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Coping Strategies of Households in Bulaklakan, Lipa City During Water Shortages: A Qualitative Study

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Abstract: ***Water shortages continue to challenge many communities in the Philippines, including Barangay Bulaklakan in Lipa City, where households frequently experience unreliable water supply, environmental fluctuations, and increasing demand. This study explored the causes of water shortages, the coping strategies used by households, and the effects of these shortages on their daily routines, sanitation, and well-being. Using a descriptive qualitative research design, ten households responsible for managing water use were purposely selected and interviewed through validated open-ended questions. The responses were transcribed and analyzed using Thematic Analysis to identify patterns and major themes. The findings reveal that water scarcity stems from environmental factors, infrastructural conditions, population growth, and unsustainable water use. Households cope by storing water in containers, harvesting rainwater, reducing usage, reusing water for multiple tasks, sharing with neighbors, and relying on alternative sources such as purchased water, public faucets, deep wells, or natural springs. However, these alternatives often require added time, cost, or physical effort. Water shortages significantly affect daily tasks such as cooking, bathing, cleaning, and laundry, resulting in compromised hygiene, increased expenses, physical fatigue, and emotional stress. Overall, the study highlights the multidimensional impact of water scarcity on households and underscores the need for improved community collaboration, strengthened water management practices, and future research that further examines resilience and long-term coping mechanisms.***

Keywords: Collection, conservation, coping, households, implications, insecurity, resources, scarcity, shortage, strategies

I. INTRODUCTION

Water is a fundamental necessity for human life and an essential component for promoting public health, agriculture, and economic growth. It is used daily for drinking, sanitation, cooking, and cleaning. However, despite the Philippines being an archipelagic nation surrounded by vast bodies of water, it continues to face serious challenges in water accessibility and management. [1], the country's per capita water availability has dropped to approximately 1,300 m³ per year—well below the water stress threshold of 1,700 m³. This decline has been attributed to rapid urbanization, population growth, pollution, deforestation, and the increasing impacts of climate change, including recurring El Niño events that cause droughts and prolonged dry spells.

Across the country, many Filipino households experience the harsh realities of water scarcity. Limited water supply affects sanitation, hygiene, food preparation, and overall quality of life. During shortages, families are often forced to find alternative sources, adjust their routines, and prioritize essential uses of water. These situations reveal not only the severity of the problem but also the resilience and adaptability of communities when faced with scarcity. Water shortage, therefore, is not just an environmental issue but a social and economic concern that directly impacts household well-being. The National Water Resources Board (NWRB) has also reported recurring water allocation cuts in Metro Manila and nearby provinces due to decreasing dam levels during dry seasons [2]. These supply challenges are not only concentrated in urban centers but also extend to nearby growing cities such as Lipa City in Batangas. As the city continues to expand, its water demand has increased, creating pressure on its local water systems. This situation leads to periodic water shortages, particularly affecting communities in lower-lying and densely populated areas such as Barangay Bulaklakan. In many local communities, these issues are felt most severely at the household level, where families struggle to secure sufficient water for their daily needs. Bulaklakan, one of Lipa City's barangays, has experienced periodic water interruptions that disrupt household routines and community harmony. Residents are often forced to wake up early to collect water, reuse it for multiple purposes, or purchase from private suppliers, adding to their financial burden.

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The problem of water scarcity in the Philippines has both environmental and social dimensions. Poor water infrastructure, leakage, and uneven distribution contribute to limited supply, while climate change worsens the situation through reduced rainfall and higher temperatures that increase water consumption. According to the policy brief *Quenching Policy Thirst: Reforming Water Governance in the Philippines* [3], there are at least 21 groundwater-stressed areas and 15 water-stressed river basins across the country. These findings highlight that water scarcity has become a national concern requiring both institutional and community-level responses.

Previous studies emphasize that during times of scarcity, households employ various coping mechanisms to adapt to water shortages. [4], a study on water scarcity in Ghana found that households store water in containers, limit their water use, and prioritize essential needs such as drinking and cooking. Similarly, [5] noted that Filipino households adopt behavioral and economic strategies—such as rationing resources, reusing water, and seeking alternative water sources—to manage limited access to basic necessities during environmental stress.

In Barangay Bulaklakan, Lipa City, many residents report recurring water supply interruptions that affect their daily routines, hygiene practices, and household management. Families often resort to purchasing water from delivery trucks, fetching water from other barangays, or storing large amounts during periods of availability. While these practices may be effective in the short term, they can also pose financial, physical, and health burdens. The persistence of this problem suggests that while households have developed coping strategies, these may not be sustainable in the long run without systematic intervention.

Understanding these coping mechanisms is essential because they reflect the community's capacity to adapt to environmental stressors. Moreover, they provide insights into how socioeconomic conditions, household structures, and community support systems influence people's responses to water scarcity. As highlighted by the Philippine Institute for Development Studies [5], studying household-level coping strategies can inform policymakers and local governments in creating more inclusive and responsive water management programs.

Therefore, this study aims to explore and analyze the coping strategies of households in Barangay Bulaklakan, Lipa City during water shortages. Through a qualitative research approach, it seeks to uncover the lived experiences of residents, the adaptive behaviors they employ, and the broader implications of these practices on community resilience and sustainable water management.

II. OBJECTIVES

The objective of this study is to explore and understand the coping strategies employed by households in Bulaklakan, Lipa City, during periods of water shortages. Specifically, this study aims to:

1) Identify the specific causes of water shortages experienced by households in Bulaklakan, Lipa City.
2) Determine the coping strategies employed by households to address water shortages in terms of:
    2.1. water collection and storage;
    2.2. water conservation practices; and
    2.3. alternative water sources.
3) Examine how water shortages and the coping strategies adopted by households affect their daily activities, sanitation practices, and overall health and social well-being.

III. MATERIALS AND METHODS

A. Research Design

A research design is the plan or strategy that guides how a study will be carried out in order to answer a research question. It explains how data will be collected and how it will be analyzed. Having a good research design helps the researcher stay organized, maintain a clear direction, and ensure that the study follows the intended steps from start to finish [6]. In this study, the researchers used a Descriptive Qualitative Research design because it is the most appropriate approach for exploring and understanding the experiences of households in Bulaklakan, Lipa City regarding their coping strategies during water shortages. Descriptive qualitative research aims to gather rich, detailed, and context-specific information about participants' lived experiences without manipulating variables or testing hypotheses. Through verbal interviews, the study collects narrative data that reveal the thoughts, behaviors, and strategies of the respondents. This design also allows the researchers to systematically analyze the data through Thematic Analysis, identify patterns and common practices, and present these as meaningful themes that accurately describe how households cope with water scarcity in their community.

B. Subjects of the Study

The respondents of this study were ten households in Barangay Bulaklakan, Lipa City, who have been experiencing repeated water supply shortages that significantly affect their daily activities and resource use. Each household was represented by a family member who was directly involved in managing the household's water needs to ensure that the information gathered accurately reflected their actual practices and difficulties during shortages. These households were selected because they have first-hand experience with water scarcity and are actively involved in daily water management, making them capable of providing relevant and reliable insights into the coping strategies used during water interruptions. Their experiences and perspectives helped the researchers better understand how families perceive and respond to the challenges brought about by intermittent water supply.

C. Data Gathering Instrument

The researcher utilized a one-on-one interview as the main instrument of the study. The interview consists of thirteen (13) open-ended questions designed to encourage participants to express their opinions, experiences, and concerns regarding their coping strategies in the household during water shortages. The interview questionnaire is organized into three main sections: the first part of the questionnaire consisted of four questions about the causes of water shortages; the second part consisted of five questions focusing on the coping strategies used by households; and the third part consisted of four questions addressing the effects of water shortages and the coping strategies employed. In constructing the interview questions, the researcher gathered information based on the study's statement of the problem.

D. Data Gathering Procedure

To gather the necessary information for this study, the researchers visited the Barangay Hall of Bulaklakan, Lipa City, Batangas, and submitted a letter of request. They were directed to the Office of the Barangay Captain, where the letter was stamped and formally received. This letter sought permission to conduct the study and to obtain information on the number of households in the barangay experiencing water shortages.

The researchers then prepared interview questions and submitted them to a validator for comments and suggestions. These questions underwent a thorough validation process by experts in research to ensure clarity, relevance, and appropriateness. After several revisions, the interview questions were finalized, and a pre-test was conducted. All documents required for data collection were also prepared ahead of time.

During the actual data gathering, the validated interview questions were used to guide conversations with selected households in Bulaklakan. The respondents were given the questions to help them clearly understand what was being asked and to encourage them to share their experiences during water shortages.

The researchers assisted the respondents throughout the interview to ensure that all questions were understood correctly. Before the interview began, the respondents were asked for their basic profile information and were informed about privacy and confidentiality. Permission to record the interview was also requested to help accurately capture their responses.

For data interpretation, the researchers ensured that all responses were recorded accurately and transcribed as precisely as possible. The transcribed data were then analyzed by comparing similarities and differences in the participants' experiences to ensure the validity and reliability of the findings. Finally, the researchers examined how each response aligned with the study's research objectives to draw meaningful and accurate conclusions.

IV. RESULTS AND DISCUSSION

A. Causes of water shortages experienced by households.

The specific causes of water shortages experienced by households in Bulaklakan, Lipa City were examined in this study.

Table 1. Illustrates the Causes of Water Shortages reported by each respondent at the household level

Respondent 1	1. Many people use the water every day, causing the supply to decrease. 2. Rainfall makes the water dirty. 3. When there are more households, more people use the water supply, which results in some households not receiving enough water. 4. In our area, our house is far from the water meter, so the water flow is very weak.

Respondent 2	1. As the number of water users increases, the water supply decreases, especially when many people use it at the same time. 2. The water supply from the faucet becomes dirty. 3. Climate change contributes to water shortage. During the dry season, the water flow becomes very weak. When many residents use water in the community, shortage may occur.
Respondent 3	1. There are too many households/commodities using water, causing the supply to decrease. 2. There are too many households using the water supply. 3. There are many households, and the water system's motor cannot provide enough water, it produces mud instead of clean water.
Respondent 4	1. Many people in our area use water at the same time, especially during busy hours, causing low pressure and intermittent flow. 2. Heavy rain, pollution, and other environmental issues affect water supply. Rainfall can make water dirty, and pollution delays distribution due to extra filtering. 3. As the population increases, more households use water simultaneously, creating high demand that the supply cannot meet. 4. Water is wasted when people wash cars or use water for multiple tasks at once, quickly reducing pressure.
Respondent 5	1. The main cause is low water supply, especially during the dry season. 2. During periods of no rain or extreme heat, the water supply weakens. 3. An increasing number of people and households results in higher water usage, limiting the supply. 4. Weak water pressure or issues with the water line also contribute to shortage.
Respondent 6	1. Water supply is sometimes low due to dry weather, broken pipes, and too many people using water at the same time. 2. Environmental factors like no rainfall, pollution, and deforestation reduce water supply and affect water quality. 3. Population growth and high household water usage cause the water supply to be depleted quickly. 4. Repairs on pipes and scheduled water interruptions also contribute to water shortage
Respondent 7	1. Poor management by water vendors contributes to limited water availability. 2. Water pollution leads to dirty water, reducing usability. 3. The more people using water, the greater the scarcity.
	1. Weak water supply due to being in a high-altitude area. 2. Water pollution affects water quality and availability. 3. Population growth and an increasing number of water users reduce supply. 4. Insufficient water pumps to meet demand.

Respondent 8	
Respondent 9	1. Many people use the water every day, causing the supply to decrease. 2. Water pollution affects water quality and availability. 3. Population growth and an increasing number of water users reduce supply.
Respondent 10	1. The main cause of water shortage in our area is the placement and size of the water pipes. 2. When it rains, the water supply immediately stops, and when it returns, the water becomes dirty. 3. Because many people live in our area, water becomes limited when everyone uses it at the same time. 4. The water pipes and the location of our house contribute to the weak water supply.

The table shows that the causes of water shortages identified by the respondents are varied and interrelated but generally fall into three broad categories: supply-side issues, demand-side pressures, and environmental or infrastructural problems. A central theme is the pressure created by high demand and the steadily increasing number of water users, which shows that demand often outstrips the relatively inelastic water supply. Environmental factors also play a crucial role, with rainfall patterns, dry seasons, and El Niño events frequently mentioned, highlighting the community's dependence on natural water cycles and its vulnerability to climate variability. In addition, serious infrastructural and systemic problems contribute to the shortage, including poor water supply or low water pressure, poor water management by vendors, scheduled service interruptions, and the presence of dirty or polluted water that affects both quality and usable availability. Some respondents also identified the physical location of their homes and the size or placement of water pipes as direct, localized causes of their water situation. Overall, the perceived causes reflect a complex interaction between natural scarcity, long-standing infrastructural weaknesses, and demand exceeding the capacity of the existing water supply system.

B. Coping Strategies Employed By Households To Address Water Shortages

The coping strategies employed by households to address water shortages were assessed in terms of water collection and storage, water conservation practices, and the use of alternative water sources.

1) Water Collection and Storage;

Table 2. Illustrates the Water Collection and Storage Methods reported by each respondent.

Respondent 1	1. We store water in tanks, drums, and containers during shortages.
Respondent 2	1. We store water in drums or gallons. 2. No unique strategies: we follow the same practices as others.
Respondent 3	1. We collect water whenever it is available and store it in containers that can hold water. 2. We do not have any unique strategies; we just do the usual methods of saving water.
Respondent 4	1. Store water in pails and tanks whenever it is available to ensure supply during shortages. 2. Save extra water for later use, e.g., using rinse water for cleaning or flushing.

Respondent 5	1. Store water in drums, pails, and gallons. 2. Neighbors share water with each other during shortages.
Respondent 6	1. Store water in containers such as buckets, drums, and bottles. 2. Share water with neighbors and inform each other when water is available.
Respondent 7	1. Store water in large drums.
Respondent 8	1. Collect rainwater and store it in large drums.
Respondent 9	1. We store water in drums or gallons.
Respondent 10	1. We store water in drums. 2. When the water completely stops, we go to the town proper to buy water, especially drinking water, and sometimes stay there to wash clothes when the water supply at home is unavailable

It shows that the primary coping strategy for dealing with water shortages is the proactive storage of water at home whenever the supply is available. The overwhelming majority of respondents practice this by storing water in commonly available household containers such as drums, tanks, pails, and gallons, demonstrating a strong reliance on shortterm, decentralized storage. This practice is almost universal; however, only one respondent mentioned the formal practice of harvesting and storing rainwater in large drums, suggesting that this method is not widely adopted. When household water supplies become insufficient, some respondents, such as Respondent 10, turn to external sources by purchasing water from the town center or using public facilities for essential needs. Others, such as Respondents 5 and 6, rely on their social networks by sharing water and exchanging important information with neighbors. In addition, some respondents combine storage with conservation practices, such as storing extra water for later use and reusing wash water for cleaning or flushing. Overall, the predominant strategy is immediate household water storage to buffer the frequent interruption of water services.

2) Water Conservation Practices; and

Table 3. Water Conservation Practices of the Respondents.

Respondent 1	1. We take baths less frequently and save water in different containers. 2. When it rains, we place containers outside to collect rainwater and use them for other purposes.
Respondent 2	1. We still take baths but limit our water usage. 2. We take quick baths and make sure faucets are not left running.
Respondent 3	1. I conserve water and limit my usage. 2. I practice water

	conservation every time I use water.
Respondent 4	1. Conserve water by washing only what is necessary. 2. Adjust routines based on availability: do laundry during off-peak hours, take turns bathing, and plan cleaning activities.
Respondent 5	1. Conserve water by reusing it and taking shorter baths. 2. Perform chores such as washing and cleaning when water is available.
Respondent 6	1. Conserve water by limiting usage, reusing water for cleaning, and taking shorter baths. 2. Adjust daily routines by using water only when needed and scheduling washing and cleaning when water is available.
Respondent 7	1. Reuse water from bathing for toilet flushing. 2. Adjust bathing schedules to early morning or night to maximize water availability
Respondent 8	1. Conserve water by limiting usage. 2. Practice careful water management to avoid wastage.
Respondent 9	1. Adjust routines based on availability or important household chores. 2. Limiting my usage when it is not necessarily used.
Respondent 10	1. I make sure to use only the right amount of water when needed. 2. When our buckets are still full, I transfer the extra water into empty buckets as reserve.

It shows that water conservation methods range from reducing overall water use to maximizing the utility of available supply through reuse practices. The most basic and common method involves simply limiting water use and focusing only on essential washing and household chores as an immediate response to scarcity. In terms of hygiene, many respondents reduce water consumption by taking fewer, shorter, or quicker baths, which directly lowers the total volume of water used. One respondent (Respondent 7) also adjusts bathing schedules to off-peak hours, such as early morning or late at night, to take advantage of periods when water availability is higher. An important conservation measure is water reuse, which includes practices such as collecting rainwater, using a basin when washing dishes to reduce total water consumption, and, most notably, reusing water from bathing or cleaning for activities like toilet flushing. To better manage limited resources, several respondents also adjust their daily routines by

performing household chores at specific times when water is known to be available. Overall, these conservation practices reflect a strong level of awareness within the community, focused on reducing water volume usage and extending the useful life of their limited water supply.

3) Alternative Water Sources.

Table 4. Alternative Water Sources Used by Respondents

Respondent 1	1. When washing dishes, we use a basin to reduce water usage.
Respondent 2	1. We go to public water sources (palaklakan) to collect water.
Respondent 3	1. We make use of the water we have stored in containers.
Respondent 4	1. Buy mineral water for drinking, cooking, and cleaning; occasionally collecting water from natural sources.
Respondent 5	1. Obtain water from vendors or deep wells.
Respondent 6	1. Obtain water from vendors or ask neighbors for water
Respondent 7	1. As a last resort, fetch water from springs (Palaklakan), which requires extra effort, transport, and storage.
Respondent 8	1. Use rainwater as an alternative water source.
Respondent 9	1. Obtain water from vendors or ask neighbors for water.
Respondent 10	1. NONE

This table shows that when stored and conserved water reserves are depleted, respondents turn to various alternative sources, each of which involves either financial cost or increased physical effort. The majority of the community relies on purchasing water from vendors or buying mineral water for drinking and cooking, highlighting the significant financial burden that water scarcity can impose on household budgets. Other common alternatives include fetching water from public sources (Palalakakan) or springs—a practice that, according to one respondent, requires additional effort, transportation, and storage. Private infrastructure, such as deep wells, or collection methods like rainwater harvesting are less frequently used as alternatives. On the social level, some respondents ask their neighbors for water, demonstrating the principle of mutual selfhelp. Conversely, a few respondents rely entirely on their own stored water before seeking outside sources, while at least one respondent reported having no alternative sources, indicating total dependence on the primary supply system and private storage facilities. Overall, the alternative sources employed involve either financial expenditure (purchasing from vendors) or considerable physical labor (fetching from public or natural resources).

C. Effects of Water Shortages and Coping Strategies

This study aims to determine the effects of water shortages and the coping strategies utilized by households.

Table 5. Effects of Water Shortages and Coping Strategies experienced by each respondent.

	1. It becomes difficult to cook, and we cannot wash our clothes.

Respondent 1	2. Bathing takes longer or becomes less frequent, and we buy water for drinking and cooking. 3. Water shortage greatly affects us, especially in cooking and drinking, because we must use clean water, so we buy it. 4. Water shortage can cause dehydration and may worsen during El Niño.
Respondent 2	1. It becomes difficult to take proper baths and wash dishes or clean the house. 2. Washing clothes becomes difficult; the water flow is too weak. 3. People may experience thirst or discomfort because they cannot bathe regularly.
Respondent 3	1. It affects us because we cannot bathe properly. 2. We find it difficult to bathe, cook, and clean. 3. It affects our health because we cannot bathe, drink, or clean ourselves and our surroundings properly.
Respondent 4	1. Water shortages make cooking, cleaning, and staying clean more difficult. Tasks take longer, and bathing becomes stressful because water must be limited. 2. Weak water flow makes bathing and cleaning challenging; sometimes water stops completely, delaying chores. 3. Limited water affects hygiene and causes discomfort due to improper washing. 4. Water shortages cause stress and disrupt routines, forcing people to wait longer to bathe or clean while tasks pile up.
	1. Cooking, cleaning, and washing become harder when water is limited. 2. Fetching or buying water is tiring and sometimes expensive.

Respondent 5	3. Limited water makes maintaining personal hygiene difficult, which can lead to skin problems. 4. Water shortages cause stress and increase household expenses
Respondent 6	1. Cooking, cleaning, and bathing become harder during water shortages. 2. Maintaining cleanliness and washing clothes becomes difficult. 3. Limited water affects hygiene and can lead to sickness or skin problems. 4. Water shortage causes stress and makes daily life more challenging.
Respondent 7	1. Water shortages waste time and energy. 2. Daily routines are disrupted, requiring extra effort to store and manage water. 3. Storing water is physically and mentally exhausting. 4. Poor water service increases frustration, as time and energy are spent obtaining water despite paying for it.
Respondent 8	1. Cooking, cleaning, and bathing become harder during water shortages. 2. Daily routines are disrupted, requiring extra effort to store and manage water. 3. It affects us because we cannot bathe properly
Respondent 9	1. We cannot bathe properly, and our water use becomes very restricted. 2. Limited water supply affects our hygiene and causes discomfort because we cannot wash properly. 3. Cooking, cleaning, and doing laundry become more difficult when there is not enough water.
	1. Cooking becomes difficult because stored water can get

Respondent 10	dirty. Bathing is also challenging when there is no running water. 2. We cannot bathe properly, and our water usage becomes very limited. 3. Sometimes we experience skin irritation because we cannot clean ourselves well due to limited water. 4. Water shortages can affect health, as stored water may cause stomachaches or diarrhea if contaminated.

The table shows that the effects of water shortages extend beyond mere inconvenience, impacting daily activities, public health, finances, and emotional wellbeing. Functionally, essential tasks such as cooking, cleaning, and washing clothes become significantly more difficult or, in some cases, impossible, while the time required to complete these tasks increases. In terms of health and hygiene, scarcity limits the ability to bathe, which can lead to skin problems or irritation. One respondent also highlighted a serious public health concern, noting that "Contaminated water stored in containers can cause illnesses such as stomachaches and diarrhea." The coping measures adopted by households introduce additional secondary effects. Procuring water, whether by fetching or purchasing, requires extra effort and time and adds financial strain, making it both tiring and costly. Consequently, disruptions to daily routines, physical exertion, and economic burden contribute to discomfort and significant psychological stress among affected individuals. Overall, the impact of water shortages is severe, transforming the issue from a manageable inconvenience into a source of chronic stress, financial hardship, and heightened public health risk.

V. CONCLUSIONS

Based on the findings of the study, the following conclusions were established:

1) The causes of water shortages include infrastructure conditions, environmental factors, population growth, and unsustainable use of water resources; remedying these usually requires integrated solutions that can ensure reliable access to clean water

2) Water shortage is mainly dealt with at the community level by storing water in various containers, harvesting rainwater, sharing with neighbors, and at times buying water from town when all supplies are depleted.

3) Water conservation approaches limit the amount of usage by carefully scheduling, reusing water for as many purposes as possible, having shorter or less frequent baths, and performing daily tasks at times when the least amount of water is wasted.

4) The findings indicate that during scarcity, households rely on various alternative water sources, such as buying from vendors, fetching water from deep wells or public sources, and borrowing from neighbors. Other families rely on stored water or, in a few instances, rainwater collections or natural spring water. These alternatives, however, often require extra effort, time, or cost, indicating that alternative sources are not always accessible or convenient. In fact, one respondent identified having no alternatives at all, which represents the extreme vulnerability of some households during severe scarcity. Overall, the data show that even as families make use of different water sources to cope, many of these methods include added burdens that reflect ongoing concerns in securing reliable water supply.

5) The results show that water shortages significantly affect households in terms of using water for cooking, bathing, cleaning, and washing clothes by forcing families to limit the use of water and adjust their daily routines. Many reported that poor hygiene becomes a big problem, sometimes causing discomfort or minor skin irritations due to insufficient water for bathing and cleaning. Water shortages increase the time, effort, and expenses made to acquire water, especially when families are bound to get or buy it outside. Some also mentioned risks of stored water becoming unsafe as adding to the problems. Overall, water shortages disrupt everyday living and hygiene and add to the stress experienced by households as they resort to coping strategies like water control and modifying cleaning and bathing schedules.

VI. RECOMMENDATIONS

Based on the study's findings and conclusions, the following recommendations are presented:

1) Promote responsible water use and conservation by strengthening collaboration between community leaders and water district officials. This cooperation can help develop appropriate strategies and effectively communicate practical solutions that reduce the difficulties experienced by residents. To further enhance community participation, residents may be encouraged to practice simple daily water conservation activities through a "Bayanihan Board," an initiative that lists water-saving tasks that students and community members can voluntarily accomplish.

2) Encourage residents to develop a positive and proactive attitude toward addressing water shortages by participating in barangay-led initiatives. The establishment of community water storage facilities can provide opportunities for residents and students to work together and improve their skills in proper water storage, strengthening cooperation among families and neighbors.

3) Enhance the capabilities of the residents of Bulaklakan, Lipa City, by implementing various capacity-building activities. These may include improving water supply lines, especially in areas affected by leakage, promoting the real-life application of water conservation practices, and organizing hands-on learning activities. The use of technology, such as educational applications and video tutorials, can deepen understanding, while regular community exercises and peer discussions can reinforce learning. Providing timely support systems can also help address the diverse needs of the community.

4) For future researchers, it is recommended to conduct in-depth interviews or case studies to gain a deeper understanding of the experiences, challenges, and perspectives of residents regarding water scarcity. Further studies may also examine the effects of water resource availability, community programs, and awareness-building initiatives on the behavior, participation, and resilience of residents during periods of water shortage.

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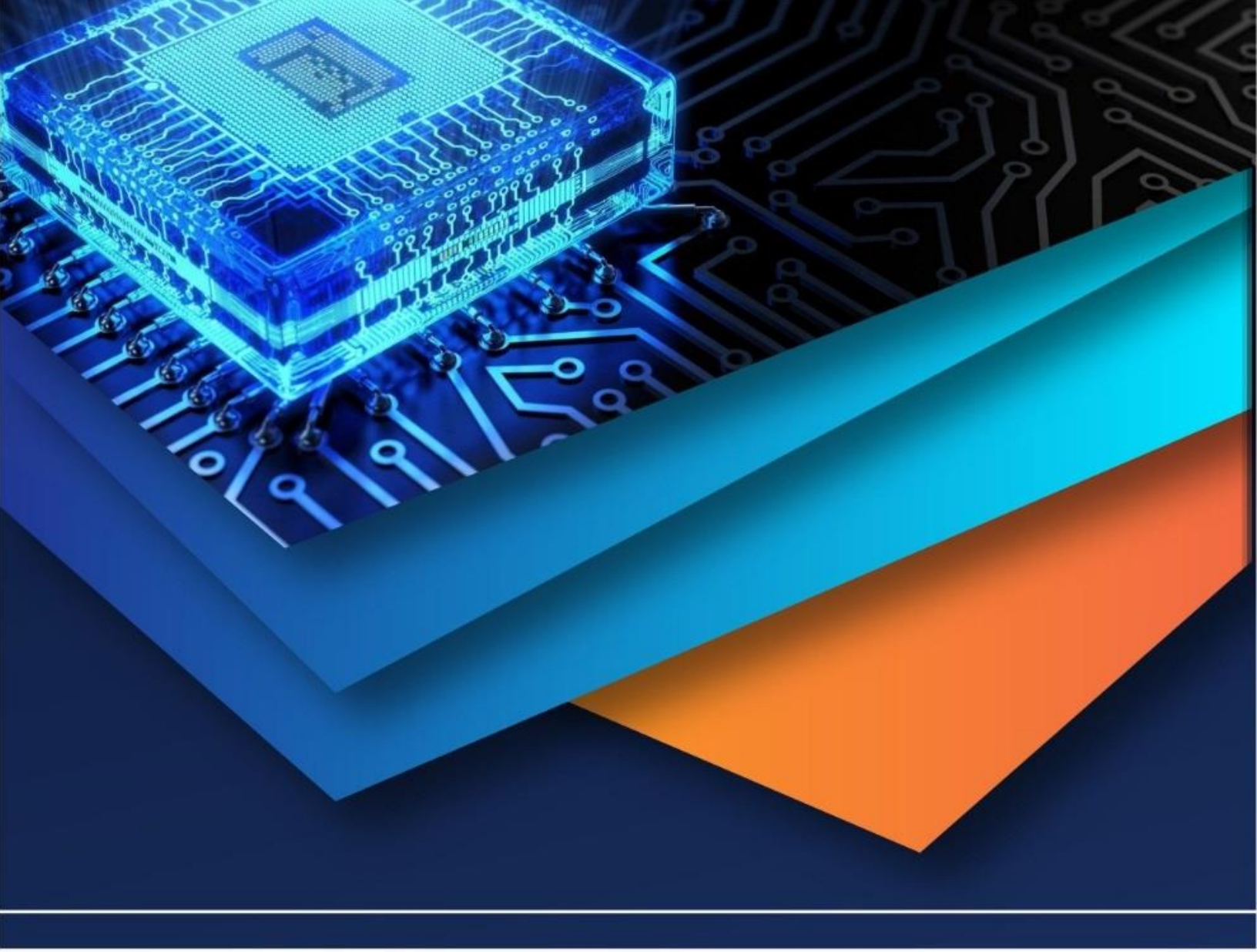

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