondents and their Attitudes towards the WASH Program

|  |  |  |
| --- | --- | --- |
| Profile | Parameters | Stakeholders’ Attitudes |
| Basic Education Offering Level | Pearson Correlation  Sig. (2-tailed)  Interpretation | -0.58  0.832  Not Significant |
| School Size | Pearson Correlation  Sig. (2-tailed)  Interpretation | -0.202  0.452  Not Significant |
| Number of Teachers | Pearson Correlation  Sig. (2-tailed)  Interpretation | 0.098  0.225  Not Significant |
| Trainings | Pearson Correlation  Sig. (2-tailed)  Interpretation | -0.643  0.138  Not Significant |
| Programs and Projects | Pearson Correlation  Sig. (2-tailed)  Interpretation | **0.039**  **0.012**  **Significant** |

Table 12 shows a consistently weak, non-significant negative correlation between stakeholders’ attitudes and their participation in all phases of WASH program implementation. This suggests that attitudes do not significantly influence stakeholder involvement in identification, planning, or implementation stages.

Table 12. Test of the Relationship between Stakeholders' Attitudes and Stakeholders’ Participation

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Parameter | Stakeholders’ Participation | | | |
| Program Identification | Program Planning | Program Implementation | M&E |
| Stakeholders’ Attitudes | Pearson Correlation  Sig. (2-tailed)  Interpretation | -.119  0.678  Not Significant | -.210  0.677  Not Significant | -.543  0.890  Not Significant |

**Conclusion**

In conclusion, there is a significant relationship between the school profile specifically on number of WASH programs and projects implemented in these schools and stakeholders’ attitudes towards WASH program. No significant relationships surfaced between the stakeholders’ attitudes towards WASH program and their level of participation.

**Ethical Approval:**

This study commenced with securing approval from the research adviser and panel members. The researcher then presented the finalised research proposal to the adviser and panel members for their review and approval to ensure alignment with the study’s objectives. Upon receiving their approval, permission was sought from the Schools Division Superintendent (SDS).

**Consent:**

The researcher sought informed consent from all participants, including parents, school heads, teachers, and students.

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3.

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