ANALYSIS OF POSSIBLE INTERVENTION OF COOPERATIVE SOCIETY IN WATER SUPPLY AND MANAGEMENT

CASE STUDY OF UBELIGBO

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DECEMBER, 2020

ANALYSIS OF POSSIBLE INTERVENTION OF COOPERATIVE SOCIETY IN WATER SUPPLY AND MANAGEMENT

(A CASE STUDY OF IJEBU-IGBO)

BY

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BEING A PROJECT SUBMITTED TO THE DEPARTMENT OF URBAN AND REGIONAL PLANNING, SCHOOL OF ENGINNEERING TECHNOLOGY ABRAHAM ADESANYA POLYTECHNIC, IJEBU IGBO

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF NATIONAL DIPLOMA (ND) IN URBAN AND REGIONAL PLANNING

DECEMBER, 2020

CERTIFICATION

I certify that this research project analysis of possible intervention of cooperative society in water supply and management (A case of study Ijebu-Igbo) was carried out by Enitan Abiola Jacob with matric no 18/07/0004 in the Department of Urban and Regional planning, Abraham Adesanya Polytechnic, Ijebu Igbo, under my Supervision.

.....
TPL OKUBENA M.R.
(Supervisor)

.....
DATE

.....
Head of Department (HOD)
Urban & Regional Planning

.....
DATE

DEDICATION

I dedicate this project to Almighty God, My creator, my source of inspiration, wisdom, knowledge and understanding and he has been the source of my strength throughout this program and on his wings only have I soared.

ACKNOWLEDGMENT

All adorations to the almighty God, the Alpha and omega, for his grace to accomplish this project, secondly to my supervisor in person of TPL Okubena,

Also to my small Gods which is my parents Mr and Mrs Enitan the great men of God, To my blood brothers Sunday, Solomon, John, Jeremiah Enitan and also special thanks to MBQ (Fatoki Christianah),

In addition to Mr Iroko, Mrs Kolade, Mr Ogadina, Mr Ojere, Mr salmon and every other relatives of mine for their caring and efforts morally, financially, emotionally and academically during my ND program may God almighty enriched and fulfil your plans in Jesus name.

ABSTRACT

Co-operative societies are business organization though in the class of nonprofit seeking form of business organisation whether a business is profit oriented or nonprofit oriented, it should have an accounting system. This study examines analysis of possible intervention of cooperative society in water supply and management using Ijebu-Igbo as a study. It employs the use of both primary and secondary data. One hundred copies of questionnaire were distributed systematically to the traders in the study area. Descriptive and analytical statistical methods were both employed to analyze the data gathered. The findings showed that there is a water resources management action within Ijebu-Igbo, Ogun State and Cooperative societies has a functional role in water provision and management. There is an infrastructure facilities adherent by the society towards water resources management. Open membership of residence by cooperative society has elevate socio economic status of the residence. The attitude of the society or government towards water management is encouraged. The study recommended that New models of institutional, financial, contractual, and legal relationships between communities and back-stopping agencies should be sought. Permanence and improvement of service should be the goals. A short term "project" mentality on the part of funding organizations should be eschewed in favour of long term and evolving commitment to developing country partners.

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CHAPTER ONE

1.0 INTRODUCTION

1.1 Background to the Study

Like other businesses, cooperatives start with the recognition of a need or an opportunity. In fact, the economic motivation for starting a cooperative is very much the same as for starting other businesses. Starting a new cooperative takes energy and resources. Because cooperatives are people-driven organizations, the first key to their success is to identify individuals with like needs (Takala, Arvonen, Katko,Pietila, & Akerman, 2011). Without this important first step, the chance for a successful cooperative progress is slight.

The tradition and history of the cooperative movement around the world is long. The scope of cooperatives includes supplying public services such as electricity, telephone communication, transportation, and water for drinking and irrigation (OUKE, 2016).A cooperative society is non-profit oriented organization whose sole purpose is totake care of the needs of the members. Cooperatives are socio-economic organizations. They are founded on the principles of equity and equality. Their decisive aim is to effect social advancement through economic improvement (Wadsworth, 2001). The success or failure of a cooperative is, therefore, adjudged by its economic performance and its social thrust on the community it serves. The economic performance of the cooperative has to be studied, measured and reported to the members, financing banks, higher level institutions and to the

state government (Abell, 2004). This, in fact, is a statutory requirement and has to be done every year without failure and omission.

Co-operative societies are business organization though in the class of nonprofit seeking form of business organisation whether a business is profit oriented or nonprofit oriented, it should have an accounting system (Levin, 2002). Co-operative societies are part of the aim of government, they are nurtured by the government the government believe that through co-operative societies that the standard of living of the masses will improve. They are meant to enhance the economic and social wellbeing of the populace as this will help to record economic growth and subsequent development, that is why the government sponsor and run some of the activities of co-operative societies. For instance the government employs co-operative field staff to disseminate the gospel of co-operation, to nurture co-operative by giving them directives and prepare them forregistration and also to audit the accounts of co-operative, societies (Ife 2002). It has been noticed that many cooperative society has been into farming business, Selling of Bike, cars and tricycle on hire purchase small and medium scale enterprises.

Against this background, this research is designed to study theanalysis of possible intervention of cooperative societies in water supply and management in Ijebu Igbo Ogun state.

1.2 Statement of Problems

One of the key challenges facing the Ijebu Igbo society is the provision of good water supply. The government has made previous efforts to give wâter to rural areas which

1.4 Research Questions

i. How can we formulate a water resources management action within Ijebu Igbo Ogun state?

ii. What is the best technology and knowledge regarding water resources provision and management in the study area?

iii. How can cooperative societies be involved in water provision and management.

1.5 Research Hypothesis

This research work will be testing for this hypothesis

H_0: There is nowater resources management action within Ijebu Igbo Ogun state

H_1: There is a water resources management action within Ijebu Igbo Ogun state

H_0: Cooperative societies has no functional role in water provision and management

H_2: Cooperative societies has functional role in water provision and management

1.6 Significance of the study

The ideal target of the pragmatic approach is the elimination of all the problem components identified. This study will be of immense benefit to the co-operative, pre and post co- operators, public and the government. To co-operators, the study will help them to formulate a proper and better water management system that will help in the growth and the realization of the goals and objectives of the co-operative societies. To pre member of co- operative societies, it will serve as a guide in understanding the benefits of growing the society of its existence, to the public it will provide a clear understanding of the present water problems faced by communities and identify of the potential benefits which can be

delivered by involving the cooperative societies in infrastructureprovision and also to observe of the actual benefits experienced by users and consumers.The research findings and recommendations will form a base that will be rallied upon by other researchers who may wish to make further inquiries into the subject matter. Finally the current study will contribute to the existing literature as few studies in this area were available.

1.7 Research Methodology

Research methodology refers to the overall method employed by a researcher to assemble data for study with a view to arriving at the scientific conclusion (Oluokun, 2003). This chapter entails the research design, population of study, sampling technique, sample and sample size, research instrument and method of data analysis.

1.7.1 The research design

The research design for this project is the survey research which enables the researcher to gather information regarding the research problem which will serve as a means of providing possible solutions to the problems.

1.7.2 Sample frame

Sampling frame is the source material or device from which a sample is drawn. It is a list of all those within a population who can be sampled, and may include individuals, households or institutions. For the purpose of this research work the researcher will sample the people of Ijebu Igbo community and the cooperative societies present in the study area. Therefore the sample frame for this study is the total number of individuals in Ijebu Igbo (1,453,311) and the 5 cooperative societies in Ijebu Igbo

1.7.3 Sample size

The sample size refers to the totality of targeted individual that form the focus of the study. The three communities identified to be lacking good water management are:Oke-Ife, Oke Alafia and Odorasoyin. Therefore 50 persons from each of the communities shall be sampled the cooperative societies will also be sampled.

1.7.4 Sampling procedure

Sampling procedure involves the selection of a number of study units from a defined study population. This research work will make use of simple random technique.

1.7.5 Instrument of data collection

A research instrument is any device constructed for recording of measuring data. It is the means for generating pertinent information to be used for solving the research problems. Questionnaires will be designed and this will be used as the research instrument for this research work. The questionnaire will be presented to residents and cooperative societies

1.7.6 Methods of data collection

This refers to where the information originates from and how the researcher wishes to sources for findings.

The researcher will make use of:

- Primary data
- Secondary data

1.7.7 Method of Data analysis

This refers to the total information gathered and how the researcher wishes to analysis the data collected. The hypothesis will be tested using a chi-square method.

1.8 Definition of terms

Co-Operative Society: Co-operative society may be defined as a form of business where in persons voluntarily associate themselves as human beings on basis of equality for the promotion of their economic and /or social standards.

Co-Operation: This service as another word for co-operative society.

Committee: This "means" the governing body of a registered society to whom the management of its affairs is entrusted.

Council of Inspection: They are "elected council of members who are not members of the committee to whom the supervision of the committee is entrusted

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.0 Conceptual/Theoretical Framework and Literature Review

2.1 Conceptual Framework

2.1.1 Concept of Integrated Urban Water Management

Integrated urban water management (IUWM) is a philosophy of varying definitions and interpretations. According to the authors of the book entitled, "Integrated Urban Water Management: Humid Tropics", IUWM is described as the practice of managing freshwater, wastewater, and storm water as components of a basin-wide management plan. It builds on existing water supply and sanitation considerations within an urban settlement by incorporating urban water management within the scope of the entire river basin (Tucci, Goldenfum, Parkinson (2019). One of the early champions of IUWM, SWITCH is a research program funded by the European Union and seeks to shift urban water management away from ad hoc solutions to a more integrated approach. IUWM within an urban water system can also be conducted by performance assessment of any new intervention strategies by developing a holistic approach which encompasses various system elements and criteria including sustainability type ones in which integration of water system components including water supply, waste water and storm water subsystems would be advantageous Behzadian; Kapelan, (2015). Simulation of metabolism type flows in urban water system can also be useful for analysing processes in urban water cycle of IUWM (Behzadian, Kapelan, 2015).

IUWM is commonly seen as a strategy for achieving the goals of Water Sensitive Urban Design. IUWM seeks to change the impact of urban development on the natural water cycle, based on the premise that by managing the urban water cycle as a whole; a more efficient use of resources can be achieved providing not only economic benefits but also improved social and environmental outcomes. One approach is to establish an inner, urban, water cycle loop through the implementation of reuse strategies. Developing this urban water cycle loop requires an understanding both of the natural, pre-development, water balance and the post-development water balance. Accounting for flows in the pre- and post-development systems is an important step toward limiting urban impacts on the natural water cycle Barton, (2009)

2.1.2 Concept of Water

Water is an inorganic, transparent, tasteless, odorless, and nearly colorless chemical substance, which is the main constituent of Earth's hydrosphere and the fluids of all known living organisms. It is vital for all known forms of life, even though it provides no calories or organic nutrients. Its chemical formula is H2O, meaning that each of its molecules contains one oxygen and two hydrogen atoms, connected by covalent bonds.

"Water" is the name of the liquid state of H2O at standard ambient temperature and pressure. It forms precipitation in the form of rain and aerosols in the form of fog. Clouds are formed from suspended droplets of water and ice, its solid state. When finely divided, crystalline ice may precipitate in the form of snow. The gaseous state of water is steam or

water vapor. Water moves continually through the water cycle of evaporation, transpiration (evapotranspiration), condensation, precipitation, and runoff, usually reaching the sea.

Water covers 71% of the Earth's surface, mostly in seas and oceans.[CIA 2008] Small portions of water occur as groundwater (1.7%), in the glaciers and the ice caps of Antarctica and Greenland (1.7%), and in the air as vapor, clouds (formed of ice and liquid water suspended in air), and precipitation (0.001%) [Gleick 2013]

Water plays an important role in the world economy. Approximately 70% of the freshwater used by humans goes to agriculture.[Baroni, 2017] Fishing in salt and fresh water bodies is a major source of food for many parts of the world. Much of the long-distance trade of commodities (such as oil, natural gas, and manufactured products) is transported by boats through seas, rivers, lakes, and canals. Large quantities of water, ice, and steam are used for cooling and heating, in industry and homes. Water is an excellent solvent for a wide variety of substances both mineral and organic; as such it is widely used in industrial processes, and in cooking and washing. Water, ice and snow are also central to many sports and other forms of entertainment, such as swimming, pleasure boating, boat racing, surfing, sport fishing, diving, ice skating and skiing.

Water is used for various kinds of purposes: for agriculture, industry, fishery, and domestic purposes. It is supplied from the ocean to the atmosphere by evaporation and comes back to the ground surface as rainfall. It supports various kinds of human activities and, of course, the natural ecosystem. As water flows over the ground surface and becomes available as water resources in rivers, lakes/marshes, underground water, and coastal water,

it accumulates inorganic substances from the soil, and organic substances and microorganisms generated by human activities and the natural ecosystem.

The world population reached to six billion in 1999, and is expected to increase to eight billion by 2015. Considering that it took about 30 years for the population to grow from four billion to six billion, it is clear that the rate of population growth is accelerating. People generally try to improve their living conditions, but for how long will the Earth be able to adequately support humanity, with such rapid population growth in so many countries? WHO defines "Health" in its charter as follows: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". Physical existence in terms of biological aspects is not sufficient in considering the lives and dignity of human beings. In addition, energy and metabolism, which are essential factors for existence, are also dependent on water in many aspects.

Water quality standard shows the levels which do not cause any hazard to human bodies and/or impose limitations on use of water, according to the purpose of water usage. Accordingly, there are various criteria of water quality standards, i.e. safety of drinking water, acceptability of water quality for industrial use such as cooling water for boilers, water used for agriculture, fish farming, fishery, and for sustaining natural aquatic ecosystems. Therefore, in order to establish a water quality standard, scientific examination is required into the safety and availability of water for each purpose. The water quality standard must have technical and economic considerations. It is not practicable to enact a

standard that requires technology (for measuring concentrations or treatment), that is either not yet available or which is too expensive for practical implementation.

The enforcement of the standard must be ensured once the standard has been established. In order to ensure compliance with the standard, periodic or continuous monitoring will be needed. The results of such monitoring will be useful information in reviewing the standard itself. If some adverse effect is observed, even though the standard has been complied with, measures should be taken to resolve the problem. Or, if compliance with the standard is very low, law enforcement may need to be intensified.

2.1.3 Concept of Public Participation

Public participation, also known as citizen participation, is the inclusion of the public in the activities of any organization or project. Public participation is similar to but more inclusive than stakeholder engagement. Generally public participation seeks and facilitates the involvement of those potentially affected by or interested in a decision. This can be in relation to individuals, governments, institutions, companies or any other entities that affect public interests. The principle of public participation holds that those who are affected by a decision have a right to be involved in the decision-making process. Public participation implies that the public's contribution will influence the decision (Rowe, G. and Frewer, L.J. (2010).

Public participation may be regarded as a form of empowerment and as vital part of democratic governance. In the context of knowledge management the establishment of ongoing participatory processes is seen by some in the facilitator of collective

intelligence and inclusiveness, shaped by the desire for the participation of the whole community or society (Huxley, Margo (2010).

Public participation is part of "people centred" or "human centric" principles, which have emerged in Western culture over the last thirty years, and has had some bearings of education, business, public policy and international relief and development programs. Public participation is advanced by the humanist movements. Public participation may be advanced as part of a "people first" paradigm shift. In this respect public participation may challenge the concept that "big is better" and the logic of centralized hierarchies, advancing alternative concepts of "more heads are better than one" and arguing that public participation can sustain productive and durable change (Pring, and Noé,. (2012).

2.2 Literature Review

2.2.1 Importance of Water

Water is one of the most important substances on earth. All plants and animals must have water to survive. If there was no water there would be no life on earth.

Human uses

Agriculture

The most important use of water in agriculture is for irrigation, which is a key component to produce enough food. Irrigation takes up to 90% of water withdrawn in some developing countries and significant proportions in more economically developed countries (in the United States, 42% of freshwater withdrawn for use is for irrigation) Dieter, Cheryl A.;

Maupin, Molly A.; Caldwell, Rodney R.; Harris, Melissa A.; Ivahnenko, Tamara I.; Lovelace, John K.; Barber, Nancy L.; Linsey, Kristin S. (2018).

Fifty years ago, the common perception was that water was an infinite resource. At the time, there were fewer than half the current number of people on the planet. People were not as wealthy as today, consumed fewer calories and ate less meat, so less water was needed to produce their food. They required a third of the volume of water we presently take from rivers. Today, the competition for the fixed amount of water resources is much more intense, giving rise to the concept of peak waterGleick, P.H.; Palaniappan, M. (2010). This is because there are now nearly eight billion people on the planet, their consumption of water-thirsty meat and vegetables is rising, and there is increasing competition for water from industry, urbanization and biofuel crops. In future, even more, water will be needed to produce food because the Earth's population is forecast to rise to 9 billion by 2050 United Nations Press Release POP/952 (13 March 2007)

As a scientific standard

On 7 April 1795, the gram was defined in France to be equal to "the absolute weight of a volume of pure water equal to a cube of one hundredth of a meter, and at the temperature of melting ice". For practical purposes though, a metallic reference standard was required, one thousand times more massive, the kilogram. Work was therefore commissioned to determine precisely the mass of one liter of water. In spite of the fact that the decreed definition of the gram specified water at 0 °C (32 °F)—a highly reproducible *temperature*—the scientists chose to redefine the standard and to perform

their measurements at the temperature of highest water *density*, which was measured at the time as 4 °C (39 °F).

The Kelvin temperature scale of the SI system was based on the triple point of water, defined as exactly 273.16 K (0.01 °C; 32.02 °F), but as of May 2019 is based on the Boltzmann constant instead. The scale is an absolute temperature scale with the same increment as the Celsius temperature scale, which was originally defined according to the boiling point (set to 100 °C (212 °F)) and melting point (set to 0 °C (32 °F)) of water.

For drinking

The human body contains from 55% to 78% water, depending on body size.[79] To function properly, the body requires between one and seven liters (0.22 and 1.54 imp gal; 0.26 and 1.85 U.S. gal) of water per day to avoid dehydration; the precise amount depends on the level of activity, temperature, humidity, and other factors. Most of this is ingested through foods or beverages other than drinking straight water. It is not clear how much water intake is needed by healthy people, though the British Dietetic Association advises that 2.5 liters of total water daily is the minimum to maintain proper hydration, including 1.8 liters (6 to 7 glasses) obtained directly from beverages. Medical literature favors a lower consumption, typically 1 liter of water for an average male, excluding extra requirements due to fluid loss from exercise or warm weather *Rhoades RA, Tanner GA (2003).*

Healthy kidneys can excrete 0.8 to 1 liter of water per hour, but stress such as exercise can reduce this amount. People can drink far more water than necessary while

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Healthy kidneys can excrete 0.8 to 1 liter of water per hour, but stress such as exercise can reduce this amount. People can drink far more water than necessary while

exercising, putting them at risk of water intoxication (hyperhydration), which can be fatal[Noakes TD, Goodwin N, Rayner BL, Branken T, Taylor RK (2005). The popular claim that "a person should consume eight glasses of water per day" seems to have no real basis in science.[84] Studies have shown that extra water intake, especially up to 500 milliliters (18 imp fl oz; 17 U.S. fl oz) at mealtime was conducive to weight loss Dubnov-Raz G, Constantini NW, Yariv H, Nice S, Shapira N (October 2011). Adequate fluid intake is helpful in preventing constipation. An original recommendation for water intake in 1945 by the Food and Nutrition Board of the United States National Research Council read: "An ordinary standard for diverse persons is 1 milliliter for each calorie of food. Most of this quantity is contained in prepared foods." The latest dietary reference intake report by the United States National Research Council in general recommended, based on the median total water intake from US survey data (including food sources): 3.7 liters (0.81 imp gal; 0.98 U.S. gal) for men and 2.7 liters (0.59 imp gal; 0.71 U.S. gal) of water total for women, noting that water contained in food provided approximately 19% of total water intake in the survey.

Specifically, pregnant and breastfeeding women need additional fluids to stay hydrated. The Institute of Medicine (US) recommends that, on average, men consume 3 liters (0.66 imp gal; 0.79 U.S. gal) and women 2.2 liters (0.48 imp gal; 0.58 U.S. gal); pregnant women should increase intake to 2.4 liters (0.53 imp gal; 0.63 U.S. gal) and breastfeeding women should get 3 liters (12 cups), since an especially large amount of fluid is lost during nursing. Also noted is that normally, about 20% of water intake comes from

food, while the rest comes from drinking water and beverages (caffeinated included). Water is excreted from the body in multiple forms; through urine and feces, through sweating, and by exhalation of water vapor in the breath. With physical exertion and heat exposure, water loss will increase and daily fluid needs may increase as well.

Humans require water with few impurities. Common impurities include metal salts and oxides, including copper, iron, calcium and lead, and/or harmful bacteria, such as *Vibrio*. Some solutes are acceptable and even desirable for taste enhancement and to provide needed electrolytesMaton, Anthea; Jean Hopkins; Charles William McLaughlin; Susan Johnson; MaryannaQuon Warner; David LaHart; Jill D. Wright (2013).

The single largest (by volume) freshwater resource suitable for drinking is Lake Baikal in Siberia.Unesco (2006).

Washing

The propensity of water to form solutions and emulsions is useful in various washing processes. Washing is also an important component of several aspects of personal body hygiene. Most of personal water use is due to showering, doing the laundry and dishwashing, reaching hundreds of liters per day per person in developed countries.

Transportation

Main article: Ship transport

The use of water for transportation of materials through rivers and canals as well as the international shipping lanes is an important part of the world economy.

Chemical uses

Water is widely used in chemical reactions as a solvent or reactant and less commonly as a solute or catalyst. In inorganic reactions, water is a common solvent, dissolving many ionic compounds, as well as other polar compounds such as ammonia and compounds closely related to water. In organic reactions, it is not usually used as a reaction solvent, because it does not dissolve the reactants well and is amphoteric (acidic and basic) and nucleophilic. Nevertheless, these properties are sometimes desirable. Also, acceleration of Diels-Alder reactions by water has been observed. Supercritical water has recently been a topic of research. Oxygen-saturated supercritical water combusts organic pollutants efficiently. Water vapor is used for some processes in the chemical industry. An example is the production of acrylic acid from acrolein, propylene and propane (Hävecker, Michael; Wrabetz, Sabine; Kröhnert, Jutta; Csepei, Lenard-Istvan; Naumann d'Alnoncourt, Raoul; Kolen'Ko, Yury V.; Girgsdies, Frank; Schlögl, Robert; Trunschke, Annette (2012). The possible effect of water in these reactions includes the physical-, chemical interaction of water with the catalyst and the chemical reaction of water with the reaction intermediates.

2.2.2 Challenges of Urban water Supply and Management

The challenges in urban water management are ample and are threatening the sustainability of the urban water system as a significant fraction of the urban population has no access to proper (good) water supply. Some of the challenges include the following:

[illegible] Compliance to Water Management Policies. The inability for the [illegible] in water management to comply with the existing policies on water [illegible] and development constitute a great challenge in the system hence [illegible].

[illegible] Iloka Ike (2008) observed that water [illegible] data management. In the past ten years, [illegible] yearbook has been published. Without water [illegible] System (DSS) models necessary for [illegible] groundwater aquifers. There is [illegible] management system for the nation [illegible] networks for these data [illegible].

[illegible] practices according to Gold [illegible] development and have [illegible] presently nothing in place to [illegible]. There are no clear responsibilities, no [illegible] effective water monitoring, no enforcement, no [illegible] for policies and [illegible].

[illegible] Climate Change: In view of Business news (2010), it was reported that climate change and water scarcity go hand-in-hand to cause some of the biggest [illegible] these issues have a reciprocal

relationship, identified by the Intergovernmental Panel on Climate Change (IPCC), in which, "water management policies and measures can have an influence on greenhouse gas (GHG) emissions." As renewable energy options are pursued, the water consumption of these mitigation tactics must be considered in producing alternatives ranging from bio-energy crops to hydropower and solar power plants.

v. Poor State of Infrastructure (In adequate supply of energy for water works and service stations): The poor state of power supply from the Power Holding Company of Nigeria, Plc. (PHCN), limited distribution system that was put at 40%, ageing plants, vehicles, machineries and limited service coverage due to limited reticulation pose a serious problem to many water supply projects in the Country.

vi. Cost Intensive (High production and maintenance cost): Producing potable water for the public involves finance in the purchase of materials/equipment and paying of bills-(chemicals, power, maintenance and overhead costs)

vii. Corruption: The situation where projects are not adequately monitored by coordinating agencies is detrimental to economic progress and against social benefits for the government to carry out such projects. Huge capital investment without corresponding financial discipline and accountability for performance, along with political interference in decisions about allocations and pricing are reflected in the inefficient operations, inadequate maintenance, financial losses and unreliable service delivery as witnessed.

viii. Challenges of Cost Recovery: The sustainability of a project is tied to continuous maintenance which involves continuous flow of funds. Cost recovery measures are not adequately put in place in our water management approach because water supply has always been considered as a social good. There is no appropriate metering system, and where they do exist utility officer do not make use of them for proper pricing system.

ix. Urbanization Challenge: The accelerating growth in urban population could see a supply-demand gap in water resources. Currently, due to urbanization process more than one billion people don't have access to clean water on the global scale, (Jeff 2010). This is a great challenge to the water management sector of the economy. More strategic and proactive approach need to be adopted to handle this situation.

2.2.3 Global best practice for water management

Meter/Measure/Manage

Metering and measuring facility water use help to analyze saving opportunities. This also assures the equipment is run correctly and maintained properly to help prevent water waste from leaks or malfunctioning mechanical equipment.

Optimize Cooling Towers

Cooling towers provide air conditioning for laboratories and are large consumers of water. Cooling tower operations can be optimized by carefully controlling the ratio of water discharged (blow-down) to water evaporated. The ratio of evaporation to blow-down is called the cycle of concentration. For maximum water efficiency, cooling towers should be

operated at six or more cycles of concentration. Metering water put into and discharged from the cooling tower ensures the cooling tower is operating properly and can help identify leaks or other malfunctions.

Replace Restroom Fixtures

The U.S. Department of Energy established federal water-efficiency standards in the 1990s. Prior to that, most EPA facilities had inefficient sanitary fixtures. For example, toilets used 3.5 gallons per flush (gpf). Nearly all EPA laboratories have since installed water-efficient fixtures, many of which have earned EPA's WaterSense® label for efficiency and performance. These include:

- New toilets with flow rates of 1.28 or 1.6 gpf.
- Water Sense labeled urinals flushing at 0.5 gpf or less.
- Water Sense labeled showerheads flowing at 2.0 gallons per minute (gpm) or less.

Faucet aerators flowing at 0.5 gpm, well below the 2.2 gpm federal standard, have also been installed in most laboratories.

Use Water-Smart Landscaping and Irrigation

Planting native and drought-tolerant plant species minimizes the need for supplemental irrigation. Landscape water use can also be reduced 10 to 20 percent by having an irrigation water audit. EPA selects audit professionals certified through a WaterSense labeled program. Water Sense labeled weather-based irrigation controllers or soil moisture sensors are used to water only when plants need it.

Control Steam Sterilizer Water

Steam sterilizers use cooling water to temper steam condensate discharge from the sterilizer to the laboratory drain. Many older sterilizers discharge a continuous flow of tempering water to the drain, even when it is not needed. EPA has retrofitted sterilizers with a tempering water control kit or replaced old steam sterilizers with models that only apply tempering water when needed.

Recover Rainwater

Recovery systems capture rainwater from the roof and redirect it to a storage tank. This water is used for flushing toilets, supplying cooling towers and irrigating the landscape.

- The Region 7 Science and Technology Center in Kansas City, Kansas, has incorporated a state-of-the-art rooftop rainwater recovery system that has the potential to save the laboratory more than 300,000 gallons of water per year.

2.2.4 Cooperative Societies and Water management

The International Cooperative Alliance (ICA) in its Statement on the Cooperate Identity, in 1995, defines a cooperative as "an autonomous association of persons united voluntarily to meet their common economic, social, and cultural needs and aspirations through a jointly-owned and democratically-controlled enterprise." It is a business voluntarily owned and controlled by its member patrons and operated for them and by them on a nonprofit or cost basis (UWCC, 2002). It is a business enterprise that aims at complete identity of the component factors of ownership, control and use of service, three distinct features that differentiate cooperatives from other businesses (Laidlaw, 2004).

Although there is no consistency to the exact origin of the co-operative movement, many academics argue the origins lie within Europe (Shaffer, 2009). The first recorded co-operatives date back to 1750 in France, where local cheese makers in the community of Franche-Comté established a producer cheese cooperative. Within the decade, co-operatives had developed in France, United Kingdom, United States and Greece. In 1844 the Equitable Pioneers of Rochdale Society (EPRS) was formed. With the goal of social improvement, twenty-eight unemployed community members saw the opportunity to pool their limited resources and attempt cooperation for the good of the group. Even though co-operatives appeared in the century previous, Rochdale is seen as the first 'modern' cooperative since it was where the co-operative principles were developed (Wikipedia, 2006; Gibson, 2005). Water management is the activity of planning, developing, distributing and managing the optimum use of water. Water management is the activity of planning, developing, distributing and managing the optimum use of water resources. Water is a basic necessity. No living creature can live without water. There's a scarcity of water. To avoid this scarcity, water is saved and managed efficiently.

Cooperative societies has traditionally focused on designing and constructing systems based on prescribed needs. These needs are usually linked to perceived health improvements and give little consideration to demand for or sustainability of services. Furthermore, in many countries government policies cooperative societies are either inconsistent or do not exist. As a result, governments and donors often end up supporting projects within the same country that have incoherent strategies. The traditional approach

to cooperative societies has frequently resulted in services that have not been sustained. Governments tend to pay more attention to building new facilities than to ensuring the use of existing ones. Roles for project planning, implementation, cost recovery, operations and maintenance (O&M), and asset ownership are poorly defined and communicated. Although communities are usually expected to provide a share of costs (mainly through in-kind contributions), it is often unclear how the level of contribution has been determined or how the level relates to demand. Furthermore, governments frequently assume that communities will somehow "manage" their facilities, but do not help build capacity or commitment to do so this makes cooperative societies vey important to rural area in establishing solution to their needs like water cooperation and all other major needs in the society

CHAPTER THREE
METHODOLOGY

3.0 The Study Area

Study area are interdisciplinary fields of research and scholarship pertaining to particular geographical, national/federal, or cultural regions. The term exists primarily as a general description for what are, in the practice of scholarship, many heterogeneous fields of research, encompassing both the social sciences and the humanities. Typical area study programs involve international relations, strategic studies, history, political science, political economy, cultural studies, languages, geography, literature, and other related disciplines (Kuijper, 2008).Therefore the study area for this research work is Ijebu Igbo in Ijebu North local government

3.1 Geographical Location of the Study Area

Geographical local is a field of science devoted to the study of the lands, features, inhabitants, and phenomena of the Earth and planets. The Geographical Location of the Study Area is Ijebu Igbo in Ijebu North local government located. Ijebu North is a Local Government Area in Ogun State, Nigeria. Its headquarters are in the town of Ijebu Igbo at 6°57′N 4°00′E. It has an area of 967 km² and a population of 284,336 at the 2006 census the postal code of the area is 120.

The local government was established in 1979 and has its headquarters at Ijebu Igbo. It is bounded by Oluyole Local Government of Oyo State in the north, in the west by Ijebu East Local Government, in the south by Ijebu North East, Odogbolu and Ijebu Ode

Local Government, and in the east by Ikenne Local Government. The region is partitioned into local wards Atikori, Oke-Agbo, Ojowo/Japara, Oke-Sopen, Ome, Oru-awa-ilaporu, Osun and Ago-Iwoye urban I, Ago-Iwoye urban II, Ako-Onigbagbo Gelete, and Mamu Ebun-Eruri. Ijebu Igbo is the second largest town in Ogun State and the largest among Ijebus in terms of land mass, there are arable land for farming. Also there are hundreds of villages and hamlet under Ijebu Igbo. The town is bordered by Ibadan, Ikire, and Ondo

The map Highlighting Ijebu Igbo Under Ijebu North Local Government, Ogun State.

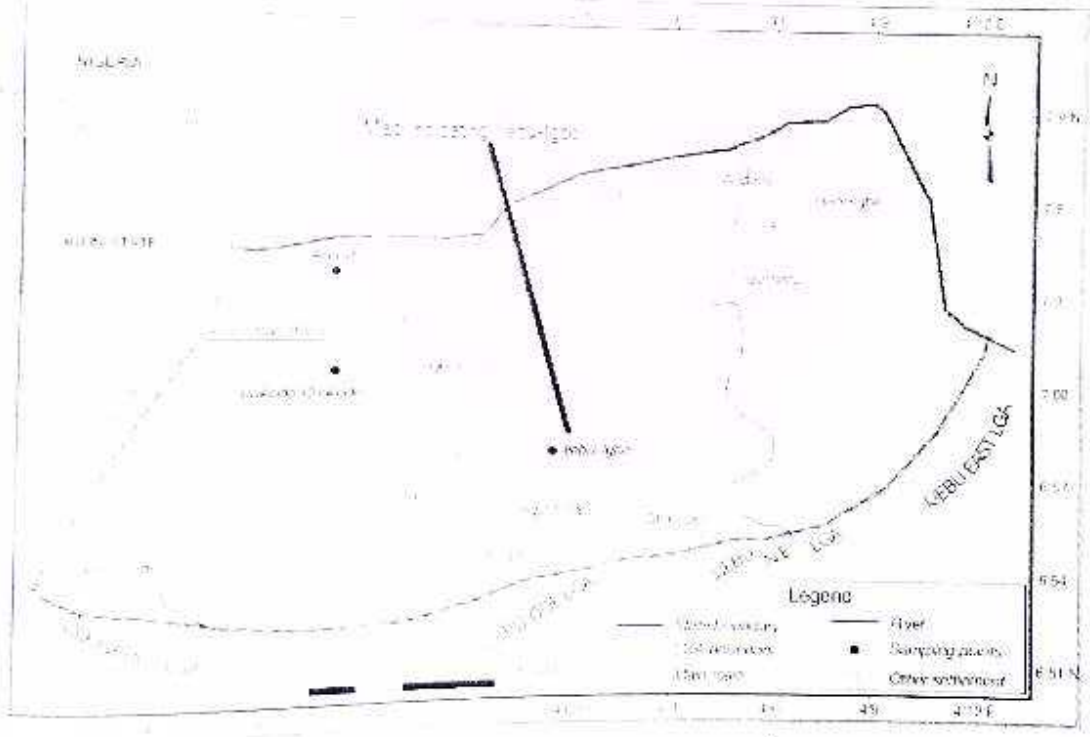

Figure 3.1: Map of Ijebu North indicating Ijebu-Igbo

3.2 Physical Characteristics ofthe Study Area

Ijebu Igbo (Yoruba: Ìjèbú-Igbó) is a town in Ogun State, Nigeria. It is approximately a 15-minute drive north of Ijebu Ode. Ijebu Igbo, also written as Ijebu-Igbo, is the headquarters of Ijebu North Local Government Authority of Ogun State, Nigeria. Like all other Ijebus, the people of Ijebu Igbo speak the Ijebu dialect, which is distinct from but similar to the Yoruba language.

3.2.3 PHYSICAL SETTING

3.2.3.1 Relief

Ijebu-Igbo consists largely of undulating plains with subdued interfluves (Mortimore, 1970). the bedrock geology is predominantly metamorphic rocks of the Nigerian basement complex consisting of biotite, gneisses and older granite. In the western corner, younger granites and batholiths are evident. Deep chemical weathering and fluvial erosion, influenced by the bioclimatic nature of the environment have developed the characteristic high undulating plains and subdued interfluves, which, in some places, are capped by high-grade lateritic ironstone especially in the west. (Bello and Nish (2008)

3.2.3.2 Drainage

The drainage system of Ijebu-Igbo focuses on two major rivers, Osun River. The Ijebu-Igbo River is affected by seasonality. The flow of the rivers is highly irregular, following rainfall events in streams. The drainage is commonly dendritic because there is no structural control on the drainage lines on the deeply weathered plains. The channel pattern of the drainage basins are of two type: those with a large number of unbranched

first order tributaries producing high stream frequencies and high drainage densities and others consisting of basins with low frequencies and low drainage densities

3.2.3.3 Climate

Ijebu-Igbo experiences a typical tropical continental climate, with distinct seasonal regimes, oscillating between cccl to he: Cry and humid. These two seasons reflect the influences of tropical continental and equatorial maritime air masses, which sweep over the entire country. However, in Ijebu-Igbo, the seasonality is pronounced with the cool to hot dry season being longer than the rainy season. High evaporation during the dry season, however, creates water shortage problems. Generally, the soils and vegetation are typical red-brown to red-yellow tropical ferruginous soils and savannah grassland with scattered trees and woody shrub. The soils in the upland areas are rich in red clay and sand but poor in organic matter.

3.3 Socio-Economic Characteristics of the Study

The town's socio-economic activities are Animal skin processing (Pomo), timber, cocoa, exploitation of mineral resources and it is home to many saw mills and also a developed quarry.

3.4 Water and Cooperative Issues in Ijebu-Igbo

A cooperative society is an autonomous association of persons who voluntary cooperate for their mutual, social, economic, and cultural benefit. Since it is common knowledge that the government cannot meet the needs of the populace at all times, the

populace must not fold their arms and suffer in perpetuity, hence the emergence of many co-operative societies in Nigeria.

Aston (2011) identified co-operative societies to be the instruments that provide a direct stake in major economies for people and communities by creating powerful incentives for local social cohesion and cooperation, as well as at regional and national levels. He noted that cooperatives have proven themselves to be potent developmental tools around the world through the employment of 20% more than corporations and with more than 800 million members internationally as well as nearly half of the world"s population benefiting directly from their membership and participation.

Cooperative societies in Ijebu-Igbo lacks great support to the well-being of the communities in terms of provision of water resources due to in-sufficient capital to sustain the project. The capital base of the most society within Ijebu-Igbo does not support or adequate for water project in the community.

CHAPTER FOUR

4.0. ANALYSIS OF POSSIBLE INTERVENTION OF COOPERATIVE SOCIETY IN WATER SUPPLY AND MANAGEMENT IN IJEBU-IGBO, OGUN STATE

4.1 Introduction

Research findings on the possible intervention of cooperative society in water supply and management in Ijebu-Igbo presented in this chapter. Reports presented here are based on the results obtained from questionnaire survey conducted by the researcher. The findings are presented bellow

4.2 SOCIO ECONOMIC CHARACTERISTICS

The socio-economic characteristics of the respondents includes gender marital status, age, educational background, occupation, Income, Length of staying in community

Table 4.1: Gender of the Respondent

Gender	Frequency	Percentage
Male	45	45
Female	55	55
Total	100	100

Source: Researcher's field Survey, 2020

Gender characteristics of the respondents show that 45% of the respondents are male while 55% of the respondents are female. This indicate that there are more female than male in the study area

Table 4.2 Age distribution of the respondent

Age	Frequency	Percentage
Less than 20 years	1	1
20-30 years	5	5
31-40 years	13	13
41-50 years	34	34
51-60 years	27	27
60 years and above	20	20
Total	100	100

Source: Researcher's field Survey, 2020

The above table reveals the age of the respondents within the study area, 1% of the respondents are less than 20 years, 5% of the respondents are between 20-30 years, 13% of the respondents are between 31-40years, 34% of the respondents are between 41-50 years, 27% of the respondents are between 51-60 years while 20% of the respondents are 60 years and above. The above indicate that respondents within 41-50 years had the highest respondent within the study area.

Table 4.3: Marital Status of the Respondent

Status	Frequency	Percentage
Single	45	45
Married	50	50
Divorced	5	5
Total	100	100

Source: Researcher's field Survey, 2020

The above indicate the marital status of the respondents; 45% of the respondents are single, 50% of the respondents are married while 5% of the respondents are divorced.

Table 4.3 Education Background of the Respondent

Education	Frequency	Percentage
Non-formal	18	18
Primary	15	15
Secondary	13	13
Vocational	20	20
Tertiary	12	12
No response	22	22
Total	100	100

Source: Researcher's field Survey, 2020

The educational background of the respondents are reviewed within the study area, 18% of the respondents had non-formal education, 15% of the respondents had primary education, 13% of the respondents have secondary education, 20% of the respondents has vocational education, 12% of the respondents had tertiary education while 22% of the respondents had no response. The above reveals that majority of the respondent had no response to the question.

Table 4.4 Occupation of the Respondent

Occupation	Frequency	Percentage
Farming	12	12
Artisan/craft	10	10
Public servant	15	15
Self employed	20	20
Trading	22	22
Others	8	8
No response	13	13
Total	100	100

Source: Researcher's field Survey 2020

The above table reveal the occupation of the respondents, 12% of the respondents are famers, 10% of the respondents are artisan/craft, 15% of the respondents are public servant, 20% of the respondents are self employed, 22% of the respondents are traders 8% of the

respondents are other while 13% of the respondents had no response. The above indicate that traders with 22% are most involved in the study area.

Table 4.5: Income of the Respondents

Income	Frequency	Percentage
10,000	8	8
10,000-20,000	20	20
20.000-30,000	20	20
other	35	35
No response	17	17
Total	100	100

Source: Researcher's field Survey 2020

The above table reveal the income of the respondents in the study area, 8% of the respondents earns 10,000, 20% of the respondents earns between 10,000-20,000, 20% of the respondents are public servant, 20% of the respondents earn between 20.000-30,000, 35% of the respondents are other, 17% of the respondents had no response. The above table indicate majority of the respondent does not response to the question.

Table 4.6 Length of Staying in Community

Length of Staying	Frequency	Percentage
[illegible]	20	20
[illegible]	18	18
[illegible]	12	12
[illegible]	[illegible]	15
[illegible]	[illegible]	30
[illegible]	[illegible]	5
[illegible]	[illegible]	100

Source: Researcher's field Survey 2020

[illegible] the respondents in the study area, 20% of [illegible] years, [illegible] of the respondents stayed between 6-10 [illegible] of the respondents lived [illegible] above 20 years, 5% of the respondents [illegible] the respondent does not response to [illegible]

PART B

SECTION A: DATA ANALYSIS OF THE RESIDENT

Table 4.7: **Sources of water using in the community**

Option	Frequency	Percentage
Borehole	30	30
Stream	5	5
well	59	59
Rain	6	6
Total	100	100

Source: Researcher's field Survey 2020

The above table reveal the source of water used within the community, 30% of the respondents agreed to borehole, 5% of the respondents agreed to stream, 59% of the respondents agreed to well while 6% of the respondents agreed to rain. The table indicate that majority of the resident are used to well water and this signifies that well water is the most available within the study area.

Table: 4.8: **Method of storing water**

Options	Frequency	Percentage
Drum	13	13
surface tank	25	25
plastic bowl	22	22
local pot	10	10
kegs	30	30
Total	100	100

Source: Researcher's field Survey 2020

It was discovered during the survey that 13% of the respondents used drum as a source of storing water. 25% of the respondents used surface tank. 22% of the respondents used plastic bowl. 10% of the respondents used local pot while 30% of the respondents used kegs. The table indicate that majority of the resident are used keg as a source of storing water.

Table 4.9: **Reason for source frequently used**

Options	Frequency	Percentage
Always available	25	25
Cheaper	20	20
Convenient to get	25	25
High quantity	30	30
Total	100	100

Source: Researcher's field Survey 2020

From table 4.9, the researcher discovered reasons behind source of frequently used, 25% of the respondents believed because it is always available, 20% of the respondents believed because it is cheaper, 25% of the respondents said it is convenient to get, while 30% of the respondents believed because it high quantity.

Table 4.10: Provision of water by stakeholders in the community

Options	Frequency	Percentage
Cooperative society	2	2
Government	80	80
Personal person	18	18
Total	100	100

Source: Researcher's field Survey 2020

From table 4.10, reveals the stakeholders involved in the community project, 2% of the respondents said cooperative, 80% of the respondents said government while 18% of the respondents said individual. The above table shows that the government has been the major donor of water to the community.

Table: 4.11: Household member involved in fetching water

Options	Frequency	Percentage
Women	25	25
Men	5	5
Children	15	15
Women and children	55	55
Total	100	100

Source: Researcher's field Survey 2020

From table 4.11, the researcher reveals the members of the family involved in fetching of water, 25% of the respondents said women, 5% of the respondents said men, 15% of the respondents said children, while 55% of the respondents said women and children. The table indicate that women and children are the most involved in fetching of water within the study area

Table 4.12: **Distance of water from the house**

Options	Frequency	Percentage
Nearby resident	70	70
Far from resident	30	30
Total	100	100

Source: Researcher's field Survey 2020

From table 4.12, the researcher reveals the distance at getting or fetching water within the community, 70% of the respondents said nearby resident, while 30% of the respondents said far from resident. The above table shows that majority of the water source are nearby the resident

Table 4.13: **Are you well satisfied with the water**

Options	Frequency	Percentage
Yes	85	85
No	15	15
Total	100	100

Source: Researcher's field Survey 2020

From table 4.11, the researcher reveals the members of the family involved in fetching of water. 25% of the respondents said women, 5% of the respondents said men, 15% of the respondents said children, while 55% of the respondents said women and children. The table indicate that women and children are the most involved in fetching of water within the study area

Table 4.12: **Distance of water from the house**

Options	Frequency	Percentage
Nearby resident	70	70
Far from resident	30	30
Total	100	100

Source: Researcher's field Survey 2020

From table 4.12, the researcher reveals the distance of getting or fetching water within the community. 70% of the respondents said nearby resident, while 30% of the respondents said far from resident. The above table shows that majority of the water source are nearby to the resident

Table 4.13: **Are you well satisfied with the water**

Options	Frequency	Percentage
Yes	85	85
No	15	15
Total	100	100

Source: Researcher's field Survey 2020

From table 4.13, the researcher reveals satisfaction of the community on water provision within the study area, 85% of the respondents said yes, while 15% of the respondents said no. The above table shows that majority shows that they are satisfied

Table 4.14: Availability of adequate water for consumption

Options	Frequency	Percentage
Yes	60	60
No	40	40
Total	100	100

Source: Researcher's field Survey 2020

From table 4.14, reveals whether the community has enough water sources for consumption, 60% of the respondents said yes, while 40% of the respondents said no. The above table shows that there are not enough water sources within the study area

Table 4.15: Opinion of the appropriate stakeholder for water maintenance

Options	Frequency	Percentage
Proper sanitation of environment	35	35
Provision of quality materials	25	25
Good monitoring	40	40
Total	100	100

Source: Researcher's field Survey 2020

From table 4.14, reveals opinion of the appropriate stakeholder for water maintenance, 35% of the respondents said proper sanitation of environment, 25% of the respondents said provision of quality materials while 40% of the respondents said good monitoring.

Table 4.15: **Relationship between the society and the community**

Option	Frequency	Percentage
Good	65	65
Better	25	25
Fair	10	10
Total	100	100

Source: Researcher's field Survey 2020

From table 4.15, reveals relationship between the cooperative society and the people within the study area, 65% of the respondents said good, 25% of the respondents said better while 10% of the respondents said fair

Table 4.16: Distribution of water by water management agency

Options	Frequency	Percentage
Yes	15	15
No	85	85
Total	100	100

Source: Researcher's field Survey 2020

From table 4.16, reveals if the water agency involve in the distribution of water within the community, 15% of the respondents said yes, while 85% of the respondents said no. The above indicate that, the water agency does not involve in the distribution of water within the community.

Table 4.17: The attitude of the society or government towards water management

Options	Frequency	Percentage
Good	75	75
Better	20	20
Fair	5	5
Total	100	100

Source: Researcher's field Survey 2020

From table 4.17, reveals the attitude of the society towards water management, 75% of the respondents said good, 25% of the respondents said better while 25% of the respondents said better. The above indicate that, the society or government attitudes are good.

Table 4.18: The cooperative society check on the water concentration

Options	Frequency	Percentage
Regularly	43	43
Occasionally	27	27
Often	30	30
Total	100	100

Source: Researcher's field Survey 2020

From table 4.18, reveals how the water concentration is checked, 53% of the respondents said yes. while 47% of the respondents said no. The above indicate that, the society or government adequately checked the water concentration.

SECTION B:

Part A: Socio Bio data of the Cooperative Society

S/N	QUESTION	
1	Name of Cooperative Society Administered	**COOPERATIVE DATA**
		OCEANVIEW OJOWO IJEBU-IGBO (IJEBU NORTH) C.M.S LTD
2	Year of Establishment	19-01-2015
3	Capital available to the society	**Shares:** 944,420 **Savings:** 944,470
4	Project Involved in by the society	Farming, Garri Production
5	Involvement in water provision	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	The society lack fund or capital for provision of water supply
6	Aspect of water provision involved	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	Inability
7	Gains for involvement	None
8	Challenges of involvement on water provision	None

From table 4.18, reveals how the water concentration is checked, 53% of the respondents said yes, while 47% of the respondents said no. The above indicate that, the society or government adequately checked the water concentration.

SECTION B:

Part A: Socio Bio data of the Cooperative Society

S/N	QUESTION	COOPERATIVE DATA
1	Name of Cooperative Society Administered	**OCEANVIEW OJOWO IJEBU-IGBO (IJEBU NORTH) C.M.S LTD**
2	Year of Establishment	19-01-2015
3	Capital available to the society	**Shares:** 944,420 **Savings:** 944,470
4	Project Involved in by the society	Farming, Garri Production
5	Involvement in water provision	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	The society lack fund or capital for provision of water supply
6	Aspect of water provision involved	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	Inability
7	Gains for involvement	None
8	Challenges of involvement on water provision	None

S/N	QUESTION	COOPERATIVE DATA
1	Name of Cooperative Society Administered	**ONWARD (IJEBU NORTH) TEACHERS C.I.C.S. LTD**
2	Year of Establishment	12-09-2002
3	Capital available to the society	**Shares:** 21,544,388.24 **Savings:** 40,925,771.52
4	Project Involved in by the society	Farming, Building, Rentals, Water
5	Involvement in water provision	Involved
	(i) Reason for involvement	To be part of the growth and development within the community
	(ii) Reason for not involvement	None
6	Aspect of water provision involved	Well Water
	(i) Reason for involvement	To provide more suitable water to the community
	(ii) Reason for not involvement	None
7	Gains for involvement	Increment of membership and building good image for the society
8	Challenges of involvement on water provision	Lack of proper maintenance from the community members

S/N	QUESTION	COOPERATIVE DATA
1	Name of Cooperative Society Administered	**ONWARD (IJEBU NORTH) TEACHERS C.I.C.S. LTD**
2	Year of Establishment	12-09-2002
3	Capital available to the society	**Shares:** 21,544,388.24 **Savings:** 40,925,771.52
4	Project Involved in by the society	Farming, Building, Rentals, Water
5	Involvement in water provision	Involved
	(i) Reason for involvement	To be part of the growth and development within the community
	(ii) Reason for not involvement	None
6	Aspect of water provision involved	Well Water
	(i) Reason for involvement	To provide more suitable water to the community
	(ii) Reason for not involvement	None
7	Gains for involvement	Increment of membership and building good image for the society
8	Challenges of involvement on water provision	Lack of proper maintenance from the community members

Part B:

Table 4.20: Water sources

Options	Frequency	Percentage
Borehole	30	30
Stream & river	5	5
Well	60	60
Rain	5	5
Total	100	100

Source: Researcher's field Survey 2020

From table 4.20, the researcher reveals type of water source to be provided for community, 30% of the respondents said borehole, 5% of the respondents said Stream & river, 60% of the respondents said well, while 5% of the respondents said rain. The table indicate that the cooperative society prefer borehole as a water source for the community.

Table 4.21: What type of project to be executed by the cooperative society

Options	Frequency	Percentage
Creation of water source	60	60
Electricity provision	5	5
Provision of shelter	10	10
None of the above	25	25
Total	100	100

Source: Researcher's field Survey 2020

From table 4.21, the researcher reveals type of project to be executed by the cooperative society, 60% of the respondents said creation of water source, 5% of the respondents said electricity provision, 30% of the respondents said provision of shelter, while 5% of the respondents said none of the above. The table indicate that the cooperative society prefer creation of water source for the community.

Table 4.22: The cooperative are eager to help the community with provision of water

Options	Frequency	Percentage
Yes	68	68
No	32	32
Total	100	100

Source: Researcher's field Survey 2020

From table 4.22, the reveals cooperative society are eager to help the community in provision of water, 68% of the respondents said yes, while 32% of the respondents said no.

The table indicate that the cooperative society is willing and ready to provide water for the society.

Table 4.23: There is an adequate planning and management toward water resources in study area

Options	Frequency	Percentage
Yes	65	65
No	35	35
Total	100	100

Source: Researcher's field Survey 2020

From table 4.23, the reveals that there is an adequate planning and management towards water resources, 65% of the respondents said yes, while 35% of the respondents said no. The table indicate that the cooperative society has adequate plans towards water resources in the study area

Table 4.24: The cooperative society wills response to the maintenance of water

Options	Frequency	Percentage
Yes	60	60
No	40	40
Total	100	100

Source: Researcher's field Survey 2020

From table 4.24, it was reveals that the cooperative society will be responsible to the maintenance of water, 60% of the respondents said yes, while 40% of the respondents said no. The table indicate that the cooperative society will be adequately responsible for water maintenance within the study area.

Table 4.25: The cooperative society have legal document establishment

Options	Frequency	Percentage
Yes	52	52
No	48	48
Total	100	100

Source: Researcher's field Survey 2020

From table 4.25, it was reveals that the cooperative society have legal document towards establishment, 52% of the respondents said yes, while 48% of the respondents said no. The table indicate that the cooperative society are able to establish or plans and project within the study area

Table 4.29: The cooperative society own all the facilities in the community

Options	Frequency	Percentage
Yes	60	60
No	40	40
Total	100	100

Source: Researcher's field Survey 2020

From table 4.28, it was reveals that the cooperative society owns facilities within the study area. 60% of the respondents said yes, while 40% of the respondents said no. The table indicate that the cooperative society own a facilities with the study area.

4.3 Test for Hypothesis

Ho: Cooperative societies has no functional role in water provision and management

Hi: Cooperative societies has a functional role in water provision and management

The model of this is specified as:

Y = Dependent variable (Cooperative society)

X = Independent variable (water resources management)

PRESENTATION OF HYPOTHESIS RESULT

Result of analysis of possible intervention of cooperative society in water supply and management

4.3.1 Regression Analysis result

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.953[a]	.909	.906	.429

a. Predictors: (Constant),

Research Findings

The findings on table indicate that the R square value (Coefficient of determination) is 0. 909 which indicate the independent variables (Conflict) explain 90.9% of the variation in warer resources management.

The Analysis of Variance (ANOVA) results are shown in table as follows

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	58.738	1	58.738	319.690	.000[b]
	Residual	5.880	32	.184		
	Total	64.618	33			

a. Dependent Variable: Cooperative society

b. Predictors: (Constant), water resources management

4.3.2 Research Findings

The findings on table show that the regression model is there is a water resources management action within Ijebu-Igbo, Ogun State. This is shown by the P-value (Sig.) of 0.000, which is less than 0.05 at 95% confidence level.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.074	.143		.518	.608
	Time management	.993	.056	.953	17.880	.000

a. Dependent Variable: Cooperative society

Research Findings

The findings on table indicate that cooperative society relates positively (B=.074) with water provision and management. From the above analysis the null hypothesis is rejected and the alternative hypothesis is accepted which indicates that Cooperative societies has a functional role in water provision and management

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.074	.143		.518	.608
Time management	.993	.056	.953	17.880	.000

a. Dependent Variable: Cooperative society

Research Findings

The findings on table indicate that cooperative society relates positively (B=.074) with water provision and management. From the above analysis the null hypothesis is rejected and the alternative hypothesis is accepted which indicates that Cooperative societies has a functional role in water provision and management

CHAPTER FIVE

5.0 SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of Major Findings

All the study communities had varied sources of community water supply. The number and type of the water supply facilities are shown in Table 4.7. Majority of the resident (59%) within the community agreed to well water as there source of water. This signifies that well water is the most available within the study area. From table 4.8 it was discovered during the survey that most of the residents with 30% used kegs, resident are used keg as a source of storing water. Table 4.9 shows the reasons behind source of frequently used, it was indicated that 30% believed because it high quantity. Provision of water by stakeholders in the community was done by cooperative society. Table 4.11 shows that women and children with 55% are most involved in fetching of water and the distance is nearby to most houses within the study area.

From table 4.13, 85% of the residents are satisfied with the water provided. Table 4.14 reveals the availability of adequate water for consumption with 60%. Majority of the respondents with 40% on the opinion of the appropriate stakeholder for water maintenance are with good monitoring. Table 4.15 shows 60% of the relationship between the society and the community are good.

From the above table, Oceanview Ojowo Ijebu-Igbo (Ijebu North) C.M.S LTD did not involved in water supply due to lack fund or capital for provision of water supply. The

cooperative only involved in Farming, Gum Production e.t.c. The inability of the society has been another reason for not involving in the provision of water to the community. Onward (Ijebu North) Teachers C.I.C.S. LTD with establishment in 2002 has been able to patronize in the community project with the provision of well water to the society. The cooperative also involved in farming, building (Lock up shops, Hall) and this has lead to increment of membership and building good image for the society.

Table 4.20 indicate that major sources of water within the community is well water with 60% of the respondent are involved. Table 4.21 shows creation of water source as the project to be executed by the cooperative society and cooperative are eager to help the community with provision of water, there is an adequate planning, management toward water resources in study and cooperative society wills response to the maintenance of water and the cooperative society have legal document establishment.

5.2 Conclusion

From the above study, it has been concluded that there has been a provision of water within Ijebu-Igbo by Onward (Ijebu North) Teachers C.I.C.S. LTD. The existing policy to supply water through boreholes especially in situations where there is no regular electricity supply to power the machines, as currently obtained in the rural areas studied, is counter productive. Given the fact that women and children are the ones mostly involved in fetching water, there is need to devise technologies for water supply which are women and children friendly. A challenge to the state's water agency, therefore, is the capability to

cooperative only involved in Farming, Garri Production e.t.c. The inability of the society has been another reason for not involving in the provision of water to the community. Onward (Ijebu North) Teachers C.I.C.S. LTD with establishment in 2002 has been able to patronize in the community project with the provision of well water to the society. The cooperative also involved in farming, building (Lock up shops, Hall) and this has lead to Increment of membership and building good image for the society.

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develop and install appropriate technologies to meet the basic water supply and sanitation needs of the millions of citizens who now lack them.

5.3 Recommendations

There is still the age-long popular opinion among the rural dwellers that the provision of social amenities, including water provision, is the sole responsibility of government. There is the need to change this orientation through grassroots awareness programmes. Infact, the success story in Ijebu-Igbo of community water supply and management shows that water supply provision and management can even be more successful and sustainable in the rural areas than in the urban areas if the community is involved in the planning and execution of such projects especially if government can provide the initial infrastructure or capital outlay.

New models of institutional, financial, contractual, and legal relationships between communities and back-stopping agencies should be sought. Permanence and improvement of service should be the goals. A short term "project" mentality on the part of funding organizations should be eschewed in favour of long term and evolving commitment to developing country partners.

Greater emphasis should be placed on institutional support (re-training, resourcing, and reform) of Government and non-Government back-stopping organizations.

Where in-country private sector providers of equipment, materials, and services do not exist, or are weak, means should be identified to strengthen them. Genuine competition and choice should be sought.

References

Abell, P. (2004): Cooperative Movement, Encyclopedia Encarta 2004 Edition

Baroni, L.; Cenci, L.;Tettamanti, M.; Berati, M. (2017). "Evaluating the environmental impact of various dietary patterns combined with different food production systems". *European Journal of Clinical Nutrition*. **61** (2):

Behzadian, K; Kapelan, Z (2015). "Advantages of integrated and sustainability based assessment for metabolism based strategic planning of urban water systems" (PDF). *Science of the Total Environment. 527-528: 220–231. Bibcode:2015ScTEn.527..220B. doi:10.1016/j.scitotenv.2015.04.097. hdl:10871/17351. PMID 25965035.*

Behzadian, k; Kapelan, Z (2015). "Modelling metabolism based performance of an urban water system using WaterMet2" (PDF). *Resources, Conservation and Recycling. 99: 84–99. doi:10.1016/j.resconrec.2015.03.015.*

Chang, Kenneth (2008-12-02). "A New Picture of the Early Earth".The New York Times.Retrieved 2010-05-20.

Cuk, M.; Stewart, S. T. (2012-10-17)."Making the Moon from a Fast-Spinning Earth: A Giant Impact Followed by Resonant Despinning". *Science*. **338** (6110):

Dieter, Cheryl A.; Maupin, Molly A.; Caldwell, Rodney R.; Harris, Melissa A.; Ivahnenko, Tamara I.; Lovelace, John K.; Barber, Nancy L.; Linsey, Kristin S. (2018). "Estimated use of water in the United States in 2015". *Circular*.U.S. Geological Survey.

Dubnov-Raz G, Constantini NW, Yariv H, Nice S, Shapira N (October 2011). "Influence of water drinking on resting energy expenditure in overweight children". *International Journal of Obesity*. **35** (10):

Gertler, *K.P.2001). The Effects of Corporate Governance on Savings and Credit Co Operatives (SACCOS) Financial Performance in Kenya.*

Gleick, P.H., ed. (2003). *Water in Crisis: A Guide to the World's Freshwater Resources.* Oxford University Press.p. 13, Table 2.1 "Water reserves on the earth".Archived from the original on 8 April 2013.

Gleick, P.H.; Palaniappan, M. (2010). "Peak Water" (PDF). *Proceedings of the National Academy of Sciences.* **107** (125): 11155–11162

Haevecker, Michael; Wrabetz, Sabine; Kröhnert, Jutta; Csepei, Lenard-Istvan; Naumann d'Alnoncourt, Raoul; Kolen'Ko, Yury V; Girgsdies, Frank; Schlögl, Robert; Trunschke, Annette (2012). "Surface chemistry of phase-pure M1 MoVTeNb oxide during operation in selective oxidation of propane to acrylic acid" (PDF). *Journal of Catalysis.* **285**: 48–60.

Ife, J. (2002). Community development: community-based alternatives in an age of globalism. New South Wales, UK: Longman.

Ludlum, H. (2004). *Qualitative characteristics of financial information and its role in investor-making of managers, monthly bank and the economy, No. 114*

Levin, M. (2002). The Promotion of Cooperatives. ILO Cooperative Branch, at www.ica.coop/europe/ra2002/speech

Mahon, Anthea; Jean Hopkins; Charles William McLaughlin; Susan Johnson; MaryannaQuon Warner; David LaHart; Jill D. Wright (2013). *Human Biology and Health.* Englewood Cliffs, New Jersey: Prentice Hall. ISBN 978-0-13-981176-0.

Noakes TD, Goodwin N, Rayner BL, Branken T, Taylor RK (2005).

O'Neil, Jonathan; Carlson, Richard W.; Paquette, Jean-Louis; Francis, Don (November 2012). "Formation age and metamorphic history of the Nuvvuagittuq Greenstone Belt". *Precambrian Research.* 220–221: 23–44.

OUKE(2016). Pohjois-SuomenVesivaliokunta [Northern Finland Water Committee]. Available from www.ouke.fi\

Piani, Laurette (28 August 2020). "Earth's water may have been inherited from material similar to enstatitechondrite meteorites". *Science.* **369** (6507): 1110–1113

APPENDIX

DEPARTMENT OF URBAN AND REGIONAL PLANNING SCHOOL OF ENGINEERING TECHNOLOGY, ABRAHAM ADESANYA POLYTECHNIC, IJEBU-IGBO

QUESTIONNAIRE ON

ANALYSIS OF POSSIBLE INTERVENTION OF COOPERATIVE SOCIETY IN WATER SUPPLY AND MANAGEMENT, IJEBU-IGBO

(COOPERATIVE SOCIETY)

Department of Urban and Regional Planning

Abraham Adesanya Polytechnic

Ijebu-Igbo

Ogun State

Dear Respondent,

AN APPEAL FOR YOUR ASSISTANCE

This questionnaire is part of a research project on "Analysis of Possible Intervention of Cooperative Societies in Water Supply and Management in Ijebu Igbo Ogun State" being carried out as part of the requirements for the award of the National Diploma in Urban and regional Planning .

Yours, faithfully,

ENITAN ABIOLA.

Instruction:

SECTION A

Please tick (√) in the box that which is in line with the answer of your choice. Although, a high degree of fairness is required in your responses, no responses is either absolutely wrong or correct.

SECTION A

Part A: **Socio Bio data of the Cooperative Society**

S/N	QUESTION	COOPERATIVE DATA
1	Name of Cooperative Society Administered	**OCEANVIEW OJOWO IJEBU-IGBO (IJEBU NORTH) C.M.S LTD**
2	Year of Establishment	19-01-2015
3	Capital available to the society	**Shares:** 944,420 **Savings:** 944,470
4	Project Involved in by the society	Farming, Garri Production
5	Involvement in water provision	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	The society lack fund or capital for provision of water supply
6	Aspect of water provision involved	None
	(i) Reason for involvement	None
	(ii) Reason for not involvement	Inability
7	Gains for involvement	None
8	Challenges of involvement on water provision	None

S/N	QUESTION	COOPERATIVE DATA
1	Name of Cooperative Society Administered	**ONWARD (IJEBU NORTH) TEACHERS C.I.C.S. LTD**
2	Year of Establishment	12-09-2002
3	Capital available to the society	**Shares:** 21,544,388.24 **Savings:** 40,925,771.52
4	Project Involved in by the society	Farming, Building, Rentals, Water
5	Involvement in water provision	Involved
	(i) Reason for involvement	To be part of the growth and development within the community
	(ii) Reason for not involvement	None
6	Aspect of water provision involved	Well Water
	(i) Reason for involvement	To provide more suitable water to the community
	(ii) Reason for not involvement	None
7	Gains for involvement	Increment of membership and building good image for the society
8	Challenges of involvement on water provision	Lack of proper maintenance from the community members

SECTION B

[illegible]

[illegible] proposed projects to be executed by the cooperative society?

[illegible] cooperatives are expected to help the community with provision of water

[illegible] to adequate planning and management toward water resources in study area

[illegible] cooperative society walls response to the maintenance of water

The cooperative society have legal document establishment

Yes [ ]

No [ ]

The cooperative society own all the facilities in the community

Yes [ ]

No [ ]

APPENDIX II
QUESTIONNAIRE
(RESIDENT)

Department of Urban and regional Planning

Abraham Adesanya Polytechnic

Ijebu-Igbo

Ogun State

Dear Respondent,

AN APPEAL FOR YOUR ASSISTANCE

This questionnaire is part of a research project on "Analysis of Possible Intervention of Cooperative Societies in Water Supply and Management in Ijebu Igbo Ogun State" being carried out as part of the requirements for the award of the National Diploma in Urban and regional Planning .

The aim of this questionnaire is to assist me in obtaining the relevant information on this research. The research questionnaire is strictly for academic purpose and all information collected will be treated with strict confidentiality.

Thanks for your co-operation

Yours, faithfully,

ENITAN ABIOLA.

SECTION B

Based on the objective of the study, the following research questions were raised;

Sources of water using in the community

Borehole [ ]

Stream [ ]

Well [ ]

Rain [ ]

Method of storing water

Drum [ ]

surface tank [ ]

plastic bowl [ ]

local pot [ ]

Kegs[ ]

Reason for source frequently used

Always available [ ]

Cheaper [ ]

Convenient to get [ ]

High quantity [ ]

Provision of water by stakeholders in the community

Cooperative society [ ]

Government [ ]

Personal person [ ]

Household member involved in fetching water

Women [ ]

Men [ ]

Children [ ]

Women and children [ ]

Distance of water from the house

Nearby resident [ ]

Far from resident [ ]

Are you well satisfied with the water

Yes [ ]

No [ ]

Availability of adequate water for consumption

Yes [ ]

No [ ]

Opinion of the appropriate stakeholder for water maintenance

Proper sanitation of environment [ ]

Provision of quality materials [ ]

Good monitoring [ ]

Relationship between the society and the community

Good [ ]

Better [ ]

Fair [ ]

Distribution of water by water management agency

Yes [ ]

No [ ]

The attitude of the society or government towards water management

Good [ ]

Better [ ]

Fair [ ]

The cooperative society check on the water concentration

Regularly [ ]

Occasionally [ ]

Often [ ]