
An appraisal of Institutional Strategies of Managing Rural Water Supply in Katsina State, Nigeria

A.I. Inkani¹, G.O. Krhoda², I.A. Nyandega²

¹(Department of Geography, Umaru Musa Yaradu'a University, Katsina, NIGERIA)

²(Department of Geography and Environmental Studies, University of Nairobi, Nairobi, KENYA)

Abstract: Rural water supply is one of the world's most pressing issues of the 21st century and its scarcity is now one of the greatest threats to human survival. To address such threat, institutional arrangement have been put in place in many countries but the problem especially in sub-Saharan Africa appear to be far away from getting solved. This study appraised the institutional strategies for managing rural water supply in Katsina state, Nigeria. Field data collection procedure involved multi-stage sampling procedure guided by the three differentiated rainfall Zones (north, central and south) of the state. A total of 400 rural households (HHs) were sampled from each of the three rainfall zones of the state. The selected HHs was subjected to personal interviews, focused group discussion and key informants interviews. The results obtained in general showed that majority of the respondents indicated that they have not been receiving support or assistance from the government in meeting their water demands, participation of government in quality monitoring, management, and funding of water facilities tended to be minimal. Many parallel institutional bodies are operating simultaneously in provision of rural water supply infrastructure but a policy/legal framework to ensure effective management of operations of such bodies are not effectively available. Majority of the respondents indicated lack of government policy to assist the households in dealing with water scarcity. Key informant interviews conducted with officials of the agency in charge with the responsibility for provision of water to rural areas in the state indicated that so much successes have been recorded by the agency in addressing water scarcity problems affecting rural areas of the state but such could not be matched with claims of the HHs studied not with those of the physical observation made during the fieldwork stage of this study. It was thus recommended that there should always a government contingency plan in ensuring that rural water supply management is made effective in Katsina State.

Keywords: Rural; Water; Supply; Katsina; Institutional; Strategies; Management

1. Introduction

At the global level, the overall water covers gives the impression of abundance with about three quarters of the earth covered with water. But this is not true since 97.5% of the earth's water is contained in oceans with only 2.5% being made up of fresh water in rivers and lakes (0.3%), ground water (1.7%) while the rest, 0.5%, is frozen in icecaps, glaciers and atmosphere (IUCN, 2007). Water supply is one of the world's most pressing issues of the 21st century and its stress and scarcity are now the single greatest threat to human health, the environment, global food supply, as well as economic and social development (IDRC, 2002). In terms of water supply, the issue is not whether or not people have access to water since everyone has access to water in some form or another as it is impossible to live without water but whether or not the water is within reasonable proximity, reliable, safe for consumption and sufficient to meet their needs (UN-HABITAT, 2003).

In Sub-Saharan Africa, domestic water use accounts for only 9% of consumptive water demands but limited water availability to satisfy this need is a major concern in rural areas of the semi-arid zone as is the case in northern Nigeria (Nyong & Kanaroglou, 2001). Consequently, efficient water management was important to maintain the health and wellbeing of the household, particularly in the rural areas.

In Nigeria, as in most other African countries, water supply to meet basic human needs is far from being adequate and the stress is more serious in rural communities. According to WHO (2010), only 32% of rural population in developing countries have access to safe drinking water and Dada (2009) notes that a large percentage of the rural population in developing countries continues to live without adequate access to safe and convenient water supply and sanitation and water supply is still unreliable. In Nigeria, more than 90% of rural areas and 60% of urban areas face water related problems (ADF, 2007).

For several years now, many Nigerian governments have been talking and emphasizing the need for sustained management of rural water supply and sanitation. Since independence in 1960, rural water supply and sanitation management in Nigeria have proceeded inconsistently (Nwankwoala, 2011). Many researchers (Ajayi *et al.* 2003; Ezeigbo; 2003; Hanidu, 2003; Goni; 2006; Offodile; 2003; 2006; Oteze ; 2006; Oyebande, 2006; Nwankwoala and Mmom, 2008; Nwankwoala; 2009; Okeke and Uzoh, 2009) have identified the major challenges facing rural water and sanitation management in Nigeria as; poor co-ordination between different agencies, poor maintenance culture, poor technical/institutional structure and multiple programmes, as well as lack of data/information for planning and over bearing bureaucratic control by various supervising ministries. Others include; lack of professional inputs on projects, lack of community participation, inadequate funding and irregular disbursements of subventions and inappropriate infrastructures combined with lack of adequate quality monitoring and evaluation, lack of clear policy direction, lack of focus in terms of goals and objectives (which resulted in the country's inability to achieve full coverage of the rural population with safe water and improved sanitation services.

The contribution of each of the above challenges towards constraining rural water supply management is expected to vary between one section of the country to the other, as critical elements like available water resources, water supply infrastructure, social organization, political structures and water demand clearly vary between different sections. This hence creates the need for rural water supply management of every area to be examined within its context.

The focus of this paper therefore is to critically appraise the institutional strategies of rural water supply in Katsina state of Nigeria, with a view to identifying the key issues that need to be addressed to strengthened the management and ensure effective water governance in the state. The state is of particular interest here because it is located at the northernmost margin of Nigeria, within a region that has variously been described as Sudano-Sahelian, semi-arid, arid and the Sahel (Gadzama, 1990; Sawa, 2010; Abdulkadir, 2011). The Sudano-Sahelian region is one of the most delicately balanced ecosystems in the world and faces several social and ecological crises including drought, desertification, pest invasion, high poverty rate and high population pressure on the land that make water supply issues very challenging. In addition, low development of water supply infrastructure has made clean and safe water supply less available in the region.

2. Literature Review

2.1 Governance and Water Supply Management

'Governance' in its general sense refers to the processes and systems through which a society operates. It relates to the broad social system of governing, which includes, but is not restricted to, the narrower perspective of government as the main decision-making political entity. Governance refers to both formal and informal structures, procedures and processes.

According to the Global Water Partnership, 'water governance' refers to the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society (Rogers and Hall, 2003).

Key elements of good water governance include equity, transparency, accountability, environmental and economic sustainability, stakeholder participation and empowerment, and responsiveness to socio-economic development needs. Cost-effectiveness analysis can guide governance by establishing water's proper value and identifying the most socially, economically and environmentally cost-effective policy options. By reorienting policy, reforming institutions, promoting education and awareness, increasing stakeholder participation, establishing international agreements and linking policy to research and development (R&D), governance can develop efficient water management practices. Effective governance must also remain flexible so that it can incorporate social and political changes of modernization and adapt to climate change.

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percentage of the rural population in developing countries continues to live without adequate access to safe and convenient water supply and sanitation and water supply is still unreliable. In Nigeria, more than 90% of rural areas and 60% of urban areas face water related problems (ADF, 2007).

In Nigeria, serious efforts at addressing rural water supply and sanitation issues began with the on-set of the International Drinking Water Supply and Sanitation Decade (IDWSSD, 1981 to 1990), which established target of universal coverage. This was followed immediately by the World Summit for Children (1990), which established goals of universal access to safe water and sanitation and complete eradication of Dracunculiasis (Guinea worm). Following this, the National Programme of Action (NPA) for the Survival, Protection and Development of the Nigerian Child envisaged achievements that emerged during this 30-years' period, some of which with the assistance of External Support Agencies (ESAs) undertook (and currently involved) in several massive water supply development projects through the following agencies: (1) National Borehole Programme (1981 to 1986); (2) UNICEF Assisted State Water and Sanitation Projects (1981 to 2010); (3) Directorate of Food, Roads and Rural Infrastructure (DFRRI) - Rural Water and Sanitation Programme (RUWATSAN) (1986 to 1992); (4) World Bank Assisted Agricultural Development Projects (1983 to 1992); (5) UNDP's RUSAFIYA (An acronym in local language) Projects (1988 to 1993); (6) Japanese International Cooperation Agency's (JICA) Rural Water Supply Projects (1992 to 1994); (7) Petroleum Trust Fund (PTF) Rural Water Supply and Sanitation Programme (1996 to 1999); (8) Improved Access to Water Supply and Sanitation Programme (2000 to 2001); (9) European Union (EU) Water and Sanitation Programme (2002 to 2009); (10) Department for International Development's (DFID) Water and Sanitation Pilot Project (2002 to 2008); (11) Water Aid's Rural Water Supply and Sanitation Programme (1996 to 2010); (12) National Rural Water Supply and Sanitation Programme (2001 to 2010); (13) Japanese International Cooperation Agency's (JICA) Rural Water Supply Projects; (14) Development of local manufacture of hand pumps (1988 to 2010).

Despite these bold and elegant initiatives, by most conservative estimates, the country is still recording less than 50% access to safe water and sanitary means of excreta disposal. Until recently (in year 2000), there has been no National Water Supply and Sanitation policy framework which defines policy objectives, guidelines and targets for the entire sector. Even then, the will power to ensure co-ordination, streamlining and lending of focus and thrust to all these initiatives is yet to be translated into action. The Rural Water Supply and Sanitation Sector and Action Plan, developed in 1992 after a major review by a cross-section of stakeholders, did not lead to the planning and implementation of a sound Rural Water Supply and Sanitation (RWSS) programme.

Water scarcity in Nigeria is a serious challenge to development efforts in rural communities (Nyong and Kanaroglu, 1999; Aguiwo, 1998; Olajide, 2011); and the creation of the National Water Resources Institute (NWRI) and the River Basin Development Authorities (RBDA) in 1976 and Federal ministry of water resources (FMWR) in 1977 were in direct response to the threat of famine brought about by the drought of the early 1970s (Hanidu, 1990). The most potent and relevant water regulation in Nigeria today is the Water Resources decree of 1993 (FGN, 1993), put into effect by the then Military government of Nigeria and ties the right of ownership and power of administration of water resources to land ownership.

The provision of rural water supply services in Nigeria is the domain of the Federal, State and Local Governments but has not been successful in meeting more than a small portion of the demand for water (Hanidu, 1990). Drilling for water can lead to many environmental problems if no recourse to geophysical tests or obtaining of necessary permits from regulatory bodies is taken (FGN, 2007). There is growing evidence of a decline in water availability in northern Nigeria due to rainfall seasonality and variability (Woo and Tarhule, 1994; Hess, et al, 1995; etc) while at the same time, the competition for water by human activities is exerting tremendous pressure on the limited water resources and the environment (Dabi and Anderson, 1998; Udoh and Etim, 2007)

3. Methodology

This study utilized both primary (filed-based interviews with households and key stakeholders in rural water supply management) and secondary data (records and publications of institutional bodies with responsibilities in rural water supply management) in appraising the institutional strategies of rural water supply management in Katsina state. At the beginning of the study (February 2012), a reconnaissance survey was conducted across the 34 Local Government Areas (LGAs) in the state. The essence of the survey was to familiarize the researchers with the study area (especially in terms of size and number of households) and identify background information relevant to the study.

Between 21/11/2012 and 2/12/12, another reconnaissance survey was carried out across the LGAs selected for the study in order to identify the suitable communities (sampling frame) that were used in the main primary data collection exercises. It was also used to test the capability of the instrument to provide the required data, and to identify communities that would be included in the study. From the reconnaissance survey, it was established that there were 34 LGAs with total communities of 5,363 and the household (HH) number of 1,130,733 spread across the 3 rainfall zones of the state (north, central and south). It was the households' number that represented the sampling frame in the study and on which the appropriate sample size calculation, given variations by rainfall zone and number of communities, was based. From this sampling frame, a sample size of 1200 households, 400 HH from each rainfall zone and 4 community's zone, was drawn using the Yamane (1967) formula of sample size determination. In total 12 communities in each of the 12 LGAs selected (Daura, Maiadua, Mashi, Kaita, Matazu, Kusada, Charanchi, Safana, Danja, Faskari, Funtua and Sabuwa) were selected across the 3 zones in the state. In addition to the HH survey, 12 Focused Group Discussions (FGDs) were held, with participating membership drawn from the same households in Katsina State but only those who did not participate in the general survey were included with each FGD made up of 10 individuals from the households.

The study further sought information from the key informants in the water sector and the selection was based on local government water supply management structure where the head of water and sanitation was considered to be the key informant. A total of 12 key informants from were included in the sample data. The key informants were contacted to provide data required especially on water resources, supply, challenges and adaptation strategies. The key informants in this study were the Katsina state RUWASSA (Rural Water Supply and sanitation Agency) officials, LGA water and sanitation staffs. Information obtained from these individuals was used to compliment data collected from focus groups, households' survey and secondary sources especially at the interpretation and discussion stage, respectively. For any official to be considered a key informant he must have been accepted by either other staff members as head of the section from which the information was sought which in all cases meant the custodian of the required information.

The questionnaire for the key informants was administered purposefully since RUWASSA and the head of LGA water department were considered to be the custodian of water information and for this reason, the centre and all the 12 heads of water departments in the 12 LGAs were interviewed using a specifically designed questionnaire for specific information from the official perspective. Field data from the HH questionnaire survey was first assembled into a single sample data in the form of a data coding sheet. For the open-ended questions, all the responses per question were first compiled, and then assigned meaning in the context of rural water supply management before including in the coding sheet. The coding sheet and associated data was then used to design a data entry interface in Excel and SPSS. Data entry was approached from the basis of quality assurance protocol where each case was entered twice by different data entry assistants and at the end of data entry exercise a comparative analysis of the two database files was done to limit data entry errors. A frequency distribution analysis on all variables was used as a tool for identifying outliers and missing responses which were confirmed with the results in the questionnaires. The clean data files were used to create the study database file from which all the variables required to address the stated questions were available.

FGD information data from the communities included in the study were compiled into one data file and then subjected to a cleaning process to ensure clarity and conformity to the information sought as well as to reduce data entry errors. The resulting information was summarized and re-written so as to fit the key

issues discussed with each community. The data summary was organized community by community to ensure that the important questions and associated responses were captured. Attendance of each FGD session by the research team was used as quality control and assurance measure. The FGD data file was used to generate information that was used in supporting or in validating the results of the household survey. Key informants interview information discussed were recorded in common data sheet which was then captured as a data file using excel and SPSS. The data file was then subjected to a cleaning process to ensure clarity and conformity as well as minimum sampling errors. Data processing was used as a quality assurance measure to ensure integrity in the resulting data files.

4. Results and Discussions

4.1 Water Governance Issues

Water governance refers to the manner in which people deal with water and it is an integral part of governance (the mode of social organization in which a society operates) in a much broader sense (Hoekstra, 2006). It involves a wide range of range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society (Rogers and Hall, 2003). Essentially, it includes both formal and informal structures, procedures and processes for managing water resources.

For long, it has been realized government alone cannot undertake all the task of water supply management and hence focus water sources management should be changed to ensure that more participation is brought in. Over the past several decades many changes have been introduced in water governance including varied policies and reforms, from devolution and participatory approaches, to increasing privatization, marketing and commoditization (Bakker, 2007; 2010; 2011; Harris and Roa-Garcia, 2013). Hoekstra (2006) in dealing with the water governance issue noted that achieving effective water governance demands a broad approach, which essentially means coordination with other forms of governance. This study was of the view that for effective water governance it is not sufficient to question which instruments water managers have or which arrangements water managers can make to solve the water problems of today and of the future. It was therefore essential to address the broader question of how wisely societies as a whole manage water resources. Accordingly, this study investigated water governance issues relating to water quality monitoring, management of water supply facilities, funding and leadership.

The first major water governance issue considered in this study is responsibility for water quality monitoring in the communities and when the HH in the communities were asked questions on this, the responses received showed that across the three rainfall zones, individuals were the most likely to bear the responsibility (41% in the north, 19% in the central and 66% in the south), followed by community leaders (40% in the north, 19% in the central and 17% in the south) as illustrated in Figure I.

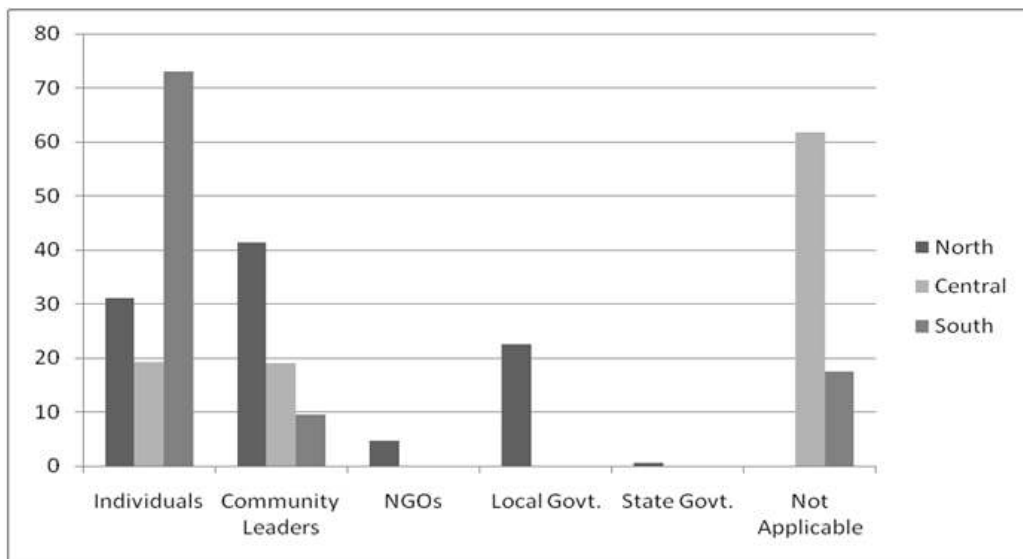


Figure I: Responsibility for Water Quality Monitoring across the Three Rainfall zones of Katsina State

It was only in the northern zone that about 17% of the respondents indicated local government as being responsibility for water quality monitoring. The implication of this is that water quality monitoring was a non-governmental issue and largely a community responsibility in Katsina State. This could mean lack of commitment from the authorities to reduce the health risk of the households or that water monitoring was not a priority in governance thus vulnerability to water scarcity in Katsina state. Since the sample data analyses results indicated different responses in water quality monitoring across the three zones, it was necessary to check if the situation was a chance event. The tool used in this test was the chi-square test and the result was that the observed was significantly different from the expected and therefore representative water quality monitoring situation in Katsina state ($\chi^2_{computed} = 616.477$ and $\chi^2_{critical} = 18.31$ at 95% confidence level).

It was expected that even if water quality monitoring is being undertaken, the management of the existing water facilities would be the responsibility of government. Results obtained indicated that management of water facilities was shared between local government, individual households and, NGOs (Figure II). This therefore indicated clearly that the governments (Federal and state) had minimal role in management of water facilities and this could mean either lack of government interest in dealing with water scarcity problem in Katsina State or that water management was not a priority issue in governance. Since it has been established that Katsina was largely water scarce, water quality monitoring was largely a community issue and, now that management was also not a government priority, should be expected therefore that vulnerability to water scarcity would increase from a government perspective. FGDs found that effective coordination was lacking to galvanize the support of stakeholders towards ensuring effective participation of all in water governance and this should have been the role of the government.

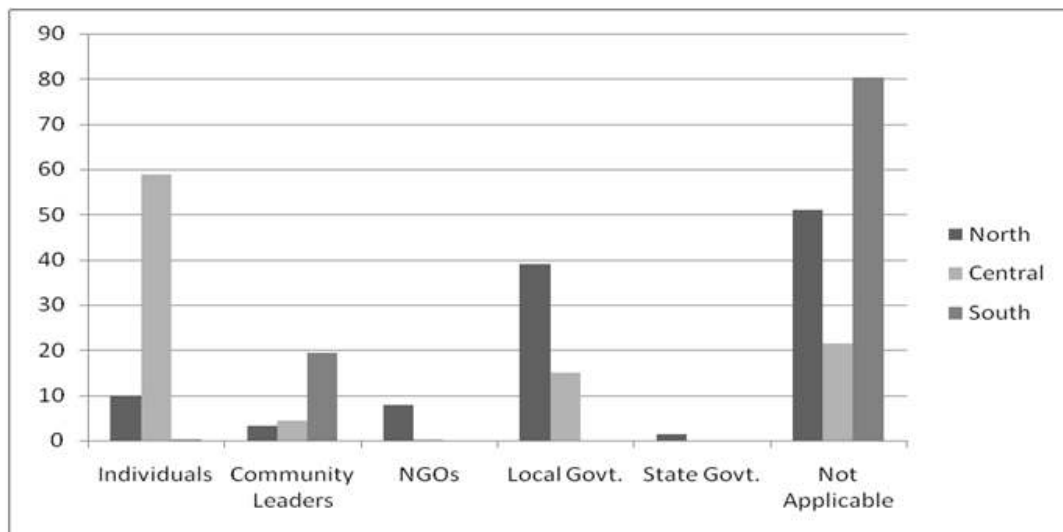


Figure II: Responsibility for Management of Water Supply Facilities across the Three Rainfall Zones of Katsina State

On funding of the water projects, it was necessary to establish the sources of funds and the results (Figure III) were varied across the three rainfall zones. Most funding were sourced from individual households (6% in the north, 45% in the central and 0% in the south) NGOs (11% in the north, 18% in the central and 9% in the south) and local government (33% in the north, 16% in the central and 4% in the south).

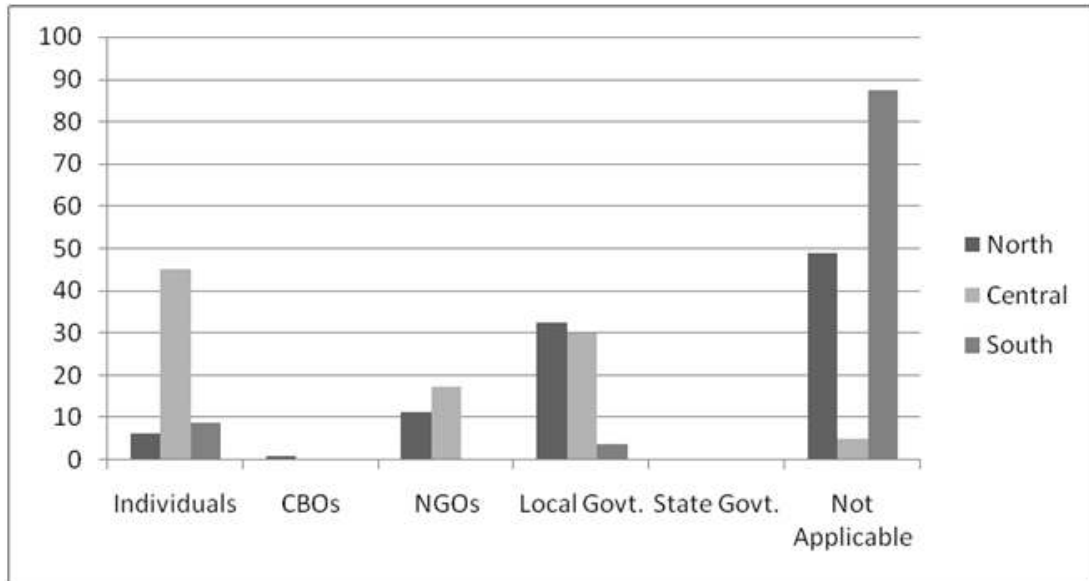


Figure III: Sources of Funding of Water Supply Facilities across the Three Rainfall zones of Katsina State

This indicated lack of funding from either the federal or state government and therefore supporting the previous assertion of lack of government involvement in alleviating vulnerability to water scarcity in Katsina State. In the central and northern zone, the local government authorities were playing some moderate roles in funding such infrastructure, but with the individuals 'households comparatively playing an even better role in this regard in the central zone. The lack of federal or state government involvement in funding water projects could results in inability of the households to acquire appropriate new technology for water resources exploration and exploitation and management to assist in reducing vulnerability to water scarcity. The results was subjected to chi-square test and the computed chi-square was 563.157 and the critical chi-square was 15.51 at 95% confidence level indicated that the observed differences in source of funding of water supply projects in communities across the three rainfall zones were not chance events and therefore those differences could be due to significant differences

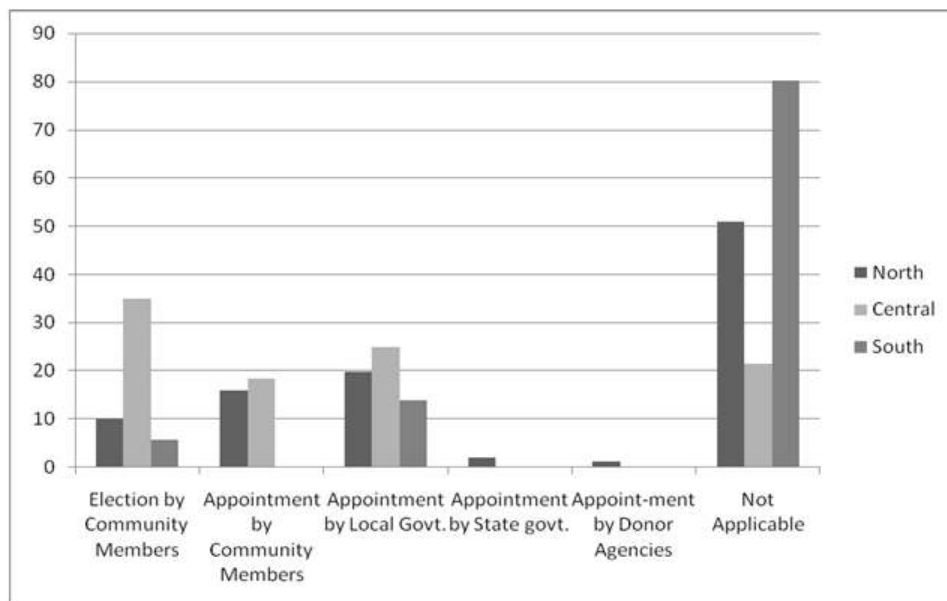


Figure IV: Methods of Choosing Management Team for Managing Water Supply Facilities across the Three Rainfall zones of Katsina State

In water governance, service delivery is dependent in quality of leadership which can be measured in terms of method of choosing and managing. The survey results (Figure IV) showed more appointments by local government than elections by community members (20% in the north, 25% in the central and 45 in the south). What this implies is the lack of democratic participation in management communities and this could mean less sustainability of water facilities. Since participation of government in quality monitoring, management, and funding of water facilities tended to be minimal, it would be unfair for government to play a major role in the appointment of members of water facilities management committees. Such a situation would result in less sustainability in water facilities and increase vulnerability to water scarcity in Katsina State. This view is supported in the work of Harris and Roa-Garcia (2013) who argued that use of locally sourced teams for managing water resources would favor water conservation through reduction of the cost of maintenance of water systems. This idea is further supported in the work of Bakker (2007; 2011) who argued that community-based water systems could open up the possibility of rethinking and challenging nature society relations, and progressively turning from a community towards a commons perspective. It seems more government participation in the appointment of water facilities committee members would not only affect sustainability but also result in high cost of water provision thus increasing vulnerability to water scarcity.

In many parts of the world nowadays, water activists hold what is popularly known as the “commons view” in which water is understood as a public good that is managed by the community and in which social equity and livelihoods are guaranteed (Bakker, 2003; Ostrom, 1990 and Shiva, 2002). Harris and Roa-Garcia (2013) have shown that in Kathmandu, as a response to the inability of the state and private companies to provide acceptable water services, some water activists have been promoting localized, community-based and decentralized water management as a promising way out of water scarcity. One of the slogans used by the urban activists in that area – “first drink Kathmandu water and only if there is no more water, then bring Melamchi water” – suggests that within Kathmandu Valley there are underused water resources such as rainwater, groundwater and traditional stone spouts that could be better managed. Kathmandu Valley, with an average rainfall of 1100 mm per year and a catchment area of 600 km² generates about 330 million cubic meters of water per year (Gyawali, 2001). Harris and Roa-Garcia (2013) thus argued that most of the water needs of Kathmandu could be met with only 6% of this figure, with rain fed water supply systems recovered and expanded to capture a fraction of the valuable rainfall that Kathmandu receives.

4.2 Findings on the Institutional Arrangement for Rural Water Supply Management in Katsina State

In this study, the key informants were requested to provide official position in terms of water supply management situation in rural areas of Katsina State. The main focus was the official position on successes of institutional arrangements in addressing water scarcity problems in Katsina State. Several institutions were identified as having been playing role in rural water supply in the state, including the following: (1) Sokoto Rima River Basin development Authority (construction of earth dams and boreholes); (2) Energy Commission of Nigeria (construction of solar powered boreholes); (3) Millennium Development Goals Office (construction of solar powered and motorized boreholes); (4) Constituency Outreach Office of the National assembly (construction of solar powered and motorized boreholes); (5) Federal Ministry of Water Resources (construction of solar powered and motorized boreholes).

There is however no policy framework or legislation to streamline and harmonize the operations/activities of these various institutional bodies in rural water supply management in Katsina state. Hence, there many cases of overlaps, duplications and conflicts with so much being expended and very little eventually being achieved. The Katsina State Rural Water Supply and Sanitation Agency (RUWASSA) which came into being on the 19th day of November, 2003 via the Katsina State Law No. 12 of 2003, was vested with the power to coordinate the activities of all the operators in Rural Water Supply and Sanitation sub-sector in the State towards achieving the Millennium Development Goals (MDGs) within the context of SEEDS and NEEDS. The three functions of RUWASSA were water supply and sanitation, mobilization and public relations and administration and finance.

The Agency has three functional departments viz: Water supply and sanitation, Mobilization and Public Relations and Administration and Finance. The head of the Agency is the Executive Director supported by Assistant Directors responsible for the three departments. The Assistant Director Administration and Finance serves also as the Secretary of the Agency's Management Committee. The specific functions of the Agency are to: Implement the National policy on Water Supply and Sanitation with regards to objectives of cost sharing formula; regulate, coordinate and set standards for the construction of ventilated improved latrines and other sanitation facilities; promote, device and innovate low-cost and appropriate technology options for communities and assist in choosing the most appropriate option in the Rural Water Supply and Sanitation; assist in eradicating water supply and sanitation related diseases; mobilize and train communities in technical and financial management of water and sanitation facilities for sustainability; prepare and continuously update the rural water supply and sanitation master plan and coordinate its implementation for the State; prepare and keep comprehensive inventory of all rural water supply and sanitation facilities in the State; provide ready institution for programme implementation in the sub-sector to attract participation of international organizations and provide a platform for achieving the goal of universal access to safe water and sanitation in rural areas.

Currently, RUWASSA is collaborating / partnering with the following Ministries, Departments and Agencies: Federal Ministry of Water Resources; Sokoto Rima River Basin Development Authority; Katsina State Ministries for Health, Agriculture, Information, Justice, Local Government, Women Affairs, Education, Environment and relevant Agencies under them; MDG Projects Implementation Committee Katsina State; 34 Local Government Councils through the WASH Departments; UNICEF; UKaid (DFID); JICA; Service To Humanity Foundation (SHF).

The agency, as claimed by the officials, has been making significant impacts that touch the life of rural populace in the provision of portable water supply. Some of the achievements were: Improved collaboration amongst sector agencies; developed and ensured the adoption of technical options and designs for water and sanitation facilities; refurbished existing equipment and vehicles of the Agency that hitherto have broken down; procurement of 3 sets of drilling rigs with supporting equipment, accessories and spare parts as well as training of 8 RUWASSA personnel on the operation and maintenance of the equipment at the manufacturer's plant in Peine, Germany.

The agency also provided a total of 923 safe water points in the rural communities, comprising of 398 new boreholes fitted with hand pumps, 200 new motorised/solar powered boreholes, 23 rainwater harvesting systems, 283 rehabilitated hand pump boreholes, 28 rehabilitated solar/motorized boreholes and 1 rehabilitated slow sand filtration system across the state; Ten rainwater harvesting facilities were provided in 11 Girls Education Project (GEP) primary schools in Sabuwa, Bakori, Kusada, Ingawa, Kurfi and Danmusa LGAs. This project provides alternative technology for water provision where sufficient groundwater for abstraction is not feasible; provided 12 rainwater harvesting facilities in selected non GEPLGAs and completed 1 no. of slow sand filtration scheme at Musawa, Musawa LGA.

In collaboration with the Federal Government of Nigeria and the People's Republic of China, 60 Hand pumps and nine motorized boreholes were provided in Dutsi, Mashi, Ingawa, Faskari, Kafur, Musawa, Jibia, Kurfi and Rimi LGAs; completed sanitation facilities in 180 primary schools and health centres through RUWASSA, UNICEF and MDG; provision of complete sanitation facilities in 11 primary schools in collaboration with UNICEF; provision of hygiene promotion materials in 36 schools and health centres; provision of WASH facilities (1 hand pump borehole and 6 compartments of VIP latrines in Jikamshi model primary school in collaboration with Service to Humanity Foundation; facilitating the attainment of open defecation free (ODF) status in nine (9) communities of Bakori LGA in collaboration with UNICEF.

5. Conclusion & Recommendations

Conclusively, we can say from the findings of the study, it is clear that Katsina State government plays an important role in managing rural water supply in the State through the provision of some basic amenities such as construction of boreholes, provision of water pumps, periodic supply of water using tankers and construction of open concrete wells at the communal level to help minimize the problem of water scarcity

in rural areas. This has greatly assisted the communities even though; the impact of the main institutional body saddled with responsibility of managing rural water supply in the state (RUWASSA) is not effectively managed, particularly in matters related to rural water supply. The gap seems to clearly exist between what the body is claiming to have achieved and what the studied HHs indicated have been made available to them. Though there are many institutional bodies operating parallel to RUWASSA in provision of water supply infrastructure in the state, there is no effective policy/legal framework to streamline their activities to ensure effective management of water supply in rural areas of Katsina State. It was in view of this therefore; we recommend the need for state government to ensure that the activities of the many institutions involved in provision of rural water supply facilities across the state are synergized to eliminate duplication of efforts that will enhance effective and efficient service delivery within the system. There is also the need for improved governance in water supply situation in Katsina State to avoid the current lack of government presence in meeting households or communities water demands.

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