ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

UNIVERSITY OF PERPETUAL HELP SYSTEM DALTA Las Piñas Campus

Perspectives on the Compliance of Water Supply Services in Capas Tarlac on the Water Code of the Philippines Towards a Localized Policy

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A Thesis Presented to the Faculty of the Graduate School of Public Administration
Department University of Perpetual Help System DALTA Las Piñas Campus

In Partial Fulfillment of the Requirements for the Degree of Master in Public Administration

Publication Date: 2025/09/29

How to Cite: Robin D. Capiz (2025) Perspectives on the Compliance of Water Supply Services in Capas Tarlac on the Water Code of the Philippines Towards a Localized Policy. *International Journal of Innovative Science and Research Technology*, 10(9), 1974-2030. https://doi.org/10.38124/ijisrt/25sep1032

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

APPROVAL SHEET

This Thesis Project entitled "**PERSPECTIVES ON THE COMPLIANCE OF WATER SUPPLY SERVICES IN CAPAS TARLAC ON THE WATER CODE OF THE PHILIPPINES TOWARDS A LOCALIZED POLICY**" was prepared and submitted by Robin D. Capiz in partial fulfillment of the requirements for the degree of Master of Public Administrations (MPA), Has been examined and recommended for acceptance and approval for Final Presentation.

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ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

ACKNOWLEDGEMENT

The researcher wishes to express his deepest gratitude to everyone who contributed to the successful completion of this publication.

He extends his heartfelt appreciation to his research adviser, Dr. Ely Lumbao, for her invaluable guidance, unwavering support, and encouragement, which greatly shaped the direction and focus of this study.

Sincere thanks are also extended to the chairman, Dr. Ulysses Aduana Brito, and the panel members,Dr. Sarlito Ferraren Jr. and Dr. Jay Sario, for their constructive feedback and insightful suggestions that significantly enhanced the quality of this work.

The researcher is also grateful to the staff and management of the graduate school for their continued assistance and steadfast support throughout the research journey.

His deepest appreciation goes to his beloved family for their unconditional love, motivation, and sacrifices, which provided him with the strength and inspiration to carry on.

He likewise acknowledges his colleagues for their collaboration and support, as well as his friends, whose encouragement and presence helped him overcome the challenges along the way.

Above all, he offers his sincerest thanks to the Almighty Creator, whose guidance and blessings made this achievement possible.

R.C.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

ABSTRACT

This study explores the perspectives of stakeholders on the compliance of Balibago Water Works in Capas, Tarlac with the Water Code of the Philippines, focusing on key provisions such as water ownership, utilization, control, conservation, and administrative enforcement. It also identifies service delivery issues, evaluates responsiveness and accountability, gathers community recommendations, and aims to propose a localized water service delivery policy for improved compliance and efficiency. The study will use a descripttive research design and will utilize 5 customers, 5 service providers and 5 representatives from the Local Government Unit (LGU) of Tarlac who are involved in local governance and water resource management. The study concludes that while efforts to comply with the Water Code exist, they are inconsistently implemented, hindered by weak service delivery, poor accountability, limited community engagement, and the absence of inclusive, localized policies aligned with national mandates and recommends strengthening local compliance and service delivery through inclusive governance, infrastructure upgrades, improved communication systems, community education, and the institutionalization of equitable, participatory water service policies.

Keywords: *Compliance, Water Code, Service Delivery, Water Supply Services, Localized Policy*

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CHAPTER ONE
INTRODUCTION

- *The Problem and its Background*

Water supply service compliance refers to the adherence of water providers to established standards, legal frameworks, and ethical responsibilities in ensuring the delivery of safe, adequate, and accessible water to communities. Compliance encompasses regulatory requirements related to water safety, equitable distribution, environmental sustainability, and service accountability. Implementation typically involves institutional monitoring, licensing procedures, public consultation, and performance evaluations conducted by local government units or national authorities such as the National Water Resources Board (NWRB).

The Water Code of the Philippines (PD 1067) was enacted to consolidate and codify laws relating to the ownership, appropriation, utilization, and protection of water resources. It stipulates that all waters belong to the State and that their development must prioritize public welfare and ecological preservation. In Capas, Tarlac, water supply services are managed under local policies aligned with the Water Code, with oversight from relevant agencies such as the Local Water Utilities Administration (LWUA) and local government units. Compliance in this area is crucial due to the growing population and rising demand for potable water, especially in fast-urbanizing municipalities like Capas. According to Ssekyanzi et al.,(2024), local compliance with national water regulations is vital for ensuring sustainable development, especially in areas vulnerable to water insecurity. This aligns with national goals for inclusive and environmentally sound resource management. Therefore, assessing the compliance of Capas, Tarlac's water supply services under the Water Code provides critical insight into the efficiency and legality of local water delivery systems.

Despite the presence of regulatory frameworks, several challenges persist in water service delivery in Capas, Tarlac. These include intermittent supply, lack of transparency in billing, inadequate grievance redress mechanisms, and questionable water quality in some areas. Observations suggest a gap between the provisions of the Water Code and their actual implementation on the ground, with limited community involvement in water governance. Research also shows a lack of localized policy adaptations that reflect the unique needs of Capas residents. According to Romero et al., (2024), service providers in semi-urban Philippine communities often struggle to meet both regulatory and consumer expectations due to infrastructure limitations and fragmented oversight. This signals a pressing need for a localized examination of service compliance that bridges legal standards with lived realities—thereby justifying the pursuit of this study.

This study seeks to investigate how water service providers in Capas adhere to selected provisions of the Water Code of the Philippines. It aims to gather the perspectives of residents, officials, and stakeholders on the compliance, effectiveness, and gaps in service delivery. The anticipated outcome is a set of evidence-based recommendations for the development of a localized water delivery service policy that enhances regulatory adherence, public satisfaction, and sustainable resource use in Capas, Tarlac.

In the Philippines, compliance is guided by Presidential Decree No. 1067, or the Water Code of 1976, which sets out the legal framework for water use, development, conservation, and management. This code mandates that all water users and suppliers must operate within specific regulatory parameters, including securing water permits, ensuring potable quality, and establishing mechanisms for conservation and conflict resolution.

Additionally, the delivery of reliable and sustainable water supply services in the Philippines, particularly in developing municipalities such as Capas, Tarlac, is a critical public service obligation. In recent years, there have been increasing concerns regarding the adequacy, quality, and regulatory compliance of local water utilities with national water policies, particularly the Water Code of the Philippines (PD 1067). This law serves as the primary legislative framework governing the ownership, appropriation, utilization, and conservation of water resources. In Capas, while there are efforts to align service delivery with national standards, several issues—such as inconsistent supply, customer complaints, and weak monitoring mechanisms—point to partial or inadequate compliance. Recent findings by Ballesteros (2023) revealed that many localities in Central Luzon, including Capas, face challenges in operationalizing the Water Code due to limitations in local governance capacity, infrastructure, and community engagement. Therefore, it is necessary to localize water governance by creating context-specific policies that bridge national regulations with local realities, promote public participation, and improve accountability among water service providers.

The legal foundation of this study is firmly grounded in Presidential Decree No. 1067, otherwise known as the Water Code of the Philippines, which was enacted in 1976. This law declares that all waters belong to the State and lays out provisions regarding water rights, usage, conservation, and administrative control (PD 1067, 1976). It emphasizes the need for water permits, rational water resource management, and responsible delivery of potable water to communities. Furthermore, the Local Government Code of 1991 (Republic Act No. 7160) empowers local government units (LGUs) to deliver basic services, including water supply, in accordance with national laws (RA 7160, 1991). The Philippine Clean Water Act of 2004 (RA 9275) also provides environmental and health-related standards for water quality. These laws collectively mandate service providers to comply with national standards while allowing LGUs to contextualize implementation through localized policies. Recent policy discussions, such as those in the Philippine Development Plan 2023–2028, further emphasize inclusive and sustainable water management as a national priority (National Economic and Development Authority [NEDA], 2024).

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Given these legal and institutional frameworks, this study seeks to examine the Perspectives on the Compliance of Water Supply Services in Capas, Tarlac on the Water Code of the Philippines Towards a Localized Policy. It specifically aims to address how participants describe the compliance of Balibago Water Works with selected provisions of the Water Code, particularly on the implementation of its objectives, principles, recognition of water ownership, and water usage and conservation. Moreover, the study explores the common problems experienced by residents, their perceptions of service responsiveness and accountability, and the recommendations they propose for enhancing water service delivery. Ultimately, the goal is to generate practical and localized policy solutions that improve compliance and responsiveness of water supply services in Capas, Tarlac.

➢ *Conceptual Framework*

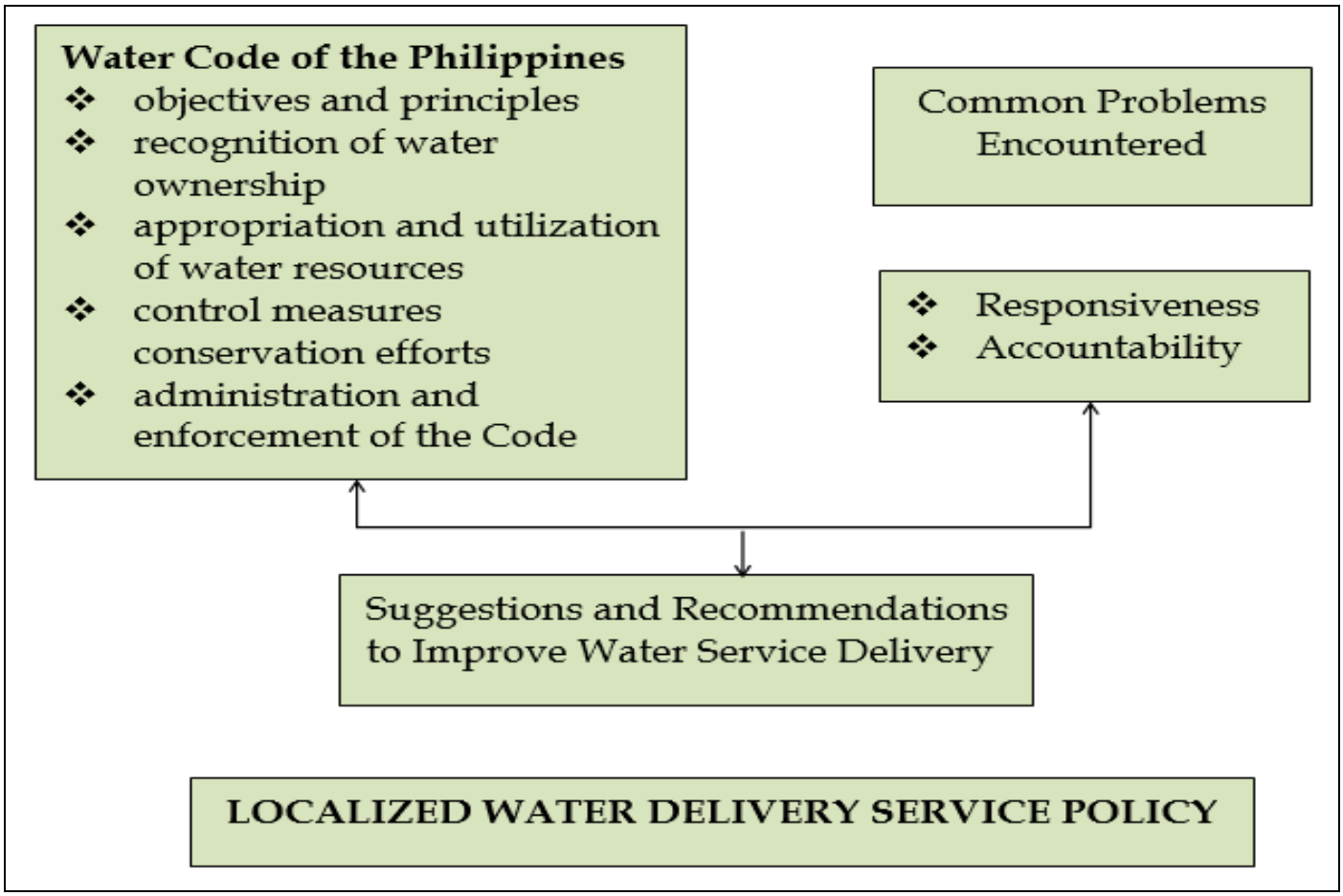

Fig 1 Conceptual Framework

Figure 1 presents the conceptual framework of the study. This illustrates the assessment of Balibago Water Works, focusing on its adherence to specific provisions of Presidential Decree No. 1067 or the Water Code of the Philippines. The inputs include six key elements from the Water Code: objectives and principles, recognition of water ownership, appropriation and utilization of water resources, control measures, conservation efforts, and the administration and enforcement of the Code. These serve as the foundational criteria for evaluating compliance.

This also considers two important aspects derived from the perspectives of participants: the common problems encountered in service delivery and the perceived responsiveness and accountability of the service provider. These inputs are analyzed to gather practical insights into the effectiveness and limitations of current water service practices. Through this process, the study identifies suggestions and recommendations from the participants aimed at improving water service delivery and ensuring alignment with the legal mandates of the Water Code. These consolidated insights lead to the final output of the study—a proposed localized water delivery service policy that is specifically tailored to the context of Capas, Tarlac. This policy aims to bridge the gap between national regulations and local implementation, ensuring that the community's needs and the provisions of the Water Code are both adequately addressed.

➢ *Statement of the Problem*

This study examines the perspectives on the compliance of water supply services in Capas, Tarlac on the Water Code of the Philippines towards a localized policy.

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- *It Offers Precise Responses to the Following Queries:*

✓ How do participants describe the compliance of Balibago Water Works with the selected provisions of the Water Code of the Philippines (PD 1067 of 1976), particularly in relation to the implementation of its objectives and principles, recognition of water ownership, appropriation and utilization of water resources, control measures, conservation efforts, and the administration and enforcement of the Code by responsible authorities?
✓ What are the common problems encountered by the participants in dealing with the service delivery of Balibago Water Works?
✓ How do participants perceive the responsiveness and accountability of Balibago Water Works in addressing their water-related concerns and complaints?
✓ What suggestions or recommendations do participants have for improving the water service delivery and compliance with the Water Code provisions in their community?
✓ What Localized Water Delivery Service Policy can be implemented to improve water service delivery and in Capas, Tarlac?

➢ *Significance of the Study*

The provision of safe, reliable, and equitable water supply services is a fundamental public utility responsibility, especially in rapidly developing municipalities like Capas, Tarlac. As mandated by Presidential Decree No. 1067, also known as the Water Code of the Philippines, water service providers are expected to operate within a legal framework that emphasizes sustainability, conservation, equitable access, and state ownership of water resources. However, local realities often reveal gaps between policy and practice, with issues such as inconsistent water delivery, limited transparency, and weak community engagement. This study explores the perspectives of stakeholders in Capas regarding the extent to which local water supply services comply with the provisions of the Water Code, and how these insights can inform the development of a localized policy that strengthens regulatory adherence, addresses community concerns, and promotes efficient and sustainable water governance.

- *This Study in Addition will Benefit the Following:*

✓ *Residents of Capas, Tarlac.* As primary water consumers, they will benefit from improved water service delivery and accountability through localized policy recommendations based on their experiences and feedback.
✓ *Local Government Units (LGUs).* The study provides evidence-based insights that can support LGUs in crafting localized ordinances and programs aligned with national water regulations and the specific needs of their constituents.
✓ *Water Service Providers in Capas*. The findings will guide service providers in evaluating and enhancing their compliance with the Water Code of the Philippines, ultimately improving service efficiency, sustainability, and public trust.
✓ *Policy Makers and Regulatory Agencies.* Institutions such as the National Water Resources Board (NWRB) and Local Water Utilities Administration (LWUA) can use the results to strengthen the enforcement of existing water laws and support the formulation of policies responsive to local conditions.
✓ *Proponent of the Study.* Through this study, the researcher gains an in-depth understanding of policy implementation, water governance, and community-based research, contributing to academic and professional growth.
✓ *Future Researchers.* The study serves as a foundational reference for future studies on water governance, service delivery compliance, and policy development, particularly those focusing on localized implementation of national laws in the Philippine context.

➢ *Scope and Limitation of the Study*

This study aims to explore the perspectives of local stakeholders in Capas, Tarlac regarding the compliance of water supply services with selected provisions of the Water Code of the Philippines (Presidential Decree No. 1067 of 1976). It critically examines how water service providers align with the Code's objectives and legal requirements, particularly focusing on water ownership, equitable appropriation and use, conservation mandates, and institutional enforcement mechanisms. The study highlights the lived experiences and assessments of individual community members to evaluate how effectively these legal principles are being implemented at the local level. Furthermore, it investigates recurring water service issues such as supply reliability, water quality, and grievance resolution, and gathers community-driven insights to improve the responsiveness and accountability of service providers. The ultimate goal is to propose a localized water service policy that reflects the specific needs and environmental context of Capas while remaining consistent with national regulatory standards.

The study is confined to the municipality of Capas, Tarlac, and specifically includes constituents who are currently availing of the water supply services provided by the local water utility. It does not include other municipalities or cities within the province of Tarlac, nor does it extend to other provinces in the Philippines. Additionally, the study focuses solely on the perspectives of individual residents and does not incorporate the views of institutional stakeholders, government agencies, or private organizations involved in water governance. The provisions of the Water Code examined in the study are selectively chosen based on their relevance to local water service delivery, and not all sections of the Code will be covered.

This study utilized a qualitative research design and will employ purposive sampling to select participants, which may affect the generalizability of the findings. As the research centers on personal perspectives and experiences, the results may reflect subjective interpretations that could vary across different community members. Furthermore, the exclusion of organizational or policy-level

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

stakeholders limits the depth of institutional analysis. The focus on selected legal provisions also restricts the comprehensiveness of the legal evaluation, which may overlook other relevant aspects of water governance found in the broader framework of the Water Code of the Philippines.

➢ *Definition of Terms*

The following terms are conceptually and operationally defined for the purpose of providing an easier understanding in the study.

- *Accountability* refers to the obligation of water service providers to be answerable for their actions, decisions, and service outcomes, particularly in addressing community complaints and concerns regarding water delivery.
- *Administration and Enforcement of the Code* is defined as the execution, supervision, and implementation of the provisions of the Water Code of the Philippines by designated government agencies such as the National Water Resources Board (NWRB), ensuring lawful water resource management and service regulation.
- *Appropriation and Utilization of Water Resources* means the process of legally acquiring the right to use water resources and the manner in which these resources are allocated, managed, and consumed for various purposes such as domestic, industrial, or agricultural use.
- *Compliance* refers to the act of adhering to or fulfilling the requirements, provisions, and legal standards of the Water Code of the Philippines (PD 1067 of 1976) by water supply service providers.
- *Conservation Efforts* means the initiatives or practices aimed at protecting, preserving, and sustainably managing water resources to prevent depletion, contamination, and wastage.
- *Control Measures* refers to the set of rules, monitoring systems, and enforcement mechanisms applied to regulate water extraction, distribution, and usage to avoid misuse and to protect water resources.
- *Localized Water Delivery Service Policy* is defined as a policy formulated at the community or municipal level that addresses the specific water service needs of local residents while aligning with the national legal framework provided by the Water Code of the Philippines.
- *Objectives and Principles of the Water Code* refers to the foundational goals and guiding philosophies of the Water Code of the Philippines, which include promoting equitable access, ensuring state control and ownership, encouraging sustainable utilization, and supporting national development through proper water resource management.
- *Recognition of Water Ownership* means the acknowledgment under Philippine law that all water resources belong to the State and that their use and distribution are subject to regulation and permitting by government authorities.
- *Responsiveness* refers to the ability of water service providers to act promptly and effectively in addressing customer complaints, inquiries, or issues related to water access and quality.
- *Service Delivery* is defined as the process by which water services are provided to consumers, encompassing aspects such as water quality, accessibility, reliability, and customer support.
- *Utilization of Water Resources* means the actual use or application of water for personal, agricultural, industrial, or municipal needs, in accordance with legal permits and sustainability practices defined by the Water Code.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

CHAPTER TWO
REVIEW OF RELATED LITERATURE

This chapter aims to explore the effectiveness of water governance and policy frameworks in ensuring sustainable water management and service delivery, with a particular focus on the Philippines. It will examine the existing literature on water governance, policy frameworks, and water supply services, and highlight the challenges and opportunities in implementing effective water governance and management practices. The review will also explore the perspectives of water users and their role in shaping water governance and policy frameworks that are responsive to their needs and priorities.

- *Water Supply Services*

Ensuring sustainable rural water supply involves addressing complex challenges related to domestic water provision, equitable access, and long-term system functionality. Policymakers aim to harmonize the interests of various stakeholders to promote fairness and sustainable development, recognizing that water infrastructure is multifaceted and critical to achieving these goals. (Balasz et al., 2021)

However, maintaining the sustainability of water systems—defined as their ability to deliver reliable service over the long term—remains difficult due to the sector's unique complexities. (Machado et al., 2022)Rural water supply systems are managed through diverse models, including community-based, public service-based, and private-based approaches, each shaped by the specific context of a country and influenced by its primary objectives. (Toan et al., 2023)

For instance, private-based models typically aim for profit, while community-based systems prioritize collective benefit. These management frameworks significantly impact the water supply's social, economic, technical, and managerial dimensions. Numerous studies have examined the sustainability of rural water services, exploring various influencing factors that contribute to or hinder effective service delivery. (Ahn et al., 2022)

Water sustainability entails ongoing evaluation of the balance between supply and demand to align with human needs, economic growth, social welfare, and environmental protection and emphasize that sustainability is inherently complex, as it ultimately determines whether a system can operate effectively over time. In the context of water services, sustainability is defined by the ability to maintain reliable quality and quantity of water throughout the system's intended lifespan. (Bhatta et al., 2024)

Nonetheless, this requires acknowledging essential factors such as routine maintenance and the need for upgrades to accommodate changing needs. Evaluating the sustainability of community water systems involves assessing the long-term functionality and usage of water points (Thapa et al., 2022). Both policy and scholarly frameworks stress that sustainable community water supplies must deliver water effectively, safely, and consistently over time.

- *Service Delivery*

Intermittent water service delivery refers to the provision of drinking water to consumers for less than 24 hours per day, which may occur on a daily, weekly, or seasonal schedule. The frequent interruption and resumption of water flow can lead to pressure fluctuations that may compromise the integrity of the distribution system and negatively affect the chemical, microbiological, and aesthetic quality of the water. Factors contributing to the deterioration of water quality under this system include the intrusion of contaminants through leaks in the pipes, backflow from household connections during low or negative pressure events, microbial growth in stagnant sections of the network, and the dislodging of biofilms, scale, and corrosion deposits due to sudden increases in flow velocity.(Salehi, 2022)

Customer satisfaction plays a vital role in enhancing the performance of any service provider, including government-run institutions that offer essential services like water supply. Water is a fundamental human need and right, necessary for various domestic activities such as drinking, cooking, sanitation, and irrigation. Beyond household use, water is also essential for diverse livelihood activities like livestock raising, gardening, crop cultivation, food processing, aquaculture, and fisheries. In both rural and urban areas of developing nations, agriculture—being a primary source of livelihood—heavily relies on water to sustain productivity and survival. (Lyimo et al., 2022)

Moreover, customer satisfaction plays a crucial role in influencing the financial outcomes of water supply enterprises. It is widely used by organizations and government agencies as a key criterion for evaluating the overall performance of water supply systems. In fact, it serves as a core indicator in assessing the effectiveness of water supply services. (Dung et al., 2022)

High levels of customer satisfaction contribute to improved business efficiency and influence the management, operation, and maintenance of rural water supply systems. Several infrastructure-related factors—such as pipeline length, number of households served, and the lifespan of the system—affect user satisfaction. (Thu et al., 2021)

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Additionally, customer satisfaction is shaped by elements like the timing and availability of water, water pressure, water quality, and the distance between households and pump stations. Interestingly, while water pricing and satisfaction are generally inversely related, studies have shown no significant connection between customer satisfaction and users' economic characteristics. (Kleemeier, 2022)

- *Implementation of Water Code of the Philippines*

Water supply and sanitation services in the Philippines remain insufficient, with the sector facing numerous long-standing challenges. Key issues include institutional fragmentation, ineffective planning and monitoring mechanisms, unreliable data collection, subpar performance of water utilities, and inadequate infrastructure development and financing. Marginalized urban and rural communities continue to be underserved, further highlighting the need for strategic interventions (PWSSMP, 2021; PDP, 2023).

Based on estimates by the National Water Resources Board (NWRB), the Philippines has an annual freshwater potential of approximately 146 billion cubic meters. A significant portion of this—around 86 percent or 125.8 billion cubic meters—is derived from surface water sources such as river basins, lakes, and watersheds. The Department of Environment and Natural Resources (DENR) reports that nearly 70 percent of the country's land area consists of watershed regions, which include 421 principal river basins and 221 lakes. Of these, 18 river basins are identified as major systems vital to national water supply.

To address the fragmented state of water governance, President Ferdinand Marcos Jr. issued Executive Order No. 22 in April 2023, establishing the Water Resources Management Office (WRMO) under the DENR. The WRMO is tasked with implementing Integrated Water Resources Management (IWRM) aligned with the UN Sustainable Development Goals and developing an Integrated Water Resources Master Plan (IWRMP). The order also directs the WRMO to advocate for the creation of a Department of Water and/or a Water Regulatory Commission, while consolidating oversight of all water-related agencies—including the NWRB, MWSS, LWUA, local water districts, and LLDA—under the DENR's supervision. (Senate Economic Planning Office, 2024)

- *Objectives and Principles*

Water governance involves a broad range of planning and policy initiatives, including the fair allocation of water resources, the empowerment of local stakeholders, and the oversight of powerful, well-funded water corporations. While much of the existing literature on water governance focuses on its role within broader development discussions, there is a need for more detailed analysis of how collective actions unfold across various levels. Traditionally guided by the philosophy of knowledge, scientific approaches have shaped the field. However, transitioning from water management to water governance signifies a shift from operational actions to strategic policy-making, capacity building, and the strengthening of regulatory frameworks. This methodological perspective can be enriched by adopting a philosophy of wisdom, which not only distinguishes the functions of governance and management but also establishes guiding principles that underpin sustainable water governance. (Rosso, 2025)

The concept of resilience has undergone significant evolution across various scientific fields, originating from engineering, ecology, and psychology. As its application expanded to encompass diverse systems—from the stability of the global economy to the adaptive capacity of individual cells—the definition of resilience has continued to evolve. Despite its rising prominence on the global agenda, the term is frequently criticized for being vague and lacking a universally accepted definition. This conceptual ambiguity and the frequent misinterpretation of its meaning present challenges in effectively translating resilience-related commitments into practical planning and management strategies. (Saikia & Jimenez, 2023)

The concept of water security remains ambiguous, despite its increasing popularity among academics and policymakers (Quiroga & Castelblanco, 2024). It generally refers to ensuring adequate water quantity and quality to meet societal needs. Scholars have emphasized various dimensions of water security, including basic human needs, issues of privatization and power dynamics, and national security concerns.

Despite these differing emphases, many approaches converge around principles of social justice, with water security often used as a shorthand for safeguarding communities from water-related risks and ensuring equitable access. (Gupta et al., 2025)

However, in practice, governments frequently invoke water security to frame water as a national interest, often viewing it through a lens of scarcity. This perspective tends to promote the securitization of water, portraying it as a potential threat that warrants exceptional protection strategies (Bosch & Gupta, 2023). These strategies may include asserting absolute sovereignty, establishing hydro-hegemonic controls, or adopting neoliberal measures such as privatization, financialization, and the commodification of water.

Historical precedents show that upstream nations often assert full sovereignty over their water resources, a notion reinforced by the 2030 Agenda for Sustainable Development, which affirms states' permanent sovereignty over natural resources.

Consequently, water security is sometimes used to shift the discourse from social equity and environmental sustainability to matters of national security. This securitized framing often sidelines concerns about social and environmental justice. In response, scholars have argued for integrating justice considerations into water security frameworks (Pokharel, 2023), as well as broader

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

environmental governance. The securitization of water can also result in water "grabbing," where access to water becomes increasingly concentrated among powerful and wealthy actors.

- *Recognition of Water Ownership*

Water systems operated by Local Government Units (LGUs) provide domestic water supply to densely populated areas, managed through the city or municipal engineering department. These systems are typically funded through loans or grants from national politicians or international donors. Governance boards are appointed by local officials, with the water manager often being the municipal engineer. LGU water systems collect fees from users to cover variable costs and maintenance, although these revenues are often insufficient, requiring subsidies from the LGU. On the other hand, community-based organizations (CBOs) operate water supply systems with support from the national government, NGOs, or local village governments. Some are privately organized by families or tribal leaders to serve their communities, often lacking legal recognition but operating based on customary rules. These CBOs may serve both domestic and irrigation needs, charging minimal fees or providing water for free. (Corazon et al., 2023)

Governance is broadly understood as a government's capacity to create and enforce rules and deliver essential public services. It also encompasses the decision-making processes that shape interactions between social institutions and the public sphere and characterized governance as self-organizing inter-organizational networks marked by interdependence, shared resources, mutually agreed rules, and relative autonomy from the state. Similarly, governance has been described as the collective decision-making mechanisms within a setting involving multiple actors or organizations, as well as the application of authority in managing a nation's affairs. (Gusenbaur et al., 2021)

Water governance, in particular, remains a highly contested concept, with varying definitions and interpretations depending on context. For some, it represents an administrative and technical framework designed to implement policies efficiently. For others, it entails broader democratic deliberation about societal goals and means. Three central tensions in water governance discourse were identified such as: who holds decision-making power, the appropriate geographical and political scale of governance, and the extent to which water should be allocated through market versus non-market mechanisms. (Raja et al., 2023

More broadly, water governance has been defined as the collection of political, social, economic, and administrative structures that influence how water resources and services are developed and managed across all levels of society. It also refers to the systems of actors, resources, and institutional mechanisms that mediate society's access to water (Gumeta-Gomez et al., 2021).

Furthermore, water ownership is an increasingly critical issue in the Philippines, as rapid urbanization, population growth, and industrial expansion continue to put immense pressure on the country's water resources. This strain has led to significant pollution of rivers, lakes, and coastal waters. According to the Department of Environment and Natural Resources (DENR), around 80% of the country's wastewater is left untreated, posing considerable risks to public health, ecosystems, and the economy. (Velasco et al., 2023)

The problem is compounded by inadequate infrastructure for wastewater treatment and the lack of effective enforcement of environmental regulations. Given these challenges, water ownership and its management have become urgent matters that require immediate, sustainable solutions. (Jegatheesan et al., 2023)

The Philippines' archipelagic geography, coupled with its tropical climate, amplifies the difficulties of managing water resources. Frequent typhoons and heavy rainfall often cause flooding, which leads to the contamination of water bodies with untreated wastewater. This issue is further exacerbated in both rural and urban areas, where inadequate sanitation facilities contribute to groundwater and surface water contamination. (Pausta et al., 2023)

Many municipalities still lack comprehensive sewage systems, relying on poorly maintained septic tanks or the direct discharge of wastewater into nearby water bodies. These practices result in widespread environmental and public health concerns, such as the spread of waterborne diseases, algal blooms, and the deterioration of aquatic habitats. (Kokkinos et al., 2022)

While the Philippine government has made strides in addressing water ownership and wastewater management through policies such as the Clean Water Act of 2004, which provides a legal framework for water quality management and encourages the establishment of wastewater treatment facilities, challenges remain. Ensuring compliance, monitoring, and maintenance of wastewater treatment systems is still an issue. To address the growing crisis, there is a need for a more integrated approach to water ownership—one that not only enforces regulatory measures but also incorporates innovative technologies, community participation, and sustainable financing mechanisms. (Dela Rosa, 2024)

- *Appropriation and Utilization of Water Resources*

Water is a fundamental resource vital to socioeconomic progress and ecological preservation in recent decades. As Bari et al. (2024) emphasize, properly managed water resources are essential to development, contributing significantly to reducing poverty and inequality.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Water plays a central role in all aspects of life, making water management a cornerstone of human economic activities, especially as rising demand and climate change continue to impact the quality and availability of water (Wan Rosely & Voulvoulis, 2023).

According to Guo (2023), the Fourth Climate Assessment report highlights that climate change is compromising the quantity and quality of water accessible for human and ecological use across the United States, raising costs and risks for sectors such as agriculture, energy, industry, recreation, and environmental protection.

Globally, access to clean, reliable, and safe water remains a critical concern. More than 2 billion people are without safe drinking water, and an additional 4.5 million lack adequate sanitation facilities. This global shortfall in freshwater not only threatens biodiversity and ecosystem services but also undermines human health, infrastructure, economic development, cultural heritage, and equitable water distribution. According to Peters-Lidard et al. (2021), these vulnerabilities are intensified in regions with low adaptation capacity due to the combined effects of economic disparities, population growth, and unsustainable land use.

Additionally, Keeler et al. (2020) further point out that governmental policies and economic factors often result in unequal water access, disproportionately favoring the privileged.

Historically, water use began in an exploratory phase characterized by limited usage. This phase was typically followed by an expansion period marked by substantial infrastructure growth, increased conjunctive water supply, and policy-driven incentives encouraging resource use (Kumar et al., 2023). However, as water resources become depleted and environmental and social pressures intensify, societies may enter a contraction phase—where water extraction must be reduced to sustainable levels due to climate change, population pressures, evolving public awareness, and scientific advancement.

Despite Earth's uniqueness in its water abundance, the availability of freshwater for domestic, economic, and environmental needs remains insufficient in many regions. Clean water for basic needs like sanitation and drinking is still lacking in several parts of the world (Galang et al., 2023; Nirmale et al., 2023).

- *Control Measures*

According to Ejiohu et al., (2025), water is a vital, life-sustaining resource that plays a critical role in transporting oxygen and nutrients to humans, animals, and plants, thereby ensuring the survival of all living organisms on Earth. The purity of water is essential for maintaining both ecosystem integrity and human health. Water purity is directly linked to environmental stability and public health, influencing everything from disease prevention to biodiversity preservation. Contaminated water poses serious risks, leading to the spread of waterborne illnesses in humans.

In ecological systems, pollution disrupts natural habitats, endangers wildlife, and contributes to the loss of biodiversity. It also degrades environmental structures, such as coral reefs, and facilitates the spread of invasive species, making survival and reproduction difficult for native organisms. Despite water's essential role in sustaining life, the world continues to face a growing water purity crisis that threatens both human populations and natural ecosystems. (Lin et al., 2022).

Water, as a fundamental resource for both environmental sustainability and socio-economic development, is increasingly strained by factors such as population growth, economic expansion, climate change, and unequal land distribution. (Cacal et al., 2023) It also plays a vital role in industrial processes, where investment in water research and development elevates technological standards and supports national economic progress.

Currently, billions of people face severe water scarcity for at least one month each year, highlighting the urgency of effective management. To ensure long-term sustainability, water management must prioritize meeting a broad spectrum of human needs alongside ecological requirements. However, conventional water management approaches that focus on isolated sectors often fall short in addressing competing demands and may lead to inefficient use of resources. (Cho et al., 2021)

Water resources are essential to both economic development and human survival. However, they are increasingly threatened by declining quality and availability due to various socioeconomic and environmental pressures, such as rapid population growth, land use changes, and climate variability. Climate change, in particular, is altering precipitation patterns and increasing the frequency of extreme weather events, posing further risks to watersheds and the sustainability of freshwater sources. (Chuma et al., 2024)

Globally, many people now live under high water stress, as the demand for freshwater exceeds what can be sustainably supplied. These growing challenges demand urgent, innovative, and adaptive water management strategies to strengthen the resilience of water systems. (Gemechu et al., 2024)

In Southeast Asia, millions of people are already experiencing the adverse effects of poor water management and recurring water shortages. The region's diverse climate and geography result in variable rainfall and river flows, which are being made even more unpredictable by climate change. (Mayar et al., 2024) Industrial growth, urban expansion, and agricultural demands have

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

intensified water abstraction, leading to issues like pollution, ecosystem degradation, and biodiversity loss. (Zhang et al., 2024) These problems are further aggravated by inadequate infrastructure and institutional limitations, making it difficult to implement and maintain sustainable water management approaches.

The Philippines, with its complex physical and economic landscape, is particularly vulnerable to water-related challenges. The country is regularly impacted by typhoons, floods, and prolonged droughts, all of which disrupt water availability and quality. Rapid urbanization and population growth are putting immense pressure on existing water sources, especially in urban centers such as Metro Manila and Puerto Princesa. The nation's dependence on surface water and limited groundwater reserves makes it even more susceptible to seasonal shifts and contamination. (National Economic and Development Authority, 2021)

- *Conservation Efforts*

Water is a vital resource for human survival, economic progress, and environmental sustainability. However, with the rapid increase in urbanization, industrialization, and population growth, the strain on water resources has escalated, raising concerns about water scarcity and the need for effective management strategies. Water conservation has become a key approach to addressing the rising demand for water while ensuring the sustainability of water resources (Shadabi & Ward, 2022).

The National Water and Sewerage Corporation (NWSC) plays a pivotal role in water supply and sanitation, serving urban and peri-urban areas across the country. NWSC's involvement in implementing water conservation measures has become critical for ensuring that available water resources are used efficiently and equitably to support sustainable development (Dickin & Gabrielsson, 2023). The challenges faced by the NWSC in ensuring water availability and conservation are complex. Increasing population density, climate change, and pollution have led to an escalating demand for clean water, often surpassing the available supply.

Additionally, the utility faces operational difficulties such as aging infrastructure, inefficient water distribution systems, and a lack of public awareness regarding water-saving practices (Dickson-Gomez et al., 2023). These challenges necessitate the adoption of innovative water conservation strategies that not only aim to reduce water consumption but also enhance the efficiency and sustainability of water supply systems. Strategies employed by NWSC, such as promoting water-efficient technologies, improving wastewater treatment, and enhancing public education, are vital components of its efforts to address these issues.

The role of water conservation in achieving sustainable development cannot be overstated. Sustainable development aims to balance economic growth, social well-being, and environmental protection. In the context of water resources, sustainable development requires the responsible use and management of water to meet the needs of both present and future generations (Ashrafuzzaman et al., 2023).

By emphasizing water conservation, NWSC seeks to ensure the long-term availability of clean water while minimizing environmental degradation. Integrating water conservation into NWSC's operational framework helps reduce the ecological impact of water use, ensuring that water resources are preserved for future generations (Dobbin & Fencl, 2021).

Furthermore, water conservation significantly contributes to reducing the cost of water treatment and distribution, thereby improving the financial sustainability of the utility. NWSC's water conservation initiatives have had both direct and indirect effects on the achievement of sustainable development goals (SDGs), especially those related to clean water and sanitation (SDG 6).

Through strategic actions like promoting water-efficient appliances, reducing leaks in water distribution networks, and raising public awareness about water conservation, NWSC has made notable progress toward achieving SDG 6. Additionally, these strategies support other SDGs, such as affordable and clean energy (SDG 7), climate action (SDG 13), and responsible consumption and production (SDG 12) (Ashiraf et al., 2023).

Nevertheless, there remains a need for comprehensive research to assess the effectiveness of these strategies in realizing broader sustainable development objectives. This study aims to examine the water conservation strategies implemented by NWSC and their impact on the utility's sustainability as well as the broader national development agenda (Rani, 2022).

Water conservation has gained global attention as a response to the increasing challenges of water scarcity and environmental degradation. According to Abas Olwol et al. (2022), over 2 billion people worldwide face water scarcity, a situation worsened by climate change, over-extraction, and pollution (Turyasingura et al., 2023).

In response, various water utilities and government agencies have implemented water conservation strategies, including demand-side management, water reuse, enhanced water storage, and efficiency measures. A study by Kabanda et al., (2025) highlighted that effective water conservation strategies not only reduce water consumption but also contribute to the long-term sustainability of water resources, particularly in urban areas with growing populations. Implementing these strategies has been shown to enhance the resilience of water supply systems and help achieve sustainable development goals, particularly those related to water availability, sanitation, and ecosystem health.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Research by Wijesiri and Hettiarachchi (2021) further emphasized that water conservation efforts should be complemented by public education and policy frameworks that incentivize sustainable water use behaviors across different sectors.

- *Administration and Enforcement of Water Code*

The enactment of the Philippine Clean Water Act of 2004 (Republic Act No. 9275) and the subsequent implementation of the National Sewerage and Septage Management Program (NSSMP) were both designed to address the identified issues and emerging challenges. This study examined key policy provisions and foundations, while highlighting the current priorities and concerns of selected case study locations. It also included insights from the major water concessionaires in the National Capital Region and the local government initiatives of the City of Baguio in northern Philippines. (Domingo, 2021)

The justification for public participation in water resource management is both logical and compelling. Involving the public increases the likelihood that water management strategies will be accepted by the community [4]. Public involvement ensures that decisions are shaped by the perspectives and experiences of those affected, fostering the development of imaginative and innovative solutions and making provisions more practical and suitable for the public. This approach leads to better decision-making, less conflict, and smoother implementation, as it encourages social learning and promotes a shared understanding of water scarcity issues. (Islam et al., 2023)

Water management and planning processes evolve not only to address new demands, expectations, and objectives but also in response to changing perceptions of how to plan and manage resources more effectively (Asthana, 2022). Water governance, while lacking a uniform definition, is generally concerned with determining who gets access to water, when, how, and under what conditions. It involves understanding who holds the rights to water and related services, and the benefits that come with those rights (Bwire et al., 2022). It aims to ensure fairness and efficiency in the allocation and distribution of water resources and services, while balancing the needs of socioeconomic activities and ecosystems.

Water regulation includes the development, implementation, and enforcement of policies, legislation, and institutions, alongside clarifying the roles and responsibilities of the government, civil society, and the private sector concerning water resources and services (Chattopadhyay et al., 2022) and also highlighted that the central aim of water resources planning, management, and analysis is to address issues related to the optimal use of water resources in an environment of uncertain supplies and growing conflicts among various stakeholders with competing interests.

Water scarcity is a significant challenge for many countries in achieving sustainable agricultural production. Rice farming faces particular challenges, as it accounts for about 40% of global water consumption, yet occupies only 18% of the total planting area (Hagos et al., 2022). In the twentieth century, the rapid development of irrigation systems was fueled by advancements in civil engineering and support from governments and development agencies (Kilic, 2020).

In developing countries like the Philippines, most irrigation projects were developed by government agencies, which managed the construction and delivery of irrigation water. During the 1980s, farmers were seldom consulted during the design and maintenance phases of these projects, which led to poor project performance. Mohseni et al., (2022) reported that Irrigation Management Transfer (IMT) processes were introduced to involve water users in the governance of irrigated areas. IMT refers to the transfer of responsibility and authority for irrigation management from government agencies to non-governmental organizations, with Water Users Associations (WUAs) identified as crucial in the new management models (Shunglu et al., 2022).

Over the last four decades, various countries and international development agencies have promoted multiple reforms in irrigation management, but several key issues still persist in irrigation governance (Singh et al., 2021).

- *Responsiveness*

Quality is a multifaceted concept that has been extensively studied in management, and it plays a critical role in the success of many industries (Sala-Garrdido et al., 2021) However, due to its intangible nature, defining quality remains a challenge, as it lacks a universally agreed-upon definition and has evolved over time in academic literature. Quality encompasses various dimensions, including performance, reliability, durability, aesthetics, and customer satisfaction, making it complex and difficult to define comprehensively. Cordoba et al., (2022) argue, quality is a "fuzzy and vague concept" that cannot be measured with certainty because it depends on individual interpretation.

Defining and measuring quality becomes even more challenging in the context of services. Unlike products, services are intangible, and their quality largely depends on the perceptions of the users (Corrente et al., 2021). Public services, such as water supply and sanitation, involve multiple stakeholders with different priorities and objectives. As a result, the concept of quality in these areas can be interpreted in various ways and requires careful consideration of the needs and expectations of all involved parties (Molinos-Senante et al., 2021)

In environments where users cannot easily switch service providers, maintaining high service quality is essential to safeguard their interests and ensure service continuity (Prasad et al., 2021). The lack of competition can also diminish providers' motivation to

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

maintain high-quality service, highlighting the need for effective quality measurement and actions to uphold service standards Collaboration and coordination among stakeholders are key to establishing clear quality standards in public services, which ultimately contributes to societal well-being. Providing safe and reliable water and sanitation services (WSS) is crucial for protecting public health. Achieving this goal requires prioritizing the delivery of high-quality services. (Henriquez et al., 2022)

Achieving a high level of service quality in the water sector calls for a new management approach that ensures operational continuity, fosters continuous improvement, develops strategic capabilities, and creates efficient and sustainable business models. (Chang et al., 2022)

- *Accountability*

In developed and urbanized regions, piped water systems are typically operated and maintained by the government or private concessionaires. In contrast, rural areas, where the government or its concessionaires may not be able to improve water access, face greater vulnerability. As a result, local populations must resort to alternative water sources, such as manual pumping, rainwater harvesting, or well water. (Machado et al., 2022)

In this context, community-managed water supply (CMWS) has emerged as a viable alternative to government or private management. Under the CMWS model, the local population takes responsibility for the operation, management, and provision of water through a community association. While external agents are tasked with constructing water facilities and providing technical, institutional, and political support, the initiative's success relies on adapting to local economic, social, and political conditions. However, there is no established framework for its initiation, and its sustainability hinges on this localized adaptation. (Romano et al., 2021)The development of adaptive water governance in the provision of aquatic ecosystem services largely depends on how the characteristics of a governance system self-organize over time and across different scales.

In this context, emergence refers to the appearance of new governance system characteristics that arise from the interactions between the system's components (Cosens et al., 2021). The emergence of adaptive water governance can be highly unpredictable due to the self-organizing nature of governance systems, which allows them to adjust to complex social-ecological contexts.(Pahl-Wosl, 2023)

Preventing hypertension is particularly challenging in populations exposed to high levels of salinity, as reducing salt intake becomes increasingly difficult [46,47]. As a result, there is an urgent need for global research and collaborative initiatives to tackle water salinity and effectively address the growing prevalence of high blood pressure. By exploring innovative solutions and implementing preventive measures, significant progress can be made in reducing the health risks linked to water salinity worldwide. (Ashrafuzzaman et al., 2023)

According to Benson et al. (2020), Sustainable Development Goal (SDG) 6.5 emphasizes the importance of integrated water resources management (IWRM) at all levels, particularly through transboundary cooperation where necessary. Efficient utilization of water resources can support the implementation of IWRM in water-scarce countries and shared water basins. This approach also promotes transboundary planning and action, fostering a supportive environment for innovative strategies to harness the potential of unconventional water sources (Benzougagh et al., 2023).

Achieving these objectives requires strengthening international collaboration and providing support to developing countries to enhance their capacity for water and sanitation projects, including the adoption of water recycling and reuse technologies. As Murthy et al. (2024) highlight, international cooperation is crucial for empowering professionals in low-income nations to fully realize the opportunities presented by effective water resources management.

- *Synthesis of the Study*

Previous literature and studies have emphasized the importance of aligning water service delivery with national legal frameworks, such as the Water Code of the Philippines (PD 1067 of 1976), to ensure equitable and sustainable management of water resources. Scholars have explored the implications of recognizing water ownership, resource appropriation, and conservation mandates as foundational elements in addressing water-related challenges in rural and urban communities. The role of institutional enforcement and public accountability has also been consistently identified as a key factor in effective water governance. However, much of the existing research has focused on broader regional or national contexts, with limited studies dedicated to understanding localized experiences in specific municipalities such as Capas, Tarlac.

Similarities and differences were highlighted, such as recurring issues related to supply reliability, water quality, and limited avenues for grievance redress in various localities across the country. While previous research generally acknowledges these problems, this study uniquely captures them from the perspective of individual stakeholders directly affected by the quality and compliance of local water services. Unlike national-level analyses, this study narrows its focus on selected provisions of the Water Code and provides a community-centered evaluation of how well local service providers implement the law. Additionally, the study brings to light the perceived responsiveness and accountability of wacter service authorities, an area often underrepresented in existing discussions.

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Hence, this will be a basis for crafting a localized water service delivery policy tailored to the needs and experiences of Capas constituents. The findings are expected to bridge the gap between the legal framework of PD 1067 and its actual enforcement at the grassroots level, thereby promoting a more responsive, equitable, and sustainable approach to water governance. By incorporating community feedback and proposing actionable recommendations, the study contributes to a practical policy direction that strengthens both compliance and service quality while upholding the core principles of the Water Code within the local context.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

CHAPTER THREE
METHODOLOGY

This chapter presents the research design, research locale, population and sampling, participants of the study, research instrument, validation and reliability of the instrument, data gathering procedure, ethical considerations, and statistical treatment of data.

- *Research Locale*

The research locale for this study is Capas, Tarlac, a municipality in the Philippines where the constituents' perspectives on the compliance of Balibago Water Works with the Water Code of the Philippines are being investigated. The study focuses on the experiences and perceptions of residents in Capas, Tarlac, who are availing of the water supply services provided by the Balibago Water Works. The researcher aims to gain a deeper understanding of the strengths and weaknesses of water supply services in Capas, Tarlac, and inform the development of localized policies that address the unique needs and challenges of the area.

- *Population and Sampling*

The population for this study consists of key stakeholders in Capas, Tarlac, who are directly involved in or affected by the delivery of water supply services provided by the Balibago Water Works. Using purposive sampling, a total of 15 participants will be selected to participate in the study based on their relevance and knowledge of the subject matter. The sample will include 5 customers of the water supply services, 5 service providers, and 5 representatives from the Local Government Unit (LGU) of Tarlac. This purposive approach ensures that insights are gathered from multiple perspectives, providing a well-rounded understanding of compliance with the Water Code of the Philippines and informing the development of a localized water service delivery policy.

- *Participants of the Study*

The participants of this study are constituents in Capas, Tarlac, who are availing of the water supply services provided by the Balibago Water Works. These individuals are crucial in providing insights into the compliance of water supply services with the Water Code of the Philippines, as their experiences and perceptions can inform the development of localized policies. The participants of this study are selected constituents in Capas, Tarlac, who are directly involved in or impacted by the water supply services provided by the Balibago Water Works. A total of 15 participants were purposively selected to provide diverse and relevant perspectives on the compliance of water services with the Water Code of the Philippines. These participants include 5 customers who actively use the water services in their households or businesses, 5 service providers not directly or working with the Balibago Water Works who are knowledgeable about the implementation and challenges of water service delivery, and 5 representatives from the Local Government Unit (LGU) of Tarlac who are involved in local governance and water resource management. Their combined insights are critical to understanding the effectiveness of current policies and practices and identifying areas for improvement toward a more localized and responsive water service delivery policy.

- *Research Instrument*

The primary instrument for data collection in this study will be a researcher-designed interview guide specifically developed to explore the perspectives on the compliance of water supply services in Capas, Tarlac. The questionnaire will be constructed based on the study's statement of purpose and will be carefully designed to gather relevant information that will address each of the statements and provide insights for the eventual formulation of a localized water service policy.

The survey instrument will be organized into several sections, directly aligned with the study's research questions. The first section will assess participants' perspectives on the compliance of Balibago Water Works with selected provisions of the Water Code, including the recognition of water ownership, appropriation and utilization of water resources, conservation efforts, and administrative enforcement by responsible authorities. The second section will examine the common problems encountered in relation to water service delivery, such as supply reliability, water quality, and grievance resolution. The third section will explore participants' perceptions of service provider responsiveness and accountability. Finally, the last section will solicit suggestions and policy recommendations for improving water service delivery and enhancing compliance with the Water Code in the local context.

This interview guide will serve as an essential tool for collecting meaningful, context-based data that reflects the experiences and views of Capas stakeholders. It will contribute significantly to bridging the gap between national legal provisions and local implementation, with the ultimate goal of informing a responsive, sustainable, and community-driven localized water service policy for Capas, Tarlac.

- *Validation and Reliability of the Instrument*

The researcher collaborated closely with the research adviser to review and refine the developed an interview guide, ensuring its validity and alignment with the statement of purpose. Their feedback was crucial in enhancing the quality of the interview guide. The research adviser provided valuable suggestions, which were incorporated to improve the instrument's relevance and effectiveness. To further validate the questionnaire, a panel of three experts—specializing in the expertise—was engaged in the validation process. Their insights contributed to ensuring the instrument's content was robust and suitable for the study.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Additionally, it will evaluate the instrument's ability to gather the necessary data to address the statement of purpose and ensured its appropriateness for the study.This comprehensive validation will ensure that the interview guide was well-suited for collecting valid and reliable data, contributing to the overall quality of the research study.

- *Data Gathering Procedure*

To initiate the data collection process, the researcher first developed an interview guide aligned with the statement of purpose and submitted it to the research adviser for comments and suggestions. Following this, the instrument underwent validation by three research experts from various sectors to ensure its content relevance and appropriateness to the research problem.

Once the instrument was finalized, the researcher will seek formal permission from the officials of the Municipality of Capas, Tarlac to conduct the study. Upon approval, the researcher will proceed with the distribution of the survey. For the face-to-face distribution, participants were personally briefed about the purpose of the research and guided on how to answer the survey. For the online distribution, the researcher obtained the necessary approval to disseminate the survey link via an online platform. To ensure that only qualified participants participated, the questionnaire included preliminary screening questions to verify eligibility. The target participants consisted of 15 individuals—5 water service customers, 5 providers, and 5 representatives from the local government unit (LGU)

After data collection, all responses were carefully organized and tabulated using Microsoft Excel. Throughout the entire research process, ethical standards were strictly upheld. The confidentiality and anonymity of all participants were maintained, and the information gathered was used solely for academic purposes. Proper citations and references were provided to acknowledge all sources used. Finally, the research findings and the proposed localized water service policy, based on the insights derived from the data, will be submitted to the concerned local agency for possible consideration and implementation.

- *Data Analysis*

The collected qualitative data from customers, service providers, and local government representatives were carefully organized, transcribed, and coded to identify recurring themes and patterns. Using thematic analysis, the researcher systematically examined participants' responses to the interview guide, focusing on their perspectives regarding compliance with the Water Code of the Philippines, challenges in service delivery, responsiveness and accountability, and policy recommendations. Themes were grouped and compared across stakeholder groups to highlight both shared concerns and differing viewpoints, ensuring that multiple perspectives were captured and represented in the analysis.

The data were further tabulated using Microsoft Excel to document the frequency of emerging themes and to provide a clearer visualization of recurring issues. This process allowed the researcher to prioritize the most critical concerns while also acknowledging less frequently mentioned but contextually significant insights. The combination of thematic coding and frequency analysis ensured that the results were both qualitative in depth and quantitative in emphasis, thereby producing a comprehensive assessment that directly informed the formulation of a proposed localized water service delivery policy for Capas, Tarlac.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

CHAPTER FOUR
PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

This section is designed to provide readers with a more comprehensive understanding of the studied phenomena. Through the use of statistical analysis, visual representations, and thematic interpretation, raw data is transformed into meaningful insights that tell a coherent story beyond the figures. The structured and clear presentation enables readers to easily interpret the findings, draw informed conclusions, and grasp the broader implications of the research.

- *Compliance with the Water Code of the Philippines (PD 1067 of 1976)*

The following tables present the assessment of respondents regarding the Water Code of the Philippines (Presidential Decree No. 1067 of 1976). This section organizes and summarizes the gathered data to provide insights into how the provisions of the Code are perceived, understood, and applied in relation to water use, conservation, and management. The results serve as a basis for evaluating the effectiveness and relevance of the Water Code within the given context.

Table 1 Customers and Service Providers' Perspectives on Efforts Aligning with the Water Code

Themes	Defining Elements	Key Informants	Recurrences
1. Inconsistent or Inadequate Effort to Sustained Compliance with the Water Code	*I think they are too left behind.*	C1	5
	The service provider's efforts to align with the Water Code appear minimal. Especially when it comes to access, fairness, and sustainability.	C2	
	The service provider has shown efforts to align with the Water Code, especially in providing access to water for households. However, their actions sometimes fall short of the law's core principles, such as sustainable management and equitable distribution. There is room for improvement in public communication and long-term planning.	C3	
	In my own words, the service provider of water in the municipality of Capas have shown the commitment which adheres the principles and objectives of Water Code of the Philippines which is to give the right amount of water supply to all the resident but unfortunately its not consistent with the sustainable water supply.	C4	
	The service provider's initiatives show substantial alignment with the Water Code of the Philippines, particularly in the areas of sustainability, equitable access, regulatory compliance, and environmental stewardship. Continued improvements and stakeholder engagement are essential to further uphold the Code's guiding principles in the face of growing demand and climate-related challenges.	C5	
2. Recognized Efforts Toward Regulatory Compliance and Fair Access	*We follow the Water Code by securing the right permits and complying with all regulations. We also promote fair and responsible water use. Our goal is to serve the community while protecting the environment.*	SP1	
	We follow the Water Code by making sure water is used properly and fairly. We do our part to give access to clean water, protect the source, and avoid waste. We also make sure everyone knows their rights and responsibilities when it comes to using water.	SP4	

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

	The major objective of the Water Code of the Philippines is to govern ownership, utilization, exploitation, development, conservation, and protection of the water resources... the service providers ensure that water is used responsibly and sustainably for the benefit and protection of the users of the environment.	SP5	
3. Community Engagement and Environmental Stewardship	*By requiring regulatory compliance by obtaining permits from NWRB. Implementing water safety plans to ensure clean delivery of safe drinking water. And lastly, we put efforts to community engagement and sustainable practices to ensure that they are preserved for future generations while meeting the need of current users.* *We do our best to align with the Water Code by improving our services and ensuring fair access to water. While we have made good progress, we know there is still more we can do—especially in making our efforts more inclusive, transparent, and sustainable for everyone in the community.*	SP3 SP2	

Table 1 presents the customers and service providers perspectives on efforts aligning on the water code. The theme "Inconsistent or Inadequate Effort in Sustained Compliance with the Water Code" emerged with the highest number of recurrences (5), reflecting a strong perception among residents that while there are visible initiatives, these fall short of achieving consistent, equitable, and sustainable water service delivery in Capas. This sentiment reveals a gap between policy-level compliance and on-the-ground effectiveness. Residents experience recurring service interruptions, weak water pressure, and unclear communication regarding access—factors that collectively suggest a lack of strategic long-term planning and infrastructural reinforcement by the service provider.

Conversely, the theme "Community Engagement and Environmental Stewardship" had the least number of recurrences (2), indicating that these aspects are either underdeveloped or not visible enough to the public. The minimal frequency of responses related to this theme suggests that while some efforts may exist, they are not widely experienced or felt by the community. This deficiency limits public trust and undermines collective responsibility in managing water resources. When community members are not meaningfully engaged, efforts toward sustainable water management remain top-down, often lacking cultural and situational relevance.

This observation aligns with the findings of Ballesteros (2024), who emphasized that water governance in the Philippines suffers from institutional fragmentation and weak local participation. The study advocates for a shift toward a more community-driven, transparent, and participatory approach to enhance compliance with national policies and to build local ownership of water governance strategies. In particular, Ballesteros argues that water access and management become more resilient when citizen feedback and environmental consciousness are integrated into the operational plans of water utilities and local governments.

The implies that mere regulatory compliance—while necessary—is insufficient without operational consistency and direct community involvement. For Capas, this means that infrastructure improvements, timely maintenance, and consistent delivery of water services must be coupled with a transparent accountability mechanism that includes the voices of ordinary citizens. The service provider and local government must co-develop systems that respond proactively to service issues and reinforce equity in water distribution, especially in underserved areas. Moreover, the low visibility of community engagement and environmental stewardship suggests a critical need for LGUs and service providers to actively involve the public through barangay-level water committees, awareness drives, and accessible reporting platforms. Such mechanisms not only empower residents but also contribute to the long-term sustainability of water services by fostering shared responsibility and trust. Community buy-in is a prerequisite for enforcing the Water Code meaningfully at the local level, and this can only be achieved if engagement is proactive, inclusive, and consistent.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 2 Customers and Service Providers' Perspectives on Recognition and Management of Water Ownership

Themes	Defining Elements	Key Informants	Recurrences
1. Issues of Water Ownership, Commercialization, and Limited Public Involvement (3 recurrences)	*Based on my experience, the concept of water ownership in the community is not always clearly defined or fully acknowledged by the service provider. While water is a public resource under the Philippine Water Code, the way it is managed and delivered often feels more like a commercial transaction than a shared community right.* *The concept of shared water ownership is somewhat acknowledged, but it is not strongly emphasized. Community involvement is limited, and there is little effort to educate residents on their rights and responsibilities regarding water resources.* *They're strict in payment.*	C1 C2 C4	3
2. Perceived Lack of Long-term Planning and Fair Distribution (2 recurrences)	*The service provider's efforts to align with the Water Code appear minimal. Especially when it comes to access, fairness, and sustainability.* *Sometimes they attend to the rants of the user of water such as shortage of supply etc. but till now there is no long-term plan for lack of water.*	C3 C5	2
3. Commitment to Shared Responsibility and Fair Water Management (3 recurrences)	*We use contracts and agreements, formal agreements to define the terms of water use for us the provider and for the community or individual users.* *We understand that water belongs to everyone, and our job is to deliver it fairly. We don't claim ownership—we're only here to manage and distribute it properly so all households have access to clean and safe water.* *We treat water as a shared natural resource that must be protected and fairly distributed. We do not claim ownership but focus on managing and delivering it properly. We also engage with the community to raise awareness on responsible usage.*	SP1 SP3 SP5	3
4. Inclusive Governance and Community-Centric Water Management (2 recurrences)	*We recognize that water is a shared resource and we do our part in managing its distribution. However, we are also working on being more open about water rights and involving the community more in decisions that affect them, because we believe everyone's voice matters in managing water resources.* *Water ownership within the community should not be limited to the development of water infrastructures, water resources management, income generation and business sustainability. It is more on having strong ties*	SP2 SP4	2

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

	between local water users and community leaders, providing a venue to know their concerns and needs and have an active information dissemination on how the water company and the community go together to ensure the efficient use and protection of the water assets and resources.		

Table 2 shows the customers and service provider's perspectives on recognition and management of water ownership.The theme "Issues of Water Ownership, Commercialization, and Limited Public Involvement" emerged with the highest number of recurrences (3), highlighting ongoing concerns among residents in Capas regarding the privatized handling of a public resource. While water is constitutionally recognized as a public good in the Philippines, many participants perceive water delivery as a commercial transaction—with strict billing practices, limited education on water rights, and minimal opportunities for community engagement in decision-making. This suggests that the commercial orientation of water provision may overshadow its communal value, weakening the shared sense of stewardship and public participation.

Interestingly, the theme "Commitment to Shared Responsibility and Fair Water Management" also had 3 recurrences but came entirely from service provider key informants. This contrast reflects a discrepancy between provider intent and public perception: service providers claim to operate with fairness and responsibility, but these principles are not strongly felt or recognized by many community members. On the other hand, the theme "Perceived Lack of Long-term Planning and Fair Distribution" had the least recurrences (2), yet it echoes a critical structural issue—the absence of visible strategic plans for sustained water access and equitable allocation.

This situation aligns with findings by Perci Cendana (2020), who emphasized that water governance in the Philippines is weakened by the commodification of water, coupled with insufficient community inclusion and local accountability. Cendana noted that without community-centered governance, people tend to feel alienated from services meant to benefit them collectively. He advocates for a rebalancing of water management—grounded in public participation, transparency, and respect for water as a shared right rather than a commodity.

This means that there is an urgent need to restore the communal nature of water access and management. For Capas, this means that the local government and service providers must not only operate transparently but also actively engage residents in shaping decisions about water access, usage, and development planning. Strengthening education about the Philippine Water Code and ensuring that residents understand their rights and roles as water users will help close the perception gap between provider commitments and public expectations. Moreover, by emphasizing inclusive governance and community-centric models, stakeholders can foster a stronger culture of shared responsibility and trust. Community participation is not just beneficial—it is essential for ensuring the sustainability of water resources, especially as climate variability, urban expansion, and population growth increase pressure on water systems. Equitable and transparent policies, supported by community monitoring and feedback, will be crucial in realigning water governance with both legal mandates and local realities.

Table 3 Customers and Service Providers' Perspectives on Appropriation and Utilization of Water Resources

Themes	**Defining Elements**	**Key Informants**	**Recurrences**
1. Water Quality Issues, Ownership Concerns, and Fair Access Challenges	*Not any but sometimes it smells something and not pleasant for human consumption.* *The processes used for water appropriation seem disorganized and inefficient. Water distribution lacks transparency, and priority often seems given to commercial areas over households that need it the most.* *Based on my experience, the concept of water ownership in the community is not always clearly defined or fully acknowledged by the service provider.* *The concept of shared water ownership is somewhat acknowledged, but it is not strongly emphasized.* *Sometimes they attend to the rants of the user of water such as shortage of supply etc., but till now there is no long-term plan for lack of water.*	C1 C2 C3 C4 C5	5
2. Compliance with Permits, Structured Distribution, and	*It involves a comprehensive legal framework, a structured application process of water*	SP1	4

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Sustainable Management	*permits, prioritization of domestic needs, and the active participation of our company and the local communities to ensure equitable access to water while promoting sustainable management practices.* *We follow proper procedures to make sure water reaches homes and public areas. We also need to improve in areas like leak prevention, billing accuracy, and customer support—and we are already making steps in that direction.* *We make sure to follow proper procedures in getting water permits and using the supply wisely. Our process ensures clean and safe water for homes and public spaces. We plan carefully to avoid waste and shortages.* *We use contracts and agreements to define the terms of water use for both the provider and the users.*	SP2 SP3 SP5	
3. Inclusive Governance and Regulatory Enforcement Gaps	*Appropriation and utilization of water resources should be regulated through permits, but this is often not enforced in some areas. Even water companies struggle to regulate unpermitted usage when their service is lacking.*	SP4	1

Table 3 indicates the customers and service providers' perspectives on appropriation and utilization of water resources. The theme "Water Quality Issues, Ownership Concerns, and Fair Access Challenges" emerged with the highest frequency (5 recurrences), underscoring persistent community unease regarding water service delivery in Capas. Statements highlighted concerns about foul odors, unclear ownership models, opaque distribution practices, and the absence of long-term planning. Collectively, these reflect a community experience of water as a commercial commodity rather than a shared public resource—despite legal frameworks emphasizing water as a collective right. Meanwhile, the theme "Inclusive Governance and Regulatory Enforcement Gaps" was mentioned only once (by SP4), which suggests that although regulatory mechanisms such as water permits exist, local enforcement and inclusive governance remain underemphasized in both the discourse and community awareness, pointing to a potential governance blind spot.

These findings align with the observations of Rola et al., (2023), who examined how community-based water governance in the Philippines often struggles to bridge institutional mandates and grassroots realities. Their work illustrates that communities frequently lack mechanisms for feedback, oversight, and equitable participation—resulting in persistent gaps between policy and practice, especially in watershed areas and barangay-level monitoring schemes

The dominant theme—concerns over quality, ownership ambiguity, and inequity—indicates an urgent need for water governance in Capas to become more responsive and transparent. Service providers and local officials must go beyond administrative compliance by implementing regular water quality assessments, public disclosure of distribution plans, and participatory forums that educate residents on water rights and responsibilities.

The conflict between provider-perceived compliance and community-perceived shortcomings also speaks to the need for mechanisms of accountability—such as transparent complaint tracking, permit enforcement logs, and community validation of service outcomes. Without these, formal adherence to regulations fails to translate into meaningful improvements in water access and reliability.

Table 4 Customers and Service Providers' Perspectives on Sustainable Use of Water Resources

Themes	**Defining Elements**	**Key Informants**	**Recurrences**
1. Sustainability Challenges and Inconsistent Water Supply*(3 recurrences)*	*Water resources are not being utilized sustainably. We experience frequent shortages.* *The recent problem we face with our water provider is that every morning there is no supply of water, then the supply comes back at noon.* *Water is mainly used for household consumption. The service provider plays a key role in distribution, but their sustainability efforts are not very visible. Programs on conservation or resource management could be strengthened to ensure long-term availability.*	C1 C2 C3	3

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

2. Domestic and Agricultural Uses of Water in Semi-Rural Communities*(1 recurrence)*	*In our area, water resources are primarily utilized for domestic purposes, such as drinking, cooking, cleaning, bathing, and laundry. Some communities also use water for small-scale agriculture, backyard gardening, and livestock, especially in semi-rural barangays.*	C1	1
3. Service Provider's Role in Promoting Conservation and System Efficiency*(3 recurrences)*	*Water in our area is used for homes, farming, and businesses. Our role is to manage and deliver clean water responsibly. We are also focusing more on conservation and upgrading our systems to reduce waste and ensure there's enough water for the future.* *Most of the water is used for household needs like drinking, cooking, and cleaning. We make sure it is managed well by monitoring its usage and maintaining our pipelines. We also remind customers to conserve water when needed.* *Water in our area is mostly used for drinking, cooking, and cleaning. Our role is to manage that use wisely—fixing leaks, checking for illegal connections, and reminding people to save water, especially during dry months.*	SP1 SP2 SP3	3
4. Strategic and Long-Term Water Resource Management Approaches*(2 recurrences)*	*The Capas Waterworks delivers clean water and protects water sources while promoting efficient water use for the long-term benefit of communities and the environment.* *To properly manage the water resources, the service provider should meet the current needs without compromising future availability. Use water efficiently, reduce water wastage, control illegal/unauthorized use, explore recycling and saving technologies. Avoid over-extraction and explore surface water as an alternative.*	SP4 SP5	2

Table 4 shows the customers and service providers' perspectives on sustainable use of water resources. The most frequently mentioned concern among participants is sustainability challenges and inconsistent water supply, which occurred three times. Informants emphasized that water shortages are a daily issue, with supply often unavailable in the mornings and resuming at noon. They also noted that while water is mainly used for household purposes, there is little evidence of active sustainability programs or conservation efforts by the service provider. This suggests a gap in long-term planning and public engagement on water resource management, pointing to the need for more visible and proactive initiatives to ensure the sustainable use of water.

On the other hand, the least recurring theme, with only one mention, pertains to the domestic and agricultural uses of water in semi-rural communities. This theme acknowledged the dual use of water for household needs and small-scale agriculture such as backyard gardening and livestock. However, this issue appears to be overshadowed by more pressing concerns related to water access and service reliability. The lower recurrence may indicate that while usage is important, it becomes a secondary discussion when the basic need for consistent water availability is not being met.

This disparity highlights a crucial insight into the priorities of semi-rural communities: access and sustainability come first, followed by usage and efficiency. This finding is supported by Timotewos and Barjenbruch (2024), who argue that the effectiveness of water demand management in developing countries is often hindered not only by infrastructure limitations but also by a lack of public engagement and transparency from service providers. Their study found that without addressing supply reliability and ensuring user awareness, conservation policies and water use efficiency strategies tend to be ineffective. This reinforces the need for local service providers to adopt an integrated approach—investing in infrastructure upgrades while actively involving communities in conservation practices.

Table 5 provides the customers and service providers' perspectives on control and conservation measures. The most prominent theme with four occurrences is Customer Perceptions on Lack of Proactive Conservation and Service Deficiencies. Community members consistently expressed frustration that conservation efforts are largely reactive—such as occasional rationing—and that visible, proactive, and community-oriented initiatives are severely lacking. While the service provider handles basic operational tasks, participants feel there's no meaningful awareness campaigns, education, or preventive maintenance in place. This perception suggests a disconnect between existing conservation procedures and the expectations of the public, especially given mandates under the Water Code of the Philippines that emphasize proactive, participatory measures.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 5 Customers and Service Providers' Perspectives on Control and Conservation Measures

Themes	Defining Elements	Key Informants	Recurrences
1. Lack of Proactive Conservation and Service Deficiencies *(4 recurrences)*	*Water shortage is not an issue so water conservation is the least of their concern.* *There are hardly any visible conservation measures.* *While the provider manages basic operational controls, its conservation measures fall short of the proactive, community-driven, and sustainable approach encouraged by the Water Code.* *There are some conservation measures in place, such as occasional rationing, but they often feel reactive rather than proactive. More consistent and preventive strategies—such as timely repairs and educational campaigns—would be more effective.*	C1 C2 C4 C5	4
2. Perceived Service Inadequacy and Lack of Long-term Solutions *(1 recurrence)*	*Our service provider cannot give a proper solution to what is lacking.*	C3	1
3. Ongoing Operational Conservation Practices by Service Providers *(3 recurrences)*	*We've put measures in place like leak detection and basic conservation practices. But we know we can do better—so we're planning more awareness campaigns, promoting water-saving habits, and working to protect our water resources to make sure we meet the Water Code's goals and serve the community well.* *We take steps to control water use through leak repairs, pressure management, and system upgrades. We also encourage water-saving habits, especially during summer or low-supply periods. These efforts help protect water for future use.* *We regularly check our system, fix damaged pipes, and monitor supply. We also inform the public about saving water and stopping waste. These small efforts help make sure water lasts and reaches more people.*	SP2 SP3 SP5	3
4. Strategic and Regulatory-Based Measures to Ensure Sustainability *(2 recurrences)*	*We protect water sources, promote efficient use and distribution, and enforce Water Code provisions by partnering with NWRB and LGU to report illegal connections, unauthorized water use, and source contamination.* *Among the conservation measures implemented by the service providers are Non-Revenue Water (NRW) management, supply and pressure management, water distribution pipeline upgrades, and infrastructure improvements. All these should be well-managed to ensure sustainability of supply.*	SP1 SP4	2

In contrast, the least mentioned theme, appearing only once, is Perceived Service Inadequacy and Lack of Long-term Solutions—a single informant noted that the provider "cannot give a proper solution to what is lacking." Although mentioned less often, this point reflects deeper dissatisfaction about leadership vision and planning for future needs, hinting at concerns about governance and strategy beyond daily operations. A recent study by Rachmat Mulyana et al. (2024) identified two primary clusters—"Active Water Stewards," who practice proactive saving, and "Passive Water Consumers," who do the minimum. They found that proactive attitudes correlate strongly with actual water conservation behavior, and socio-demographic factors (income, education) influence whether households fall into one cluster or the other

This underscores that without visible, community-based engagement and preventive measures—such as leak detection, educational outreach, and local government involvement—customers are unlikely to internalize conservation habits or trust the provider's commitment to sustainability. While there appears to be some operational conservation activity (as seen in other themes), public perception remains dominated by frustration over a lack of proactive, visible, and community-engaging strategies. The service provider should focus on bridging this gap—moving from reactive repairs and intermittent rationing to consistent, preventive, and participatory conservation engagement to build trust and effectiveness.

- *Common Problems Encountered in Service Delivery*

This part highlights the challenges experienced by customers in accessing reliable and safe water supply. The tables summarize issues related to availability, quality, scheduling, and maintenance, providing insights into how these recurring problems affect daily living, health, and productivity.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 6 Customers' Perspectives on Difficulties in Accessing Clean and Reliable Water

Themes	Defining Elements	Key Informants	Recurrences
1. Service Interruptions and Inconsistent Water Flow *(3 recurrences)*	*When there is a blackout, there is also a temporary halt in flow of water.* *The water pressure is low, the supply is inconsistent, and the water is sometimes discolored or smells bad.* *The most common issues include low pressure and irregular supply, especially during peak hours. These problems are not constant but happen often enough to cause inconvenience.*	C1 C2 C3	3
2. Dependency on Alternative Water Sources During Interruptions *(2 recurrences)*	*At times of blackout, there is no available water. We resort to using artesian wells.* *We frequently deal with unannounced water interruptions.*	C4 C5	2
3. Water Quality and Associated Health Risks *(2 recurrences)*	*Water can be sometimes foul-smelling.* *Some households report skin irritation and other health issues from using tap water.*	C4 C5	2
4. Delayed Service Response and Inconvenient Coping Measures *(2 recurrences)*	*When there is a delay, we resort to using manual water pumps, which is hassle and energy-consuming.* *It can take days or even weeks for the provider to respond to repair requests.*	C4 C5	2
5. Negative Effects on Daily Life and Well-being *(2 recurrences)*	*It's hard to start your day without a proper shower.* *These issues disrupt daily life, reduce productivity, and create stress.*	C4 C5	2

Table 6 determines the customers' perspectives on difficulties in assessing clean and reliable water. The most prominent theme is Service Interruptions and Inconsistent Water Flow, which appeared three times. Informants reported that power outages often coincide with water service halts, and that water pressure is frequently low, inconsistent, and occasionally of poor quality—sometimes discolored or foul-smelling. While these issues are not constant, they occur often enough to inconvenience residents and affect their quality of life. This recurring theme underscores how fragile the water infrastructure is, especially when it relies on electricity, and how inconsistent service undermines public confidence in water supply systems.

In comparison, the other themes—Dependency on Alternative Water Sources, Water Quality and Health Risks, Delayed Service Response, and Negative Effects on Daily Life—each appeared twice. participants shared that in the absence of reliable supply, they are forced to rely on artesian wells or manual water pumps, which are laborious and inconvenient. Health-related concerns also surfaced, with households reporting skin irritations and suspected health issues linked to water quality. Additionally, delays in service provider responses—sometimes taking days or even weeks to address issues—further burden residents, impacting their time, energy, and psychological well-being.

The disparity in recurrence shows that while all themes are critical, service interruptions and inconsistency in water flow are the most pressing. This aligns with findings from Mekonnen and Hoekstra (2024), who emphasized that intermittent water supply in developing regions contributes not only to daily disruptions but also to serious health and coping burdens. Their research indicated that residents in low- and middle-income communities experiencing irregular supply are more likely to report stress, health concerns, and productivity loss due to the physical and emotional demands of accessing alternative sources and adapting daily routines. While water quality, health risks, coping mechanisms, and well-being are all affected by poor service, the root issue lies in unreliable water flow and pressure, which cascade into other problems. Addressing this core issue through infrastructure upgrades, backup systems for blackouts, and faster service response could significantly reduce health risks and daily life disruptions, enhancing overall community well-being.

Table 7 shows the customers' perspectives on recurring issues in water availability or scheduling. Based on the gathered data, two themes emerged with equal highest recurrence, each appearing twice: Perceived Lack of Compliance and Alignment with the Water Code, and Inconsistent Water Pressure and Irregular Supply. participants expressed dissatisfaction with the service provider's minimal efforts to align with the principles of the Philippine Water Code, particularly regarding equitable access, sustainability, and fairness. One informant described the provider as "too left behind," indicating a perception that the utility has not kept pace with evolving regulatory or service standards. This reflects a growing awareness among consumers of their rights under national water governance frameworks and their expectations for compliance.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 7 Customers' Perspectives on Recurring Issues in Water Availability or Scheduling

Themes	Defining Elements	Key Informants	Recurrences
1. Lack of Compliance and Alignment with the Water Code *(2 recurrences)*	*I think they are too left behind.* *The service provider's efforts to align with the Water Code appear minimal, especially when it comes to access, fairness, and sustainability.*	C1 C2	2
2. Inconsistent Water Pressure and Irregular Supply *(2 recurrences)*	*There are only certain times when the water pressure is strong, and it's not consistent.* *The most common issues include low pressure and irregular supply, especially during peak hours. These problems are not constant but happen often enough to cause inconvenience.*	C3 C4	2
3. Delayed Response from Service Personnel *(1 recurrence)*	*The workers within our resident are hard to contact, it will take at least 2 days before they can attend.*	C5	1

Simultaneously, issues related to inconsistent water pressure and irregular supply were frequently mentioned. Residents shared that water is strong only at certain times and unreliable during peak hours, making daily routines difficult. These supply inconsistencies, while not constant, are disruptive enough to cause regular inconvenience. Such irregularities are often symptomatic of poor infrastructure, demand overload, or a lack of pressure management mechanisms—challenges commonly faced in semi-urban and peri-urban water systems.

The least recurring theme, appearing only once, is Delayed Response from Service Personnel. One respondent described the difficulty of reaching service workers, stating it typically takes at least two days for them to respond to issues. While not as frequently mentioned, this statement highlights a problem in customer service and operational efficiency, which can compound frustrations caused by supply issues and regulatory non-compliance.

These findings are consistent with the study by Escalent (2020), which emphasized that public satisfaction with water utilities is not only driven by water availability but also by responsiveness, regulatory transparency, and perceived fairness. Their research found that when utilities fail to meet public expectations in both service delivery and governance alignment, trust deteriorates, and compliance with water conservation programs also declines.

The participants' feedback suggests two critical issues: the perceived disconnect between utility practices and legal mandates, and the technical unreliability of the water supply system. Addressing these would require both regulatory reforms and operational improvements. While delayed service response was mentioned less frequently, it remains a key area to address in building a more responsive and community-trusted water service system.

Table 8 Customers' Perspectives on Challenges in Water Quality and Sanitation

Themes	Defining Elements	Key Informants	Recurrences
1. Unreliable Water Quality and Health-Related Concerns *(3 recurrences)*	*Not any, but sometimes it smells something and not pleasant for human consumption.* *The water is usually clean, but there have been occasional instances of murky water or foul odor. These instances create concerns about sanitation, especially when they affect drinking and cooking water.* *Unreliable Water Quality, Health Risks and Preventive Measures, Poor Sanitation Infrastructure.*	C1 C3 C4	3
2. Lack of Transparency and Inefficiency in Water Distribution *(1 recurrence)*	*The processes used for water appropriation seem disorganized and inefficient. Water distribution lacks transparency, and priority often seems given to commercial areas over households that need it the most.*	C2	

Table 8 includes the customers' perspectibes on challenges in water quality and sanitation. Based on the analysis of respondent feedback, the most frequently cited issue is Unreliable Water Quality and Health-Related Concerns, which appeared three times. Informants mentioned that while the water is generally clean, there have been occasional occurrences of foul odor or murkiness. These incidents raise concerns about the safety of water for drinking and cooking and suggest deeper issues in sanitation and maintenance. One respondent even connected these problems with broader concerns about poor infrastructure and lack of preventive measures. These perceptions indicate a lack of trust in the water supply system and highlight the psychological and physical impacts of inconsistent water quality on community well-being.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

In contrast, the least recurring theme, appearing only once, is Lack of Transparency and Inefficiency in Water Distribution. One key informant observed that water distribution processes appear disorganized and biased, with perceived prioritization of commercial establishments over household needs. Though mentioned only once, this concern underscores potential issues in governance and accountability, which can significantly influence public trust even if physical infrastructure is present.

These findings are supported by Watson et al. (2025), who examined public perception of water quality in an arsenic-affected region. Their study emphasized that even minor or occasional lapses in water quality—such as unpleasant taste, color, or odor—can significantly undermine public confidence in water safety. Moreover, trust in service providers was found to be closely linked to transparency, effective communication, and consistent delivery of clean water. Without these elements, even technically safe water may still be regarded with suspicion by users. While inconsistent water quality is the dominant concern among participants, the singular mention of inefficient and opaque distribution reveals an underlying issue of governance that could affect service equity and satisfaction. To ensure long-term trust and community health, it is essential for water service providers to address both the technical quality of water and the clarity and fairness of their operational systems.

Table 9 Customers' Perspectives on Service Delays, Repairs, or Maintenance Concerns

Themes	Defining Elements	Key Informants	Recurrences
1. Unsustainable Use of Water Resources and Frequent Shortages *(2 recurrences)*	There is a lack of visible long-term planning from the service provider to ensure continuous and sustainable water supply, especially during high-demand periods. Water resources are not being utilized sustainably. We experience frequent shortages.	C1 C2	2
2. Poor Response Time and Lack of Communication *(3 recurrences)*	Delayed Response Times, Lack of Timely Communication, Dependence on Community Initiatives. Repairs are sometimes delayed, and there is usually a lack of updates. It can take multiple follow-ups to get a problem resolved, which is frustrating for residents who depend on consistent water access. When contacting the workers, it may take at least 2 days before they can attend to your request.	C3 C4 C5	3

Table 9 displays the customers' perspectives on service delays, repairs, or maintenance concerns. The most frequently cited concern is Poor Response Time and Lack of Communication, with three mentions. Informants described experiences of delayed repairs—sometimes requiring days and multiple follow-ups—with minimal updates or acknowledgment from the service provider. This lack of timely communication forces communities to rely on their own coping strategies and erodes trust in the provider's reliability.

In contrast, the theme Unsustainable Use of Water Resources and Frequent Shortages was mentioned twice. participants pointed to a lack of visible planning or sustainable practices to ensure consistent supply during peak demand periods. While these signals underlying systemic issues, it appears less urgent to users than the day-to-day frustrations tied to service responsiveness and engagement.

These findings align with the research of Grupper et al., (2021), who investigated trust determinants in water utilities. Their study found that procedural transparency and communication are core factors in maintaining public trust, even when technical service delivery is adequate. When utilities fail to communicate clearly or respond promptly, it can significantly damage user confidence—even in cases where physical infrastructure may be functioning adequately.

Table 10 determines the customers' perspectives on effects of service problems on daily life, health and productivity. The most frequently cited issue is Impact on Daily Life, Hygiene, and Well-being, which appeared three times. Informants shared that water service disruptions significantly interfere with daily routines—especially for families with young children or elderly members—and undermine health, hygiene, and even economic stability. One respondent described how water outages "break morning routines," making it difficult to prepare for school or work. These reflections underscore how essential reliable water access is to household functioning and mental well-being. participants emphasized that responsive communication and timely service from providers are crucial to restoring normalcy.

Table 10 Customers' Perspectives on Effects of Service Problems on Daily Life, Health, and Productivity

Themes	Defining Elements	Key Informants	Recurrences
1. Lack of Conservation Efforts and Low Awareness *(2 recurrences)*	*Water shortage is not an issue so water conservation is the least of their concern.* *There are hardly any visible conservation measures.*	C1 C2	2

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

2. Impact on Daily Life, Hygiene, and Well-being *(3 recurrences)*	*Water service problems affect health, well-being, and economic stability. Improving reliability, responsiveness, and communication from the service provider is essential for restoring normalcy and ensuring that basic human needs are met.* *These problems have disrupted daily routines, particularly for families with young children or elderly members. Water shortages affect hygiene and health, and they also interfere with work-from-home setups or home-based businesses.* *Well, it sometimes breaks my morning routine—especially when preparing to go to school and there is no supply of water.*	C3, C4, C5	

In contrast, the theme Lack of Conservation Efforts and Low Awareness was cited twice. participants noted that because water scarcity isn't widely perceived as urgent, conservation is not prioritized. The absence of visible conservation campaigns or educational initiatives contributes further to low awareness about sustainable water practices. This suggests a missed opportunity to foster proactive engagement before system strains become more severe.

These themes resonate with Yang, Butcher, Edwards, and Faust (2023), who studied the relationship between public trust in water utilities and use of alternative water sources. Their research in 21 U.S. shrinking cities found that perceptions of poor communication and inadequate response from water providers foster distrust, often prompting households to rely on bottled water or other substitutes—even when infrastructure remains functional. In other words, disruptions to daily life combined with unsatisfactory provider interaction erode public confidence and diminish satisfaction, regardless of broader system capacity.

- *Responsiveness and Accountability*

This section presents the customers' assessment of how service providers respond to concerns and uphold accountability. The focus is on communication processes, responsiveness to reported issues, transparency in decision-making, and the perceived sense of responsibility shown by the provider toward the community.

Table 11 Customers' Perspectives on Communication Process with the Service Provider

Themes	Defining Elements	Key Informants	Recurrences
1. Multiple but Fragmented Communication Channels	*Via Messenger.* *Walk-in at the Local Office, Community Channels (Barangay or HOA).* *Call them on their cellphone number provided.*	C1, C3 C5	3
2. Difficulties in Communication with Service Provider	*Communicating with the provider is difficult.*	C2	1
3. Inefficient Complaint Handling Process	*Concerns are usually reported via hotline or barangay offices. The process is not very streamlined, and follow-ups are often required. It would help to have a more efficient and transparent complaint-tracking system.*	C4	1

Table 11 includes the customers' perspectives on communication process with the service provider. Based on the feedback, the most frequently cited theme is Multiple but Fragmented Communication Channels, mentioned three times. Informants reported using various methods—Messenger, walk-ins at local offices or community leaders, and calling direct cellphone numbers—to contact the service provider. While these multiple channels offer options, they indicate a lack of centralized and streamlined communication that can lead to inconsistent follow-ups, confusion, and potential gaps in issue resolution.

By contrast, the themes Difficulties in Communication with the Service Provider and Inefficient Complaint-Handling Process were each noted once. One informant described the difficulty in reaching the provider at all, and several mentioned that complaints submitted via hotline or barangay offices are handled inefficiently, requiring persistent follow-up. This highlights a critical need for a more transparent and efficient system—ideally with complaint tracking and clear feedback mechanisms.

These issues closely reflect findings by Rahman et al. (2024) in their study on consumer perceptions of water services in Indonesia. They found that clear, reliable communication channels and efficient complaint handling significantly influence consumer trust and satisfaction. When communication is fragmented or systems are unstructured, users reported lower satisfaction levels and greater frustration—even when utility services were otherwise functioning normally. While residents do have multiple means to contact their provider, the fragmentation across channels undermines effectiveness. Solving this requires establishing a centralized, well-coordinated communication and complaint management system, accompanied by clear feedback loops. Doing so would improve responsiveness, reduce resident frustration, and rebuild community trust in water services.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 12 Customers' Perspectives on Response to Reported Problems or Irregularities

Themes	Defining Elements	Key Informants	Recurrences
1. Delayed or No Response to Customer Complaints *(2 recurrences)*	*1. Slow replies, sometimes no reply at all. 2. The service provider rarely responds promptly. Most complaints seem to be ignored.*	C1, C2	2
2. Inconsistent Responsiveness and Need for Service Improvement *(2 recurrences)*	*3. While the service provider generally responds to reported problems, the timeliness, communication clarity, and effectiveness of these responses can vary. Greater transparency, faster action, and improved follow-up procedures would enhance residents' trust and satisfaction with the water service. 4. Response time varies. Some issues are addressed promptly, while others are ignored for days. There is inconsistency, which can lead to frustration and mistrust among residents.*	C3, C4	2
3. Acceptable but Limited Response Time *(1 recurrence)*	*5. They will attend to any request between 1–2 days.*	C5	1

Table 12 shows the customers' perspectives on response to reported problem or irregularities. From the collected responses, the most prominent themes are Delayed or No Response to Customer Complaints and Inconsistent Responsiveness and Need for Service Improvement, each appearing twice. participants expressed dissatisfaction with the response rate of the service provider—some reporting that replies are slow or entirely absent, while others noted inconsistency in how and when issues are addressed. This unreliability generates frustration and mistrust within the community. There is a clear desire for improvements in timeliness, communication clarity, and complaint follow-up. Although some residents acknowledged that problems are sometimes resolved, they emphasized that the unpredictability of response undermines confidence in the service system.

The theme Acceptable but Limited Response Time appeared once, with one respondent mentioning that service requests are typically addressed within one to two days. This indicates that while there are pockets of acceptable service, these experiences are not consistent across the broader customer base. The coexistence of both negative and neutral experiences suggests a need for more standardized response protocols and stronger accountability mechanisms.

These concerns are validated by the findings of Daniell et al. (2024), who examined public satisfaction with water service delivery in community settings. Their research concluded that variability in response time and communication practices can significantly erode public trust, even when core water services are being maintained. Daniell emphasized that strengthening procedural fairness, complaint transparency, and consistent follow-through is essential for improving community satisfaction with utility providers, particularly in developing or semi-urban areas.

Table 13 Customers' Experiences of Being Responsibly Attended To

Themes	Defining Elements	Key Informants	Recurrences
1. Impact of Water Interruptions on Livelihood and Household Needs *(1 recurrence)*	*1. Yes, when it is blackout and we can't even water our animals and plants.*	C1	1
2. Lack of Action on Reported Concerns *(1 recurrence)*	*2. There have been many times when our concerns were not addressed at all.*	C2	1
3. Poor Follow-Up and Unresolved Low Water Pressure Complaints *(1 recurrence)*	*3. There was a time when our household experienced very low water pressure for several consecutive days, making it difficult to perform basic tasks like cooking, bathing, and doing laundry. We reported the issue through the provider's hotline and were told a team would be dispatched to check within 24 hours. However, no one came, and there were no follow-up calls or updates.*	C3	1
4. Delayed Repairs and Stressful Follow-Up Process *(1 recurrence)*	*4. One time, we reported a leaking pipe in our area. It took three separate follow-ups and nearly a week before the issue was fixed. While it was eventually resolved, the lack of timely communication made the process stressful.*	C4 C5	2

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

	Action is too slow		

Table 13 provides the customers' experiences of being responsibly attended to. Each of the four identified themes in this set appeared only once, indicating a wide range of individual concerns related to water service delivery. However, taken collectively, they all point to a common issue: poor responsiveness and inadequate follow-through from the service provider. One informant emphasized the impact of water interruptions on livelihood, particularly in rural or semi-rural settings where water is essential not just for household use but also for caring for animals and plants. Another raised the lack of action on reported issues—highlighting that repeated concerns are often left unresolved. Further, a respondent reported poor follow-up after an incident of low water pressure; despite contacting the provider, no one arrived, and no updates were given. Lastly, another customer detailed a delayed repair and stressful follow-up process, which required multiple attempts before a leaking pipe was finally addressed. These responses reflect a shared experience of frustration, inefficiency, and emotional stress, especially when basic household needs are affected and communication is unclear or nonexistent. The community's perception is not just about the presence or absence of water, but about the quality of service, reliability, and how respectfully and efficiently concerns are addressed.

These findings are supported by Baillat and Fernandez (2023), who emphasized in their study on user satisfaction and public utility management that delayed responses, poor complaint handling, and lack of follow-up reduce institutional trust and compromise users' willingness to cooperate with local service providers. They stress that even minor disruptions, if handled without transparency or urgency, can trigger broader dissatisfaction and diminish the perceived legitimacy of public utilities.

Table 14 Customers' Perspectives on Transparency in Decision-Making

Themes	Defining Elements	Key Informants	Recurrences
Lack of Transparency and Need for Improved Communication *(5 recurrences)*	*They need more improvement in terms of information and communication.*	C1	5
	transparency is lacking. Residents are not informed of water shortages, rate changes, or plans for improvement.	C2	
	While some communication channels exist, the transparency in decision-making is not yet consistent or proactive. Greater openness—especially about service decisions, community impact, and long-term plans—would help residents feel more informed, respected, and involved.	C3	
	Transparency could be much improved. Most decisions are made without informing the public. There are few public announcements or updates, and rate changes or repairs often catch people off guard.	C4	
	Sometimes we find out about water interruptions or maintenance only after they've already started. There are no advance notices, which makes it hard to prepare.	C5	

Table 14 presents the customers' perspectives on transparency in decision-making. The most dominant theme emerging from the responses is Lack of Transparency and Need for Improved Communication, cited five times by all key informants. participants expressed strong dissatisfaction with the way water service providers communicate—or fail to communicate—important information. Issues raised include the absence of advance notices about service interruptions, minimal updates on repairs or maintenance, and lack of clarity around water rate changes or long-term service plans. Several participants noted that decisions are made without informing the community, leaving residents unprepared and feeling excluded from matters that directly affect their daily lives. Even though some communication channels exist, they are not used consistently or proactively, resulting in a perceived gap between service providers and their consumers.

This consistent dissatisfaction highlights that effective communication is not only a service feature but also a governance issue—one that impacts public trust, preparedness, and perceived respect for citizens' rights. The desire for greater openness reflects a community need to be seen not just as consumers but as stakeholders in local water governance. These findings align with the work of Bakker and Kooy (2023), who emphasized that transparency and consistent communication are key drivers of public trust and utility legitimacy in water governance systems. In their study on public utilities and communication gaps, they found that residents are far more likely to support and cooperate with service initiatives when they are clearly informed and treated as partners in service improvement. Bakker and Kooy argue that a lack of proactive transparency—especially around disruptions and pricing—can lead to public disengagement and resistance, even when service quality remains technically adequate.

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Table 15 Customers' Views on the Accountability of the Service Provider to the Community

Themes	Defining Elements	Key Informants	Recurrences
1. Lack of Visible Accountability and Public Engagement *(2 recurrences)*	*At present, there's very little to show that the provider is accountable. There's no public reporting or platform to express concerns meaningfully.*	C2	2
	Accountability means being present when problems arise. I think the service provider should be more visible and take initiative in addressing complaints rather than waiting to be called out.	C1	
2. Community Expectations on Responsible and Responsive Service *(3 recurrences)*	*Accountability is shown not just by solving problems but by communicating openly, acting promptly, engaging meaningfully, and delivering consistent, equitable service. When these actions are evident, the community feels respected and confident in the service provider.*	C3	3
	When the service provider attends barangay consultations or provides updates through public channels, it shows accountability.	C4	
	A regular presence in the community and timely responses to issues also build trust.	C5	
	They are the service provider, users are paid monthly, they must attend whatever rants may come.		

Table 15 presents the customers' view on the accountability of the service provider to the community. The theme with the highest number of recurrences is Community Expectations on Responsible and Responsive Service, cited three times. participants emphasized that accountability goes beyond simply fixing problems—it also requires timely communication, consistent engagement, and visible participation in community processes. When service providers attend barangay consultations, provide regular updates, and show a reliable presence during issues, the community feels that their concerns are respected and that the provider values its responsibility. One informant plainly stated that, as paying users, residents expect the provider to attend to all concerns and complaints without delay. This underscores that accountability is not perceived solely in terms of technical performance, but also in how fairly and attentively the provider responds to the public.

Meanwhile, the theme Lack of Visible Accountability and Public Engagement appeared twice, pointing to concerns that the provider often operates with minimal transparency or community interface. participants noted the absence of public reporting mechanisms and highlighted that providers should not wait to be "called out" before taking action. These sentiments reflect a gap between what the community expects and what they currently experience in terms of visibility, initiative, and responsiveness from the provider.

These insights are supported by Furlong, Bakker, and de Loe (2022), who argue that accountability in public water services is best demonstrated through proactive engagement, regular communication, and a commitment to procedural transparency. Their research reveals that residents are more likely to view service providers as legitimate and trustworthy when they are consistently involved in dialogue with the community, especially during service failures or disruptions. A lack of visible accountability, on the other hand, fosters public skepticism and disengagement—even in cases where basic service delivery is maintained.

- *Suggestions or Recommendations for Improvement*

This part compiles the suggested improvements from both the local government and customers regarding water service delivery. The discussion covers recommended strategies for enhancing communication, conservation, inclusivity, and equitable access to water resources in the community.

Table 16 Local Government and Customers' Recommendations for Improving Water Service Delivery

Themes	Defining Elements	Key Informants	Recurrences
Recommendations for Infrastructure and Service Improvement	*Improve infrastructure, ensure consistent water supply, repair leaks faster, and upgrade treatment systems.*	C5	3
	I would suggest improving infrastructure to minimize leaks, maintaining a consistent water supply schedule, and setting up a faster response system for complaints and maintenance.	C2	
	Weekly check-up of water pipes installed in the road.	C3	
Call for Communication, Engagement, and Community	*I would recommend implementing infrastructure upgrades to reduce leaks and contamination risks, establishing a robust water quality monitoring system for regular testing, and introducing efficient billing and payment systems for improved customer convenience. Additionally, community engagement and participation in planning and decision-making would help address local needs, while capacity*	LGU2	7

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Involvement	*building for staff would enhance their technical and customer service skills.* *As Barangay Captain, I hear a lot of complaints, especially of low water pressure after 5 pm. I suggest they improve the system or add more supply to match the growing number of households. Personally speaking, I would recommend improving communication and responsive aspect of the provider towards its clients in a more general approach. I have noticed that there where the lack of communication and slow response from the provider has led to inefficient anfd disruptive service. Additionally, to enhance the current water service delivery, the service provider should prioritize community engagement and conduct surveys or gather the opinion of clients in order to cater to their needs in a more detailed manner.* *We've been hearing a lot of complaints from residents, especially about weak water pressure in the evenings. The provider needs to improve their system and add more supply to match the growing number of households. Water should be strong and steady, no matter the time.* *Inform us in advance about water outage.* *As direct customer of water service provider, conducting focus group discussions with consumers could help identify key issues. A sincere willingness from providers to accommodate all concerns—such as frequent water shortages or complete lack of supply—and to address them proactively may significantly improve and even transform the entire system.* *We encourage residents to report leaks, avoid illegal connections, and not waste water. If we all do our part, services can improve and reach more people in the right way.* *By improving communication, upgrading infrastructure, ensuring transparency, and fostering community engagement, the water service provider can significantly enhance the reliability, safety, and equity of water delivery for all residents.*	LGU3 LGU4 C4 LGU1 LGU5 C1	

Table 16 displays the local government and customers; recommendation for improving water and service delivery. The theme with the most recurrences is Call for Communication, Engagement, and Community Involvement, appearing seven times across key informants from both customers and local government units (LGUs). participants emphasized that improving water services requires more than technical fixes—it also demands greater transparency, responsiveness, and inclusion of community voices in planning and decision-making. Recommendations included informing residents in advance of outages, conducting customer consultations such as focus group discussions, and establishing channels for two-way communication. Multiple informants pointed out the gap between the service provider and its users, especially when it comes to handling complaints and anticipating local needs. The call for community engagement, communication strategies, and participatory governance reflects a shift in expectations—residents want not only functional services but also to be treated as partners in service improvement.

On the other hand, the theme Recommendations for Infrastructure and Service Improvement was mentioned three times. Suggestions here focused on technical solutions: improving the reliability of the water supply, upgrading treatment systems, ensuring regular pipe maintenance, and accelerating repair of leaks. These infrastructural improvements are viewed as essential for stabilizing supply and avoiding service disruptions. While the focus is on physical systems, the underlying goal remains the same—ensuring consistent, safe, and equitable water access.

These findings are echoed in the research by Tortajada et al., (2023), who assert that technical upgrades must go hand-in-hand with public communication, institutional accountability, and participatory approaches in order to achieve sustainable water governance. Their study highlights that infrastructure alone cannot solve chronic water issues unless service providers actively involve communities and foster trust through open dialogue and responsiveness. Involving the public not only improves satisfaction but also ensures that system improvements are aligned with actual user needs.

Table 17 Local Government and Customers' Suggestions on Improving Communication with Residents

Themes	Defining Elements	Key Informants	Recurrences
Use of Technology and Communication	*Improving communication means being proactive, accessible, transparent, and community-oriented. When residents are well-informed and can easily reach the service provider, trust and satisfaction increase significantly.*	C1 C2	

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Platforms	*Regular updates through SMS, community bulletin boards, or social media would make a big difference. These updates should include supply interruptions, maintenance schedules, and general announcements.* *Create a Facebook page, open to all the community for transparency.* *Try using social media.* *Set up a 24/7 hotline or digital platform. Use text alerts or community boards to update residents.* *The service provider can establish regular updates through multiple channels, such as social media, email newsletters, and community meetings. They can also implement a customer relationship management system to track and respond promptly to resident inquiries and concerns. Additionally, providing clear and concise information about service disruptions, maintenance schedules, and water quality reports can help build trust and transparency.* *Given that our current generation is heavily reliant on technology, utilizing media and its aspects can be a huge factor in improving communication towards the clients or the residents. Additionally, just like as I have mentioned above, community engagement through conducting surveys, or as such can also be a factor in improving communication while at the same time promoting inclusivity for better rapport with the residents as well as better service outcomes.*	C3 C4 C5 LGU2 LGU4	7
Strengthening Communication and Community Engagement (3)	*Establish a reliable customer service hotline and conduct regular consultations with consumers through community forums or conferences. This two-way communication will ensure that residents' voices are heard, and their issues are addressed promptly. (LGU1)* *They should inform us right away if there is no water of if repairs are being done. Simple updates through text or barangay posts will help people prepare.(LGU3)* *People just want to be informed. If there's a water interruption or repairs, they should let the barangay know right away. A simple text or announcement goes a long way so residents can prepare and adjust. (LGU5)*	LGU1 LGU3 LGU5	3

Table 17 denotes the local government and customers' suggestions on improving communication with residents. The most dominant theme from the responses is Use of Technology and Communication Platforms, with seven recurrences. Both customers and local officials emphasized the urgent need for modernizing communication efforts. Recommendations included creating an official Facebook page, sending SMS alerts, using community bulletin boards, and setting up a 24/7 digital hotline. The participants noted that communication must be proactive, transparent, and easily accessible, especially during supply interruptions, maintenance schedules, and emergencies. Several highlighted that leveraging common technology platforms—like social media and customer relationship management systems—could improve trust, foster transparency, and help providers respond promptly to issues. Moreover, some suggested that digital engagement must be paired with inclusive practices, such as surveys and community dialogues, to ensure all stakeholders feel involved and heard. Meanwhile, the theme Strengthening Communication and Community Engagement appeared three times, focusing more on interpersonal and community-based strategies. Local government officials suggested the value of community consultations, direct barangay-level announcements, and consistent feedback mechanisms. These inputs reflect a recognition that while technology is crucial, localized, human-centered communication remains equally important to ensure people feel acknowledged and prepared, especially in rural or less digitally connected areas.

These themes align closely with the findings of Brown, Farrelly, and Loorbach (2023), who argue that digital innovations in water governance must be integrated with inclusive, participatory communication strategies. In their study of urban water services, they found that successful utility communication combines both technological tools and place-based engagement approaches to create trust, legitimacy, and more resilient service delivery. The authors emphasize that real-time updates, feedback channels, and transparency platforms significantly increase public satisfaction and reduce service-related frustrations.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 18 Local Government and Customers' Strategies for Water Conservation and Wastage Prevention

Themes	Defining Elements	Key Informants	Recurrences
Technical and Infrastracture Based Interventions	*First, the service provider should repair leaking water lines or tubes to prevent unnecessary loss. Educational seminars on water conservation should also be conducted for residents. Additionally, introducing incentive programs or awards for households that practice excellent water-saving habits could encourage community participation.* *Introducing strategies such as public awareness campaigns to educate residents on the importance of water conservation, promoting water-efficient appliances and fixtures, and implementing rainwater harvesting systems. A tiered water pricing system to incentivize conservation, regular leak detection and repair programs, and promoting water-saving practices in agriculture and industry could also be effective.* *In a more technical approach, the water service provider should incorporate or optimize better water system distribution materials, in a way that it can prevent water leakages while at the same time providing better service delivery. Another strategy which can help improve water conservation and prevent wastage in the community is improving public awarness and integrating programs on responsible usage. Community investment towards wastewater treatment can be also be possible in order to reduce water pollution while at the same time offering a new alternative for water resources.* *Weekly check-up with the water pipe, check the line of water if they are still working.* *Collect rainwater during the rainy season and use it during dry season.*	LGU1 LGU2 LGU4 C1 C4	6
Community Engagement and Behavioral Change	*They should conduct campaigns.* *Water-saving education campaigns, discounts or rewards for low-usage households, and fixing public leaks quickly would help.* *Encouraging rainwater harvesting could also be a sustainable solution.* *We can start small campaigns in the barangay to teach people how to save water. Also, fixing leaks fast and avoiding waste should be everyone's habit.* *We can work with the barangays to teach simple water-saving tips. We also need to act fast when there are leaks or busted pipes. Everyone has a part to play—let's use water wisely and not let it go to waste.*	C1 C2 LGU3 LGU5	4

Table 18 depicts the local government and customers' strategies for water conservation and wastage prevention. The more prevalent theme in this set is Technical and Infrastructure-Based Interventions, with five key informants emphasizing the need for structural improvements and systems-based solutions. participants recommended strategies such as regular pipe inspections, upgrading distribution systems to prevent leaks, and incorporating rainwater harvesting and wastewater treatment as alternative solutions to scarcity. Some suggested adopting tiered pricing systems to incentivize conservation and proposed education programs alongside infrastructure work, showing that effective water governance must include both physical systems and human behavior change. There was also an emphasis on regular maintenance routines, such as weekly pipe check-ups, which residents believed would prevent long-term supply issues and ensure better service delivery.

Meanwhile, Community Engagement and Behavioral Change appeared four times, indicating strong recognition that sustainable water use also depends on citizen awareness, participation, and daily habits. participants stressed the importance of campaigns in barangays to promote responsible water use, quick action on leaks, and community-wide conservation habits. Incentives, such as discounts or recognition for water-saving households, were also proposed. These statements suggest a collective understanding that water conservation is not only the provider's responsibility but a shared duty among citizens—requiring both top-down system improvements and bottom-up behavioral shifts.

These insights reflect the findings of Koch and Newig (2023), who argue that integrating infrastructure development with community engagement is essential for effective water governance. Their research demonstrates that while investments in physical systems like leak detection and rainwater harvesting are necessary, long-term conservation success depends on active

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

stakeholder participation, education, and co-produced solutions. Koch and Newig further emphasize that empowering communities to engage in everyday conservation practices enhances the impact of technical strategies and fosters a shared sense of accountability.

Table 19 Local Government and Customers' Perspectives on Inclusive and Equitable Water Services

Themes	Defining Elements	Key Informants	Recurrences
Financial and Structural Strategies for Inclusive Access	*Ensure remote areas and low-income families receive equal service. Use subsidized water plans and community taps.*	C4	8
	Implementing lower fees, such as reduced septage charges, can make water services more accessible. Moreover, expanding water line coverage should be done carefully to ensure that the availability and quality of supply are not compromised for existing consumers.	LGU1	
	To make water services more inclusive and equitable, the provider or LGU can prioritize affordable pricing structures, subsidies for low-income households, and targeted support for marginalized communities. Physical accessibility for people with disabilities and elderly residents must be ensured.	LGU2	
	Community-led water management initiatives and incorporating traditional knowledge can also help tailor water services to specific community needs.	LGU4	
	The best alternative for the service provider and the local government in ensuring inclusive and equitable water services for all residents or clients would be strengthening or incremental improvement of regulations and water resource programs. Through an improve water regulation, the residents or the clients would be provided top quality and sustainable water which is highly derserving for the service that they are paying for. Additionally, through improving and integrating water resource programs or systems, the residents are ensured equitable quantity and quality water due to a more developed water resource.	C1	
	Inclusive and equitable water resource.	C2	
	They should identify underserved areas and prioritize extending services there. Subsidies or discounts for marginalized groups and better coordination with barangay officials would promote equity.	C3	
	Create a memo which mandates the " bawas singil sa tubig" or "tubig para sa lahat" so that everyone can use.		
Equity in Geographical Distribution and Access (2)	*Everyone should get water, not just those in central areas. The farthest home must be included, and the water supply should be fair for all. (LGU3)*	LGU3	2
	Water service should reach everyone, not just those near the town proper. Even the farthest households deserve the same access. The supply must be fair, no matter where you live. (LGU5)	LGU5	

Table 19 displays the local government and customers perspectives on inclusive and equitable water services. The most frequently mentioned theme is Financial and Structural Strategies for Inclusive Access, appearing six times across both local government officials and community members. participants strongly emphasized that equitable water access goes beyond physical infrastructure—it must include affordable pricing models, subsidies for low-income families, and inclusive service coverage for marginalized sectors. Suggestions ranged from reducing fees (such as septage charges) to creating targeted policies like "tubig para sa lahat" (water for all) initiatives that ensure no resident is left behind. Additionally, there was a clear call for strengthened regulations and water resource programs to uphold service quality and reach, especially for vulnerable populations such as the elderly and people with disabilities. The participants also recognized the value of community-led water management and incorporating local knowledge systems to ensure culturally appropriate and sustainable solutions.

Meanwhile, the theme Equity in Geographical Distribution and Access was noted twice, both stressing that water delivery must be fair and inclusive for remote or peripheral areas, not just residents in central locations. The idea that "even the farthest households deserve the same access" highlights the geospatial inequalities often present in utility service delivery and the urgent need for equitable distribution mechanisms.

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These perspectives align with the findings of Sultana and Loftus (2023), who assert that water governance must intentionally address social and spatial inequalities. In their study on inclusive water access in Southeast Asia, they highlight how progressive pricing, decentralized infrastructure planning, and participatory governance contribute significantly to more equitable and sustainable water distribution. The authors emphasize that recognizing the differentiated needs of marginalized groups and geographic zones is critical to avoiding structural exclusion and fostering long-term water justice.

Table 20 Local Government and Customers' Views on the Role of Residents in Service Improvement and Compliance

Themes	Defining Elements	Key Informants	Recurrences
Active Participation and Feedback in Service Improvement (3)	*Residents should actively practice water conservation and stay engaged with both the service provider and local government. Their feedback and participation in policy discussions are vital for improving service delivery and ensuring compliance with the Water Code.* *Residents should participate in community engagement initiatives, report leaks and anomalies, and provide feedback to the service provider. They can promote water conservation practices, support efforts to protect water sources, and help hold the provider accountable. A collaborative approach is key to compliance and improved service delivery.* *The residents should take on the active role of an evaluator and user in improving water service delivery and in complying with the water code. Given that there are clients as well as part of the stakeholders, it is their job to provide opinions or feedback to their service provider in order to address problems or issues in terms of service provision. Additionally, it is the duty of the residents to conserve and utilize water usage in a responsible manner to avoid wasting water and contribution to water pollution.* *They should improve their service.*	LGU1 LGU2 LGU4 C1	4
Responsible Individual Action and Cooperation (4)	*Residents should report issues responsibly, conserve water, and participate in community feedback mechanisms. Active involvement in barangay-level water committees can also help monitor and improve services.* *Conserve and Control the usage of water. Residents should monitor services and participate in feedback mechanisms, such as water user associations.* *Don't be afraid to speak out about your experiences in water shortage. They should report leaks, avoid illegal connections, and use water wisely. If we all cooperate, service will get better for everyone.* *We encourage residents to report leaks, avoid illegal connections, and not waste water. If we all do our part, services can improve and reach more people in the right way. (LGU5)*	C2 C3 C4 C5 LGU3 LGU5	6

Table 20 indicates the local government and customers' views on the role of residents in service improvement and compliance. The theme with the most recurrences is Responsible Individual Action and Cooperation, appearing six times across both residents and local government officials. participants emphasized that water sustainability is not solely the responsibility of the service provider—it also requires the active cooperation of residents. Community members are expected to report leaks, avoid illegal connections, and adopt responsible water usage habits. Participation in barangay-level committees or feedback mechanisms was also highlighted as a means to help monitor and improve service quality. The participants reflect a shared belief that collective responsibility and behavioral change at the household level can significantly contribute to improved service delivery, reduced water waste, and better governance outcomes. This strong call for citizen cooperation suggests a recognition that top-down efforts will be more effective when complemented by bottom-up initiatives.

The theme Active Participation and Feedback in Service Improvement was mentioned four times, stressing the importance of residents engaging as evaluators, stakeholders, and feedback providers. Several informants noted that meaningful community involvement in policy discussions, monitoring, and compliance with the Water Code is essential to ensure that services are not only technically sufficient but also socially responsive. The idea of residents playing a dual role—as users and as partners in governance—points to a growing awareness of the democratization of water service delivery.

These themes are well-supported by the findings of Mullin and Hughes (2023), who argue that citizen participation and responsible engagement are fundamental to achieving sustainable and inclusive water governance. Their study on water utilities and community involvement highlights that when residents are empowered to co-produce solutions, report problems, and promote

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

conservation, the outcomes are not only more effective but also more equitable and resilient. They emphasize that shared responsibility leads to stronger public trust, faster problem resolution, and deeper compliance with water management policies.

➢ *Localized Water Delivery Service Policy Proposal*

This section outlines the proposed inputs from local government, service providers, and customers toward formulating a localized water service delivery policy. The assessment centers on fair service guidelines, the role of government in management, community-based monitoring, and balancing national Water Code provisions with the specific needs of Capas, Tarlac residents.

Table 21 Local Government, Customers, and Service Providers' Recommendations for Fair Service Delivery Guidelines

Themes	Defining Elements	Key Informants	Recurrences
Equity, Accessibility, and Affordability in Water Service Delivery (6)	*Policies must ensure equal access, transparency, affordability, and timely service. There should be penalties for non-performance.*	C4	9
	While the LGU has jurisdiction, encouraging competition among service providers can help prevent monopolies. This can lead to better service quality, fair pricing, and greater accountability, ensuring that no community is left underserved.	LGU1	
	In my opinion, it is important that we take into account the aspect of accessibility, equity and affordability in order to ensure fair water service delivery. As for the guidelines, the most important part is to ensure a reliable water quality standard as well as sustainable water supply. Through these aspect and guidelines, not only we will achieve fairness in water service delivery, we would also achieve an efficient and effective service provision.	LGU4	
	There should be a clear schedule for water supply, quick action on complaints, and equal distribution. All households—whether in the center or in remote areas—should get proper water service, especially during times of high demand.	LGU5	
	We ensure that water services are accessible, affordable, reliable and equitable and the most important it is safe drinking water.	SP1	
	Water-efficient technologies, pro-poor focus, leakage reduction.	SP3	
	All households, regardless of location, income level, or social status, must have equal access to safe and reliable water. C1	C1	
	Policies should require transparency, fair pricing, accessible feedback channels, and protection for vulnerable groups. Monitoring bodies should also be community-inclusive.	C2	
Transparency, Accountability and Legal Compliance (3)	*Include guidelines such as transparency in billing, non-discrimination, and accessibility for all residents.*	LGU2	4
	Responsiveness to complaints and feedback, accountability for service standards, and education on resident rights and responsibilities are also essential.	SP2	
	All water service delivery aligns strictly with the provisions of the Water Code and other applicable national and local regulations. This includes proper permitting. Furthermore, to uphold the integrity of our water systems and prevent unauthorized exploitation, any establishment found to have drilled wells or accessed water sources without the requisite permits must face appropriate penalties.	SP4	
	Apart from the guidelines, provisions and policies under the national and local water regulators, which the water company is obliged to comply with, to ensure fair service delivery, a standard Water Service Contract is normally provided by the water company to the costumers wherein the rights and obligations of the water company and	C3	

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

	costumers are detailed. A Service Law Agreement (SLA) is also established defining the level of service a customers expect, outlining the metrics by which the service is measured as well as remedies or penalties is agreed upon should service levels are not achieved. Priorities consumer experience.		
Operational Efficiency and Responsiveness (2)	*Clear schedules, fair distribution and fast response to complaints. Water must reach all households, especially during peak hours. Water should be shared fairly. Every area should have a regular schedule, quick action on complaints, and clear updates about interruptions. No household should be left behind.*	LGU3 SP5	2

Table 21 presents the local government, customers and service providers' recommendations for fair service delivery guidelines. The most frequently occurring theme is Equity, Accessibility, and Affordability in Water Service Delivery, mentioned by eight key informants. The responses emphasized that water should be considered a basic human right, and as such, service delivery must be inclusive, reliable, and just—regardless of a household's income, location, or social status. Informants called for clear schedules, affordable pricing structures, and universal access, especially during peak hours or in underserved areas. Several also suggested introducing competition among service providers to break monopolies, improve accountability, and elevate service standards. Moreover, the data reflect a strong desire for policies that protect vulnerable groups, integrate community feedback into planning, and promote a pro-poor approach in infrastructure development and tariff design. This combination of structural fairness and people-centered practices is seen as foundational to long-term improvements in water services.

The theme Transparency, Accountability, and Legal Compliance followed with four recurrences, underlining the importance of aligning water service operations with the Water Code of the Philippines and related regulations. Stakeholders called for publicly disclosed contracts, non-discriminatory policies, and performance accountability. Provisions such as Service Law Agreements (SLAs), transparency in billing, and responsiveness to consumer rights were presented as mechanisms to enhance trust and ensure that services are not only delivered but held to clear standards. The emphasis on legal compliance shows that many view transparency and regulatory enforcement as integral to fair service provision.

While operational Efficiency and Responsiveness appeared twice, but was still a critical concern. participants pointed out the importance of fair distribution, swift complaint response, and timely communication about service interruptions. These are viewed not just as customer service issues, but as essential indicators of an efficient and ethical utility system.

These community sentiments strongly align with the findings of Leong and De Souza (2023), who argue that water service equity must be addressed through integrated legal, institutional, and operational frameworks. Their study emphasized that accessibility, affordability, and transparency are not isolated components but must work synergistically to improve service outcomes and rebuild trust in public utilities. They also stress the need for adaptive service contracts, transparent billing systems, and participatory governance to enhance accountability and meet the needs of marginalized populations.

Table 22 Local Government, Customers, and Service Providers' Views on Local Government's Role in Water Policy Implementation

Themes	Defining Elements	Key Informants	Recurrences
Regulatory Oversight and Accountability (8)	*Hold them accountable.*	C5	11
	The local government should take a stronger oversight role.	C4	
	The local government should maintain close coordination with water providers and ensure regular monitoring of their compliance with environmental laws and regulations. Their active involvement will help ensure sustainable and responsible water management.	LGU1 LGU2	
	The local government should set clear policies, monitor compliance, enforce standards, engage the community, support provider capacity building, promote conservation, and allocate resources efficiently.	LGU4	
	The LGU should take on the active roles of an enforcer and regulator in terms of their involvement in water management and policy implementation. It is the duty of the LGUs in helping develop an efficient water infrastractures to ensure the provision of equitable, quality and accessible water. The LGUs should utilize their involvement by promoting or integrating seminars or workshops which can help reduce water pollution, promote water	SP2 SP3 SP4	

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

	recycling methods, and prioritizing water management concepts. In terms of policy implementation, it is imperative of the LGUs to be involved in adjusting towards the queries or evaluations of the residents as well as the water service providers in order to formulate and implement better water policies. *The LGU are involved in the process of proposing water rate increases to NWRB. Also, in monitoring and regulating water permits.* *Enforce and update water regulations, ensure compliance, clear guidelines for holding water service providers accountability.* *The Local Government or Municipality should create an oversight committee for water that will involved in the development of service delivery frameworks, policies or regulations, monitor its compliance therein and exercise its authority to sanction or reward the performance of the water company. Municipal planning initiatives can also support by incorporating water-saving measures into building codes and urban development plan to ensure protection of ouw water resources.* *There is a need for oversight committee.* *The local government should play a supervisory role—ensuring service standards are met, funding improvements when necessary, and supporting public awareness campaigns. C2* *Local Government role will be vital to execute policy and guidelines within the community. It can be a serious problem if it cannot be attended well.c3*	C1 C2 C3	
Collaboration, Planning and Coordination (3)	*LGU should coordinate with the water provider and help follow up on issues. We should also be part of planning and decision-making.* *The LGU should work closely with the provider to raise concerns and follow up on problems. We should also be part of planning and decision-making so we can speak for the people in our community.* *We believe the LGU should work closely with us. They can help collect feedback, support awareness drives, and join in planning so the water service truly fits the needs of the people.*	LGU3 LGU5 SP5	3
Governance Functions in Water Resource Management (1)	*The local government's plannand enforced water policies, protect water sources, ensures fair access, educate communities, monitor use, and support water projects. (sp1)*	SP1	1

Table 22 denotes the local government, customers, and service providers' views on local governments' role in water policy implementation. The dominant theme is Regulatory Oversight and Accountability, which was cited by 11 key informants, underscoring the urgent expectation that local government units (LGUs) take a more proactive and authoritative role in water governance. participants widely agreed that the LGU should not only act as a coordinator but also enforce service standards, monitor water quality and supply, propose rate adjustments to national agencies, and initiate seminars, campaigns, or policy revisions that promote sustainable practices. There is also a call for the creation of oversight committees empowered to enforce penalties or rewards based on service provider performance. This comprehensive view reveals a deep trust in the LGU's capacity to influence water equity, infrastructure improvements, and community education, especially when national oversight is limited or slow to respond.

The third theme, Governance Functions in Water Resource Management, appeared once, but remains highly relevant. It reflects a more systemic understanding that LGUs must not only deliver services but also protect water sources, enforce access equity, and support long-term development projects.

These insights align closely with the work of Araral and Wang (2023), who emphasize that decentralized and accountable local governance is crucial in the delivery of equitable and sustainable water services, particularly in developing regions. Their research shows that when LGUs exercise strategic oversight, implement fair regulatory frameworks, and foster active collaboration with providers and citizens, the quality, transparency, and inclusivity of water services significantly improve. Araral and Wang also argue that LGU-led governance models, when embedded in legal mandates and supported by capacity-building, lead to more resilient and community-responsive water systems.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Table 23 Local Government, Customers, and Service Providers' Perspectives on Community-Based Monitoring Mechanisms

Themes	Defining Elements	Key Informants	Recurrences
Community Led Monitoring and Feedback Mechanisms (7)	*Community Reporting Platforms, Transparency and Accountability Forums, Community-driven mechanisms foster ownership, encourage active participation, improve service responsiveness, and contribute to the long-term sustainability of water services in Capas. C1* *A local water users' council or barangay water monitoring team could serve as a watchdog group. Regular meetings and performance reports would also help sustain transparency and service quality. C2* *- Weekly reports per area so it will be easier to track the leakages and improve the system. C3* *Form community monitoring groups and establish barangay-level reporting systems.* *Community-driven monitoring mechanisms, such as resident-led oversight committees or feedback reporting systems, can help sustain and improve water services. These allow for real-time reporting of issues and increased accountability from providers.* *Mechanisms such as water user associations, community-led water committees, and volunteer water monitors can encourage transparency, accountability, and participation in water-related decisions and actions.* *Each barangay can have a water committee to report problems and give feedback. This way, the provider know what's really happening on the ground.* *We can form barangay water teams that monitor supply and report problems. This will help the provider understand what's really happening in each area and respond faster.* *Water supply is an essential public service, which must be protected by the local government and the community particularly on the barangay level.* *There should also be a water committee in the barangay that will look after the concerns of the people related to the water service and bring this to the water company or municipal government as necessary.* *Barangays can form local water teams to help monitor the supply, report problems, and guide residents on how to use water wisely.* *Community involvement makes service more effective.*	C4 LGU1 LGU2 LGU3 LGU5 SP4 SP5 C1 C2 C3	11
Community Empowerment through Feedback, Volunteering and Awarness (2)	*Some examples of the community-based mechanisms which could helo the monitoring and sustaining of water service in Capas, Tarlac would of course be community feedback and volunteering. Feedback from the community itself would be one of the major factors in identifying problems or issues within the service provision aspect which is important in monitoring and sustaining water services in our municipality. Additionally, community volunteering to help raise awareness and promote responsible water usage while at the same time addressing water pollution is quite effective in ensuring sustainable water services.* *The company ensures that the water services are well-managed, and responsive to community needs.*	LGU4 SP1	2
Supportive and Complementary Barangay Led Initiatives (2)	*Promote barangay-level demonstration projects for rainwater harvesting.* *Improving revenue collection to ensure financial stability and sustainability of water providers.*	SP2 SP3	2

Table 23 depicts the local government, customers, and service providers' perspectives on community-based monitoring mechanisms. The most prominent theme identified is Community-Led Monitoring and Feedback Mechanisms, cited by 11 key informants. participants expressed a strong desire for grassroots involvement in monitoring and reporting water service issues, highlighting the creation of barangay water committees, local water users' councils, and resident-led feedback forums. These mechanisms are viewed as crucial for promoting transparency, timely problem resolution, and provider accountability. Moreover, these community-driven initiatives are believed to foster a sense of ownership and collective responsibility, especially when water

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

supply interruptions, leakage problems, or service gaps occur. Several responses emphasized the need for regular updates, weekly area-level reporting, and open channels for communication between residents and service providers. The underlying belief is that when citizens are engaged as watchdogs, the quality and responsiveness of public utilities significantly improve.

A secondary theme, Community Empowerment through Feedback, Volunteering, and Awareness, appeared twice. It underscores how community participation, public awareness campaigns, and volunteerism can complement formal governance systems. Informants suggested that educating residents about water conservation and pollution prevention, combined with encouraging community-based feedback systems, would contribute to the sustainability and effectiveness of service delivery.

The third theme, Supportive and Complementary Barangay-Led Initiatives, was also mentioned twice, with suggestions such as promoting rainwater harvesting demonstration projects and improving revenue collection at the barangay level to support water service providers' financial sustainability. These responses indicate a growing awareness that barangays play a pivotal role not just in feedback but also in mobilizing resources and infrastructure development.

These findings are aligned with the conclusions of Giné-Garriga et al. (2022), who emphasize that community monitoring structures and citizen engagement directly improve water service performance. Their research across rural and peri-urban communities shows that active user participation, particularly through feedback platforms and decentralized monitoring, results in faster repairs, reduced service disruptions, and increased satisfaction. The authors argue that embedding community roles into water governance can lead to more resilient and inclusive service systems, especially when local governments support and formalize these grassroots efforts.

Table 24 Local Government, Customers, and Service Providers' Suggestions on Best Practices Adapted from Other Areas

Themes	Defining Elements	Key Informants	Recurrences
Water-Saving Innovations and Technology Based Approaches (3)	*The use of efficient irrigation systems from agricultural areas can be adapted for both farming and residential use in Capas. These systems reduce water waste and maximize supply efficiency, which can be especially helpful in areas with limited resources.* *Invest in Smart Water Meters to reduce NRW. And, encourage the community to conserve water by promoting rainwater harvesting in household and schools for non-potable uses like flushing and gardening.* *Explore other water resources development like the use of surface water instead of relying only on grpund water sources. Explore other technologies that would improve water quality and efficient water operations.* *Use prepaid water meters.* *Some towns use prepaid water meters, community rainwater tanks, or real-time update apps for outages. These could be adopted and adjusted to fit Capas' context and needs.* *Open communication, first using the technology to accommodate the issues and concern and second is using the modern facility or equipment to provide better within the community.*	LGU1 SP2 SP4 C1 C2 C3	7
Alternative Supply Strategies and Rainwater Utilization (7)	*Some towns used scheduled water distribution or backup tanks. We can also explore rainwater collection in areas with weak supply.* *Some towns use scheduled supply systems or have storage tanks for backup.* *We can also look into rainwater harvesting for watering plants or cleaning, especially in places with weak supply.* *Implementing rainwater harvesting systems.* *We can follow what other towns do—like water delivery schedules during shortages, rainwater storage for cleaning, and extra tanks in high-use areas. These can help reduce pressure on the main system.* *Use prepaid water meters, rainwater collection systems, and community-based water associations.* *Don't be like Prime Water please.*	LGU3 LGU5 SP3 SP5 C4 C5	7
Community Engagement, Infrastructure Improvement and Governance	*The Balibago Waterworks System Inc. has one approach and will not copy other companies' approach because we know we have better and more effective ways to give the best water distribution in the Philippines.* *Community-managed water systems, rainwater harvesting, greywater reuse, and participatory governance from other areas could be adapted.* *Water-saving technologies and decentralized management approaches may also be beneficial.*	SP1 LGU2 LGU4	1

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(3)	*I believe that there is not much practices or approaches from other areas to which we can apply to our town since our practices and approaches are mostly similar with theirs. Rather, we should focus on improving water infrastructures, systems and accessibility.*		

Table 24 shows the local government, customers, and service providers' suggestions on best practices adapted from other areas. The most frequently mentioned theme in this set of responses is Alternative Supply Strategies and Rainwater Utilization, with seven recurrences. Informants advocated for replicating practices from other towns such as scheduled water distribution, use of backup storage tanks, and community-level rainwater harvesting systems. These approaches were viewed as practical interim solutions to alleviate pressure on existing infrastructure, particularly in areas prone to water shortages. participants also emphasized the utility of rainwater for non-potable purposes like cleaning, flushing, and irrigation, recognizing that diversifying supply sources is critical for both resilience and sustainability. The push for community-based water associations was also raised, highlighting the importance of localized water governance in promoting both efficiency and equity.

The second theme, Water-Saving Innovations and Technology-Based Approaches, appeared six times. Suggestions included smart water meters, prepaid water systems, real-time update apps, and open communication channels supported by digital platforms. Participants stressed the potential of surface water development and efficient irrigation systems for both agricultural and domestic use. These technologies, when integrated into Capas' existing infrastructure, could drastically reduce non-revenue water (NRW), encourage conservation, and improve customer service.

The theme Community Engagement, Infrastructure Improvement, and Governance was noted three times, emphasizing participatory governance, infrastructure upgrades, and learning selectively from the successes of other municipalities. While some informants felt their local systems were already aligned with regional practices, others saw value in adapting decentralized water management models and greywater reuse systems used in other areas to improve accessibility and resilience.

These findings are consistent with the insights of Matous (2023), who stresses that adaptive and locally tailored innovations—particularly in water-saving technologies and alternative supply systems—are most effective when accompanied by strong governance and active community involvement. His research in Southeast Asia highlights that successful water management in resource-constrained areas hinges on combining technological adaptability, community participation, and flexible governance structures to create resilient and inclusive service models.

Table 25 Local Government, Customers, and Service Providers' Perspectives on Balancing the National Water Code with Local Needs

Themes	Defining Elements	Key Informants
Alignment with National Standards while Adapting to Local Needs (4)	*A localized water policy for Capas should honor the national Water Code's mandates while being tailored to the community's unique circumstances through active participation, flexibility, and practical enforcement. This balance ensures legal compliance and meaningful, sustainable water management at the local level. C1*	C4
	The policy should comply with national standards while being flexible enough to address local issues such as seasonal droughts, infrastructure gaps, and population growth. Regular consultations with residents should guide this balance. C2	LGU1
	-Everyone who use water should be heard for a balance and fair execution of policies provided by the water code.c3	LGU4
	A localized policy should address Capas's rural and urban needs while meeting national standards. Local voices must be included.	SP1
	A localized policy should align with the national Water Code while addressing the specific needs of Capas residents. This includes setting clear compliance standards for all providers, establishing strong monitoring mechanisms, and adapting solutions based on the community's unique challenges and resources.	C1
	This can be achieved by applying and mapping out the water service provision in a local concept, which is in this case, is our Municipality of Capas. To balance a localized policy together with the National Water Code requirements, tailoring strategues or solutions as dependent towards the unique needs of the residents within Capas can be a method.	C2
	Follow the National Water Code, protect local water sources, ensure fair access, address local needs and promote community participation and conservation.	C3
Community Participation and Local	*The policy must reflect the national framework while integrating Capas-specific factors such as local water sources, cultural norms, and economic realities. A participatory approach involving stakeholders ensures relevance and compliance.*	LGU2
	We follow the water code, but we also need solutions that fit our situation here in Capas. Local input is important so that policies really work for the people.	LGU3 LGU5 SP2

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

Stakeholder Involvement	*We respect the Water Code, but we also need to adjust it to fit our local situation. With the help of our people, we can come up with better solutions that truly work for Capas. Alignment and monitoring of the approved water permit.* *We support the Water Code, but we also believe it should be flexible to fit Capas' needs. Every town is different, so local feedback and experience should help shape the policies we follow.*	C5 SP4
Governance, Monitoring and Institutional Support	*I am not familiar with the unique needs of the Capas, Tarlac residents, just stating in general. The local government should established policies and service delivery frameworks that will protect the rights of the water users. The local government should consistently monitor the performance or compliance of the water company as to what the local policy requires, to ensure that residents are receiving the good water service that the water company must provide. Similarly, the local government should also support and provide the assistance that the water company need to efficiently perform its duties and obligations as the water service provider of the municipality.*	Sp3

Table 25 displays the local government, customers, and service providers' perspectives on balancing the National Water Code with Local Needs. The most prominent theme across the responses is Community Participation and Local Stakeholder Involvement, with five recurrences. Informants consistently emphasized that while the national Water Code serves as a foundational legal guide, policies must integrate local realities—such as water availability, economic constraints, and cultural norms—to ensure their relevance and effectiveness. The sentiment shared was that residents must have a voice in shaping water-related policies to foster compliance, sustainability, and trust. Local feedback and participation were viewed as essential not only for shaping the content of the policy but also for ensuring its effective implementation and responsiveness to evolving community needs.

The second theme, Alignment with National Standards while Adapting to Local Needs, was noted four times. Informants pointed to the importance of balancing national legal mandates with Capas's specific geographic and socio-economic conditions, such as seasonal droughts and growing household demand. They called for tailored enforcement mechanisms, flexible policy provisions, and active public consultation to ensure both legal compliance and practicality in implementation. There was strong support for localized planning frameworks that uphold the principles of the Water Code while remaining sensitive to the distinct needs of Capas's urban and rural populations.

The theme of Governance, Monitoring, and Institutional Support was mentioned once but raised a critical point: the role of the local government in establishing enforcement frameworks, regularly monitoring provider performance, and offering institutional support to service providers. These measures were seen as essential for ensuring residents receive equitable, reliable, and legally compliant water services.

These findings resonate with Alejandro and Candelaria (2023), who argue that decentralizing water governance—while ensuring national legal alignment—enhances community empowerment, fosters transparency, and improves service delivery outcomes in Philippine municipalities. Their study emphasizes that bridging national policy with localized application through stakeholder engagement is crucial in addressing water access disparities and improving governance in water-scarce regions.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

CHAPTER FIVE
SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATION

This section presents a thorough summary of the study's findings and conclusions, carefully derived from an in-depth analysis aligned with the research questions. In addition, preliminary recommendations are offered, ensuring consistency with the conclusions reached.

A. Summary of Findings

➢ *Compliance with the Water Code of the Philippines (PD 1067 of 1976)*

- *Customers and Service Providers' Perspectives on Efforts Aligning with the Water Code*

The theme "Inconsistent or Inadequate Effort in Sustained Compliance with the Water Code" emerged with the highest number of recurrences (5), reflecting a strong perception among residents that while there are visible initiatives, these fall short of achieving consistent, equitable, and sustainable water service delivery in Capas. Conversely, the theme "Community Engagement and Environmental Stewardship" had the least number of recurrences (2), indicating that these aspects are either underdeveloped or not visible enough to the public.

- *Customers and Service Providers' Perspectives on Recognition and Management of Water Ownership*

The theme "Issues of Water Ownership, Commercialization, and Limited Public Involvement" emerged with the highest number of recurrences (3), highlighting ongoing concerns among residents in Capas regarding the privatized handling of a public resource. Interestingly, the theme "Commitment to Shared Responsibility and Fair Water Management" also had 3 recurrences but came entirely from service provider key informants. On the other hand, the theme "Perceived Lack of Long-term Planning and Fair Distribution" had the least recurrences (2), yet it echoes a critical structural issue—the absence of visible strategic plans for sustained water access and equitable allocation.

- *Customers and Service Providers' Perspectives on Appropriation and Utilization of Water Resources*

The theme "Water Quality Issues, Ownership Concerns, and Fair Access Challenges" emerged with the highest frequency (5 recurrences), underscoring persistent community unease regarding water service delivery in Capas. Statements highlighted concerns about foul odors, unclear ownership models, opaque distribution practices, and the absence of long-term planning. Collectively, these reflect a community experience of water as a commercial commodity rather than a shared public resource—despite legal frameworks emphasizing water as a collective right. Meanwhile, the theme "Inclusive Governance and Regulatory Enforcement Gaps" was mentioned only once (by SP4), which suggests that although regulatory mechanisms such as water permits exist, local enforcement and inclusive governance remain underemphasized in both the discourse and community awareness, pointing to a potential governance blind spot.

- *Customers and Service Providers' Perspectives on Sustainable use of Water Resources*

The most frequently mentioned concern among participants is sustainability challenges and inconsistent water supply, which occurred three times. Informants emphasized that water shortages are a daily issue, with supply often unavailable in the mornings and resuming at noon. On the other hand, the least recurring theme, with only one mention, pertains to the domestic and agricultural uses of water in semi-rural communities. This theme acknowledged the dual use of water for household needs and small-scale agriculture such as backyard gardening and livestock. However, this issue appears to be overshadowed by more pressing concerns related to water access and service reliability. The lower recurrence may indicate that while usage is important, it becomes a secondary discussion when the basic need for consistent water availability is not being met.

- *Customers and Service Providers' Perspectives on Control and Conservation Measures*

The most prominent theme with four occurrences is Customer Perceptions on Lack of Proactive Conservation and Service Deficiencies. Community members consistently expressed frustration that conservation efforts are largely reactive—such as occasional rationing—and that visible, proactive, and community-oriented initiatives are severely lacking. In contrast, the least mentioned theme, appearing only once, is Perceived Service Inadequacy and Lack of Long-term Solutions—a single informant noted that the provider "cannot give a proper solution to what is lacking."

➢ *Common Problems Encountered in Service Delivery*

- *Customers' Perspectives on Difficulties in Accessing Clean and Reliable Water*

The most prominent theme is Service Interruptions and Inconsistent Water Flow, which appeared three times. Informants reported that power outages often coincide with water service halts, and that water pressure is frequently low, inconsistent, and occasionally of poor quality—sometimes discolored or foul-smelling. In comparison, the other themes—Dependency on Alternative Water Sources, Water Quality and Health Risks, Delayed Service Response, and Negative Effects on Daily Life—each appeared twice.

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- *Customers' Perspectives on Recurring Issues in Water Availability or Scheduling*

Based on the gathered data, two themes emerged with equal highest recurrence, each appearing twice: Perceived Lack of Compliance and Alignment with the Water Code, and Inconsistent Water Pressure and Irregular Supply. Simultaneously, issues related to inconsistent water pressure and irregular supply were frequently mentioned. Residents shared that water is strong only at certain times and unreliable during peak hours, making daily routines difficult.

- *Customers' Perspectives on Challenges in Water Quality and Sanitation*

Based on the analysis of respondent feedback, the most frequently cited issue is Unreliable Water Quality and Health-Related Concerns, which appeared three times. Informants mentioned that while the water is generally clean, there have been occasional occurrences of foul odor or murkiness. In contrast, the least recurring theme, appearing only once, is Lack of Transparency and Inefficiency in Water Distribution.

- *Customers' Perspectives on Service Delays, Repairs, or Maintenance Concerns*

The most frequently cited concern is Poor Response Time and Lack of Communication, with three mentions. Informants described experiences of delayed repairs—sometimes requiring days and multiple follow-ups—with minimal updates or acknowledgment from the service provider. This lack of timely communication forces communities to rely on their own coping strategies and erodes trust in the provider's reliability. In contrast, the theme Unsustainable Use of Water Resources and Frequent Shortages was mentioned twice. participants pointed to a lack of visible planning or sustainable practices to ensure consistent supply during peak demand periods. While this signals underlying systemic issues, it appears less urgent to users than the day-to-day frustrations tied to service responsiveness and engagement.

- *Customers' Perspectives on Effects of Service Problems on Daily Life, Health, and Productivity*

The most frequently cited issue is Impact on Daily Life, Hygiene, and Well-being, which appeared three times. Informants shared that water service disruptions significantly interfere with daily routines—especially for families with young children or elderly members—and undermine health, hygiene, and even economic stability. One respondent described how water outages "break morning routines," making it difficult to prepare for school or work. In contrast, the theme Lack of Conservation Efforts and Low Awareness was cited twice. participants noted that because water scarcity isn't widely perceived as urgent, conservation is not prioritized. The absence of visible conservation campaigns or educational initiatives contributes further to low awareness about sustainable water practices.

➢ *Responsiveness and Accountability*

- *Customers' Perspectives on Communication Process with the Service Provider*

Based on the feedback, the most frequently cited theme is Multiple but Fragmented Communication Channels, mentioned three times. Informants reported using various methods—Messenger, walk-ins at local offices or community leaders, and calling direct cellphone numbers—to contact the service provider. While these multiple channels offer options, they indicate a lack of centralized and streamlined communication that can lead to inconsistent follow-ups, confusion, and potential gaps in issue resolution. By contrast, the themes Difficulties in Communication with the Service Provider and Inefficient Complaint-Handling Process were each noted once. One informant described the difficulty in reaching the provider at all, and several mentioned that complaints submitted via hotline or barangay offices are handled inefficiently, requiring persistent follow-up.

- *Customers' Perspectives on Response to Reported Problems or Irregularities*

From the collected responses, the most prominent themes are Delayed or No Response to Customer Complaints and Inconsistent Responsiveness and Need for Service Improvement, each appearing twice. participants expressed dissatisfaction with the response rate of the service provider—some reporting that replies are slow or entirely absent, while others noted inconsistency in how and when issues are addressed. Although some residents acknowledged that problems are sometimes resolved, they emphasized that the unpredictability of response undermines confidence in the service system. The theme Acceptable but Limited Response Time appeared once, with one respondent mentioning that service requests are typically addressed within one to two days. This indicates that while there are pockets of acceptable service, these experiences are not consistent across the broader customer base. The coexistence of both negative and neutral experiences suggests a need for more standardized response protocols and stronger accountability mechanisms.

- *Customers' Experiences of Being Responsibly Attended To*

Each of the four identified themes in this set appeared only once, indicating a wide range of individual concerns related to water service delivery. However, taken collectively, they all point to a common issue: poor responsiveness and inadequate follow-through from the service provider. One informant emphasized the impact of water interruptions on livelihood, particularly in rural or semi-rural settings where water is essential not just for household use but also for caring for animals and plants. Another raised the lack of action on reported issues—highlighting that repeated concerns are often left unresolved. Further, a respondent reported poor follow-up after an incident of low water pressure; despite contacting the provider, no one arrived, and no updates were given. Lastly, another customer detailed a delayed repair and stressful follow-up process, which required multiple attempts before a

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

leaking pipe was finally addressed. These responses reflect a shared experience of frustration, inefficiency, and emotional stress, especially when basic household needs are affected and communication is unclear or nonexistent. The community's perception is not just about the presence or absence of water, but about the quality of service, reliability, and how respectfully and efficiently concerns are addressed.

- *Customers' Perspectives on Transparency in Decision-Making*

The most dominant theme emerging from the responses is Lack of Transparency and Need for Improved Communication, cited five times by all key informants. participants expressed strong dissatisfaction with the way water service providers communicate—or fail to communicate—important information. Issues raised include the absence of advance notices about service interruptions, minimal updates on repairs or maintenance, and lack of clarity around water rate changes or long-term service plans. Several participants noted that decisions are made without informing the community, leaving residents unprepared and feeling excluded from matters that directly affect their daily lives. Even though some communication channels exist, they are not used consistently or proactively, resulting in a perceived gap between service providers and their consumers.

- *Customers' Views on the Accountability of the Service Provider to the Community*

The theme with the highest number of recurrences is Community Expectations on Responsible and Responsive Service, cited three times. participants emphasized that accountability goes beyond simply fixing problems—it also requires timely communication, consistent engagement, and visible participation in community processes. Meanwhile, the theme Lack of Visible Accountability and Public Engagement appeared twice, pointing to concerns that the provider often operates with minimal transparency or community interface.

➢ *Suggestions or Recommendations for Improvement Changes or Improvement Recommended*

- *Local Government and Customers' Recommendations for Improving Water Service Delivery*

The theme with the most recurrences is Call for Communication, Engagement, and Community Involvement, appearing seven times across key informants from both customers and local government units (LGUs). participants emphasized that improving water services requires more than technical fixes—it also demands greater transparency, responsiveness, and inclusion of community voices in planning and decision-making. Recommendations included informing residents in advance of outages, conducting customer consultations such as focus group discussions, and establishing channels for two-way communication. Multiple informants pointed out the gap between the service provider and its users, especially when it comes to handling complaints and anticipating local needs. The call for community engagement, communication strategies, and participatory governance reflects a shift in expectations—residents want not only functional services but also to be treated as partners in service improvement. On the other hand, the theme Recommendations for Infrastructure and Service Improvement was mentioned three times. Suggestions here focused on technical solutions: improving the reliability of the water supply, upgrading treatment systems, ensuring regular pipe maintenance, and accelerating repair of leaks.

- *Local Government and Customers' Suggestions on Improving Communication with Residents*

The most dominant theme from the responses is Use of Technology and Communication Platforms, with seven recurrences. Both customers and local officials emphasized the urgent need for modernizing communication efforts. Recommendations included creating an official Facebook page, sending SMS alerts, using community bulletin boards, and setting up a 24/7 digital hotline. The participants noted that communication must be proactive, transparent, and easily accessible, especially during supply interruptions, maintenance schedules, and emergencies. Meanwhile, the theme Strengthening Communication and Community Engagement appeared three times, focusing more on interpersonal and community-based strategies. Local government officials suggested the value of community consultations, direct barangay-level announcements, and consistent feedback mechanisms.

- *Local Government and Customers' Strategies for Water Conservation and Wastage Prevention*

he more prevalent theme in this set is Technical and Infrastructure-Based Interventions, with five key informants emphasizing the need for structural improvements and systems-based solutions. participants recommended strategies such as regular pipe inspections, upgrading distribution systems to prevent leaks, and incorporating rainwater harvesting and wastewater treatment as alternative solutions to scarcity. Meanwhile, Community Engagement and Behavioral Change appeared four times, indicating strong recognition that sustainable water use also depends on citizen awareness, participation, and daily habits.

- *Local Government and Customers' Perspectives on Inclusive and Equitable Water Services*

The most frequently mentioned theme is Financial and Structural Strategies for Inclusive Access, appearing six times across both local government officials and community members. Meanwhile, the theme Equity in Geographical Distribution and Access was noted twice, both stressing that water delivery must be fair and inclusive for remote or peripheral areas, not just residents in central locations.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

- *Local Government and Customers' Views on the Role of Residents in Service Improvement and Compliance*

The theme with the most recurrences is Responsible Individual Action and Cooperation, appearing six times across both residents and local government officials. The theme Active Participation and Feedback in Service Improvement was mentioned four times, stressing the importance of residents engaging as evaluators, stakeholders, and feedback providers. Several informants noted that meaningful community involvement in policy discussions, monitoring, and compliance with the Water Code is essential to ensure that services are not only technically sufficient but also socially responsive. The idea of residents playing a dual role—as users and as partners in governance—points to a growing awareness of the democratization of water service delivery.

➢ *Localized Water Delivery Service Policy Proposal*

- *Local Government, Customers, and Service Providers' Recommendations for Fair Service Delivery Guidelines*

The most frequently occurring theme is Equity, Accessibility, and Affordability in Water Service Delivery, mentioned by eight key informants. The responses emphasized that water should be considered a basic human right, and as such, service delivery must be inclusive, reliable, and just—regardless of a household's income, location, or social status. Informants called for clear schedules, affordable pricing structures, and universal access, especially during peak hours or in underserved areas. The theme Transparency, Accountability, and Legal Compliance followed with four recurrences, underlining the importance of aligning water service operations with the Water Code of the Philippines and related regulations. Stakeholders called for publicly disclosed contracts, non-discriminatory policies, and performance accountability.

- *Local Government, Customers, and Service Providers' Views on Local Government's Role in Water Policy Implementation*

The dominant theme is Regulatory Oversight and Accountability, which was cited by 11 key informants, underscoring the urgent expectation that local government units (LGUs) take a more proactive and authoritative role in water governance. participants widely agreed that the LGU should not only act as a coordinator but also enforce service standards, monitor water quality and supply, propose rate adjustments to national agencies, and initiate seminars, campaigns, or policy revisions that promote sustainable practices. There is also a call for the creation of oversight committees empowered to enforce penalties or rewards based on service provider performance. The third theme, Governance Functions in Water Resource Management, appeared once, but remains highly relevant. It reflects a more systemic understanding that LGUs must not only deliver services but also protect water sources, enforce access equity, and support long-term development projects.

- *Local Government, Customers, and Service Providers' Perspectives on Community-Based Monitoring Mechanisms*

The most prominent theme identified is Community-Led Monitoring and Feedback Mechanisms, cited by 11 key informants. participants expressed a strong desire for grassroots involvement in monitoring and reporting water service issues, highlighting the creation of barangay water committees, local water users' councils, and resident-led feedback forums. The third theme, Supportive and Complementary Barangay-Led Initiatives, was also mentioned twice, with suggestions such as promoting rainwater harvesting demonstration projects and improving revenue collection at the barangay level to support water service providers' financial sustainability. These responses indicate a growing awareness that barangays play a pivotal role not just in feedback but also in mobilizing resources and infrastructure development.

- *Local Government, Customers, and Service Providers' Suggestions on Best Practices Adapted from Other Areas*

The most frequently mentioned theme in this set of responses is Alternative Supply Strategies and Rainwater Utilization, with seven recurrences. Informants advocated for replicating practices from other towns such as scheduled water distribution, use of backup storage tanks, and community-level rainwater harvesting systems. These approaches were viewed as practical interim solutions to alleviate pressure on existing infrastructure, particularly in areas prone to water shortages. The second theme, Water-Saving Innovations and Technology-Based Approaches, appeared six times. Suggestions included smart water meters, prepaid water systems, real-time update apps, and open communication channels supported by digital platforms. Finally, the theme Community Engagement, Infrastructure Improvement, and Governance was noted three times, emphasizing participatory governance, infrastructure upgrades, and learning selectively from the successes of other municipalities. While some informants felt their local systems were already aligned with regional practices, others saw value in adapting decentralized water management models and greywater reuse systems used in other areas to improve accessibility and resilience.

- *Local Government, Customers, and Service Providers' Perspectives on Balancing the National Water Code with Local Needs*

The most prominent theme across the responses is Community Participation and Local Stakeholder Involvement, with five recurrences. Informants consistently emphasized that while the national Water Code serves as a foundational legal guide, policies must integrate local realities—such as water availability, economic constraints, and cultural norms—to ensure their relevance and effectiveness. The second theme, Alignment with National Standards while Adapting to Local Needs, was noted four times. Informants pointed to the importance of balancing national legal mandates with Capas's specific geographic and socio-economic conditions, such as seasonal droughts and growing household demand. Lastly, the theme of Governance, Monitoring, and Institutional Support was mentioned once but raised a critical point: the role of the local government in establishing enforcement frameworks, regularly monitoring provider performance, and offering institutional support to service providers. These measures were seen as essential for ensuring residents receive equitable, reliable, and legally compliant water services.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

B. Conclusions:

➢ *Based on the Summary of Findings, the Following Conclusions ae Created:*

- Both customers and service providers recognize that while some initiatives reflect alignment with the Water Code, compliance remains inconsistent and unsustained. Persistent concerns about ownership, quality, access, and equitable utilization point to systemic gaps in planning, governance, and transparency. Service providers acknowledge shared responsibility, but residents remain unconvinced due to visible service deficiencies. Overall, the findings indicate that compliance with the Water Code in Capas, Tarlac is fragmented, requiring stronger regulatory enforcement, sustainable planning, and proactive community engagement.
- The most pressing challenges in water service delivery revolve around interruptions, poor water quality, irregular supply schedules, and delayed repairs. These issues not only disrupt daily routines but also compromise health, hygiene, and productivity. Although some systemic concerns such as conservation and sustainability were noted, customers' priority remains the need for consistent, safe, and reliable water services. The recurring problems reveal that the service provider's current strategies are insufficient to meet community needs, underscoring the urgency of improving infrastructure, efficiency, and responsiveness.
- Customer experiences reveal widespread dissatisfaction with how service providers respond to concerns and uphold accountability. Multiple communication channels exist, but they are fragmented and inefficient, often resulting in poor follow-up and delayed problem resolution. Transparency in decision-making is a major weakness, leaving residents feeling excluded from important service-related matters. While some efforts to respond were acknowledged, these are inconsistent and fail to build trust. Collectively, the findings highlight the need for standardized response mechanisms, stronger transparency, and more visible accountability to restore community confidence in water governance.
- Both customers and local government units strongly advocate for improved communication, engagement, and inclusivity in water service delivery. The recurring recommendations point to the dual need for technical solutions—such as infrastructure upgrades and conservation systems—and participatory governance, where residents are involved as partners in decision-making. Calls for transparency, proactive communication, and equitable access reflect a community expectation that water services must be not only functional but also fair and socially responsive. Ultimately, the findings emphasize that sustainable improvement will require both structural investments and greater collaboration between providers, government, and residents.
- The proposed policy directions emphasize that water must be treated as a basic human right, with service delivery grounded in equity, affordability, and accessibility. Stakeholders see the local government as central in enforcing accountability, monitoring performance, and integrating community-led mechanisms. Best practices from other areas—such as rainwater harvesting, technology-driven monitoring, and participatory governance—offer practical models that can be adapted to Capas. Balancing national Water Code mandates with local realities remains essential to ensure relevance and sustainability. The findings suggest that a localized, inclusive, and transparent water policy is key to addressing service gaps and fostering long-term resilience.

C. Recommendations:

Based on the conclusions, the following recommendations are designed.

- Strengthen compliance with the Water Code by institutionalizing regular monitoring and transparent reporting of water ownership, allocation, and conservation measures. This can be done through joint initiatives between the Local Government Unit (LGU) and service providers, with active participation of community representatives in oversight committees. By creating clear reporting channels and requiring periodic community consultations, both compliance and accountability can be ensured.
- Improve water service reliability by upgrading infrastructure, investing in backup systems (e.g., storage tanks, generators), and establishing faster response teams. This should be implemented by the service providers with LGU supervision, ensuring that preventive maintenance schedules are followed and emergency response protocols are in place. Community representatives can also be tapped to provide feedback on recurring service issues to guide improvements.
- Establish a standardized, centralized communication and complaint-handling system to ensure timely responses and transparency. This can be achieved by creating a 24/7 hotline, SMS alert system, and official social media platforms managed directly by the service provider and monitored by the LGU for accountability. Regular public forums and community assemblies should also be organized to strengthen provider-customer trust.
- Enhance water service delivery through a dual strategy of technical upgrades (pipe maintenance, leak repairs, water treatment) and community engagement programs (awareness campaigns, conservation drives). The LGU should facilitate community consultations, while the service providers implement the technical solutions. Residents, in turn, should actively participate by attending consultations, practicing conservation, and serving as partners in monitoring compliance.
- Formulate and adopt a localized water delivery service policy that integrates equity, sustainability, and accountability. This should be developed through a multi-stakeholder committee composed of the LGU, service providers, and resident representatives. The committee should benchmark best practices (e.g., rainwater harvesting, technology-based monitoring), align them with national Water Code standards, and adapt them to Capas's unique needs. Implementation should include clear guidelines, enforcement mechanisms, and continuous evaluation to ensure fairness and long-term resilience.

ISSN No:-2456-2165 https://doi.org/10.38124/ijisrt/25sep1032

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