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From the Great Bubonic Plague Outbreak to PUSH UP in Ghana

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Abstract:An insight into past events offers alternative development policy approaches through experiences gained and lessons learnt over the years. Water supply and sanitation history is critical for sustainable development and the achievement of universal access to basic services under the Sustainable Development Goal 6 (SDG 6). The history of water supply and sanitation in Ghana from the great bubonic plague outbreak in Accra to **P**eople-centred effective **U**tilization of resources, improved **S**upervision, **H**igh performance (PUSH UP) programme may already exist, but in a scanty, unorganized, poorly documented, and scattered across literature pieces, some of them undocumented. This review paper attempts to gather credible peer-reviewed documentation of the evolution of the water supply and sanitation sector in Ghana to guide policy formulators, technocrats, and governments on the strategic development direction. The review proposes a revision of the capital cost contribution (CCC) policy of 5% by beneficiary communities to a fairer and more poverty-friendly policy since it fails to address the needs of the poor and vulnerable in society in its current state. The review reveals substantial evidence of a strong political will for policy formulation in Ghana, but policy implementation is weak – creating a growing gap between sanitation policy formulation and the reality in policy implementation. To bridge this gap and promote sustainable water supply and sanitation development and management, the author recommends a stronger political will for policy implementation in Ghana. The politicization of Ghana Water Company Limited (GWCL) appointments at the highly professional level has partly contributed to the failures and under-achievements in that company, and increasing environmental degradation due to illegal mining (galamsey) has over doubled the cost of the resulting contaminated water treatment. The author further recommends consistent and quality historical evidence documentation and examination of Ghana's water supply and sanitation sector key events to inform future policy formulation and implementation direction.

Keywords:Water supply, sanitation, history, key events, policy, Ghana

1. Introduction

Documentation and examination of historical events are important for a better understanding of what went wrong in the past [1], to guide and guardus into the future. Ghana's water supply and sanitation sector has undergone various policy prescriptions even before independence – from the great bubonic plague outbreak which triggered an investigation into the state of sanitation in Accra to the **P**eople-centred effective **U**tilization of resources, improved **S**upervision, **H**igh performance (PUSH UP) programme. The addition of "UP" in the acronym was to urge Ghana Water Company Limited (GWCL) workers to put up their best in the programme. Before Ghana's first water supply system was developed, rainwater, wells, and lagoons were the primary water supply sources in Ghana, and no one was responsible for public health at the time [2]. Prompted by the bubonic plague outbreak in Accra (Ghana), the colonial government established an investigation in 1909 headed by British medical Professor J. W. Simpson who submitted a report on the sanitary conditions in the city [2]. Professor Simpson's report summarized Accra's sanitary situation as follows:

"…… the majority of the poorer people goes to the wells and ponds and store the days supply in vessels in the compound of their huts. This source of supply is poor and inadequate. The sweet water wells are mostly some distance from the town while the ponds get dried up or become extremely low towards the end of the dry season"[2].

Though evidence of political will to formulate policies exists in Ghana, the political will to support policy implementation is lacking [3] – a situation creating a growing gap between sanitation policy formulation and the reality in policy implementation. Water supply and sanitation services accessibility analysis in Ghana found that sanitation facilities incorporation in building regulations to advance Ghana's sanitation policy is ineffective [4] – a demonstration of Ghana's policy implementation weakness. Therefore, under an already strong political will for policy formulation, a stronger will for policy implementation to bridge the gap and promote sustainable water supply and sanitation development and management is recommended. The New Patriotic Party (NPP) now in government on a four-year mandate (2017 – 2020) has proposed a 3-year water and sanitation strategic plan focused at addressing the sector's challenges, and a 2-billion-dollar facility is

secured for the construction of two waste treatment plants per region. It is therefore the author's expectation that Ghana's strong political will for policy formulation will translate into a strong political will for the implementation of this policy.

Ghana's sanitation policy frowns on pit latrines use, but prioritizes private sanitation facilities provision in individual homes [4]. The policy for rural areas is services provision through community participation in the ownership and management of facilities. For the urban areas, the policy is towards simple sewerage systems and single household type dry on-site systems for rural areas and small towns. Recent works support these policy choices – simple, cheap but effective sanitation technology options (STOs) that use minimal or no water [5], and simplified sewerage as likely STOs of choice and 'true partner' of the peri-urban poor [6]. A major component of sanitation is drainage facilities provision, and Ghana's sanitation policy is designed to meet the sanitation needs of all households in communities through the provision of drains [2]. However, instead of addressing the underlying causes of poor sanitation, close sanitation delivery gaps, and develop a national vision for environmental sanitation [7]; [2], the focus is rather on prioritizing waste collection and disposal which developing countries struggle to effectively deliver [8].

2. Ghana – background

Ghana is located on the West coast of Africa and abound in natural resources including water. It has a total land area of 238,537 km^2, of which 8,520 km ^{2} is water [9]. The average annual rainfall in Ghana is estimated at 2,030 mm in the South, 1000 mm in the North, and the annual temperature ranges from 21ºC to 32ºC [9]. Ghana is at borders with Burkina Faso to the North, to the South are the Gulf of Guinea and the Atlantic Ocean, Togo to the East, and Ivory Coast to the West (Figure 1). Ghana's 2010 population was approximately 24.7 million, of which 51.2% was female and 48.8% was male – this gave a sex ratio of 95 males per 100 females [10]. The 2010 population and housing census revealed that average annual population growth rate was 2.5% [10]. The demographics of Ghana include 55.3% adult population (18+ years), dependent population of 44.7% (15 – 65 years), and the most populous region was Ashanti with roughly 2.5 million inhabitants [10].

Source: [9]

Figure 1: Map of Ghana showing geographic boundaries and main cities

3. Ghana's water supply and sanitation history

"Most future facts are based on those in the past" [11]. Ghana's first public water supply utility began in 1928 with a pilot piped water supply system managed by the Hydraulic Branch of the Public Works Department (PWD) in Cape Coast [12]. Nine (9) urban water schemes were operated and managed by the Hydraulic Branch of PWD at the time of independence [2]. The PWD was responsible for both urban and rural water supplies. There was no national water and sanitation policy document for Ghana, and no institution had overall responsibility for managing the sector. The results were that water and sanitation services were provided not reflective of the economic value of producing them, and little focus was on management and conservation. The water supply branch under the Geological Survey Department was however formed in 1937 to cater for rural areas. The Ghana Water and Sewerage Corporation (GWSC) was then established as a legal utility in 1965. The water supply and sanitation sector key events in Ghana is shown as Table 1.

Policy reforms in the water supply and sanitation sector in 1993 led to increased private sector participation (PSP) in both operation and management, and the establishment of an independent economic regulator [13]; [9]. The PSP objectives were to: tap expertise for improved efficiency and access to water supply and sanitation, improve sector management and operation, reduce the financial burden, and ensure sector sustainability through cost recovery and affordability. Opponents however argue that the PSP policy on water supply and sanitation infrastructure management did not achieve anything that a well-functional public sector could not have achieved [14]. Besides, the 5% capital cost contribution (CCC) by beneficiary communities under the PSP policy failed to achieve its purpose in safe water supply and sanitation access delivery to the

poor. The CCC failure led to lifeline tariff introduction to offer the poor access, but that was insufficient to give poor communities access to these services [15]. In view of the PSP concept failure to address the needs of the poor and vulnerable in society, the author recommends a review of the CCC policy to be fairer and more poverty-sensitive.

GWSC was transformed into two separate structures in 1999 – the profitable downsized Ghana Water Company Limited (GWCL) was contracted to multinational corporations, and the unprofitable rural water and sanitation sector was managed by the World Bank's Community Water and Sanitation Project Phase II [13]. The key objectives of the transformation were to: maximize health benefits using the integrated approach by combining water, sanitation, and hygiene education interventions; make basic water and sanitation facilities available to communities willing to contribute towards operation and maintenance (O & M), and capital cost and repair to ensure sustainability. The Water Sector Restructuring Programme was implemented from 2003 – 2009 to increase urban water availability [9]. The urban water provider (GWCL) is currently facing challenges – environmental degradation due to illegal mining activities (galamsey) results in water contamination and occasional drying up of some dams. Catchment area water degradation means increased chemical cost for water treatment and intermittent shut down of some treatment plants. Though the GWCL was primarily set up to add and maximize value by providing Ghanaians portable water for social, general well-being, and economic growth, the professionals with the knowledge, ability, freedom and understanding to deliver the service on sustainable basis are often lacking in the company, largely due to politicization of appointments to highly professional positions.

Table 1: Water and sanitation sector key events in Ghana

Year	Key Event
1896	Responsibility for urban sanitation formally handed over from central government to Accra City Council
1909	British medical Professor J. W. Simpson submitted report on the sanitary conditions in Accra following the great bubonic plague outbreak in the city
1914	Kumasi Water Works maiden investigations commenced, but was temporarily postponed by Governor Clifford due to the First World War; Weija Water Works inaugurated as the first water works in Ghana
1917	Secondi water supply opened
1921	Winneba water supply opened
1928	First public water supply systems developed and operated by the Hydraulic Division of the Public Works Department (PWD); Cape Coast water supply opened
1930	Kumasi water supply opened
1934	Water Works Ordinance passed and general water rates introduced
1937	Water supply branch under the Geological Survey Department (GSD) formed to cater for rural areas
1942	The water supply branch under GSD closed down due to problems with staff procurement
1943	Department of Rural Water Development established
1954	Kpong Water Works inaugurated
1958	The Water Supply Division was delinked from the PWD and placed under the Ministry of Works and Housing (MWH)
1959	Agreement signed with WHO on water sector development study to be carried out in Ghana; The Hydraulic Branch of PWD and Department of Works and Housing merged into the Water Supplies Department to cater for rural and urban water development
1965	Ghana Water and Sewerage Corporation (GWSC) established and became a legal utility responsible for urban and rural water supply and sewerage system operation and development
1991	Ghana Government's National Environmental Action Plan established to prioritise the development and implementation of environmental health standards
1993	Private sector participation (PSP) policy reforms in the water supply and sanitation sector introduced
1994	The operation of rural and small town water supplies moved from GWSC to be community managed; Environmental Protection Agency (EPA) was formed with the role to ensure that the activities of water operators do not harm the immediate environment and water bodies
1996	Water Resources Commission established
1997	Public Utility Regulatory Commission (PURC) established
1998	Community Water and Sanitation Agency (CWSA) formed; A memorandum of understanding reached for the transfer of 120 small town systems from GWCL to the District Assemblies

	(DAs) for community management
1999	GWSC converted into a full state-owned limited liability – GWCL in urban areas and the CWSA in rural areas, and responsibility for sanitation transferred to the local government
2005	GWCL signed management contract with Aqua Vitens Rand (AVRL) to improve performance and extend infrastructure
2006	Management contract between GWCL and AVRL commenced
2010	Revised Ghana's Environmental Sanitation Policy (ESP) document produced
2011	GOG failed to extend AVRL contract with GWCL; Ghana Urban Water Limited (GUWL) temporarily took over urban water system management in Ghana
2013	GWCL and GUWL merged under original name GWCL; Transaction Advisor engaged to facilitate performance-based reforms implementation
2015	GWCL first performance-based contracts signed at all management levels of GWCL; First programme started under the name "100-day high performance improvement programme" (HIPIP); Second programme commenced, sustaining high performance in 180 days (SHiP 180°)
2016	GWCL ran a 9-month **P**eople-centred effective **U**tilization of resources, improved **S**upervision, **H**igh performance (PUSH UP) programme

Sources: [13]; [2]

Water supply delivery in Ghana today is classified as either urban or community water [16]. Ghana Water Company Limited (GWCL) is responsible for supplying water to urban areas, and as a parastatal organization, it produces 600,000m^3 of water per day from its 87 water supply systems [17]. Community Water and Sanitation Agency (CWSA) has responsibility for facilitating community water supply delivery to rural areas and small towns. Government of Ghana water sector reform currently focuses on public-private partnership (PPP), and so the GWCL entered into a management contract with Aqua Vitens Rand (a private company) to operate urban water supply systems [9]. Following pressure by communities and union activists, Government of Ghana declined to extend Aqua Vitens Rand's contract on grounds of non-performance, and GWCL retook over operations in 2011. Great attention was paid to non-revenue water (NRW) reduction in the 2016 programme. There is the need for consistent and quality historical evidence documentation and examination of Ghana's water supply and sanitation key events to inform future policy formulation and implementation direction in the sector.

4. Conclusions and recommendations

A better understanding of what went wrong in the past through documentation and examination of historical events is important for sustainable development. The history of water supply and sanitation in Ghana from the great bubonic plague outbreak in Accra to the PUSH UP programme offers an insight into what happened in the sector in the past, experiences gained, and lessons to be learnt. A credible peer-reviewed documentation of the evolution of the water supply and sanitation sector in Ghana is therefore critical for the sector's future development. The review proposes a revision of the capital cost contribution (CCC) policy of 5% by beneficiary communities to a fairer and more pro-poor policy since the current policy failed to address the needs of the poor and vulnerable in society. The politicization of GWCL appointments at the highly professional level has partly contributed to the failures and under-achievements in that company, and increasing environmental degradation due to illegal mining (galamsey) has over doubled the cost of the resulting contaminated water treatment. There is substantial evidence of a strong political will for policy formulation in Ghana, but a weak policy implementation, resulting in a growing gap between sanitation policy formulation and the reality in policy implementation. The author therefore recommends a stronger political will for policy implementation in Ghana to promote effective water supply and sanitation management. The author further recommends consistent and quality historical evidence documentation and examination of Ghana's water supply and sanitation key events to inform future policy formulation and implementation direction in the sector.

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