

# The Role of Indigenous Institutions in Water Resource Management: Insights from Ghana

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**Abstract:** *This paper explores the role of indigenous institutions in Ghana's water resource management and critiques the limitations of the statutory framework that excludes these institutions. Drawing insights from international principles, the study advocates for incorporating indigenous practices into water governance to address pollution and sustainability challenges.*

**Keywords:** Water, Resources, Management, Indigenous, Institutions

## 1. Introduction

Indigenous institutions have existed in this country before colonisation and have continued in existence till this day. Before the emergence of the modern state, these indigenous institutions played key roles in the organisation and development of communities in many parts of the country. Though some of the roles of indigenous institutions have diminished in modern society, they nevertheless continue to play key roles in the organisation and growth of our societies.

Indigenous institutions refer to the traditional institutions of communities such as chiefs, heads of families, heads of clans, *asafo* groups, and traditional councils of elders (Manteaw & Pimpong, 2024). [1] They also include; the customary laws, rules, regulations, customary practices, taboos, totems, and beliefs of communities (Awuku, 2016). [2] These institutions shape the behavioural patterns or cultures of the people and provide the structures of governance and mechanisms for dispute resolution. Indigenous populations have diverse beliefs about water resources; the common trend shows sacred connections of indigenous populations to water resources. As a result of those sacred connections, many communities have diverse traditional beliefs, practices, customs, rules and regulations regarding the use of their water resources.

The study emphasizes the critical role of indigenous institutions in sustainable water resource management, highlighting their potential to complement statutory frameworks and address governance gaps in Ghana. It also examines the gaps in our current statutory regime on water resource management and the potential synergies of the statutory regime with indigenous institutions. This paper also assesses the involvement of indigenous institutions in managing boreholes and water resources in the context of mining. An assessment is made of the international legal framework for water resource management and the lessons learned from it, particularly, in involving indigenous institutions in water resource management.

## 2. Conceptualisation of Indigenous Institutions

Indigenous institutions refer to the distinct knowledge systems and structures of indigenous populations, structures and units of organisations of communities that have evolved in course of history (Manteaw & Pimpong, 2024). [3] These include the various norms, customs, beliefs, customary practices, cultures, language and governance structures that regulate societal lives. There are also indigenous institutions that are religious, social, political, economic, and judicial structures that have been developed to govern social interactions among people (Awuku, 2016). [4] These institutions establish the leadership structures of the communities, the decision - making bodies, dispute settlement structures and processes, the customs of the people, and the general legal system of the community. Indigenous or traditional institutions organise local communities through leadership, functional roles, influence, spiritual guidance, and in the efficient use of natural resources. Leadership structures within the community and their functional roles ensure compliance with the rules, norms and beliefs on the part of the populace (Awuku, 2016). [5]

Institutions spell out the rules applicable in a society or more formally, the human - devised constraints, regulations, and structures that shape human interaction (Awuku, 2016). [6] Institutions reflect power relations in a community, and they shape the ways in which differentiated actors access, use and derive well - being from environmental resources and services (Adjakloe, 2021). [7] They play a critical role in the sustainable management of natural resources through defining property rights. Indigenous institutions are divided into various categories including leadership institutions, spiritual roles and offices, dispute settlement structures, traditional knowledge, and customs, rules, regulations, taboos, rituals, sacrifices, totems, social norms, values, etc.

Indigenous leadership institutions form a cadre in the organization of communities. The leadership institutions include the people and bodies in whom the power to govern is vested. These leadership institutions constitute the framework of governance of the communities and play key roles in the enforcement of rules, regulations and customs of the people (Osei, 2023). [8] These indigenous leadership

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institutions include the chiefs, the traditional councils of elders, heads of families, and heads of clans, opinion leaders, household leaders, women leaders, *tendana*, *magazias*, rainmakers, soothsayers, medicine - men, and diviners (Awuku, 2016). [9] The institution of chieftaincy specifically, has been recognised and preserved by our Constitution as an indigenous institution. [10] The Chieftaincy Act, 2008 (Act 759) recognises different classes of chiefs which include the Asantehene and paramount chiefs, divisional chiefs, sub - divisional chiefs, Adikrofo, and other chiefs. [11] The Act further establishes the National House of Chiefs, Regional Houses of Chiefs, traditional and divisional councils. [12]

Their functions encompass regulating access to land and water resources, holding land, water, and other resources on behalf of and in trust for the people as well as mediating disputes over land, thefts of crops, and misconduct (Awuku, 2016). [13] Furthermore, they mobilise people to participate in community activities spearheaded by indigenous institutions. Chiefs, for instance, assume key leadership roles in the traditional authority structure in the management of natural resources in their communities

In ancient times, these leadership institutions led the people in the acquisition of territories, management of natural resources, the preservation of the environment and the allocation of resources, and oversaw the overall organisations of communities (Ahmed et al., 2018). [14] Today, they still play key roles in the organisation of families, clans, and the larger communities, and ensure compliance with the relevant customary rules and practices. In the area of water resource management, they set rules regarding access and utilisation of water, and the measures to prevent the pollution of water bodies (Adjakloe, 2021). [15]

Indigenous institutions also include spiritual offices and rules, customs and practices deeply rooted in spirituality. In indigenous communities, there exist chief priests and priestesses who serve as the spiritual guides for the local communities especially as regards rules on the access to and use of natural resources (Manteaw & Pimpong, 2024). [16] In the next section of this paper, the roles of these priests will be examined in detail regarding indigenous water resource management as practiced in several parts of the country. But suffice it to say here that, these chief priests and priestesses serve as intercessors for the people who communicate with the gods and ancestors for and on behalf of the people, and receive instructions from such deities for the indigenous populations. The priests also play key roles in setting rules and regulations, including sanctions regarding the use of resources; especially water bodies. The priests also pacify the land through sacrifices whenever violations of traditional rules on access to and utilisation of resources occur (Adjakloe, 2021). [17]

Indigenous institutions further include the dispute settlement structures of local communities. These structures include councils of elders, chiefs, priests, priestesses, queen mothers, heads of families, and heads of clans who decide cases by applying the prevailing customs and practices of the people (Gondo & Kolawale, 2019). [18] They form part of the

leadership structure of the communities, and help in the resolution of disputes. They employ dispute settlement mechanisms such as arbitration, mediation, consultations, conciliations and adjudication. In the context of water resource management, they resolve disputes regarding the access to and utilisation of water resource, and help in the enforcement of customary rules and laws on the efficient use of water. The awards of these traditional tribunals are adhered to by the community (Gondo & Kolawale, 2019). [19] As regards water resource management, community members adhere to the decisions of these bodies out of deep reverence for the chiefs and elders, and also out of fear of the pronouncements of the fetish priests and priestesses. These priests and priestesses are believed to possess supernatural powers, and could literally bring misfortune upon offenders. Again, the leaders have the power to ostracise a community member for non - compliance with the decisions or awards of these tribunals. [20]

Local customs, rules, regulations, taboos, rituals, sacrifices, totems, social norms, moral values, and curses are an integral part of indigenous institutions (Manteaw & Pimpong, 2024). [21] They constitute a cadre of indigenous institutions. They prescribe the behavioural patterns for the members of the communities: what one can do and cannot do, when and how one is permitted to do something (Adjakloe, 2021). [22] Values are the principles and beliefs that influence the behaviour and way of life of a particular group or community. Thus, indigenous institutions include the cultural beliefs, practices, rules, regulations, taboos, totems, moral values, and societal norms of the people (Adjakloe, 2021). [23] They prescribe the way of life of the indigenous populations. In the context of water resource management, these customs and practices prescribe when and how one may access water, and various prohibited conducts related to the access and use of water. Some of these rules are direct prescriptions from the gods and ancestors passed to the people through the priests and priestesses, and some have evolved through history (Adjakloe, 2021). [24] These are the laws that are enforced by the indigenous leadership institutions of the communities.

Traditional knowledge is another important aspect of indigenous institutions. This knowledge refers to deeply rooted patterns of knowledge of local people of their lives, cultures and the environment (Awuku, 2016). [25] The Swakopmund Protocol defines traditional knowledge as “*any knowledge originating from a local or traditional community that is the result of intellectual activity and insight in a traditional context, including know - how, skills, innovations, practices and learning, where the knowledge is embodied in the traditional lifestyle of a community, or contained in the codified knowledge systems passed on from one generation to another. The term shall not be limited to a specific technical field, and may include agricultural, environmental or medical knowledge, and knowledge associated with genetic resources*”. [26] [Emphasis is mine].

Thus, traditional knowledge encompasses knowledge embodied in the traditional lifestyle of a community, and include knowledge associated with the environment. Indigenous knowledge is made up of traditional beliefs and

practices generated by indigenous people in relation to natural resource management, agriculture, and human and animal health care. [27] Indigenous knowledge systems include sets of actors, networks, or organisations which are expected to work together to support understanding processes that improve the correspondence between knowledge and environment (Awuku, 2016). [28] Indigenous people have developed knowledge systems over time which guide conduct in the society. In the context of water resource management, such knowledge is vital in prescribing patterns of behaviour on sustainable access to and use of water by the local populations.

### 3. Involvement of Indigenous Systems in Water Resource Management in Ghana

This section examines indigenous approaches to water management, and the common practices among the indigenous populations towards water management. Generally, from ancient times till today, indigenous communities have developed various rules, beliefs, customs, and practices for the sustainable use of their natural resources, including water resources. Some of these beliefs and practices are deeply rooted in the history and experiences of the people. These rules and customs are enforced by the indigenous leadership institutions of the people. I would first examine some indigenous approaches to water resource management in some communities in Ghana, after which I would examine the ways in which these indigenous systems can be used today in managing our water resources.

A research conducted in the Faase Community of the Ga West Municipal of Ghana shows the existence of indigenous governance structures and institutions in managing their water resource (Adjakloe, 2021). [29] The findings were made regarding customary institutions, beliefs, practices, rules and laws on the access to and utilisation of the Nsakyi river (Adjakloe, 2021). [30] The Faase community has water governance institutions made up of actors and agents who govern their water resources within the community, in order to preserve the quality, quantity, and purity of their water resources. These institutions are made up of chiefs, traditional councils of elders, traditional watchdog committees, priests, heads of families, and the community members (Adjakloe, 2021). [31] The water resource governance laws are in the form of taboos and sacred days regarding access to their water. Through the instrumentality of the governance institutions, laws and regulations, water governance functions such as allocation, distribution, monitoring, water quality and quantity, are managed (Adjakloe, 2021). [32] The outcome of the work of these indigenous institutions is that they maintain the quality and quantity of their water resources for domestic, economic, ecological, cultural, and agricultural uses (Adjakloe, 2021). [33]

The customary institutions of water governance through their traditional laws and regulations clearly spell out when, where, and how to collect water from the Nsakyi River. In the Faase community, it is prohibited to bath, or wash anything, or even swim in the river (Adjakloe, 2021). [34] When a person is caught violating these rules, the person is

summoned to the chief's palace and made to pay a fine. Sunday is the sacred day for the Faase community, and on this day, it is prohibited to fetch water from the river. Again, it is prohibited to send anything black into the river, such as black cooking utensils. The mechanisms used in enforcing these laws are fines imposed by the chiefs on offenders (Adjakloe, 2021). [35]

In the Faase community, as indicated earlier, the customary governance institutions on water resource management include the chiefs, the earth priest, elders of the chief's council, clan heads and family heads. The earth priest, known as the Wulomo, acts an intercessor for the people, who pours libations on behalf of the people, perform rituals for the people, and communicate the instructions of the river goddess to the people. The chief and his elders ensure the implementation of these water rules and regulations, and through the linguist, these laws are communicated to the people (Adjakloe, 2021). [36] Then there exists a watchdog committee which is made up mostly of young men of physical strength. The function of this committee is to ensure that the people comply with the laws and regulations regarding access to and utilisation of their water resource. The committee also apprehends offenders who violate these laws, and brings them to the chief's palace to be fined (Awuku, 2016). [37]

Some of the customs and practices of the Faase Community are deeply rooted in spirituality. For instance, the people believe in the existence of a river god who is the lord over the river. This river god is responsible for prescribing the rules and regulations regarding the access to and utilisation of the water from the Nsakyi River (Awuku, 2016). [38] For example, Sunday as the sacred day on which it is prohibited to go to the river, is deemed sacred for the river god, and also that their first ancestors arrived on a Sunday (Awuku, 2016). [39] Again, the pouring of libations and performance of rituals are deeply rooted in spirituality, and they are means of communicating with the river god (Awuku, 2016). [40] During their festival, the people bathe in the river as a form of cleansing from their sins. The river god is believed to hate black color, and that is why it is prohibited to send black objects into the river (Awuku, 2016). [41] All these customary rules are deeply rooted in spiritism.

Commenting on the effectiveness of these indigenous institutions on water resource management in the Faase Community, Adjakloe has this to say: *"Due to the continuous monitoring of water resources, the main water body, which was the Nsakyi river, was preserved. According to community members, because the water governance laws and regulations were effective, the water quality was quite good to be used for literally everything. The Nsakyi River was accessed to meet the people's domestic, small - scale industry and agricultural water needs. The preservation of the Nsakyi river as a governance function was also necessary because it gave them an identity as a people and as a community. Secondly, the community had a dedicated traditional council who were efficient and effective in ensuring that the laws and regulations were obeyed and culprits were punished to deter others from violating any customary water governance laws and regulations"* (Awuku, 2016). [42] This shows a robust indigenous

architecture for water resource management in the Faase Community! I would revisit this point later when assessing the effectiveness of indigenous institutions in water resource management.

A research conducted on the management of water resource in the coastal areas of Ghana (particularly on the Muni lagoon), also revealed the existence of customary institutions which are effective in water resource management (Adu - Boahen & Dadson, 2018). [43] There exist indigenous institutions such as leadership institutions, and rules and regulations on the water resource management in the coastal communities. The research shows that traditionally, coastal lagoon management is vested in the owners of the lagoons. The owners are usually stools, fetishes, and clans (Adu - Boahen & Dadson, 2018). [44] The organisational frameworks for these societies are built on kinship and family lineages, with specific rights and obligations, and also regarding authority, adjudication of disputes, inheritance and succession (Adu - Boahen & Dadson, 2018). [45] Each level of the organisational framework is headed by a chief. There also exist laws on the access to the lagoons in the form of taboos, and in some cases, outright ban of certain people (Adu - Boahen & Dadson, 2018). [46] The findings show that traditional beliefs are the bed rock on which the Muni lagoon is managed, including other customs and norms (Adu - Boahen & Dadson, 2018). [47] In the four communities in which the research was done, the indigenous populations emphasised the key role of traditional beliefs and taboos in the management of the lagoon (Adu - Boahen & Dadson, 2018). [48]

Again, there exists a traditional council with a chief who oversee the preservation of the lagoon. [49] The sacred day for the Muni lagoon is Wednesday. [50] On this day, fishing is strictly prohibited, with strict punishment for those who violate the rules. A key cultural trait of the people regarding the lagoon is that they identify themselves with the lagoon and see the lagoon as part of their lives and sustenance. Therefore, the community members are actively involved in ensuring compliance with the laws and regulations regarding access to and use of the lagoon. [51] Farming along river banks is prohibited because the river banks are believed to be the resting places for the gods of the lagoon (Adu - Boahen & Dadson, 2018). [52] Again, it is also prohibited to carry a corpse across the river, especially on Wednesdays, until rituals are performed for the corpse to be carried over the lagoon on the next day. [53] Women in their menstrual periods are strictly prohibited from entering the lagoon (Adu - Boahen & Dadson, 2018). [54] Violations of these norms carry sanctions, including punishments from the gods, and sacrifices have to be offered to cleanse the offender (Adu - Boahen & Dadson, 2018). [55]

Like Nsakyee in Faase, some of the practices and customs regarding the Muni lagoon are deeply rooted in spirituality. For example, the prohibition of farming along the river banks is so because those places are believed to be the resting places of the gods. The reverence of Wednesday as a sacred day is also based on the fact that the river god rests on that day. Pouring of libations and offering of sacrifices are all connected to spirituality. These rules and customs are obeyed by the people especially because most of them are

deemed to have been received from the gods and the ancestors, and offenders suffer punishments from the gods for violating these rules, including death. For fear of incurring the wrath of the gods, the local people obey these rules (Adu - Boahen & Dadson, 2018). [56]

Akwamu traditional in the Eastern region is another community with robust indigenous institutions for water resource management. This community has indigenous leadership institutions, religious and cultural beliefs that regulate the use of their water resource (Osei, 2023). [57] The Akwamu people believe in the spiritual world, and existence of gods and ancestors who are believed to live in trees, caves, rivers, mountains, rocks etc. These natural objects in which, are believed reside the gods and the ancestors are regarded as sacred and treated with strict rules (Osei, 2023). [58]

The institution of taboos plays key roles in water resource management in Akwamu. In this community, water bodies are regarded as sacred and it is therefore a taboo to catch fish in those water bodies on taboo days (Osei, 2023). [59] The taboos days are regarded as sacred days for the gods and ancestors, and days on which sacrifices are offered to these deities. Not only are sacrifice offered to these deities on taboo days, those days themselves are regarded as bad days, and a violation of any of the religious and customary norms, especially regarding water bodies, carried severe punishments from the gods. Countless misfortunes are believed to befall those who violate these norms. There would be need to offer sacrifices to pacify the gods whenever a person violates these laws. The Akwamu people also believe that the river bodies are the dwelling places of the gods, and there is the fetish priest, who is the mouthpiece of the gods (Osei, 2023). [60] These gods mandate the people to keep the water bodies clean, to prevent pollution and other practices that are harmful to the health of the people. Open defecation along river banks is strictly prohibited in Akwamu. Anyone found in it is deemed to have offended the community and the gods, and becomes unclean. Sacrifices or rituals would therefore need to be offered to cleanse the offender. The offender would provide bottles schnapps, rams, fowls, etc., to pacify the gods (Osei, 2023). [61]

The institution of sacred groves is yet another key indigenous institution in Akwamu on water resource management. In this community, sacred groves are held in high esteem among the people, because of the religious beliefs attached to them. In this community, a sacred grove is located near the Volta River, known as "abosom mpc", meaning, the dwelling place or grove of the gods. Several taboos are connected with this grove. For example, it is a taboo for non - royal members to enter the grove. It is also a taboo to kill any animal around the grove. In the past, harvesting snails in this grove was met with severe consequences, and the offender could even go missing for three days. Whichever form of violation of these rules that occurs requires sacrifices to be offered and rituals to be performed to pacify the gods (Osei, 2023). [62] In the past, human sacrifices were offered to pacify the gods of this grove, but the advent of our modern state and Constitutional regime strictly prohibit such practices. [63]

In Ashanti, different indigenous institutions exist for water resource management. While the customary practices may differ from community to community, the structure or framework of these indigenous institutions are similar (Adu - Boahen & Dadson, 2018). [64] There are the chiefs who constitute the government architecture of the community, and enforce the customs and rules regarding the various water bodies (Adu - Boahen & Dadson, 2018). [65] There also exists different norms and taboos relating to use of their water resources. The priests receive the rules and commandments from the gods and ancestors and pass them to the people, who are mandated to comply with these laws (Adu - Boahen & Dadson, 2018). [66] Failure to comply with these laws incurs the wrath and punishment of the gods and ancestors. For example, the indigenous water resource management institutions of Lake Bosomtwe are made of local chiefs, priests with shrines, and several taboos which prohibit some conduct such as the prohibition of fishing on sacred days, the prohibition of fishing with conventional nets, noise making etc (Adu - Boahen & Dadson, 2018). [67] These traditional beliefs and practices have roots in the history of the people as well as ancestral beliefs and practices. Offenders are made to pay for sacrifices to be offered to the gods and ancestors (Adu - Boahen & Dadson, 2018). [68]

The management of the Tano River in the then Brong Ahafo region showcases the active involvement of indigenous institutions (Awuku, 2016). [69] It is managed by a traditional council. There are also taboos put in place to regulate the actions of the people towards its use and sustainable management. The areas covered in the research were Sunyani, Bechem, and Chiraa traditional areas. These societies are made of hamlets, villages, towns and cities, and they are headed by an Omanhene, but each is headed by an Odikro. (Awuku, 2016) [70] In these community too, there are traditional councils that serve as the judicial systems of the local people, adjudicating cases brought before them through the application of traditional laws, taboos, and customs. There are also linguists who are the spokespersons for the chiefs; there are also queen mothers, sub chiefs, elders, heads of clans and heads of families, chief priests, youth leaders etc. Through their customs and practices, these communities regulate access to and utilisation of their water resource (Awuku, 2016). [71]

### 3.1. Comparison of Ghanaian indigenous systems with indigenous systems in other Sub - Saharan jurisdictions Botswana and Zimbabwe

Customary or indigenous institutions exist in Botswana and Zimbabwe for water resource management. These indigenous institutions make up the leadership and cultural architecture of the societies and regulate the utilisation and management of water resources (Gondo & Kolawale, 2019). [72] Within the leadership architecture, there exist structures and hierarchies of authority, with some being subordinate to others. In Botswana, the indigenous leadership institution is made up of the chief, deputy chief, senior chief representative, headman of records, headman of arbitration, and the village development committee (Gondo & Kolawale, 2019). [73] These institutions form the leadership structure for the organisation of indigenous societies. In Zimbabwe,

indigenous populations have a leadership structure within their societies which forms the governance architecture for the indigenous peoples. There is the chief, the headman, the kraal head, the village head and the family head (Gondo & Kolawale, 2019). [74] These leadership institutions govern access to resources: that is, issues of ownership of water resources, allocation and distribution of their water resources. In both Botswana and Zimbabwe, there exist a judicial system for the settlement of disputes among the indigenous populations, including disputes relating to water resources. In Botswana, indigenous people have the *kgotla* system (a type of court system) and the Zimbabweans also have the *Dare* courts (Gondo & Kolawale, 2019). [75] These courts are responsible for the settling of disputes among the people, including disputes relating to natural resources. In Ghana indigenous institutions include leadership structures which comprise the chiefs, elders, tendana, etc, at the helm of affairs for their respective communities, and regulate access to, and the utilisation of water resources.

In the context of water resource management, the indigenous populations of Botswana and Zimbabwe have spiritual beliefs, customs, practices and other cultures rooted in spirituality. They believe in the existence of gods and ancestors, who are deemed to be the true owners and custodians of the resources, and the people regarded as caretakers of the resources (Gondo & Kolawale, 2019). [76] For water resources particularly, indigenous people in these two countries believe in the existence of spirits in water bodies such as pools, rivers, and springs. They believe in all kinds of spirits who are deemed to be associated with water bodies. As a result, punishments are meted out to violators of the inhibitions of the gods, and the people are required to comply with the laws on access to and utilization of water resources (Gondo & Kolawale, 2019). [77] Under Ghanaian indigenous institutions, there are also laws and customs derived from both history and spiritism, which regulate the behavior of the people towards the utilisation and management of water resources.

Community people in Botswana who live around the sacred Tsodilo Hills have very strong traditional and spiritual connections with the hills as a sacred place of worship of ancestral spirits (Gondo & Kolawale, 2019). [78] There are all kinds of legends and stories about the hills, and all kinds of beliefs about the hills relating to bad spirits, witchcraft problems etc. (Gondo & Kolawale, 2019). [79] These beliefs are at the very heart of the conservation and management of the environment and water resources in these areas and their sustainable use. This is akin to the sacred groves that exist in Ghana. As seen in the Akwamu sacred grove example, community people hold such groves in high esteem, and this ensures water resource management.

### 3.2 Common lessons/practices from indigenous institutions across Ghana

The common trends of indigenous water resource management institutions throughout Ghana include the leadership institution, which is made up of the chiefs, the elders, traditional councils, etc. As seen above in the Faase community example, the governance architecture is responsible for the regulation, and the effective and efficient

utilisation of water resources through the enforcement of the laws and customs of the people, and playing roles of distribution, monitoring, maintenance, and presentation of the water resource. They also settle disputes among the people.

The second part of the indigenous architecture relates to the existence of norms, customs and taboos in water resource management. These customs and laws prescribe how water is accessed and used in the community, and the various prohibitions associated therewith. Again, the existence of cultural beliefs is a key aspect of indigenous water resource management approach. In the Faase and Akwamu communities, water bodies are deemed to be part of the lives of the people, and the identity and lives of the people are deeply connected with these water resources. The people believe that if they lose such water resources, they would lose their lives. Coupled with the spiritual beliefs, taboos, totems, and sacred days observed by the people, the indigenous water resource management architecture effectively regulates the access to and utilisation of the water resources.

One of the lessons is that, indigenous people respect their local leadership institutions and submit themselves to the laws and regulations of their leaders. The indigenous populations also task themselves to ensure compliance with the laws and regulations. These are effective indigenous institutions that can be utilised for water resource management in this country. I would pick up this point later.

Under Ghanaian customary law, water in all its forms including the sea, rivers and lakes is regarded as public property not subject to individual appropriation. Water resource is seen as belonging to the entire community and no one can lay the right of exclusive ownership. Because of this sense of common ownership, community members have access to the water resource, and task themselves with the responsibility of protecting and preserving their water resource. This idea of common ownership is very important in the context of involving indigenous institutions in water resource management today. This point would be discussed in detail *infra*.

#### 4. Ghana's Statutory Regime and its Impact on Indigenous Systems

The statutory regime for the ownership and management of water resources has completely abolished the customary regime of the ownership of water resources in this country. [80] Under the customary regime, the ownership of water resources was vested in stools, skins, families and clans. However, under the statutory regime, the State has assumed the ownership and management of water resources. [81] Section 37 of the Water Resource Commission Act, 1996 (Act 522) provides; “*water resources*” means all water flowing over the surface of the ground or contained in or flowing from any river, spring, stream or natural lake or part of a swamp or in or beneath a watercourse and all underground water but excluding any stagnant pan or swamp wholly contained within the boundaries of any private land’.

Sections 12 and 13 of the Water Resources Commission Act provides

(12) “*The property in and control of all water resources is vested in the President on behalf of, and in trust for the people of the Republic*”.

(13) “*Except in accordance with the provisions of this Act, a person shall not*

(a) *divert, dam, store, abstract or use water resources, or*

(b) *construct or maintain any works for the use of water resources.*

(2) *Subsection (1) of this section shall not prevent the use of water resources for the purpose of fighting fires”.*

The effect of these provisions is that they vest the ownership, management and regulation of water resources in the State. The State manages the water resources primarily through the Water Resources Commission, established by the Water Resources Commission Act. However, section 14 of the Act allows the use of water for domestic purposes. It provides:

(14) (1) *A person who has lawful access to water resources may abstract and use the water for domestic purposes.*

(2) *Subsection (1) does not authorise the construction of works for the purpose of abstracting water resources.*

#### 4.1 The role of the Water Resource Commission

Section 1 of the Water Resource Commission Act, 1996 (Act 522), herein after referred to as Act 522, establishes a Water Resource Commission. It is a body corporate with perpetual succession and capacity to acquire or dispose movable or immovable property, and enter into contracts and transactions, and it may sue or be sued in its corporate name. Section 2 of Act 522 provides that the Commission is responsible for the regulation and management of the utilisation of water resources, and for the co - ordination of any policy in relation to them. To this end, the Commission is mandated to (a) propose comprehensive plans for the utilisation, conservation, development, and improvement of water resources (b) initiate, control, and co - ordinate activities connected with the development and utilisation of water resources (c) grant water rights (d) collect, collate, store and disseminate data or information on water resources in Ghana (e) require water user agencies to undertake scientific investigations, experiments or research into water resources in Ghana (f) monitor and evaluate programmes for the operation and maintenance of water resources (g) advise the Government on any matter likely to have an adverse effect on the water resources of Ghana (h) advise pollution control agencies in Ghana on matters concerning the management and control of pollution of water resources.

The Water Resource Commission is the body in whom power is vested to grant water right. Under section 16 of Act 522, an application for the grant of a water right is to be made to the Commission. The Commission is mandated to make the necessary investigations and consultations with the inhabitants of the area and the water resources concerned. [82] Where the Board of the Commission is satisfied that the

water right be granted, it may so grant the water right, subject to ratification by Parliament. [83] Thus, Parliament must ratify a Water right before it would be granted by the Board of the Commission. The Commission further has a right to vary or suspend a Water right. [84] Section 19 of the Act provides that where it appears in the opinion of the Commission that the Water resource in the area where a grant is made, is insufficient or likely to be insufficient as a result of the, the Commission may suspend or vary the Water right. Again, the Commission has power under section 20 of the Act to terminate or limit a Water right for public purposes. Section 20 provides that “. . . where the Commission is satisfied that water resources are required for a public purpose it may by notice in writing addressed to the holder of a water right, terminate or limit that right on the grounds that the water is required for public purpose, and the right shall cease or shall be exercisable only as so limited”.

Under section 22 and 23 of the Act, the Commission has power to terminate a water right for a breach of a condition in the grant or for non - user of the right for a period of 2 years. Section 29 of the Act further empowers the Commission in consultation with the relevant District Assembly, to enter any land and to inspect any works constructed or under construction, for the purposes of ascertaining the amount of water being used for the works. Where the Board of the Commission decides that the use of the water for the construction or the works being so constructed constitute danger to life, health property or would damage natural resources of the area, the Commission may require the person in charge of such works to demolish the works or change the use of the works as directed by the Commission. Section 30 of the Act provides:

- 1) The Commission may on the advice of a District Assembly by notice in writing require a person;
  - a) who has constructed or extended, or caused to be constructed or extended any works contrary to any of the conditions under which the person was required or authorised to effect the construction or extension, or
  - b) whose water right in respect of which any works in existence have been terminated under the provisions of this Act or has otherwise come to an end, to modify, demolish or destroy the works within a period not being less than thirty days, specified in the notice.
- 2) Where a person fails to comply with a notice served on that person under subsection (I), the Commission may cause the works to be modified, demolished or destroyed and recover the cost of the modification, demolition or destruction from the person in default by civil suit

In addition to the above, the Commission has power under section 15 of the Act to serve notices on people who use water resources in a manner that poses serious danger to the environment. It provides:

- 1) Where it appears to the Commission that the use of water resources for a purpose at a place poses a serious threat to the environment or to public health, the Commission may serve on the user of the water resources, an enforcement notice requiring the user to take the necessary steps to prevent or stop the activities.

- 2) An enforcement notice shall specify
  - a) *The offending activity*
- 3) The Commission may in an enforcement notice direct the immediate cessation of the offending activity where it considers that the circumstances so demand.

It is a criminal offense to act contrary to the enforcement notice issued by the Commission, punishable by imprisonment and/or fine. [85]

#### 4.2 Other statutes affecting indigenous involvement in water resource management

There is the **Water Use Regulations, 2001 (L. I 1692)**, herein after referred to as L. I 1692). These Regulations are made by the Water Resource Commission pursuant to the power conferred on it under section 35 of the Water Resource Commission Act. Regulation 1 lists a number of sectors under which a person may apply to the Commission and obtain a water use permit for using water in those sectors. Regulation 1 provides that a person may obtain a permit from the Commission for, (a) domestic water use (b) commercial water use (c) municipal water use (d) industrial water use (e) agricultural water use (f) power generation water use (g) water transportation water use (h) fisheries (aquaculture) water use (i) environmental water use (j) recreational water use, and (k) under water (wood) harvesting.

An application for a water use permit is to be made to the Commission in the prescribed form. [86] The Regulations mandate the Commission to consider the application to grant the permit where the applicant meets the requirements prescribed by the Regulation. [87] In considering an application, the Commission is to be guided by (a) the prevailing water policy (b) domestic water use, and (c) any other water use which fulfils the goals of national socio - economic development. [88] A permit granted is for the duration specified in the permit, and it may be renewed upon expiry. [89] A person who fails to renew his permit, or whose application for the renewal is rejected by the Commission is prohibited from using the water resources to which the permit relates. [90] A permit granted by the Commission cannot be transferred without the approval of the Commission. [91]

Regulation 9 provides exemptions for water use that do not need the permits of the Commission. It provides that any water use resulting from the abstraction of water by manual means is exempted from the Regulations, and that these Regulations do not prevent the use of water resources for the purposes of fighting fires.

Regulation 10 provides water uses which are exempted from the necessity to obtain permits, but are mandated to be registered. It provides that (a) water abstracted by mechanical means and used for any purpose where the abstraction level does not exceed five litres per second; and (b) subsistence agricultural water use for land areas not exceeding 1 hectare, are only mandated to be registered with the Commission, but no permit is to be obtained. An application for registration is to be submitted to the relevant District Assembly, containing the details of the applicant. [92]

There is also the **Drilling License and Groundwater Development Regulations, 2006 (L. I 1827)**, herein after referred to as L. I 1827). These Regulations are made by the Water Resource Commission pursuant to the power conferred on it by section 35 of the Water Resource Commission Act. Under regulation 1, it is mandatory to obtain a drilling license from the Commission to authorize a person to construct a well for the abstraction, or monitoring of groundwater or for research. Regulation 2 mandates that an application for a drilling license be submitted to the Commission which should contain the details of the applicant, and the particulars of responsible personnel. The application is also to contain a list of the available plant and equipment, and a list of the drilling activities conducted during the 5 years immediately preceding the application. Regulation 3 and 4 task the Commission to process the application, and to grant or refuse to grant the license, depending on whether or not the applicant meets the requirements. A drilling license is to be for the period specified in the license, and it may be renewed upon expiry. [93] A drilling license cannot be transferred without the approval of the Commission. [94] The Commission has power to withdraw a drilling license under any of the conditions stated therein, and to prohibit the construction of a well where a license has not been renewed. [95] The rest of the provisions of the Regulations deal with the necessary processes and procedures to be followed to construct wells, and that of the decommissioning of wells.

Furthermore, there is the **Dam Safety Regulations, 2016 (L. I 2236)**, herein after referred to as L. I 2236). These regulations are made by the Water Resources Commission under the power conferred on it by section 35 of the Water Resource Commission Act. These regulations apply to an existing dam or a proposed dam that is determined by the Commission to have a safety risk. Under regulation 1, a Dam Safety Unit is established, and it is tasked with the responsibility to implement the regulations on behalf of the Commission. The functions of the Unit include; a) review and approve procedures and guidelines, and the Operation and Maintenance Manual prepared by each owner or operator of a dam and submitted to the Commission (b) inspect dams and classify dams to which these regulations apply (c) investigate any report on dam safety (d) co - ordinate consultations on the formulation of dam safety policy within the Commission (e) co - ordinate inter - agency consultations on dam safety policy (f) develop technical materials on dam safety (g) create public awareness on dam safety and related matters, and (h) perform other functions determined by the Commission. [96] It is mandatory for an owner of a dam or a person who operates a dam to apply to the Commission for the registration of that dam. [97] Failure to register a dam which a person operates, or owns, is a criminal offense punishable by fine. [98] Regulation 11 provides:

- 1) *A person shall not*
  - a) *construct a dam,*
  - b) *alter a dam,*
  - c) *operate a dam,*
  - d) *conduct maintenance on a dam, or*
  - e) *decommission a dam, unless*

- f) *the dam, whether constructed or to be constructed, is registered,*
- g) *the class of that dam has been determined in accordance with regulation 9, and*
- h) *that person holds a Dam Safety License issued by the Commission.*

An application for a Dam Safety License is to be submitted to the Commission. [99] The Commission would then assess whether or not the applicant meets all the relevant requirements. The Commission has the power to grant or refuse to grant the license depending on whether or not the applicant meets the requirements. [100] A license so granted can only be transferred with the prior approval of the Commission. [101] A license granted is valid for 2 years; subject to renewal. [102] The Commission has the power to suspend or revoke a dam safety license granted where the holder breaches the conditions in the license. [103]

The Ministry of Water Resources, Works and Housing adopted a **Riparian Buffer Zone Policy for Managing Fresh Water in Ghana** in June 2013. The buffer zone policy aims at ensuring that all designated buffer zones along rivers, streams, lakes, reservoirs and other water bodies are sustainably managed for all. [104] The overall objectives of the policy include inter alia; (a) to protect, restore and maintain the ecological and livelihood –support functions of the buffer zone (b) to ensure equitable and sustainable utilisation and management of buffer zone conservation areas, which will contribute to long-term well-being of both resident and downstream communities (c) to intensify capacity building, education, and training of stakeholders and ensure their commitment to the conservation of the buffer zone (d) to coordinate and harmonise policies and laws in the area of buffer zones amongst various governmental agencies with the view to achieve maximum synergy (e) to set guidelines for buffer zone designs that can be incorporated into the planning and decision - making of other sectors (f) to promote research in the protection and management of buffer zones for water conservation, maintenance of ecosystem integrity and socio-economic growth (g) to encourage the development and management of buffer zones in urban and peri-urban areas by integrating natural systems into development planning; and (h) to support international efforts to protect and manage buffer zones. [105]

This Policy recognises the importance of buffer zones to the ecosystems and in ensuring ecological balance [106]. The Policy outlines the principles and the strategies for implementing its objectives. Other key areas which the Policy provides mechanisms for implementation include the maintenance of the ecosystem functions of buffer zones, sustaining the multi - functioning of buffer zones, the maintenance of riparian buffer zones in urban and peri - urban areas, capacity building of communities in the conservation of buffer zones, and coordination and harmonization. A call is made in the Policy for all hands to be brought on deck to ensure the effective implementation of the Policy. Thus, district and municipal assemblies, traditional rulers, community members, government departments and agencies, women, men, and children are to take roles to effectively implement the Policy.



The **Ghana Water and Sewage Corporation Act, 1965 (Act 310)** establishes the Ghana Water and Sewage Corporation. The Corporation is a body corporate with perpetual succession. It has capacity to acquire movable and immovable property, and to enter into contracts and transactions, and it may sue or be sued in its corporate name. [107] On 1st July 1999, the Corporation was converted into the Ghana Water Company Limited. [108] Its objectives are; (a) *the provision, distribution and conservation of the supply of water for public domestic and industrial purposes*, and (b) the establishment, operation and control of sewerage systems. [109] For the purposes of carrying out its objectives, the Corporation is required to; (a) prepare long - term plans in consultation with the appropriate co - ordinating authority established by the President (b) conduct research relative to water, sewerage and connected subjects (c) make engineering surveys and plans (d) construct and operate works (e) set the standards relative to water supply and sewerage in collaboration with the appropriate authorities selected for the purposes of this Act by the President (j) determine adequate rates, charges or fees, and effective methods for collection of the fees for water and sewerage services furnished to users; and (g) conduct any other related or incidental activity. [110]

#### 4.3 Other regulatory statutory institutions worth noting include:

- Public Utilities Regulatory Commission
- Environmental Protection Agency (EPA)
- Forestry Commission
- Lands Commission
- Fisheries Commission
- National Development Planning Commission (NDPC)
- Metropolitan, Municipal, and District Assemblies (MMDAs)

#### 4.4 Summary of the Statutory regime's impact on indigenous systems

The statutory regime, as discussed above has impacted indigenous systems in the following ways:

- 1) *Ownership of water resources*: Under the customary or indigenous system of water resource management, the ownership rights of water resources are vested in stools, skins, families, and clans. However, under the statutory regime, ownership rights of water resources are now vested in the State. The effect is that, local populations have been divested of their ownership rights in water resources. [111]
- 2) *The management of water resources*: The management of water resources in this country has now been vested in the Water Resource Commission. The Commission is responsible for the regulation and management of the utilisation of water resources, and for the co - ordination of any policy in relation to them. [112]
- 3) *Grant of water rights, water permits, and dam safety licenses*: Under the current statutory regime, the Water Resources Commission is vested with the power to grant water rights, water permits, and dam safety licenses. As discussed above, a person is now mandated to obtain the requisite water right, water permits or dam

safety licenses in the areas prescribed by the Regulations.

- 4) *Power to suspend, vary, revoke, or terminate a water right or license*: Under the current statutory regime, the power to suspend, revoke, terminate or vary a water right or permit or license is vested in the Water Resource Commission, to be exercised in accordance with the prescriptions in the Regulations. A transfer of a water right or license needs to be approved by the Commission.
- 5) *Power to divest a right holder of his right*: The Commission has power under the statutory regime to divest a water right holder of the right for failure to use the right for two years or for a breach of the conditions in the right.
- 6) *The call for co - ordinated efforts*: With regards to buffer zones, the Policy calls for co - ordinated efforts to effectively preserve the zones as designated. The Policy specifically calls on traditional leaders and indigenous populations (men, women, and children) to play roles in actualising the objectives of the Policy. [113]

#### 5. Gaps and disadvantages in the statutory laws on Water Resource Management

The focus of this section is to outline some gaps in the statutory regime of water resource management in Ghana.

- 1) *Dichotomy of ownership of lands and water resources*: [114] The ownership regime of lands is well articulated under the 1992 Constitution of Ghana and the Land Act, 2020 (Act 1036). Both the Constitution and the Land Act recognise the ownership of lands by stools, skins, families, and clans. Under article 267 of the 1992 Constitution and section 9 of the Land Act, stools, skins, families and clans' lands are vested in the respective stools, skins, families, and clans. Only public lands are vested in the president on behalf of and in trust for the people of Ghana, and lands which become State land through compulsory acquisition under article 20 of the Constitution are managed by the Lands Commission under article 258. So, the point is this, the Constitution and the Land Act vest lands in their respective owners. However, the legislations on water resources have dichotomised water resources from lands; to wit, the lands are vested in their respective owners. However, the water resources on those lands are vested in the president. This is a serious problem because, land is defined in the Land Act to include water resources. Section 281 of the Land Act provides, "*land" includes the solid surface of the earth, trees, plant, crops and other vegetation, a part of the earth surface covered by water, any house, building or structure whatsoever, and any interest or right in, to or over immovable property*". A part of the earth surface covered by water includes rivers, streams, lakes, dams, and other water course. These are the same water resources vested in the State! It is therefore a lacuna in our law to have vested one resource, land (which includes water resources), in two entities, the State and indigenous populations.
- 2) *Non recognition of customary water rights and the role of indigenous institutions in water resource management under the statutory regime*: [115] As have already been

highlighted above, the statutory regime has completely abolished the customary law regime of water rights (ownership) for the indigenous people, with the effect of vesting water resources in the State. In addition to that, the role of indigenous institutions has not been recognised and included under the statutory regime. Management of water resources is now in the hands of the Water Resource Commission, which has power to grant, revoke, suspend, vary or cancel a water right, or license. It is only in the buffer zones policy that a call is made on traditional rulers and local people to play co-ordinated roles in the preservation of buffer zones.

- 3) Again, the Water Resource Commission Act does not provide for any mechanisms to reconcile customary rights with statutory rights; neither does it provide a judicial mechanism or basis for the settlement of disputes between customary water rights and statutory rights. It only enjoins parties whose rights have been affected to stake their claims within 12 months of the coming into force of the Act.
- 4) *The case of rainwater.* Our National Water Policy has recommended the passing of a legislation to govern the harvesting and use of rain water. However, no such legislation has been passed as at the time of this writing. What we rather have now is a National Rainwater Harvesting Strategy, which comprehensively outlines the various strategies for harvesting rainwater. Pending the passing of the legislation, I recommend that the right to harvest rainwater should not be the exclusive reserve of the State.

## 6. Potential synergies between statutory and indigenous systems in water resource management- blueprint for addressing gaps in Water Management through Indigenous Institutions

### 6.1 A brief background

The effective and efficient management of water resources in any country demands the incorporation of indigenous institutions into the water resource management regime. Indigenous institutions cannot be sidelined in our quest to manage our water resources. The Indigenous Peoples Kyoto Water Declaration of 2003 is a declaration of indigenous peoples from all parts of the world, affirming their sovereign right to water resources in their indigenous territories. This declaration reaffirms their relationship with the earth, their responsibilities in the management of the earth (water resources) for themselves and future generations, and their commitment to honour and respect water resources, as it is the sustainer of all life on earth. They resolve to use traditional knowledge, institutions, beliefs, and customary practices to protect the quality and vitality of water resources within their territories. The Declaration recognises the physical and spiritual connections that indigenous populations have with their lands and natural resources (water resources), and they assert their position as caretakers with rights and responsibilities to defend and protect the availability and purity of water resources. In this declaration, indigenous people strongly call for their active involvement in the management and utilisation of their water resources,

and a strong call is made on governments and institutions to recognise the rights of indigenous peoples and their active involvement in the management of water resources. The declaration strongly calls for consultations of governments and institutions with indigenous peoples and communities in decision - making on the utilisation and management of water resources. It further calls on governments and international organisations to fulfill their duties under various international instruments to the end that the rights of indigenous peoples to their water resources are recognised and preserved. Indigenous people affirm their resilience to use traditional knowledge to protect their water resources.

Article 8 (j) of the 1992 Convention on Biodiversity calls on State parties to respect, preserve and maintain the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices. Though this provision does not expressly mention water resource conservation, it nevertheless calls on States to involve indigenous people in the utilisation of traditional knowledge for sustainable use of resources.

### 6.2. Addressing gaps in Water Management through Indigenous Institutions

*(1) Involvement of traditional rulers in water resource management:* The involvement of traditional rulers in water resource management is pivotal to ensuring sustainable utilisation and management of our water resources. There is the need to involve traditional rulers in granting water rights and licenses. The Water Resource Commission needs to consult traditional rulers whenever a grant of water right or licenses relates to areas within the jurisdiction of those traditional rulers. Especially as regards the construction of dams and sinking of boreholes, traditional rulers need to be actively involved in allocating the sites for drilling, and co-ordinating community action in the effective management of the dams and boreholes. There is also the need to involve traditional rulers and water user associations in community - based irrigation schemes.

A research was conducted in Gumbrugu and Kasena in Upper East region on the involvement of indigenous institutions in the management of irrigation projects. [116] It was found out that the management of community - based irrigation schemes strongly draws on the supportive roles of indigenous institutions for discharging their management responsibilities more effectively. That is, management institutions such as the Water Users Associations (WUAs) draw on the strengths and resourcefulness of indigenous institutions; particularly traditional authorities, through their direct participation in operational and management functions such as land allocation, water resource management, and mobilisation of labour for project maintenance activities. This produces sustainable and efficient management of the irrigations systems in the communities, and ensures effective management of water resources.

(2) *Capacity building and community confidence*: Studies conducted by Bonye sought to explore how synergies can be harnessed with emphasis on the role of traditional institutions in natural resource management in the northern region of Ghana using communities in the Talensi - Nabdam District of Ghana as case studies. He reports that, indigenous beliefs and practices which stood the test of time in natural resources management were fading away. This was because these beliefs and practices were found to be unpopular with children and the youth. He then suggested that, building communities' confidence in their indigenous knowledge through capacity strengthening will enable them understand and cooperate with local governance structures, and institutions concerning the use of their common resources (Awuku, 2016). [117] There is also the need to strengthen the existing indigenous institutions to take up roles collectively manage our water resources. The utilisation of indigenous knowledge would assist the locals to accept and embrace the statutory institutions more readily. Research conducted in Zimbabwe in a Shona community found that the inclusion of aspects of Shona culture in the management of water will help the perception of the local Shona that any programme which engages norms, taboos and culture would be more acceptable and people may cooperate so rapidly (Gondo & Kolawale, 2019). [118] This helps in avoiding the usually paternalistic approach to policy - making and implementation in rural development. This means that the Water Resource Commission and the other regulatory agencies alone cannot effectively manage our water resources, and that is why this call is made to enhance community confidence in water resource management.

(3) *Community based approach to water resources management with emphasis on collective actions to manage water resources and improve the likelihoods of indigenous peoples*: The effective management of water resources requires a community - based approach which actively involves the indigenous peoples in water resource management. This is very important, especially in the context of water projects in communities, and the exploitation of resources in water bodies, such as salt. The focus here is that the statutory agencies such as the Water Resource Commission, should design plans to actively involve indigenous peoples in water projects in their communities. In a research on the involvement of indigenous peoples in the management of water resources in the Volta Basin, it was found that the rural communities use their long standing social and cultural practices to manage and develop their water resources. It was further found that communities supported a joint action plan that protects and preserve their resources. With regard to water projects, it was found that the community peoples were willing to support water projects and development programmes that integrate their ideas, contributions and presence (Awuku, 2016). [119]

## 7. Indigenous involvement in managing boreholes generally and water resources in the limited context of mining

The focus of this section of the paper is to ascertain how indigenous institutions have been involved in the management of boreholes, water resources, and sanitation,

and lessons that can be gleaned for wider application. It also touches briefly on the role of indigenous institutions in managing water use in the context of mining. An assessment would thus be made; first, into the existing regime for the management of boreholes albeit briefly, and the involvement of indigenous institutions in managing boreholes.

### 7.1 Role of Indigenous Institutions in the Provision and Management of Boreholes in Ghana

The stakeholders involved in the provision and management of boreholes in Ghana include the Ministry of Water Resources, Works and Housing (MWR and WH), Community Water and Sanitation Agency (CWSA), Regional Water and Sanitation Team (RWST), District Assemblies (DA), District Water and Sanitation Teams (DWST), and Community Water and Sanitation (WATSAN).

- 1) **Ministry of Water Resources, Works and Housing (MWR and WH)**: This ministry is responsible for water management at the national level. It ensures the efficient management of all water resources, increase access to potable water, and provides adequate sewerage and drainage. Its core functions include; (a) initiating, formulating, and implementing policies and programmes to enhance service delivery in the area of works and housing (b) undertaking development planning in consultation with the National Development Planning Commission (NDPC) (c) providing, regulating and facilitating access to safe shelter, flood control systems, operational hydrological networks and drainage systems etc. [120]
- 2) **Community Water and Sanitation Agency (CWSA)**: The CWSA was established by the Community Water and Sanitation Agency Act, 1998 (Act 564). It is to facilitate the provision of safe water and related sanitation services to rural communities and small towns. [121] It is mandated to provide support to District Assemblies to; (i) promote the sustainability of safe water supply and related sanitation services in rural communities and small towns, and (ii) **enable the Assemblies encourage the active involvement of the communities, especially women, in the design, planning, construction and community management of projects related to safe water supply and related sanitation services**. [122] Other functions of the Agency are to; (a) formulate strategies for the effective mobilization of resources for the execution of safe water development and related sanitation programmes in rural communities and small towns (b) encourage private sector participation in the provision of safe water supply and related sanitation services in rural communities and small towns (c) provide District Assemblies with technical assistance in the planning and execution of water development and sanitation projects in the districts (d) assist and co - ordinate with Non - Governmental Organisations (NGOs) engaged in the development of rural community and small town water supply, among others. [123]
- 3) **Regional Water and Sanitation (RWST)**: The RWST is the Regional Secretariat of the Community Water and Sanitation Agency, which gives technical assistance to the District Assemblies and develops the capacities of

the private sector to perform the roles related to the improvement of community water and sanitation (Kuma & Suglo, 2010). [124]

- 4) **District Assemblies:** The District Assemblies are responsible for the overall development of the districts. [125] The Assemblies have therefore established statutory committees to help them perform their functions. These committees include the Executive, Development Planning, Social Service, Justice and Security, Finance and Administration, and Works (Kuma & Suglo, 2010). [126]
- 5) **District Water and Sanitation Team (DWST):** The DWST is a team of members in the district. They are trained in community development, environmental hygiene, water supply and sanitation related activities and charged with the management of water and sanitation activities of the district. The team is also in charge of baseline data collection on boreholes, promotional activities relating to water and sanitation, verification of water and sanitation issues in the communities, monitoring and follow - ups (Kuma & Suglo, 2010). [127]
- 6) **Community Water and Sanitation (WATSAN) Committees:** These committees are made up of members of the community for each borehole in the community. Their functions include (a) community mobilisation and consultation in respect of boreholes (b) fund raising and management for boreholes (c) operation and maintenance management of boreholes (d) development of community proposals (e) sanitation and hygiene of boreholes vicinities. The Committees are also responsible for base data collection, supervision, monitoring, evaluating, promoting and writing reports on water and sanitation related issues (Kuma & Suglo, 2010). [128]
- 7) **Communities & the private sector:** The communities participate in the selection of the WATSAN Committees, planning facilities and systems for raising and managing funds, construction, maintaining old and new facilities, and hygiene/sanitation actions for boreholes. The private sector is made up of contractors, training institutions, mechanics, spare parts dealers, etc. who provide goods and services to the communities (Kuma & Suglo, 2010). [129]

From the foregoing, it can be seen that there has been an involvement of indigenous people in the management of water resources and boreholes at the local level to some extent. There is therefore the need to increase and strengthen such indigenous involvement in water management at the local level, especially in their participation in the works of the DSWT, WATSAN Committees, and the District Assemblies. The Manual for the District Water and Sanitation Teams adopted by the Community Water and Sanitation Agency is a comprehensive blueprint for the involvement of indigenous people at the local for water resource management. It outlines the strategies for local level management of water, and the various organs at the local level which incorporate indigenous peoples in water resource management, and other issues relating to community sanitation.

## 7.2 Role of Indigenous Institutions in Managing Water Use in the Context of Mining

Under section 17 of the **Minerals and Mining Act**, a holder of a mineral right is mandated to obtain the requisite permits/licenses from the Water Resource Commission before commencing operations. Such a permit or license authorises the holder to obtain, divert, impound, convey and use water from a river, stream, underground reservoir or watercourse within the land the subject of the mineral right. These are often authorised and implemented or done without the involvement of indigenous institutions and the affected communities.

Mining activities therefore impact and even at times destroy water resources. A lot of water bodies in Ghana have been polluted and some destroyed through mining activities. Some water bodies have dried up as a result of the negative impact of some mining activities. In order to effectively manage our water resource to avoid the damage of mining activities to our water resources, there is a need to include the participation of the indigenous people, especially the community watchdog committees in mining water use. There is clearly the need to involve traditional rulers in the management of water bodies and boreholes in their respective domains; including, mining water use management.

## 8. International Frameworks on Water and Lessons for Indigenous Institutions

The main international conventions on water resources are the following:

- 1) Convention on the Protection and Use of Transboundary Watercourses and International Lakes, 1992
- 2) Convention on the Law of the Non - navigational Uses of International Watercourses, 1997.
- 3) The 2003 Protocol to the 1992 International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage.
- 4) Dublin - Rio Principles.
- 5) United Nations 1992 Conference on Environment & Development (Agenda 21)

However, these Conventions contain principles of management of water resources, and the need for coordination among States in water resource management. They also outline various State obligations relating water resource management. These Conventions do not deal with indigenous involvement in water resource management. I would therefore not examine their details here. I would rather focus on Agenda 21 of the United Nations and the second principle of the Dublin Rio Principles. They contain useful information related to the concerns highlighted in this paper.

### 8.1 United Nations Conference on Environment & Development (Agenda 21)

Chapter 26 of the 1992 United Nations Conference on Environment & Development (also known as Agenda 21) entitled *“Recognizing and strengthening the role of indigenous people and their communities”* provides a

comprehensive blueprint for the involvement indigenous people at both the national and international levels, in the management of resources. It outlines the best practices in resource management through the involvement of indigenous people, and how indigenous people can be integrated at the international level in resource management, through cooperation with international organisations. Because of its in - depth significance to this paper, its major highlights are discussed seriatim.

It calls on international organisations and governments to actively involve indigenous people in the management of resources. The Agenda recognises the historical relationship of indigenous people with their lands and resources, which they have developed over many generations through holistic traditional scientific knowledge of their lands, natural resources and environment. The Agenda underscores that in view of the interrelationship between the natural environment and its sustainable development and the cultural, social, economic and physical well - being of indigenous people, national and international efforts to implement environmentally sound and sustainable development should recognise, accommodate, promote and strengthen the role of indigenous people and their communities

The Agenda tasks governments and international organisations to fully partner with indigenous peoples and communities to fulfil the following objectives:

- a) Establishment of a process to empower indigenous people and their communities through measures that include; (i) the adoption or strengthening of appropriate policies and/or legal instruments at the national level (b) recognition that the lands of indigenous people and their communities should be protected from activities that are environmentally unsound or that the indigenous people concerned consider to be socially and culturally inappropriate (iii) *recognition of their values, traditional knowledge and resource management practices with a view to promoting environmentally sound and sustainable development* (iv) development and strengthening of national dispute - resolution arrangements in relation to settlement of land and resource - management concerns (v) enhancement of capacity - building for indigenous communities, based on the adaptation and exchange of traditional experience, knowledge and resource - management practices, to ensure their sustainable development;
- b) Establishment of arrangements to strengthen the active participation of indigenous people and their communities in the national formulation of policies, laws and programmes relating to resource management and other development processes that may affect them, and their initiation of proposals for such policies and programmes;
- c) Involvement of indigenous people and their communities at the national and local levels in resource management and conservation strategies and other relevant programmes established to support and review sustainable development strategies,

The Agenda further calls on the United Nations organisations and other international development and

finance organisations and governments; based on the active participation of indigenous people and their communities, as appropriate, to take the following measures to incorporate their values, views and knowledge, including the unique contribution of indigenous women, in resource management and other policies and programmes that may affect them:

- a) Organise annual inter - organisational co - ordination meetings in consultation with Governments and indigenous organisations, as appropriate, and develop a procedure within and between operational agencies for assisting governments in ensuring the coherent and coordinated incorporation of the views of indigenous people in the design and implementation of policies and programmes.
- b) Provide technical and financial assistance for capacity - building programmes to support the sustainable self - development of indigenous people and their communities;
- c) Strengthen research and education programmes aimed at achieving a better understanding of indigenous people's knowledge and management experience related to the environment, and applying this to contemporary development challenges.
- d) Increasing the efficiency of indigenous people's resource management systems, for example, by promoting the adaptation and dissemination of suitable technological innovations.
- e) Contribute to the endeavours of indigenous people and their communities in resource management and conservation strategies including programmes to collect, analyse and use data and other information in support of sustainable development projects.

Governments are tasked, in full partnership with indigenous people and their communities, to develop or strengthen national arrangements to consult with indigenous people and their communities with a view to incorporating their values and traditional and other knowledge and practices in national policies and programmes in the field of natural resource management and conservation and other development programmes affecting them.

The Agenda provides the means of implementation of the above strategies to include the following.

### (1) Financing and cost evaluation

The costs of achieving the above objectives are to be met from grants, other concessional and other non - concessional funding. The Agenda underscores that the actual costs and financial terms, including any that are non - concessional depends on the specific strategies and programmes governments decide upon for implementation.

### (2) Legal and administrative frameworks

The Agenda mandates governments to incorporate, in collaboration with the indigenous people affected, the rights and responsibilities of indigenous people and their communities in the legislation of each country, suitable to the country's specific situation.

### (3) Human resource development

The Agenda charges international development agencies and governments to commit financial and other resources to the

education and training of indigenous people and their communities to develop their capacities to achieve their sustainable self - development, and to contribute to and participate in sustainable and equitable development at the national level. Particular attention is to be given to strengthening the role of indigenous women.

### 8.2 Principle 2 of the Dublin - Rio Principles: Participatory approach.

It provides that water development and management should be based on a participatory approach, involving users, planners, and policy - makers at all levels. This principle underscores that water is a subject in which everyone is a stakeholder, and that real participation only takes place when stakeholders are part of the decision - making process. This, it states, can occur directly when local communities come together to make water supply, management and use choices. Participation also occurs if democratically elected or otherwise accountable agencies or spokespersons can represent stakeholder groups. The principle recognises that the type of participation will depend upon the spatial scale relevant to particular water management and investment decisions and upon the nature of the political economy in which such decisions take place.

The principle further states that participation requires that stakeholders at all levels of the social structure have an impact on decisions at different levels of water management. A participatory approach is the only means for achieving long lasting consensus and common agreement. However, for this to occur, stakeholders and officials from water management agencies have to recognise that the sustainability of the resource is a common problem and that all parties are going to have to sacrifice some desires for the common good.

According to this principle, participation is about taking responsibility, recognising the effect of sectoral actions on other water users and aquatic ecosystems and accepting the need for change to improve the efficiency of water use and allow the sustainable development of the resource. It thereby calls on governments at all levels to take the responsibility to make participation possible. This involves creating mechanisms for stakeholder consultation.

### 8.3 Lessons from the International Principles

The above international principles on water resource management highlight the need to actively involve indigenous institutions in the management of water resources. The need for and the dimensions of participation of stakeholders at all levels in water resource management as seen in principle 2 of the Dublin - Rio Principles are key lessons. The guidelines above are therefore a blueprint for the active involvement of indigenous institutions and populations in water resource management at both the national and international levels based on international best practices. A clarion call is hereby made to all the Ghanaian statutory agencies in the water resource management sector to include indigenous institutions in the management of our water resources.

## 9. Conclusion

This study underscores the importance of integrating indigenous institutions into Ghana's statutory water governance framework. Incorporating traditional knowledge and community - based approaches can enhance the sustainability and effectiveness of water resource management. Stakeholders are urged to prioritize collaboration with indigenous communities to address governance gaps and environmental challenges.

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