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Appraisal of the Achievements of Sustainable Development Goals and the Role of Public-Private Partnerships in Water, Sanitation, and Hygiene Projects in Plateau State, Nigeria

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ABSTRACT

This study appraises the role of SDGs and the provision of water supply, sanitation, and hygiene (WASH) facilities in Plateau State, Nigeria, from 2015 to 2020. It utilized both primary and secondary data sources. The primary data were obtained through stakeholder interviews conducted on the Engineering staff of the SDGs office in Jos, Plateau State, the users of these projects were randomly sampled across the State and field observation of the authors. The secondary data, on the other hand, were obtained from the reports and other documents of the same SDGs office. In this study, frequency tables and maps were used in presenting and analysing the results. The study also found that the WASH projects were executed for social, political, and to some extent economic reasons and are not sustainable due to the inability of the government to carry the end users along from execution stages. Results also show that these projects are not evenly distributed across wards, districts, and Local Government Areas in Plateau State due to the presence and agglomeration of some of them in especially the metropolitan places and enumerated the benefits of these WASH projects to users to include reduced distance to water source, time savings, reduction in rates of open defecation and reduction in diseases rate. It is concluded that some level of government-community collaborations should be fostered to enable the projects become sustainable in delivering their gains in all locations of the State. The study recommends, among other things, the replication of these projects within communities across the state, the involvement of the communities at stages of execution, and the establishment of a mechanism for the sustainability of the projects.

INTRODUCTION

Access and use of water, sanitation and hygiene (WASH) infrastructure is a basic right to humans, yet almost a third of the world's population suffer daily from a lack of access to improved WASH facilities which can impact a whole community, affecting many aspects of daily life and ultimately posing a serious health risk (Roma, et.al. 2013; Wambai, et al 2020). Whereas inadequate sanitation is estimated to cause 280,000 diarrhoeal deaths annually across the globe, about 2800 people die daily from illnesses related to inadequate sanitation, poor hygiene, and unsafe water in Africa (Anon, 2017). Although some achievements have been recorded, not so much is seen as many regions are not on track to meet the 2030 goal 6 related to water, sanitation, and hygiene. One in three people on our planet still lack access to safe drinking water, and more than half of the world's population lacks access to safe sanitation. Some three billion people lack basic handwashing facilities with soap and water, and more than 673 million people still

practice open defecation. This despicable situation accounts for the death of 432,000 deaths from diarrhoea every year (Wambai et al., 2020).

The Sustainable Development Goals (SDGs) are the new worldwide objectives for enhancing the quality of life for people everywhere. World leaders endorsed the Agenda for Sustainable Development, which comprises 17 Sustainable Development Goals (SDGs) to combat poverty, battle injustice and inequality, and address climate change by 2030, at the United Nations Summit on September 2, 2015 (Dansabo, 2016). Billions of people lack access to safe drinking water and sanitary facilities ten years after the UN first recognized water and sanitation as human rights. The development achieved in the Water, Sanitation, and Hygiene sector since 2010 demonstrated that there was a slow speed in the implementation of the human rights angle to the provision of water and sanitation. The growing population of the Plateau State, with its attendant urbanization and human activities of farming, industrialization, and domestic waste generation, with their resultant pollution of the environment, especially the water resources, has imposed a greater financial burden on the water agency. Just as there are so many sources of water like ponds, streams, springs, wells, as well as rainwater harvested, there are equally competing needs of drinking, agriculture, electricity generation, recreation, and others for these same sources (Orubu, 2006).

Given the significance of water to health and entire economic activities, serious, conscious, and sustained efforts are expected to provide the economic good to meet the needs of the urban populace and their activities. These periods were those when greater demands were generated for water by expanding population and rising living standards, increasing urbanization, as well as great expansions in other sectors of the national economy (ACBF, 2016; Chakuchichi, 2017; Ba, Gasmi & Noumba, 2010). The SDGs and the achievement of WASH objective 6 outline methods for providing the world's underserved population with affordable and accessible water, sanitation, and hygiene. Water, sanitation, and hygiene go hand in hand and depend heavily on one another for the achievement of the aim of healthy living by the majority of people in the world. According to WHO (2019), around 2.5 billion people worldwide lack access to adequate sanitation and hygiene facilities, while more than 1.6 billion people lack access to better water sources. In the plateau state, out of the population of 3.5million people, the public water supply agency can only provide for about 1m people, leaving up to over 2.5 million people resorting to unimproved sources for municipal, institutional, and industrial uses. Sources like streams, wells, bore holes, and ponds serve to bridge the gap in providing raw water for washing, drinking, bathing, small-scale gardening, and water vending in urban, suburban, and rural areas of the State.

Most of these projects face stiff challenges due to a lack of collaboration between the government agencies, the private sector parties, and the communities as a result of a top-down management approach being adopted by most governments and project executors (AMCOW, 2025; Rao, 2018; Rao, 2020; Chikaza & Simatele, 2021; FGN, 2017). This has created so much conflict and crisis even at project execution stage in diverse places as the communities from inception are not informed about the project nor were their consents sought to establish such projects in their domain and whether they are needed by the people or some other projects (PP Knowledge Lab, 2021, Panayides, Parola, & Lam, 2015, Chan et al., 2015). Once all these stakeholders are carried along in most projects from planning through to execution stages, a sense of ownership, belonging, and responsibility will be imbibed by everyone, and during payments of water bills, securing of the infrastructure against vandalism, they will willingly be available to contribute to their maintenance through payment of bills and provision of security.

Due to failure of most of the utilities to meet the objectives of providing safe, affordable and desirable service delivery to consumers and ensure system that is capable of recovering costs and delivering quality service and benefits to water subscribers, water tariffs are low and many water users do not pay their bills, service providers rely mostly on occasional subsidies to cover their costs (Wikipedia, 2015). In most cities, result of failures of these utilities has led to individuals, communities and other potable water users resorting to drilling their wells and bore holes, private sector business enterprises setting up bottled and sachet water packaging plants and forcing households to pay

high rates to get water from these sources while the rich ones that afforded connections pay less to enjoy erratic water supply from these utilities (IFC, 2020, Chitongo, 2017, Wikipedia, 2015, Kumar, 2019). In order to reach the established worldwide targets, the World Water Conference in March 2000 in The Hague urged increased investments in the water supply sector as well as more creative ways to raise the necessary funds. This is aimed at 50% reduction in the number of people lacking adequate water and good sanitary conditions in the year 2015 (Jomo et al., 2016, Nxumalo, 2020, Nhongo, Hoko & Kugara, 2018, Pan, Chen, Zhou & Kong, 2020). All these led to the international development partnerships from WaterAid, USAID, UNDP, FAO, WHO, UNICEF, and JICA, which have notably contributed positively towards the development of Nigerian water resources, mostly at the urban centres, which have to some extent, curbed and reduced the scarcity of potable water. The partnerships came in the form of grants from the African Development Fund, loans from the World Bank and African Development Bank, and technical collaborations and synergies which have variously resulted in the construction of dams, treatment plants, and extension of water pipes to locations which hitherto were not connected (Cole et al., 2021; Cui et al., 2018).

Additionally, between 1980 and 1990, billions of dollars were borrowed from international development partners like the World Bank, Paris Club, African Development Bank, and even Nigerian financial institutions to address the scarcity in the water supply and sanitation sector. However, not much has been seen because of common limitations in the delivery mechanism, infrastructure, and management, such as illegal connections, high water losses, a lack of staff, and low tariffs (Pangare, Kulkarni & Pangare, 2004). The International Bank for Reconstruction and Development (IBRD), since 1985, had completed seven water supply projects and had three ongoing projects in the year 2010; these brought the total investment for the ten projects to USD 1.4 billion (MIGA, 2021; Marozva & Makoni, 2018; Maposa & Munanga, 2021). Also, the AfDB and ADF in the year 2001 granted long-term loans of about N4 billion to the Plateau State Government for Keffi, Akwanga, and Doma water schemes, headquarters workshop and stores equipment; Jos\Bukuru water extension; technical assistance, engineering and consultancy services (PSWB, 2002).

Sustainable Development Goals (SDGs) were targets set to achieve development goals at the expiration of the Millennium Development Goals (MDGs) in the year 2015. From 2015 to date is five years into the timeline set by the United Nations, and having ten years to expiration of the 15 years set for the achievement of these goals. The implementation of the human right to water and sanitation has been implemented slowly, as seen by the progress made since 2010. Few nations are on track to meet the 2030 objectives for water, sanitation, and hygiene, so despite a few notable successes, not much has been accomplished. More than half of the world's population lacks access to adequate sanitation, and one in three people still do not have access to safe drinking water. About 3 million people practice open defecation and lack access to basic handwashing facilities with soap and water; this intolerable scenario results in 432,000 diarrheal fatalities annually (Healthwise, 2020; Anonymous, 2018; Dansabo, 2016). SDGs that began at the expiration of the MDGs in 2015, complement the efforts of individuals, corporates, NGOs, governments, and other partners in providing water, sanitation, and hygiene projects in urban and rural places across the world. Several factors and challenges have negated their progress in Nigeria. Some of which include: corruption, fall in petrodollar, Covid 19 pandemic, and political manipulations. The water sector is very key to the development of sanitation and hygiene, which guarantees the health of the teeming population of people across the countries of the world. The underperformance of this sector will put the health of humans and animals in serious jeopardy. This research assesses the performance of the SDGs office in the provision of WASH projects in Plateau State from 2015 to 2020.

MATERIALS AND METHODS

Plateau State is situated between latitudes 8° 30’ and 10° 30’ north and longitudes 7° 30 and 8° 37’east in the middle belt area of Nigeria. Additionally, it is located in Nigeria's Guinea savannah biological region (Daloeng, 2019). It shares borders with Taraba State to the east, Nasarawa and Kaduna States to the south, and Bauchi to the north. 28,011 square kilometers make

up the State's landmass (NCRS, 2009). The 2006 national census puts the State's population at 3,206531 (NPC, 2006). The State at present has seventeen Local Government Areas, which include Jos South, Jos East, Jos North, Bassa, Langtang North, Langtang South, Shendam, Qua'anpan, Barkin Ladi, Bokkos, Kanam, Wase, Mangu, Kanke, Pankshin, Riyom, and Mikang.

In terms of its relief, Plateau State may be divided into two geographic zones: The Jos plateau or highland region and the southern Plateau lowland region. The Plateau highland region rises to an average altitude of 1200m above mean sea level (amsl) with a peak of about 1829m amsl in the Shere hills area, east of Jos, the State capital. This region covers Jos East, Bassa, Jos North\South, Barkin-Ladi, Riyom, Bokkos, Mangu, Pankshin, and Kanke LGAs. The southern Plateau lowland region, which includes the LGAs of Kanam, Mikang, Langtang North, Langtang South, Qua'an-pan, Shendam, and Wase, has an average elevation of roughly 600 meters above sea level (Udo, 1981). The state's relief areas have a significant impact on Plateau State's climate. The Jos Plateau's relief has caused the temperature to become more temperate. The average high temperature is roughly 22°C, while the average low temperature is 18°C. From December to February, the state has cold weather, which is brought on by the northeastern trade winds. With a mean temperature of 32°C and a mean minimum temperature of 22°C, the surrounding plains, particularly the southern Plateau lowland areas, are hot for the majority of the year (Daloeng, 2019). The ITCZ influences the two distinct seasons that Plateau State experiences: the dry season and the wet season. Dry season sets in from November to March, while the wet season is from April to November.

Rainfall varies from 0 mm in the dry season to about 1400mm in the months of the rainy season (April to October) in the state. In the southern part of the state (Lowland), which is at the leeward side of the Jos plateau, the mean annual rainfall is about 1317mm, and on the Jos plateau, it is about 1460mm (Daloeng, 2019). Rainfall is not evenly distributed in the State. While on the Jos plateau, areas covered by the windward rain-bearing local wind, especially the escarpment, receive more rainfall than the leeward areas immediately after Jos city, such as Naraguta village and Jengre, North and North East of Jos. The southern plains experience a lesser amount but more evenly distributed rainfall throughout the rainy season, receiving the highest in the months of August and September. For the Jos Plateau, about 90% of the rainfall occurs in the six months between April and October, the wettest months being July and August (Udo, 1981).

According to FGN (2009), the growth rate was 2.2% per annum for the entire nation. The population of Plateau State as of 2006 was 3,206,531, with a total land area of 28,011km2 having a density of 114.47% per km2 which is lower than the average national density of 150 per km2. The State population in 2020 is projected as 4,542,028 and a density of 142.713 persons per km2. In terms of sex composition, the female group is slightly more than half of the total population (Nigerian Demographic and Health Survey, 2012). Rural settlements are the first form of settlements, while urban settlements are recent developments, initiated by the British for effective administration, trade, and commerce. The State is predominantly rural in morphology and functions. Urban settlements in the State are few and comprises of Jos city, the State capital and the seat of Jos North Local Government Area, Bukuru, Barkin Ladi, Mangu, Pankshin, Langtang, and Shendam, which are seats of local political units. Commercial and traditional administrations are major urban places in the State (Daloeng, 2019).

The social amenities provided by the government, individuals, and private companies are educational institutions, health facilities, water infrastructure, electricity, and road networks. Notable among the government efforts are road construction activities, which have opened up new areas and are renewing the old ones; the construction of new water supply projects and maintenance of the existing ones; the linking of the new areas to the national electric grid, among other ones within the city. Apart from the government's efforts, the private sector, faith-based organizations, and communities have been equally very active in the provision of hospitals, schools, transport services, and even electricity supply, which complements government efforts.

Both primary and secondary sources of data were used in this study. A total of 384 respondents from a systematically sampled population throughout Plateau State were given questionnaires

that asked about water sources, their sufficiency and availability, the advantages, performance, and difficulties of WASH facilities. The data from this primary source focuses on the availability, sufficiency, and functionality of these WASH projects. We arrived at the villages and districts for questionnaire administration by first obtaining the list of these projects and their locations and beneficiaries from the SDGs office in Jos, Plateau State. The list of these locations was arranged alphabetically, and 5% of their population was sampled, and questionnaires were administered. Key stakeholders' interview was undertaken and elicited other information on sustainability and maintenance of these facilities. This was carried out on the heads of schools, heads of clinics, and leaders within communities of project execution. Secondary data are the information obtained from the records of the SDGs office in Jos, the internet, and various databases.

The secondary data were obtained from the unpublished reports and archives of projects executed by the SDGs office through the joint efforts of the Federal and State Governments. The WASH project reports obtained from this office spanned 2015 to 2020. Stakeholder interviews were undertaken with the engineering and some management staff of the office, on the sustainability of the projects and efficiency of their service delivery to the target users. The population of all the seventeen Local Government Areas of the State, according to the 2006 census (4,987,234), projected to 2019 is 5,567,000 (Federal Republic of Nigeria, 2020). The sample size of 384 for this study, as determined by Krejcie and Morgan (1970), was established on a 0.05 margin of error and 95% confidence level. 384 questionnaires were administered to systematically sampled respondents in the areas of project execution, and 378 were successfully executed and returned for analysis. The data for this study were analysed by the use of simple descriptive statistics like percentages and frequency tables, generated through SPSS version 27.

RESULTS AND DISCUSSION

Respondents' Demographic Characteristics

According to this survey, the typical household size in the majority of Local Government Areas in Plateau State is between four and twelve people. The high average household size of 10–12 people demonstrated that the state's population is expanding quickly due to religious and cultural beliefs, which is one of the main causes of resource shortage and depletion worldwide. Similar to this, the large family sizes suggest that frequent sanitization is necessary for the prevalent water and sanitation facilities to be reasonably safe for use, as the likelihood of facility contamination increases with the number of users (Ann, 2014).

Table 1. Water Sources for Sanitation Purposes in Schools Before SDGs Interventions

Variable	Water Source	Frequency	Percentage
Primary water source	Pipe-borne water	6	1.59
	Well	230	60.85
	Borehole	35	9.26
	Vendor	8	2.12
	Surface water sources	96	25.40
	Others	3	0.79
	Total	378	100.0
Alternate water sources			
	Well	15	3.97
	Borehole	98	25.93
	Stream	229	60.58
	Rainfall	31	8.2
	Others	5	1.35
	Total	378	100

Nature of sanitation facilities			
	Toilets & baths	297	78.57
	Latrines	33	8.73
	Showers	35	9.26
	Others	13	3.43
	Total	378	100.0
Water quantity available			
	10-50litres	136	35.98
	51- 70 litres	98	25.93
	71-80 litres	80	21.16
	81- 100litres	40	10.58
	over 101litres	24	6.35
	Total	378	100.0

Source: Field Survey, 2020

The major primary source of water supply to the respondents for potable uses, sanitation, and hygiene is a well. As 60.85% of the respondents in Table 1 agreed that wells are their major water source for WASH purposes before the advent of SDGs projects in their communities. This is followed by surface water surfaces like streams, ponds, and dams, as 25.40% said they rely on this source for their various uses. Only 1.59% of the respondents across the 17 Local Government Areas have access to pipe-borne water for potable uses. The alternate sources available to water users are boreholes (25.93%), streams (60.58%), and rainfall sources, complementing the main sources available to them. Toilets and baths constitute the major sanitation and hygiene facilities in the study area, as 78.57% shown in Table 1 agreed that they have access to this facility. This is followed closely by latrines (8.73%) and showers (9.26%) respectively, with a very few others still practising open defecation. The majority of the respondents (35.98%) are of the view that between 10 to 50litres of water is available for individual use per capita per day from various sources in the study area. 25.93% of the respondents have access to between 51 to 70litres of water per capita per day for various potable use, and only a few of the respondents (6.35%) have access to more than 101litres of water in the area.

Table 2. Adequacy and Sufficiency of Water for Sanitation and Hygiene

	Variable	Frequency	Percentage
Adequacy and sufficiency	Yes	136	35.98
	No	245	64.81
	Total	378	100.0
	Available/ Sufficient	71	18.78
	Inadequate /Insufficient	307	81.23
	Total	378	100.0
Reasons for Facilities			
	Sickness suppression	55	14.55
	Drinking purposes	109	28.84
	Sanitation	62	16.40
	Hygiene	92	24.34
	All of the above	60	15.87
	Total	378	100.0

Source: Field Survey, 2020

On the availability and sufficiency of water for sanitation and hygiene purposes, 35.98% of the respondents agreed that they have an adequate and sufficient quantity of water for their various uses. While over 64% of the respondents stated that they have an inadequate and insufficient quantity of

water for use, as seen in Table 2. Various reasons were advanced by respondents for the provision of these facilities. Since the majority of the Local Government Areas surveyed are rural in nature, the use of water for disease suppression is of least importance, with only 14.55% affirming the use of water as a disease fighter. The majority (28.84%) of those surveyed use water for drinking purposes. Sanitation and hygiene use of water have the backing of 16.40% and 24.34% respectively, while 15.87 of the respondents agreed that water and its facilities are used for all these purposes in the area. This is consistent with the concern shown by the WMO Secretary General in a function. WMO Secretary-General Petteri Taalas stated that, "it is extremely worrisome to observe that Sustainable Development Goal 6, which is centered on clean water and sanitation, is now so far off course." The fact that 3 billion people globally lack access to basic handwashing facilities is concerning, particularly in light of the coronavirus epidemic. This is unacceptable in the twenty-first century (WMO, 2020b).

Table 3. Water Availability for Sanitation and Hygiene from SDGs Projects

Variance	Classes	Frequency	Percentage
Accessibility/Availability	Very Accessible	28	7.41
	Accessible	79	20.90
	Moderate	231	61.11
	Inaccessible	40	10.58
	Total	378	100.0
Performance of SDGs Projects			
	Poor	142	37.57
	Too early to say	205	54.23
	Good	31	8.20
	Total	378	100.0
Quantity of Water			
	1-5litres	118	31.21
	6-10litres	88	23.28
	11-15litres	70	18.52
	16-20litres	74	19.58
	over 20	28	7.41
	Total	378	100.0

Source: Field Survey, 2020

Sanitation and hygiene in households and communities are only possible with the availability of water. Water for this purpose, according to 61.11% of the respondents, is moderately accessible, and accessible with only 7.41% and 10.58% of the respondents respectively declaring that water is very accessible and inaccessible. These responses are true because of the variation in water resources availability and the differences in rates of intervention by SDGs across Plateau State. In the assessment of the performance of SDGs in WASH intervention in making water available and accessible, the majority of the respondents (54.23%) said that since it is just about 5 years since the SDGs agenda was put forth by the United Nations, it is too early to pass any judgment condemning them. But 37.57% of the respondents still insist that they have performed poorly, and only 8.20% said they have done well in view of the brevity of time and the daunting challenges the world is going through generally today.

In order to achieve the SDGs, the nation must overcome numerous obstacles, including poverty, insecurity, social inequality, lack of inclusive growth, youth unemployment, gender disparity, a lack of funding, and generally insufficient institutional capacities (FGN, 2017). Additionally, the country suffers from a huge infrastructural deficit in power, roads, and rail networks, and food insecurity that is due to low agricultural production and productivity. There is widespread poverty that is compounded by land and ecosystem degradation. On the quantum of water derived as gains of these projects, the majority of the respondents said that

they enjoy up to 1 to 5litres of water per day per capita for their potable uses, and this is grossly below the acceptable water use quantity benchmark set by the WHO. 23.28% stated that they are accessible to 6 to 10litres from these projects, and those that access over 20litres constitute only 7.41%, which is consistent with the quantity of water made available to residents of Plateau State Water Board in Jos metropolis (PSWB, 2002)

Hand washing or sanitization is one of the best strategies to reduce the spread of the coronavirus (COVID-19) and other infectious diseases. However, 55% of the world's population, or 4.2 billion people, lack access to even the most basic hand-washing facilities at home. Disease susceptibility and poor health are impacted by a lack of access to clean water. It is particularly severe for those in rural and informal urban settlements who are extremely poor (WMO, 2020b). According to recent reports, climate change will have an impact on the amount, quality, and availability of water required for basic human needs, hence jeopardizing billions of people's ability to enjoy their fundamental rights to clean water and sanitary facilities (WMO, 2020a).

Table 4. Distance to WASH Facilities and Water Sources used by Respondents

Variables	Classes	Frequency	Percentage
Distance to WASH facilities (Km)	1 – 2	133	35.19
	3 – 4	107	28.31
	5 – 6	77	20.37
	7 – 8	51	13.49
	Over 9	10	2.65
	Total	378	100.0
Water Sources Used			
	Well	38	10.05
	Borehole	30	7.91
	Pipe-borne water	72	19.05
	All of the above	238	62.96
	Total	378	100.0
Nature of Sanitation Facilities			
	Toilets	210	55.56
	Latrines	88	23.28
	Wash hand basins	43	11.38
	All of the above	16	4.23
	Others	21	5.55
	Total	378	100.0

Source: Field Survey, 2020

Distance to any service point defines accessibility. For more respondents (35.19%) to say that they cover 1 to 2kilometres to enjoy these facilities, it is good news because before some of these interventions, most residents, especially in rural places suffer to cover several kilometres to access water for drinking, sanitation, and hygiene purposes. So only 2.65% of the respondents said they cover over 9kilometres to enjoy these facilities. Of all the water sources available, well (10.05%), borehole (7.91%), and pipe-borne water (19.05%), 62.96% being majority of the respondents agree that these are water sources provided within their communities by the SDGs office to curb all the negative issues associated with water shortages. Since most of the sanitation and hygiene facilities provided by the SDGs office are done along with schools and health centres, toilets, latrines, and wash hand basins are the main ones available. 55.56% of the respondents said that toilets are the most available, followed by latrines (23.28%), wash hand basins (11.38%), and in some cases, all of them (4.23%) are provided.

Table 5. Performance and Challenges of the SDGs Office in Plateau State

Variables	Classes	Frequency	Percentage
Have they performed?	Yes	21	5.55
	No	357	94.44
	Total	378	100.0
Level of Performance			
	Very High	5	1.32
	High	46	12.17
	Moderate	59	15.61
	Low	127	33.60
	Very Low	141	37.30
	Total	378	100.0
Challenges of providing facilities			
	Paucity of funds	148	39.15
	Covid 19 pandemic	119	31.48
	Corruption/No political will	50	13.23
	All of the above	61	16.14
	Total	378	100.0

Source: Field Survey, 2020

On the performance of the SDGs office in Jos, 94.44% of the respondents said that the Office has failed to perform in the areas of providing functional and sustainable WASH facilities for use by citizens in Plateau State. Only 5.55% of the respondents said that the office has performed well in areas of provision of WASH facilities in Plateau state. Only 1.32% of the respondents said that the level of performance is very high, and 33.60% of the respondents scored the SDGs activities undertaken by the office as low. The majority of the respondents (37.30%) scored them very low in performance. The majority of the respondents attributed these failures to paucity of funds (39.15%) and Covid 19 pandemic (31.48%), while 13.23% attributed the failures to corruption and lack of political will. Those who said all these factors are responsible for these failures are just 16.14% of the respondents.

Table 6. Benefits of SDGs Project Execution in Plateau State

Variables	Frequency	Percentage	Unit
Cost savings	45	11.90	Naira/day
Time savings	56	14.81	Hours/day
Reduced children's drudgery	60	15.87	-
Reduced incidences of water-borne diseases	75	19.84	Days/incidences
Increased water use per capita	52	13.76	Litre/Households/day
All of the above	91	24.07	-
Total	378	100	

Source: Field Survey, 2020

SDGs deliver several benefits to individuals, households, and communities. In areas of cost savings, 11.90% agreed that most water users have been migrated from the costly sources of water supply, like vendors, traversing long distances, and spending many man-hours to access water. Over 14% of the respondents agreed that these projects bring about time savings, while 15.87% agreed that the time which hitherto was spent by women and children is now freed up for other economic activities. Additionally, more than 19% concurred that the prevalence of water-borne illnesses has decreased, whereas 13.76% believe that the amount of water used per person has increased. However, according to 24.07% of the respondents, water

consumers in the research area get all of the advantages indicated in Table 6.

Table 7. SDGs State Track and Nature of Projects

LGA/Projects	PHC	LGEA	STAFF QUARTERS
Kanam	NA	NA	Staff quarters with complete toilet facilities
Pankshin	1 PHC with borehole	NA	NA
Langtang North	1 PHC without a borehole	NA	NA
Langtang South	2 PHC with 2 boreholes	NA	NA
Bokkos	1 PHC with a borehole	NA	NA
Mikang	1 PHC with a borehole	NA	NA
Riyom	1 PHC with a borehole	NA	NA
Mangu	2 PHC with a borehole	NA	NA
Bassa	1 PHC with 1 borehole	1 LGEA with a borehole	NA
Shendam	2 PHC and 1 borehole	NA	NA
Qua'an Pan	1 PHC with a borehole	NA	NA
Wase	1 PHC with a complete toilet	NA	NA
Kanke	NA	1 primary school with a borehole	NA

Source: SDGs official records, Jos; Authors' Compilations, 2020

Table 7 shows the intervention of the SDGs office, which dwelt mostly on the building of Primary Healthcare centres across all the 17 LGAs in Plateau State. The intervention was targeted at public institutions because of the presence of a lot of people in those facilities and the fact that the MDGs projects had drilled boreholes within several communities. So in 10 LGAs, 11 boreholes were provided to cater for 14 newly constructed Primary Health Centres (PHCs). Kanam and Kanke LGAs did not benefit from these projects because, based on the needs assessed across the 17 LGAs, it was noticed that they already have these facilities on the ground that can cater to the needs of the people in these places. Instead, a staff quarters was built with complete toilet facilities in Kanam, and 1 LGEA primary school was built with a borehole, also for Kanke LGA and Bassa, having 1 LGEA with a borehole. The boreholes are said to have been provided to cater for sanitation and hygiene facilities already provided by the previous interventions.

The COVID-19 epidemic has made it more difficult to complete projects and advance infrastructure development, generally in many areas of the global economy. As the water supplied is used for sanitation and hygiene, WASH facilities are offered as ancillary packages to initiatives pertaining to water, sanitation, and hygiene in rural areas, as well as the primary health care and educational infrastructure.

Table 8. Goal 6 – Availability and Sustainable Management of Water and Sanitation for all

SDGs Indicator Number	SDGs Indicators	Baselines Findings	Source
6.1.1	Proportion of population using safely managed drinking water services	69.6 Per cent	*Panel Survey 2015*
6.2.1	Proportion of population using safely managed sanitation services, (Sanitation)	60.3 Per cent	*Panel Survey 2015*
6.2.1	Proportion of population using safely managed sanitation services, (Hand washing)	48.0 Per cent	*MICS 2011*
6.3.1	Percentage of wastewater safely treated by year	0.04 Per cent	SDGs 2016

Source: FGN, 2017

According to Table 8 of the 2015 Panel Survey, 69.6% of people nationwide use securely managed drinking water services, and 60.3% use sanitation services. According to MICS 2011, 48% of the population has access to hand washing facilities, whereas wastewater treatment has only achieved a very small 0.04% success rate. This scenario is especially concerning at the subnational level because there is very little on the ground in the states and local governments, and the projects that have been started have failed quickly.

Table 9. Private Sector Participation in WASH SDGs Activities in Plateau State

Variables	Classes	Frequency	Percentage
Any PPP?	Yes	33	8.73
	No	342	90.48
	Total	378	100.0
Level of Relationship			
	Very High	7	1.85
	High	15	3.97
	Moderate	30	7.93
	Low	121	32.01
	Very Low	205	54.23
	Total	378	100.0
Challenges of Partnership			
	Inadequate funding	97	25.66
	Covid 19 pandemic	91	24.07
	Inadequate sensitization	79	20.90
	All of the above	111	29.37
	Total	378	100.0

Source: Field Survey, 2020

To achieve the SDGs in WASH, the participation of the private sector and its partnership with the government are key. The private sector participation in WASH and other development is known to be limited to the provision of wells, boreholes, toilets, and other WASH facilities within and outside dwellings for both family and use by the neighbours. The PPP is a new model that is about to gain ground in WASH. Table 9 shows that over 90% of the respondents said that PPP for the achievements of SDG Goal 6 does not exist in Plateau State, with only 8.73 accepting that such a partnership exists. According to FGN (2017), the Nigerian national budget also provided for the much-needed technical and managerial capacity to bridge the massive infrastructure deficit through structured Public Private Partnerships (PPPs). In spite of the provision of the national budget for this relationship, 54.23% in the table 9 are of the view that the level of partnership is very low, with a very negligible 1.85% accepting that the relationship is very high. This low level of partnership was attributed to inadequate funding (25.66%), covid 19 pandemic (24.07), and inadequate sensitization of the private sector (20.90) by the government authorities. So the majority of the respondents, constituting 29.37%, agreed that all these factors constitute the challenges to their relationship and partnerships.

Table 10. Strategies for Achieving SDG 6 in Plateau State

Strategy	Frequency	Percentage
Need Assessment and bottom up approach	62	16.40
PPP/Commitments to agreements by all parties	61	16.14
Concentrate on areas of need	64	16.93
Depoliticization of projects	63	16.67
Direct labour model	31	8.20
All of the above	97	25.66
Total	378	100

Source: Field Survey, 2020

On strategies for achieving the SDGs Goal 6, respondents in Table 10 gave nearly equal responses as need assessment and bottom up approach takes (16.40%), public private partnerships and commitments to agreements by all parties (16.14%), concentration on areas (communities) with genuine and serious needs (16.93%), project depoliticization by the authorities (16.67%). Only 8.20% of the respondents suggested that the direct labour model should be used, and the majority of the respondents (25.66%) said that all the strategies should be combined to achieve the SDG Goal 6 in Plateau State.

CONCLUSION

Access to water, sanitation, and hygiene is a basic right of human beings, but almost a third of the world's population suffers daily from a lack of access to these infrastructures, which can impact a whole community, affecting virtually every aspect of human life. Human health is seriously threatened by insufficient water, sanitation, and hygiene facilities in Plateau State. Inadequate access to water, sanitation, and hygiene facilities is a good indicator of how the poorest members of a community are handling life's challenges. Although the poor are disproportionately denied access to these facilities, everyone is affected by the crippling consequences of inadequate facilities, so everyone should feel accountable for tackling the problems associated with limited access to WASH facilities.

Based on the findings of the study, there are several recommendations (1) The high level government- community collaborations should be fostered to enable the projects become sustainable in delivering their gains in all locations of the State, (2) There should be a replication of these projects within communities across the State, the involvement of the communities at stages of execution and the establishment of mechanism for sustainability of the projects, (3) The objectives of WASH SDGs, their programmes and projects should be broadly spread to all the water resources MDAs that are directly or even indirectly connected with the Goal 5 SDGs and targets, (4) The government and private sector collaboration should also be enhanced to expand these projects and services to the target population across the state.

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