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Behavioral, Infrastructural, and Governance Determinants of Zero Open Defecation Implementation in Rural Philippines: Evidence from Donsol, Sorsogon

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***Abstract*—** This study assessed the implementation of the Zero Open Defecation (ZOD) Program in selected barangays of Donsol, Sorsogon, focusing on behavioral, infrastructural, and governance determinants, as well as challenges and proposed strategies for improvement. A quantitative descriptive cross-sectional design was employed, involving 150 respondents composed of household representatives, barangay officials, and Barangay Health Station Team members. Data were gathered using a validated researcher-made questionnaire and analyzed through frequency counts, percentages, and ranking. Findings revealed that Bororan consistently exhibited high sanitation compliance in terms of toilet use, hygiene practices, infrastructure availability, and governance support, while Mabini showed moderate performance, and Old Maguisa demonstrated the lowest compliance, particularly with open defecation practices and limited sanitation facilities. Infrastructural gaps, financial constraints, and weak governance mechanisms were identified as major barriers to effective ZOD implementation. Conversely, strong local leadership, continuous monitoring, and community participation were associated with better sanitation outcomes. The study concludes that successful ZOD implementation requires an integrated approach combining behavioral change, adequate infrastructure, and strong governance support. Addressing disparities across barangays is essential to achieving sustainable sanitation outcomes in rural communities.

***Keywords*—** Zero Open Defecation; Sanitation Behavior; Infrastructural Factors; Governance; Rural Public Health.

I. INTRODUCTION

Access to safe water, sanitation, and hygiene (WASH) services remains a fundamental component of public health and sustainable development worldwide. Despite global progress in sanitation coverage, significant disparities persist between urban and rural populations, particularly in low- and middle-income countries. The World Health Organization (2024) emphasizes that inadequate sanitation continues to be a major driver of preventable diseases, environmental contamination, and child mortality, especially in underserved communities where access to basic toilet facilities remains limited. Alongside this, the United Nations' Sustainable Development Goal 6 (SDG 6) underscores the global commitment to ensuring availability and sustainable management of water and sanitation for all. However, achieving universal sanitation coverage remains a persistent challenge due to socio-economic inequalities, infrastructural gaps, and behavioral barriers that limit the adoption of safe sanitation practices.

In many developing regions, open defecation remains a critical public health concern. According to WHO and UNICEF (2023), millions of people globally still practice open defecation, particularly in rural communities where sanitation infrastructure is either inadequate or inaccessible. This practice exposes communities to a range of health risks, including diarrheal diseases, parasitic infections, and environmental degradation. Coffey et al. (2017) further explain that open defecation is not solely a result of infrastructure deficiency but is also shaped by deeply rooted social norms, economic limitations, and cultural practices. These intertwined factors make sanitation behavior change a complex and long-term process, requiring integrated interventions beyond infrastructure provision alone.

In response to these global challenges, many countries have adopted community-driven sanitation programs aimed at eliminating open defecation. In the Philippines, the Department of Health (DOH) has implemented the Philippine Approach to Sustainable Sanitation (PhATSS), which serves as the national framework for achieving sustainable sanitation outcomes. This approach emphasizes behavior change, household toilet ownership, community participation, and strong local governance as key pillars for achieving and sustaining Zero Open Defecation (ZOD) status. DOH (2022) highlights that PhATSS is designed to ensure that sanitation interventions are not only infrastructure-focused but also behavior-oriented and community-led, thereby promoting long-term sustainability. Through this framework, local government units are encouraged to actively monitor sanitation compliance, conduct hygiene education campaigns, and support households in building and maintaining sanitary toilets.

Despite these national efforts, the implementation of sanitation programs in rural Philippine communities remains uneven. Reyes and Santos (2020) found that low-income rural households often struggle to comply with sanitation standards due to financial constraints and limited access to materials and services. Similarly, Jenkins and Curtis (2005) argue that sanitation behavior is influenced not only by awareness but also by perceived convenience, social acceptance, and economic feasibility. These findings suggest that achieving Zero Open Defecation requires addressing multiple dimensions of sanitation behavior, including infrastructure availability, governance support, and community motivation. In addition, Dela Cruz et al. (2021) emphasize that local leadership and community participation play a crucial role in sustaining sanitation compliance in rural settings, where institutional enforcement alone may not be sufficient.

Within the Philippine context, the Zero Open Defecation (ZOD) program has been widely implemented as part of national efforts to improve sanitation outcomes at the grassroots level. However, progress toward full ZOD compliance varies significantly across regions and municipalities. The Philippine Institute for Development Studies (2024) notes that while some communities have successfully achieved ODF or ZOD status, others continue to face persistent challenges related to infrastructure deficits, weak monitoring systems, and inconsistent community engagement. These disparities highlight the importance of examining local-level implementation dynamics to better understand what drives success or failure in sanitation programs.

At the local level, sanitation challenges are often compounded by socio-economic conditions and geographic limitations. The National Economic and Development Authority (2021) reports that rural areas in the Philippines continue to experience unequal access to basic services, including water and sanitation infrastructure. These inequalities are particularly evident in geographically isolated and disadvantaged areas, where limited funding and logistical constraints hinder the implementation of comprehensive sanitation programs. As a result, households in these communities may rely on unsafe sanitation practices, including open defecation, which undermines public health efforts and environmental sustainability.

In addition to infrastructure gaps, governance structures significantly influence the success of sanitation programs. Effective local governance ensures the enforcement of sanitation ordinances, the provision of resources, and the mobilization of community participation. The Department of Health (2022) emphasizes that barangay-level leadership is essential in sustaining ZOD status, as local officials are directly involved in monitoring household compliance and implementing sanitation interventions. However, variations in governance capacity across communities often lead to uneven program outcomes, with some barangays demonstrating strong compliance while others lag behind due to weak enforcement and limited institutional support.

The importance of behavioral change also cannot be overlooked in achieving sustainable sanitation outcomes. Behavioral practices such as toilet use, handwashing, participation in sanitation activities, and proper waste disposal are critical indicators of ZOD success. According to WHO (2024), sustained hygiene

behavior significantly reduces the transmission of sanitation-related diseases and improves overall community health outcomes. However, behavioral change is often slow and requires continuous education, reinforcement, and community engagement. In rural settings, where traditional practices may persist, shifting behaviors toward safe sanitation requires culturally sensitive and context-specific interventions.

Against this backdrop, the municipality of Donsol, Sorsogon provides a relevant context for examining the implementation of the Zero Open Defecation program. Although efforts have been made to promote sanitation compliance through the PhATSS framework, disparities remain across barangays in terms of infrastructure availability, behavioral adoption, and governance effectiveness. Based on observed conditions, Bororan demonstrates relatively high compliance with sanitation standards, while Mabini shows moderate implementation, and Old Maguisa continues to experience significant challenges, particularly in terms of open defecation practices, limited sanitation facilities, and weak institutional support. These variations highlight the need for a deeper understanding of the factors influencing ZOD implementation at the community level, particularly in rural Philippine settings where socio-economic and institutional disparities are pronounced.

Understanding these differences is crucial for strengthening sanitation programs and ensuring sustainable health outcomes. By examining behavioral, infrastructural, and governance determinants, this study seeks to contribute to the growing body of literature on community-led sanitation interventions and provide evidence-based insights for improving ZOD implementation strategies in rural areas. The findings are expected to inform local policy development, enhance program implementation, and support the broader goal of achieving sustainable sanitation in line with national and global development agendas.

In line with this, the study is guided by the following objectives written in paragraph form. The general objective of this study is to assess the implementation of the Zero Open Defecation (ZOD) Program in selected barangays of Donsol, Sorsogon in terms of behavioral, infrastructural, and governance factors, as well as associated challenges and proposed strategies for improvement. Specifically, the study seeks to describe the socio-demographic profile of the respondents in terms of age, sex, educational attainment, and monthly household income; determine the behavioral factors affecting ZOD implementation in selected barangays, including toilet use, hygiene practices, participation in sanitation activities, and waste disposal practices; assess the infrastructural factors influencing ZOD implementation, such as toilet ownership, water availability, sanitation facilities, and access to sanitation materials and support services; and evaluate governance factors, identify challenges encountered in achieving ZOD status, and examine proposed strategies for strengthening program implementation.

II. METHODOLOGY

This study employed a quantitative descriptive cross-sectional research design to assess the implementation of the Zero Open Defecation (ZOD) Program in selected barangays of Donsol, Sorsogon. The study focused on identifying behavioral, infrastructural, and governance factors that affect sanitation practices, as well as the challenges encountered and the strategies proposed for improvement. The research was guided by structured frameworks, including behavioral compliance and community-based sanitation governance, allowing systematic evaluation of program implementation across barangays. Data were gathered from respondents in Bororan, Mabini, and Old Maguisa to provide comparative insights into varying levels of ZOD implementation.

The study respondents comprised 150 individuals, including household representatives, barangay officials, and members of the Barangay Health Station Team (BHST). A purposive sampling technique was used to select participants based on their direct involvement in sanitation practices and program implementation within the selected barangays. Data were collected using a structured, researcher-made questionnaire that was validated by experts and pre-

tested for reliability. The instrument gathered information on socio-demographic characteristics, behavioral practices, infrastructural conditions, governance support, challenges encountered, and proposed strategies related to the ZOD program.

Data collection was conducted after securing permission from the Municipal Government of Donsol through the Municipal Health Office. Ethical considerations were strictly observed, including informed consent, voluntary participation, and confidentiality of responses. The data were processed using descriptive statistical tools such as frequency counts, percentages, and ranking, which were used to analyze and present the findings in tabular form. This approach allowed the study to clearly describe patterns and differences across barangays and identify key determinants affecting the implementation of the Zero Open Defecation program.

III. RESULTS

Socio-demographic profile of the respondents

Table 1 presents the socio-demographic characteristics of the 150 respondents from selected barangays in Donsol, Sorsogon, showing that the majority belong to middle-adult age groups, are predominantly female, have reached secondary education, and fall within low to middle-income households . Specifically, the largest age group is 41–50 years old (35.3%), followed by 51–60 years old (24.0%), while only a small proportion belongs to the youngest (21–30 years old, 6.0%) and oldest (71–80 years old, 3.3%) categories. This suggests that sanitation-related responses in the study are largely shaped by economically active adults who are typically responsible for household hygiene decisions.

The predominance of female respondents (58.0%) reflects the common social structure in rural households where women are often more involved in daily sanitation practices and household management. This aligns with the observation that sanitation responsibility frequently rests on women, especially in rural communities where they oversee hygiene, water use, and family health-related routines. In terms of educational attainment, most respondents reached high school level (40.0%), followed by college level (34.7%), indicating moderate literacy that may influence their understanding and compliance with sanitation programs such as ZOD. Household income data further show that most respondents earn between ₱5,001–₱10,000 (40.0%), with a significant portion earning below ₱5,000 (35.3%), reflecting the economic constraints that may affect sanitation infrastructure access and household toilet construction.

Table 1. *Profile of the Respondents*

Variable	Category	f	%
Age	21–30	9	6.00
	31–40	34	22.70
	41–50	53	35.30
	51–60	36	24.00
	61–70	13	8.70
	71–80	5	3.30
Sex	Male	63	42.00
	Female	87	58.00
Education	Elementary	30	20.00
	High School	60	40.00
	College	52	34.70
	Postgraduate	8	5.30
Income	< ₱5,000	53	35.30
	₱5,001–₱10,000	60	40.00
	₱10,001–₱15,000	30	20.00
	> ₱15,000	7	4.70

These findings are consistent with sanitation and public health literature emphasizing that socio-economic conditions strongly influence hygiene behavior and sanitation outcomes.

The World Health Organization (2024) highlights that limited income and education are major barriers to sustained sanitation improvement, particularly in rural settings where households may struggle to afford proper toilet facilities and maintenance. Similarly, the WHO and UNICEF Joint Monitoring Program (2023) reported that sanitation inequalities persist in low-income communities, where access to improved facilities is strongly linked to household economic capacity. In addition, Jenkins and Curtis (2005) found that behavioral adoption of latrine use is closely tied to socio-economic motivation and perceived household benefits, rather than awareness alone. These studies support the present findings, suggesting that while awareness may exist, structural constraints such as income level and educational background significantly shape sanitation behavior and compliance in ZOD implementation.

Behavioral factors affecting ZOD implementation in selected barangays

Table 2 presents the behavioral practices of respondents across the three selected barangays in Donsol, Sorsogon, specifically focusing on toilet use, open defecation practices, handwashing behavior, participation in sanitation activities, and proper waste disposal.

The findings reveal a clear gradient of sanitation behavior, with Bororan consistently demonstrating the highest compliance levels, followed by Mabini, while Old Maguisa shows the lowest performance across most behavioral indicators.

Table 2. *Behavioral factors affecting ZOD implementation in selected barangays*

Behavioral Factor	Bororan	Mabini	Old Maguisa
Toilet use	50 (100%)	33 (66.7%)	10 (20%)
Open defecation	0 (0%)	10 (20%)	30 (60%)
Handwashing	48 (96.7%)	43 (86.7%)	32 (63.3%)
Participation in sanitation activities	47 (93.3%)	38 (75.0%)	25 (50%)
Proper waste disposal	48 (95.0%)	40 (80.0%)	23 (46.7%)

In terms of toilet use, Bororan achieved full compliance (100%), whereas Mabini recorded a moderate level (66.7%), and Old Maguisa showed critically low usage (20%). Correspondingly, open defecation was absent in Bororan (0%), but still present in Mabini (20%) and highly prevalent in Old Maguisa (60%). Similar patterns were observed in hygiene-related behaviors such as handwashing (Bororan: 96.7%, Mabini: 86.7%, Old Maguisa: 63.3%), participation in sanitation activities (93.3%, 75.0%, and 50.0% respectively), and proper waste disposal (95.0%, 80.0%, and 46.7% respectively). These results indicate that behavioral compliance with sanitation standards is strongly clustered in communities with higher program adherence and weaker in areas with persistent open defecation practices.

These findings are consistent with established sanitation behavior theories and empirical studies. Jenkins and Curtis (2005) emphasized that latrine adoption and hygiene behavior are strongly influenced by habitual practices and perceived benefits rather than awareness alone, suggesting that behavior change is gradual and socially reinforced. Similarly, Coffey et al. (2017) highlighted that sanitation behavior is deeply embedded in socio-cultural and economic conditions, where entrenched practices such as open defecation persist despite infrastructure availability. The World Health Organization (2024) further reinforces that improved sanitation behaviors, particularly consistent toilet use and hand hygiene, significantly reduce disease transmission and are critical indicators of successful sanitation programs. Moreover, WHO and UNICEF (2023) stress that sustained behavioral change is essential for achieving

universal sanitation coverage, particularly in rural and underserved communities.

Infrastructural factors influencing ZOD implementation

Table 3 presents the infrastructural conditions influencing the implementation of the Zero Open Defecation (ZOD) Program across the selected barangays of Bororan, Mabini, and Old Maguisa in Donsol, Sorsogon, focusing on toilet ownership, water availability, sanitation assistance, accessibility of sanitation facilities, and availability of sanitation materials.

The results show marked disparities in sanitation infrastructure across barangays, with Bororan consistently exhibiting the strongest infrastructural support, while Old Maguisa shows the most severe deficiencies.

Table 3. *Infrastructural Factors Affecting ZOD Implementation*

Infrastructural Factor	Bororan	Mabini	Old Maguisa
Toilet ownership	50 (100%)	33 (66.7%)	10 (20%)
Water availability	47 (93.3%)	45 (90.0%)	43 (86.7%)
Sanitation assistance	38 (76.7%)	10 (20%)	0 (0%)
Access to sanitation facilities	48 (96.7%)	39 (78.3%)	23 (46.7%)
Availability of sanitation materials	48 (95.0%)	38 (75.0%)	20 (40.0%)

Findings indicate that toilet ownership is universal in Bororan (100%), but significantly lower in Mabini (66.7%) and critically low in Old Maguisa (20%). Although water availability is relatively high across all barangays (Bororan: 93.3%, Mabini: 90.0%, Old Maguisa: 86.7%), other critical support systems such as sanitation assistance vary greatly, with Bororan reporting moderate support (76.7%), Mabini showing very limited assistance (20.0%), and Old Maguisa reporting none (0%). Similarly, access to sanitation facilities and materials follows the same pattern, with Bororan consistently recording the highest access (96.7% and 95.0%, respectively), while Old Maguisa records the lowest (46.7% and 40.0%). These results highlight that while basic water availability is relatively stable, the enabling infrastructure required for sustained sanitation behavior is unevenly distributed.

These findings align with established public health and sanitation literature emphasizing the critical role of infrastructure in sustaining hygiene behavior. The World Health Organization (2024) states that access to safe sanitation facilities is a fundamental determinant of reduced exposure to sanitation-related diseases and is essential for sustaining open defecation-free communities. Likewise, WHO and UNICEF (2023) emphasize that improvements in sanitation outcomes depend not only on awareness but also on the availability of functional toilets, water systems, and hygiene materials, particularly in rural and low-income settings. The Department of Health (2022) under the Philippine Approach to Sustainable Sanitation (PhATSS) further reinforces that sustained ZOD status requires integrated support systems combining household infrastructure, local government assistance, and community-based resources. In addition, Reyes and Santos (2020) found that low-income rural households often fail to comply with sanitation standards due to financial and infrastructural limitations, even when awareness levels are relatively high.

Governance factors and challenges encountered in achieving ZOD status

Table 4 presents the governance-related factors influencing the implementation of the Zero Open Defecation (ZOD) Program across the selected barangays of Bororan, Mabini, and Old Maguisa in Donsol, Sorsogon, focusing on enforcement of sanitation ordinances, support from barangay officials, sanitation monitoring, availability of sanitation programs, and community participation initiatives . The findings reveal a consistent pattern of stronger governance performance in Bororan, moderate implementation in Mabini, and significantly weaker governance structures in Old Maguisa.

Table 4. Governance Factors, Challenges, and Strategies

Governance Factor	Bororan	Mabini	Old Maguisa
Ordinance enforcement	48 (96.7%)	40 (80.0%)	22 (43.3%)
Support from barangay officials	48 (95.0%)	39 (78.3%)	23 (46.7%)
Sanitation monitoring	47 (93.3%)	38 (76.7%)	20 (40.0%)
Sanitation programs	48 (96.7%)	38 (75.0%)	18 (36.7%)
Community participation	47 (94.0%)	37 (73.3%)	17 (33.3%)

Results show that Bororan consistently recorded the highest governance performance across all indicators, including enforcement of sanitation ordinances (96.7%), support from barangay officials (95.0%), sanitation monitoring (93.3%), availability of sanitation programs (96.7%), and community participation initiatives (94.0%). In contrast, Mabini demonstrated moderate governance support ranging from 73.3% to 80.0%, while Old Maguisa consistently recorded the lowest levels, particularly in community participation (33.3%) and sanitation program availability (36.7%). These results suggest that governance strength is strongly associated with improved sanitation compliance and sustained ZOD implementation at the community level.

These findings are supported by public health governance literature emphasizing the critical role of local leadership in achieving sanitation outcomes. The Department of Health (2022) under the Philippine Approach to Sustainable Sanitation (PhATSS) highlights that strong barangay-level governance, including enforcement of ordinances and active monitoring, is essential for sustaining Zero Open Defecation status. Similarly, the World Health Organization (2024) emphasizes that effective sanitation governance improves compliance by ensuring accountability, regular monitoring, and community engagement. Dela Cruz et al. (2021) also found that rural sanitation compliance improves significantly when local leaders actively participate in enforcement and community mobilization, reinforcing the importance of leadership-driven sanitation initiatives. Furthermore, WHO and UNICEF (2023) stress that governance systems are a key determinant of sanitation sustainability, particularly in low-resource settings where behavioral change alone is insufficient without institutional support.

Table 5 presents the major challenges encountered by respondents in the implementation of the Zero Open Defecation (ZOD) Program across Bororan, Mabini, and Old Maguisa in Donsol, Sorsogon, focusing on financial limitations, inadequate sanitation facilities, weak monitoring systems, limited water supply, and poor compliance with sanitation ordinances . The findings clearly show that challenges are most severe in Old Maguisa, followed by Mabini, while Bororan consistently records the lowest levels of sanitation-related constraints.

Table 5. Major Challenges in ZOD Implementation

Challenge	Bororan	Mabini	Old Maguisa
Lack of financial resources	5 (10%)	25 (50%)	43 (85%)
Inadequate sanitation facilities	0 (0%)	23 (45%)	40 (80%)
Weak monitoring	8 (15%)	20 (40%)	38 (75%)
Limited water supply	0 (0%)	13 (25%)	30 (60%)
Poor compliance	5 (10%)	18 (35%)	35 (70%)

The results indicate that lack of financial resources is the most critical barrier, particularly in Old Maguisa (85.0%) and Mabini (50.0%), compared to Bororan (10.0%). Similarly, inadequate sanitation and toilet facilities are highly prevalent in Old Maguisa (80.0%) and Mabini (45.0%), but absent in Bororan (0.0%). Weak sanitation monitoring is also more pronounced in Old Maguisa (75.0%) and Mabini (40.0%) than in Bororan (15.0%). Limited water supply follows the same pattern, with Old Maguisa reporting the highest

proportion (60.0%), while Bororan reports no significant issue (0.0%). Poor compliance with sanitation ordinances is likewise most evident in Old Maguisa (70.0%) and Mabini (35.0%), compared to Bororan (10.0%). These findings suggest that financial and institutional constraints significantly influence sanitation compliance and the sustainability of ZOD implementation.

These results are consistent with existing literature emphasizing the role of resource limitations and institutional capacity in sanitation outcomes. The World Health Organization (2024) highlights that financial constraints and inadequate infrastructure are among the primary barriers to achieving universal sanitation coverage, particularly in rural and low-income settings. Similarly, WHO and UNICEF (2023) report that progress toward improved sanitation is often uneven due to disparities in funding, infrastructure, and governance capacity across communities. Reyes and Santos (2020) further emphasize that rural households in low-income areas often struggle to comply with sanitation standards due to economic limitations and insufficient access to essential facilities. In addition, Coffey et al. (2017) note that persistent open defecation practices are often reinforced by structural poverty, weak enforcement mechanisms, and limited access to sanitation services, rather than lack of awareness alone.

Proposed strategies for strengthening program implementation

Table 6 presents the proposed strategies suggested by respondents to strengthen the implementation and sustainability of the Zero Open Defecation (ZOD) Program across Bororan, Mabini, and Old Maguisa in Donsol, Sorsogon. These strategies focus on improving sanitation financing, strengthening governance enforcement, enhancing health education, improving water access, and intensifying monitoring and evaluation systems . The findings reflect the perceived priority interventions needed to address persistent sanitation gaps, particularly in barangays with lower ZOD compliance.

Table 6. *Proposed Strategies for Strengthening ZOD*

Strategy	Bororan	Mabini	Old Maguisa
Financial assistance for toilet construction	18 (35%)	28 (55%)	48 (95%)
Stronger ordinance enforcement	40 (80%)	43 (85%)	39 (78%)
Health education campaigns	43 (85%)	45 (90%)	40 (80%)
Water supply improvement	15 (30%)	25 (50%)	45 (90%)
Strengthened monitoring	48 (95%)	38 (75%)	44 (88%)

The results show that provision of financial assistance for toilet construction is most strongly supported in Old Maguisa (95.0%), followed by Mabini (55.0%) and Bororan (35.0%), indicating that financial constraints are most severe in the least compliant barangay. Strengthened enforcement of sanitation ordinances is consistently rated high across all barangays, particularly Mabini (85.0%) and Bororan (80.0%), suggesting widespread recognition of governance as a key driver of sanitation compliance. Similarly, intensified health education campaigns received high support across all areas, especially Mabini (90.0%), indicating strong community recognition of the importance of sustained behavioral change. Improvement of access to safe water supply is most strongly emphasized in Old Maguisa (90.0%), reflecting infrastructural deficiencies that continue to hinder sanitation practices. Meanwhile, strengthening sanitation monitoring and evaluation systems received the highest support in Bororan (95.0%), showing that even high-performing barangays prioritize sustaining compliance through continuous oversight.

These findings align with global and national sanitation frameworks that emphasize integrated, multi-sectoral interventions. The Department of Health (2022) under the Philippine Approach to Sustainable Sanitation (PhATSS) highlights that sustainable ZOD implementation requires a combination of financial support, infrastructure development, behavior change communication, and strong local governance. The World Health

Organization (2024) similarly emphasizes that sustained sanitation outcomes depend on continuous monitoring, community engagement, and equitable access to sanitation facilities. WHO and UNICEF (2023) further stress that improving sanitation coverage requires addressing both demand-side factors (behavior and awareness) and supply-side constraints (facilities and resources). Additionally, Coffey et al. (2017) highlight that financial and structural barriers are among the most significant determinants of persistent sanitation gaps in rural communities, reinforcing the importance of targeted subsidies and community-based support mechanisms.

IV. CONCLUSION & RECOMMENDATION

The study concludes that the implementation of the Zero Open Defecation (ZOD) Program in selected barangays of Donsol, Sorsogon is highly variable across behavioral, infrastructural, and governance dimensions. Bororan consistently demonstrated strong sanitation compliance supported by high toilet use, adequate infrastructure, and effective governance mechanisms, while Mabini showed moderate implementation levels, and Old Maguisa exhibited persistent challenges particularly in open defecation practices, limited sanitation infrastructure, weak monitoring, and insufficient financial and institutional support . Overall, the findings reveal that successful ZOD implementation is not solely dependent on behavioral change, but is strongly influenced by the interplay of infrastructure availability and governance effectiveness. Communities with stronger local leadership, better access to sanitation facilities, and sustained monitoring systems are more likely to achieve and maintain Zero Open Defecation status, highlighting the need for an integrated and context-sensitive approach to sanitation programming.

Based on the findings, it is recommended that the Municipal Government of Donsol, in coordination with the Municipal Health Office, MSWDO, and Barangay Local Government Units, prioritize the expansion of targeted sanitation support programs, particularly in low-performing barangays such as Old Maguisa and Mabini. This includes providing financial subsidies and construction materials for household toilet facilities, strengthening enforcement of sanitation ordinances through regular inspections, and institutionalizing a standardized barangay-level monitoring and evaluation system to ensure compliance and sustainability. In addition, continuous health education campaigns and community engagement activities should be conducted by BHST and barangay officials to reinforce positive hygiene behaviors, while parallel investments in improving water supply systems should be prioritized to address infrastructural barriers. To ensure long-term impact, an incentive-based recognition system for ZOD-compliant barangays is also recommended, alongside periodic program evaluations to guide policy refinement and strengthen evidence-based sanitation governance strategies.

REFERENCES

[1] Coffey, D., Gupta, A., Hathi, P., Khurana, N., Spears, D., Srivastav, N., & Vyas, S. (2017). Understanding open defecation in rural India: Untouchability, pollution, and latrine pits. Economic and Political Weekly, 52(1), 59–66.

[2] Department of Health. (2019). Administrative Order No. 2019-0054: Guidelines on the implementation of the Philippine approach to sustainable sanitation (PhATSS). Republic of the Philippines. https://sanitationlearninghub.org/wp-content/uploads/2023/04/AO-No.-2019-0054-dated-November-15-2019-PhATSS.pdf

[3] Department of Health. (2022). Philippine approach to sustainable sanitation (PhATSS): Zero open defecation program implementation guidelines. Republic of the Philippines.

[4] Dela Cruz, R. M., Santos, L. P., & Reyes, J. A. (2021). Community participation and sanitation compliance among selected rural barangays in the Philippines. Philippine Journal of Public Health, 16(2), 45–58.

[5] Jenkins, M. W., & Curtis, V. (2005). Achieving the "good life": Why some people want latrines in rural Benin. Social Science & Medicine, 61(11), 2446–2459. https://doi.org/10.1016/j.socscimed.2005.04.036

[6] National Economic and Development Authority. (2021). Philippine development plan and

sustainable development goal implementation updates. NEDA.

[7] Philippine Institute for Development Studies. (2024). Water, sanitation, and hygiene in the Philippines: Policy and implementation issues. PIDS.

[8] Reyes, P. T., & Santos, M. G. (2020). Factors affecting sanitation compliance among low-income rural households in the Philippines. Asia Pacific Journal of Rural Development, 30(1–2), 88–101.

[9] Republic Act No. 7160. (1991). Local Government Code of the Philippines. Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/1991/10/10/republic-act-no-7160/

[10] Republic Act No. 9275. (2004). Philippine Clean Water Act of 2004. Official Gazette of the Republic of the Philippines. https://www.officialgazette.gov.ph/2004/03/22/republic-act-no-9275/

[11] Sanitation Learning Hub. (2024). Practical resources and current thinking to help achieve safely managed sanitation for all. Institute of Development Studies. https://sanitationlearninghub.org/

[12] United Nations Children's Fund Philippines. (2017). Department of Health: 100 percent toilet coverage possible before 2022. UNICEF Philippines. https://www.unicef.org/philippines/press-releases/department-health-100-toilet-coverage-possible-2022

[13] UN-Water. (2023). Blueprint for acceleration: Sustainable Development Goal 6 synthesis report on water and sanitation 2023. United Nations. https://www.unwater.org/publications/sdg-6-synthesis-report-2023

[14] World Health Organization. (2024). Water, sanitation and hygiene monitoring. WHO. https://www.who.int/teams/environment-climate-change-and-health/water-sanitation-and-health/monitoring-and-evidence/wash-monitoring

[15] World Health Organization, & United Nations Children's Fund. (2023). Progress on household drinking water, sanitation and hygiene 2000–2022: Special focus on gender. WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation and Hygiene. https://www.unwater.org/publications/who-unicef-joint-monitoring-program-update-report-2023