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## The Concept, State, Roles and Management of Protected Areas in Ghana: A Review

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### Abstract

Protected areas have greatly improved the conservation of biological diversities worldwide. The main objective of this short review was to discuss the concept of protected areas, their categorization as well as their state and important roles they play in Ghana. Desk survey and Document Analysis under the qualitative research approach guided every facet of the review. The Interpretative Document Analysis was used in thoroughly analyzing the papers before the extensive review was written. The short review focuses on the state of three main protected areas namely wildlife sanctuaries, forest reserves and sacred grove systems in Ghana, their management and the roles they play in biodiversity conservation. The paper reveals that the protected areas must be enhanced and preserved to promote the conservation of biodiversity that pivots life. It argues that if protected areas are managed effectively with the support of local communities where many of these gazette sites are stepped, they would positively improve the ecology and enhance the conservation of biodiversity. Governments must ensure that strong legal frameworks are put in place to facilitate the smooth implementation of the principles for the establishment and management of protected areas.

**Keywords:** Protected Areas; Wildlife Sanctuaries; Forest Reserves; Sacred Groves; Biodiversity Conservation

### Introduction

Protected areas are special patches of land protected from encroachment by law, whether formal or informal because of their social, cultural, economic or religious values. Many authors and bodies have given their definitions of protected areas. For instance, Saout., *et al.* [1] describe protected areas as biogeographical areas where biodiversity resources are protected, managed and maintained through legal and administrative means. The International Union for Conservation of Nature also defines a protected area as 'a clearly defined geographical space, recognized, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values' [2].

The Convention on Biological Diversity acknowledges protected areas as rich sites with rare species of biodiversity resources. They are the homes of the bio-resources that provide indispensable goods and services for human and other living organisms. The IUCN through its World Commission on Protected Areas (WCPA) since 1970 has worked at improving and increasing the numbers of protected areas around the globe as a means of conserving nature's resources [3]. The 1972 Stockholm Declaration of the United Nations Conference on the Human Environment, the 1982 World Charter for Nature, the 1992 Rio Declaration at the Earth Summit, the 2002 Johannesburg Declaration as well as International programmes for biodiversity conservation have stressed on the need for countries to have protected areas. Owing to the immense ben-

efits derived from protected areas, especially in biodiversity conservation, the IUCN, and the WCPA have developed six protected areas Management Categories that classify protected areas based on their management objectives, which are internationally recognized by various national governments as well as the United Nations. These classifications are the strict nature reserve (Category Ia), Wilderness Area (Category Ib), National Park (Category II), Natural Monument or Feature (Category III), Habitat/Species Management Area (Category IV), Protected Landscape/Seascape (Category V) and Protected areas with Sustainable Use of Natural Resources (Category VI). Aside this categorization of protected areas by the IUCN, the 1999 Environment Protection, and Biodiversity Conservation Act classifies protected areas into three main types. These are the World Heritage Places, National Heritage Places, and Ramsar Wetlands. Examples of protected areas include Forest or Biosphere Reserves, Sacred Groves, Wildlife Sanctuaries, National Parks, Zoological Parks, Nature Parks, Botanical Gardens, Nature Monuments, Burial Sites etc.

This short review thoroughly examines the concept of protected areas, the state, roles and management of some protected areas in Ghana. The research questions that have been addressed in this short review are:

- What is the concept of protected areas?
- What is the state of protected areas such as wildlife sanctuaries, forest reserves and sacred groves in Ghana?
- What challenges confront the administration and management of the protected areas in Ghana?

## Methodology

The study was positioned in the qualitative study with document analysis [4] and desk survey [5] as the principal research methods. Several secondary data of previously published articles in peer reviewed journals, reports and newspapers were thoroughly examined [6]. The materials were carefully reviewed and analyzed to understand [7] the general concept of protected areas and how they assist in biodiversity conservation. The multiple views from the various authors on the research theme assisted the researchers in writing a rich review on protected areas. The steps in the interpretative document analysis were used in giving a comprehensive interpretation of the state of some of the protected areas in Ghana and their roles in biodiversity conservation. This analytical procedure was governed by the important factors in

reviewing documents which are authenticity, credibility and representativeness [8]. The documents were perused severally to understand thoroughly the contents of the papers in relation to the main theme of the paper [6]. The main ideas in the reviewed materials were summed up and discussed based on the research questions for the study [9]. Themes based on the research questions for the study were developed from the reviewed materials and extensive discussions were written on them [7]. The new understanding was subjected to verification with the aim of validating the claims, assumptions and theories made by scholars [9]. A final concise, persuasive and information packed write-up that highlights the concept of protected areas, the state, management and roles of three protected areas in Ghana was produced.

## Results and Discussions

### The Concept of Protected Areas

Protected areas are specially earmarked in communities with the goal of conserving plants and animals [10]. Protected areas provide habitats and protection for threatened and endangered species in the environment. This helps in giving the species a conducive environment to grow, breed and multiply. Owing to this, those areas are barred from timber harvesting, collection of firewood for fuel, hunting and so forth. The protection of the bio-resources in these protected areas is effective because it is backed by some kind of legislation such as an act of parliament, traditional institutions, and sanctions, conventions or conservation agreements [2]. Coad, *et al.* [11] admit that protected areas also embrace other important zonal areas that require protection of specific species of biodiversity. Some of these areas include Important Bird Areas (IBA), Endemic Bird Areas (EBA), Centres of Plant Diversity (CBD), Indigenous and Community Conserved Areas (ICCA), Alliance for Zero Extinction Sites (AZE) and Key Biodiversity Areas (KBA) and others. Saout, *et al.* [1] surface area of the world. However, the IUCN in 2014 estimated over 200,000 protected areas covering about 14.6% of the world's landmass.

### The Concept, State, Roles and Management of Wildlife Sanctuaries in Ghana

A wildlife sanctuary is a special place earmarked in the community to serve as a refuge area for wildlife that are severely threatened, abused and even harmed, though some sanctuaries also serve as abodes for endangered plant species [12]. These wildlife species may be residential or migratory [13]. The wildlife sanctu-

aries thus become a peaceful environment for these endangered species to have their freedom while ensuring the treatment of their injuries and ensuring the maximization of their numbers through special breeding programmes. After these threatened species are properly treated and bred, they are sometimes released back into their natural habitats or forest if it is safe to do so or their disturbing factors in their habitats are addressed. Thus, a sanctuary is supposed to be a rescuer site with the key goal of protecting these harmed species.

Wildlife sanctuaries have special compartments or enclosures as well as designed trails for unique species that are mostly replicas of their natural habitats so that species could feel at home. Therefore, for a sanctuary to act true to its core objective, it should not breed or exploit any species for commercial purposes [12]. However, members of the general public are permitted to visit the wildlife sanctuaries for purposes that may be cultural, touristic, scientific, research, entertainment, inspirational or spiritual [13].

In Ghana, efforts to conserve the wildlife species have always existed. The Ghanaian forebears instituted taboos against the wanton destruction of these species while adopting others as their totemic symbols [14]. Institutionally, the country set up the Department of Game and Wildlife in 1965, tasked with the sole responsibility of protecting the exploitation of the wildlife resources of the country [13]. In 1974, the department published the wildlife reserves and conservation policy which was a working document to dictate the management of the wildlife resources of the country. Currently, there are six national parks, six resource reserves, two wildlife sanctuaries, one nature reserve and one biosphere reserve constituting about sixteen legally managed wildlife conservation areas in Ghana covering a total land surface of 6.2% of the country's land mass [15].

Wildlife sanctuaries are often managed by park managers with the assistance of a team of experts such as a law enforcing officer, tourism officer, community liaison officer and a park biologist [13]. This team ensures the conservation of the wildlife resources in a wildlife conservation site. At present, the Ghana Forest and Wildlife Policy 2012 is in force to help in the management of the wildlife resources in Ghana. The Forest and Wildlife Division of the country is confronted with many challenges in their quest to protect the wildlife resources of the country. Some of these include the

continual conversion of forest lands for mining activities, developmental projects, and crop farming. This has resulted in the destruction of the habitats of these wildlife species and their over-exploitation. Another heinous challenge that has been in discourses of this nature is with the management of these wildlife sanctuaries [16]. The management of these sites has significantly been vested in the powers of the state who manage the sites through its park officers.

However, it is sad to admit that the local people in communities where this wildlife protected areas are set up are often neglected in their management [14]. However, policy statements issued by the Forest and Wildlife Division in Ghana include elements of local participation in the management of the sites. For instance, the Wildlife Division in 1998 came out with the formation of CREMA (Community Resource Management Areas), an approach to allow local communities to manage the wildlife resources in their jurisdiction [17]. This has constantly been a paper issue. It is a constant phenomenon in Ghana to relegate the powers of the local people to the background as soon as such sites gain roots and popularity. In their studies conducted in the Kakum Conservation Area in Ghana, Cobbinah, *et al.* [18] realized that the local communities are usually engaged in the initial managerial processes of the sites when they are coaxed into believing that they will play active roles in the setting up of the wildlife conservation sites in their localities. To their dismay, these sites end up becoming the preserve of government officials and workers who are often not residents in the area. This has often resulted in the abuse of the sites by some of the angered local people.

### The Concept, State, Roles and Management of Forest Reserves in Ghana

Environmental Affairs [19] describes forest reserves as portions of state land protected with the aim of conserving rare and endemic elements in biodiversity. The body adds that all commercial harvesting activities related to the wood products in these sites are avoided. However, a country can have sustainably harvested sites where forest products are fairly harvested with the ideals of sustainability in view. The situation is somehow different in Ghana because forest reserves are not generally intact reserves that ban all forms of commercial activities. There are two types of forest reserves in Ghana. These are protective and production reserves. A forest reserve may be protective or productive or may

engage in both activities. The 2012 Ghana Forest and Wildlife Policy allows 75% of production forest reserves for timber and non-timber products exploitation while the protective forest reserves are strictly protected from all forms of commercial activities. Permits from the authorized ministry, that is, the Ministry of Lands and Natural Resources and its departments are needed before such forest reserves are entered. In terms of size, forest reserves are classified into two. These are the matrix or large reserves and the patch or small reserves. The matrix or large reserves support wider diversities of biological resources while the patch or small reserves mostly conserve rare and endemic species and their habitats because of their intact or compact nature [19].

There are almost 300 forest reserves in Ghana covering 11% of the country's total land surface area [20]. Out of this number, twenty-nine (29) of the forest reserves have been designated by the Ghana Forestry Commission as Globally Significant Biodiversity Areas (GSBAs). The management of these forest reserves is by law vested in the hands of the ruling government [21].

However, it is sad to reckon that most of these forest reserves are under serious attack of exploitation. The forests are being cleared for mining activities, crop production and are destroyed by bushfires. Another cause of forest destruction is the invasion of alien or exotic plant species such as *Chromolaena odorata*, *Broussonetia papyrifera* and *Leucaena leucocephala* [22]. The United Nations Environment Programme dubbed 'Removing Barriers to Invasive Plant Management in Africa' revealed the ecological risks of these exotic plant species that prevent regeneration while displacing the indigenous plant species. These exotic plant species end up threatening the sustainable use of the forest. Local customs and traditional practices in various communities ban the plantation of these exotic weeds in the natural forests viewed as sacred as Ormsby [23] noted in Karnataka in the Kodagu District in India. The success of using the traditional practices of local people in biodiversity protection in Ghana was realized in 1994 when the Forestry Commission under the Dedicated Forest Management Scheme declared two forest tracts in the Fosu District in Ghana under the management of the local people and their traditional practices [24]. The positive results from the pilot studies indicate that local communities can manage forestry and wildlife resources creditably.

### The Concept, State, Roles and Management of Sacred Groves in Ghana

Sacred groves are small patches of forests set aside as sacred for spiritual and cultural purposes, strictly protected by customary laws, beliefs and enforced by taboos [25,26]. Sheridan [27] contends that the term 'sacred grove' was coined by some Westerners because they saw the holy tracts of land as epitomes of the iconic flagship of tradition after Frazer's published his book titled *Holy Trees* in 1890. In that book, Frazer highlighted the strong relationship that existed between religious practices and nature. This means that the deliberate apportioning of some patches of the forest as sacred and untouched is born out of religious beliefs and practices. This strong religious backing that calls for the existence of sacred groves is clearly seen in the definition for sacred groves by Hughes and Chadran [28]. Hughes and Chadran define sacred groves as tracts of land that consist of various biodiversity species and their habitats protected by the local people because of their belief that these patches of the forest are the abodes of some deities.

These sacred tracts of the forest are not supposed to be harmed but revered and kept safe for all generations. This is crucial to the people because the continual help from the spirits depends on this. This underscores why the Indians in the Jaintia Hills refer to their sacred groves as *Khloo Blai* meaning 'god's forest' [23]. All the species in the sacred grove were believed by indigenous Ghanaians to be under the tutelage of the deity that resided in them. As such, any foul act against the grove would certainly attract the anger of the deity. UDS/CARE [29] reports that among some native communities where sacred groves were highly respected, the local people even believed that the birds in the area were seen as emissaries sent by the deities to announce an impending danger such as the death of a prominent person or a disaster such as houses catching fire. How then could such birds be hunted down and eaten by these local people? The spiritual (religious) and cultural values associated with these virgin forests explain why they are not perturbed in any way by the local people. It is interesting to note that some of the indigenes see themselves as offspring of the groves thus, commanding for their respect and conservation [29]. Specific plant and animal species, as well as rivers and mountains in the sacred grove, were considered as their ancestors [30].

History has it that local people in various communities around the globe have specially reserved some patches of the forest as sacred. Huges and Chadran mention African countries like Ghana, Nigeria, and Senegal as having various sacred groves. Also, some European countries like Turkey and Canada all have sacred groves. Various countries in Australia and particularly Asia have numerous sacred groves in Japan, Korea, and China. Ormsby rates India as having the highest number of sacred groves globally. She cites over 100,000 sacred groves across the country. Sacred groves usually measure from one hectare to about 100 hectares [23]. The sacred groves have helped in protecting the forests in their pristine forms. That is why rare, threatened and endemic species are still present in these sacred tracts of land. The survival of the sacred groves as well as their sustainable utilization is as a result of the religious beliefs and taboos associated with them. Khan, *et al.* [31] add that a key element for the survival of the sacred groves has also been the collective cooperation of the rural folks.

#### Management of Sacred Groves in Ghana

The management of most sacred groves around the world is principally in the preserve of the local communities in which these groves are situated. However, even within the local community, the supreme responsibility of the sacred grove usually rests on the shoulder of a particular family or clan [23]. They are supposed to ensure the performance of the rituals, libations, sacrifices and other important rites associated with the deity in the sacred grove. They are expected to ensure the upkeep of the various injunctions by the deity such as resting days, taboos, and moral values that need to be observed by the local people [30]. This is very relevant to the continual help of the deity in societal affairs. In each of the families or clans tasked with the duty of protecting the sacred grove, there is a traditional priest or priestess who spearheads this honorable duty. S/he must be well versed in the customs, laws, norms and values as well as in the performance of rituals and their accolade rites. S/he serves as the first point of call to the sacred grove and the deity [23]. He communicates the displeasure of the deity to the people and what is to be done to appease him or her. Also, when a taboo regarding the grove is breached, s/he sanctions the culprit while ensuring that the needed pacification or reconciliation rites are performed. In the case of a stricken ailment to an infringer of a taboo, it is the traditional priest who takes charge of the reversion of that ailment through the required rituals [32].

In some cultures, or ethnic societies, a special committee is set to assist the traditional priest or priestess in carrying out the day to day activities as well as the ritualistic performances of the sacred grove. The committee normally consists of elderly men who are the pillars of the society, as well trained young ones who are groomed to take the seat of leadership [23].

Whatever the case may be the traditional priest or priestess and his or her committee accounts for the duties to the seat of the traditional governance. Traditional leaders' interest in the affairs of the sacred grove is essential to the progression or retrogression of their governance of the people. Usually, it is believed among the local people that the traditional leader sits on the stool of the ancestors who have taken out meticulous care of the sacred groves. As such, the traditional leader and his cabinet are very passionate about the management of the sacred grove. They clearly ensure that the religious and artistic practices that govern the sacred grove are maintained and preserved. They believe that the protection of the sacred grove is akin to the survival of the society.

The situation is somewhat different in various modern societies today. For instance, in Ghana, managerial power has often been wrestled from the traditional institutions and the ultimate powers, in fact, the total management of the sacred grove is given to the national ruling seat of governance [33]. This, to Ormsby, is the main cause of the eroding of the cultural and artistic elements that are used for regulating the sacred groves. It is no wonder there has been a vehement abuse of the sacred groves and the forest as a whole in Ghana. Societal, national and global hitches in the light of the adverse effects of biodiversity degradation are attributed to the breach of the cultural and artistic elements constantly perpetuated by the traditional governance systems in local communities. Realizing this root cause, some researchers such as Mensah and Amoah [16], Dorm-Adzorbu, *et al.* [34], Adom [35] as well as Akom and Adum [36] have advocated the sharing of managerial powers of these sacred groves between the local people, that is, their traditional governance system and the national governance system. A conscientious effort of fighting for co-management of these sacred groves where the local authorities are viewed as stakeholders and are involved in the decision-making processes of the sacred grove management has equally been suggested by Mensah and Amoah [16].

This action may also have its own challenges, in that the local people and their ruling system sometimes strongly object to the government's involvement in the managerial and decision-making processes in connection with the sacred groves. On the other hand, some governmental officials also feel that the local community's style of management which most scholars term as 'traditional forms of conservation' are superstitious and even idolatrous and do not carry any weight [26,37]. Owing to this, they sometimes do not involve the local people in the decision-making processes of conservation. This makes the application of the scientific conservation strategies by the local people a challenge. The local people tend to nullify any conservation strategies developed without any ingredient of their cultural and artistic elements known to them. The cultural and artistic elements used for biodiversity conservation may certainly have their own setbacks. Thus, to forge a better weapon in combating the biodiversity decline in protected areas, Golo and Yaro [38] expertly suggest that the scientific conservation approaches should be used alongside the wisdom and values enshrined in the traditional conservation practices.

### Sacred Groves and their roles in the Ghanaian Community

Sacred groves are storehouses of pristine diverse species of living organisms. The benefits which societies derive from the rich biodiversity in the sacred groves are immense. Ampili [30] points out that the sacred groves provide a cultural space to a community as a historic asset ensuring the spirit of solidarity or belongingness. Whenever societal members see these sacred groves, it reminds them of their forebears and gives them a sense of belongingness.

Also, the sacred groves ensure the healthy wellbeing of the people. This is very true because the entire community utilizes the services of the sacred groves such as good rainfalls and agricultural productions for the sustenance of life [23]. Mensah and Amoah [16] clearly mention various medicinal plants such as Nyamedua (God's tree), Mahogany, esro wisa, kokodua (Tree for treating piles) etc., that help in healing fractures, piles, fever, stomach problems and boils. The abundance of these natural cures has helped in reducing local communities' reliance on expensive and even hard-to-reach health facilities mostly situated in the urban circles. It is interesting to note that the wild fruits collected from the sacred groves are seen by many health experts as rich in all forms of vitamins that can combat and reduce the risks of diseases attack. It is clear that

the absence of the sacred groves would certainly be detrimental to the lives of the local people.

Moreover, the sacred groves are seen as ideal sites for eco-education, thus, teaching people about the various diversities found in plant and animal life. This knowledge is often passed on from elders to the younger generation. This form of informal education about the ecology is carried out during initiation ceremonies when the initiates are camped in these sacred groves [23]. The initiates experience firsthand information on the distinct features of the various plant and animal species as well as their health values [39]. Myths, folklores, and maxims whose subjects are mainly from the diverse animal and plant species personified, were used as educational tools in teaching the young and the old about the acceptable ways of life, laws and customs of the land [40].

These cultural sites are used as tourism sites where people from diverse ethnic societies and cultures visit for recreational and relaxation purposes. The sightseeing activities give the visitors some form of aesthetic and spiritual satisfaction because most of the sacred groves give scenic beauty of the landmass in the community. Again, the local people residing in areas of the sacred groves gain religious satisfaction realizing that they have honored the deities by conserving the sacred groves. This psychologically puts them in a sound and undisturbed frame of mind.

Hughes and Chadran [28] highlight the scientific value of the sacred groves. They mention that it helps in moderating the climate regions in the communities by constantly regulating the hydrology of the local terrain, whilst maintaining the nutrients and fertility of the earth. This booms agricultural yield, killing the menace of food shortages in most local communities. In addition, Khan, *et al.* [31] reveal that the sacred groves help in reducing the erosive force of water while ensuring that desirable water is obtained. Agriculturalists, in particular, would be happy to know that the sacred groves foster the natural dispersal of seeds of useful plant species and conserves indigenous flora and fauna species which are difficult to find in most areas.

### Causes of the Degradation of Sacred Groves

Ampili [30] attributes the degradation of biodiversity resources to the collection of dead wood and the felling down of trees for timber and fuelwood. Also, there is over consumption of wild fruits

by humans as well as the collection of green leaves as fodder for the increased rearing of livestock. Collections of biomasses in the form of traditional medicine in the form of herbs by herbalists and other medical practitioners who engage in herbal treatments as well as the collection of green manure for the fertilization of the soil are pointed out as some of the causes of biodiversity degradation. Actually, there is nothing wrong with the use of biodiversity for all these products and services. The problem, however, is with the overexploitation of the forest resources [41]. Interestingly, the early forebears of communities judiciously used these same resources for their everyday undertakings with the values of sustainability ringing constantly in their minds. This is what is lacking in many human societies today which need redress. The 2003 Millennium Ecosystem Assessment alerted that humans need to manage the equilibriums between their needs, thus, nature's resources that man consumes and it carrying capacity without affecting their long-term use by the future generation. The ancestors

It is, therefore, a wise course to revisit the traditional knowledge base to pick viable points that can be used in curbing the ever accelerating rate of biodiversity degradation. Gadzekpo [42] strongly opines that conservation planners must critically consider and revisit the values in the cultural and artistic elements that formerly helped in conserving biodiversity [43-45].

## Conclusion

The establishment of protected areas such as wildlife sanctuaries, forest reserves and sacred groves has been beneficial to biodiversity conservation, maintenance of the ecology and promotion of environmental sustainability in Ghana. However, the state of these protected areas should be constantly improved to promote their preservation and enhance the roles they play in biodiversity conservation in Ghana. Proactive strategies must be put in place to enhance the management of these protected areas and eradicate all forms of potential abuse of these sites. A co-management approach between the government officials and local communities, to the authors, is the best managerial strategy that would yield more positive results in the management of protected areas in Ghana. In addition, the synergistic implementation of both scientific and traditional conservation practices at protected areas in Ghana would beef up their conservation measures and maintain the ecological stability and habitats of the rich biological resources abundant in these sites.

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