

Natural Resources of Okyeman- an Overview

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Abstract

Biodiversity in all its forms sustains tremendous socio-economic and cultural interests of millions of people all over the world. Increasing human population has resulted in proportional increase in the demand for natural resources for the sustenance of human development needs. Unsustainable pattern of utilization of biodiversity in most parts of the world has necessitated the need for new thinking in the management of biodiversity. One key approach to managing these resources is through community-based approaches as opposed the classic approach to managing natural resources. The Akyem Abuakwa Traditional Area (Okyeman) in the Eastern Region of Ghana offers some lessons on community approaches in managing natural resources. Okyeman is one of the ecologically endowed areas in Ghana. The Traditional Area boasts of rich biodiversity including endemic, rare and globally threatened fauna and flora as well as diverse landscape of aesthetic value. Atewa Range Forest Reserve, one of the ecologically unique sites in Ghana is a prominent feature in the traditional area which is a home to many of the fauna and flora resources of the traditional area. However, these have in recent times come under intense pressure from illegal and unsustainable exploitation. This situation has compromised the ecological and biological integrity of Okyeman. Recognizing the need to reverse the situation, the traditional council has in recent times taken the initiative to use the existing traditional structures to enhance natural resource governance in the area. This chapter gives an overview of the current status of natural resource of the traditional area, highlighting on their importance to local people and the need for sustainable exploitation of these resources.

Introduction

The Akyem Abuakwa Traditional Area is commonly referred to as Okyeman. The historical appellation of Okyeman, “*Kwaebibirem*” (meaning the dark forest) validates the past extent and condition of forest lands in the. Okyeman controls a significant portion of Ghana’s remaining forest. Okyeman lies within the Moist Semi-Deciduous (South-east subtype) forest zone according to Hall and Swaine’s forest classification of Ghana (Hall and Swaine, 1981). This forest type is characterised by tall trees (height often exceed 50 m), with an upper canopy consisting of a mixture of deciduous and evergreen species. On isolated hills within this forest type, occurs the upland evergreen forest, a forest type which is relatively rare and accounts for only 0.3% of the country’s forests. The has a

number of forest reserves, but key among them is the Atewa Range Forest Reserve which is only Globally significant biodiversity (GSBA) within the high forest zone in the Eastern Region of Ghana.

Traditional Governance Structure of Okyeman

Okyeman (the Akyem Abuakwa Traditional Area) in the western part of Ghana’s Eastern Region is one of the most powerful kingdoms within the Akan traditional system in Ghana comprising 801 towns and villages which are organised into five Divisions (*Adonteng* – 155 towns and villages; *Oseawuo* – 288, *Nifa* – 113, *Benkum* – 218 and *Gyasi* – 27). The traditional system of government in Okyeman is one of the most sophisticated in Ghana, with a government structure made

up of the King (Okyenhene) and three councils of elected chiefs, sub-chiefs, councilors and elders. The Councils correspond to the executive, state and county councils of western government (CINRMP, 2003)

Okyeman's natural resource heritage

Okyeman is one of the richest areas in Ghana in terms of natural resources, including mineral resources, forest estate and biodiversity. It is home to the country's largest state-owned diamond firm. At a point in time, there were 27 gold and diamond concessions in the area. In addition, the area has considerable bauxite and kaolin deposits, which are yet to be exploited.

The area boasts of a number of forest reserves and numerous sacred groves, which are patches of forest set aside as sacred and strictly protected by customary laws (Ntiamao-Baidu, 1995; Ntiamao-Baidu et al., 1992; Dwomoh, 1990). Two of the forest reserves in the area: Atewa Range Forest Reserve and the Nsuensa Forest Reserve, have global importance in terms of biodiversity. (FRMP, 1999; Ntiamao-Baidu et al., 2001).

The Atewa Range Forest Reserves, located near the Kyebi town, comprises two forest reserves: the Atewa Range and the Atewa Range Extension, both of which form a contiguous forest block. Atewa is a Globally Important Bird Area (Ntiamao-Baidu et al., 2001) and is also one of the 34 sites designated as Globally Significant Biodiversity Areas in Ghana. The Atewa hills are steep sided hills (elevation of 500-700 m) running approximately north to south and to the west of the Accra Kumasi road. These hills constitute the last remains of the Tertiary peneplain that once covered southern Ghana

and are characterised by very ancient bauxitic soils. Atewa is an important watershed, designated as a forest reserve in 1926 to: a) protect the headwaters of the Birim, Densu and Ayensu rivers and their tributaries; b) maintain forest cover on the steep slopes of the hills, thereby preventing excessive erosion, and c) halt shifting cultivation and extension of the boundaries of existing cocoa farms (CINRMP, 2003).

Atewa is one of two forest reserves in the country (the other being the Tano Offin Forest reserve) representing the Upland Evergreen forest type and accounts for ca. 30% (17,400 ha) of the forest type. The Upland Evergreen forest is known to be botanically very important in terms of plant species richness and floral diversity; sample plots in the forest type generally provide longer species lists than those in surrounding Moist Semi-Deciduous forest. Plant species within the forest type indicate the sub-montane nature of the type with characteristic herbaceous species, abundant and diverse epiphytic and ground living ferns and a rich floral diversity, which is enhanced by the diverse topography of the hill summits. So far, 656 species of plant have been recorded including 6 black star species (highest conservation priority species of global significance) and 33 Gold star species. The forest type has an unusual flora, the bovals (meadows on bauxite outcrops), swamps and thickets are also considered to be unique in Ghana. The floral diversity is further enhanced by the diverse topography of the hill summits while the misty conditions favour unusual flora. The Atewa forests harbour many plant species not found elsewhere in the country (Hall and

Swaine, 1981; Hawthorne and Abu-Juam, 1995). The first record of the plant *Celtis durandii* for Ghana was found in this area.

The Atewa Forest Reserve is also very diverse in faunal species, with high endemism (Ntiamoa-Biadu *et al*, 2000; GWS, 1998; Larsen, 1994; McCullough *et al*, 2007). The biodiversity information currently available for Atewa indicates that there are 460 butterfly species, 155 bird species, 30 species of large mammals, 11 species of small mammals, 16 species of reptiles, 32 species of amphibians and 27 species of bats. These figures are among the highest recorded for any forest site in Ghana, and therefore, in terms of faunal diversity and species conservation, Atewa is one of the most important sites in the country.

Two other important forest blocks in the Akyem area are the adjoining forests of Nsuensa and Mamang forest reserves. The fauna of Mamang has not been studied, Nsuensa is a Globally Important Bird Area (Ntiamoa-Baidu *et al*, 2001). The name “*Nsuensa*” means three rivers; the site encompasses the headwaters and catchment areas of the three streams: Subin, Aboabo and Kadepon, which flow into the Birim river; and includes a number of sacred groves.

There are five major sacred groves in Okyeman, these have been extensively surveyed and mapped recently under the Community integrated natural resource management project in Okyeman (GWS, 2006). However, these sacred groves constitute the only remnant forest amidst severely degraded forest and farmlands. Thus, despite the small sizes of the sacred groves, they constitute a matrix of biotic islands with great potential for conservation

of remnant floral and faunal communities (CINRMP, 2003). More importantly, they represent a traditional conservation system that local communities believe in and can identify themselves with, and any investments to enhance the protection of these areas would be worthwhile.

Freshwater resources

The Akyem Abuakwa forests serve as a source and/or constitute the entire or part of the catchment of three major rivers: Birim, Ayensu and Densu, as well as a large number of tributaries of these rivers. These rivers provide water sources for people in the entire area, therefore the survival of the people is interlinked with the survival of these rivers. Apart from the local importance, the Densu River is the source of water for half of the Accra Metropolitan Area. All the rivers are known to be important sources of freshwater fisheries and rapid assessment of the of fishes in these rivers recorded 19 species belonging to nine genera of five families. These include: Mormyridae, Characidae, Cyprinidae, Cyprinodontidae and Cichlidae (Abban, 2007).

Degradation of river catchments from agriculture and human settlements is a common problem in Ghana and all the river sections that run through population centres are exposed to serious pollution problems. Studies along the Densu show that various forms of materials drain into the river as a result of discharges from agricultural activities, human settlement, mining, industrial and other commercial activities. This has resulted in physical water quality deterioration from source to mouth (GWS, 2006).

Threats to Okyeman's terrestrial and aquatic ecosystems

Historically, renewable natural resources have in part been the basis of Ghana's socio-economic development and today, remain the primary source from which local communities make their living. Therefore like many other areas of the country, the renewable natural resources of Okyeman, comprising forests harbouring a wide variety of globally important and unique flora and fauna, nationally important freshwater ecosystems, and diverse mineral and timber resources play a major role in the economic, religious, and cultural life of the Akyem people (CINRMP, 2003; GWS, 2006). These important resources, however, are under threat from human-induced pressures, including over-exploitation and habitat degradation. This is because the local population depend on these same natural resources for their livelihoods. In addition to major economic activities like logging, mining and hunting, the local population who are mainly farmers use slash and burn farming methods for both cash and food crops grown under the bush fallowing land shifting cultivation system. In addition, crops that previously had little commercial value are gaining economic importance thus forcing farmers to intrude onto protected lands. Examples are oil palm, citrus and pineapple production. New generation farmers who need additional lands increase pressures on available farmlands and moved on to encroaching on forest reserves. The main economic activities that threaten the natural resources of Okyeman are farming, illegal logging, illegal mining operations and uncontrolled hunting.

Farming is by the slash and burn methods,

with both cash and food crops grown under the bush fallowing and shifting cultivation systems. The average farm size of farmers is 3.50 ha. Major crops produced include yam, plantain, cassava, maize, cocoyam, cocoa, oil palm, citrus and pineapple. With the slash and burn system, primary and secondary forests are cleared for cultivation, most standing trees cut down and burned, before the crops are planted, resulting in considerable forest degradation and loss of biodiversity. Unfortunately due to poor farming practices farmers tend to complain of inadequate farmland. However the continuous slash and burn cultivation practice, which used to be practicable due to the small population sizes is no longer suitable for today's expanding rural population. Even hill slopes are farmed and in Atewa, severe degradation of the lower slopes from farming activities is evident, with abandoned farms at various sites.

Illegal logging and mining pose major threats to biodiversity conservation in the area. Okyeman has a long history of economic dependence on the forest through timber and several timber concessionaires operate in the area. Economic trees in the area include species such as odum (*Milicia excelsa*), wawa (*Triplochiton scleroxylon*), African walnut and African redwood. The logging is not restricted to forests outside reserved lands, for example in Atewa, the last official logging was recorded in 1991, but illegal logging still continues and the impacts of logging are evident. The number of chainsaw operators has been increasing since the mid 1980s and is now very common. The timber removed by chainsaw operators is carried from the forest to accessible points by the roadside where they

are loaded onto trucks. A recent estimate indicates that there may be as many as 500 chainsaw operators in the Atewa reserve, with around 2,500 young men working as operators and lumber carriers. Furthermore Illegal logging has extended to areas considered to be sacred and was hitherto revered by local communities. For example Illegal logging, chain sawing and commercial fuel wood harvesting is now a common site within the 'Okyemanpo' (burial ground of the Kings of Okyeman), which used to be an excellent example of traditional forest conservation initiative in Ghana. (GWS, 2006).

The threat of Bauxite mining to Atewa Range, now a Globally Significant Biodiversity Area (GSBA) has been discussed at different times (Hall et al, 1973; Hall & Swaine, 1981 and Hawthorne & Abu-Juam, 1995; Forestry Commission, 2003). Atewa Range GSBA has a reputation for its upland evergreen forest type (Hall & Swaine, 1976) and botanically for the abundance of endemic species, which are rare in Ghana and globally. The reserves of bauxite, although of relatively low grade, are a potential threat to the survival of upland evergreen forest type (Hall & Swaine, 1981; Forestry Commission, 2003; CINRMP, 2003). Gold prospecting and illegal gold mining are also evident in the Okyeman forests. Atewa is known to have substantial gold deposits, which poses a potential threat to the reserve.

Bushmeat constitute a major source of animal protein in most rural communities in Ghana. Certain species are considered a delicacy and are preferred over domestic meat while others are eaten as part of certain traditional rites. All varieties of wild

animals are accepted as comestible, resulting in serious overexploitation that has led to very low population levels of all large mammal species. Large mammals in forest reserves and farmlands constitute an important protein source for the communities living along the fringes of the reserve. Interviews with the farmers and hunters around Atewa showed that as many as thirteen out of the 30 species of large mammals recorded in the reserve are regularly hunted as bushmeat, the rest being so rare that they do not feature in the hunter's regular catch. In addition to the bushmeat, the area is well known for other non-timber forest products (NTFP's) such as mushrooms and snails, which are heavily collected when in season and are sold at various points along the Akyem section of the Accra- Kumasi road.

Thus, the Okyeman situation is a clear case of a traditional area with rich natural resources that are threatened by misuse and ineffective management, where national governmental efforts have not been able to contain the situation, and where the traditional authorities are keen to protect the resources for the survival of their people, but currently lack the capacity to be effective.

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