PROTECTED AREA MANAGEMENT AND LIVELIHOOD CONFLICTS IN GHANA: A CASE STUDY OF DIGYA NATIONAL PARK

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ABSTRACT

The Digya National Park in Ghana has been the scene of conflicts between local communities and wildlife managers ever since its establishment in 1971. The conflicts range from apprehension of local people by Wildlife Officials for entry into the park to collect non-timber forest products, to serious confrontation with poachers, arrests and evictions that occasionally result in deaths. Documented information on these conflicts, however, is scanty. This study examines the root causes of conflict in Digya National Park, with a view to recommending policy interventions that will help curtail the conflicts. Data for the study were derived from focused group discussions, direct interviews with stakeholders, on-site observations, as well as, from a management effectiveness evaluation exercise that involved administration of a pre-designed questionnaire to protected area managers and administrators. The results revealed that a major underlying source of conflict in the park was poverty in neighbouring communities. This, together with unresolved issues of compensation payment, animal raids on farmlands and exclusion of local communities in the management process, have fuelled illegal activities, mainly hunting and encroachment, leading to several conflict situations. Arrest of culprits and forced evictions by Wildlife Officials had not helped in curtailing illegal activities and conflicts. The study recommends linking wildlife management to community development to ensure that local economies and livelihoods of fringe communities are sustained while seeking to attain the objectives of wildlife conservation in order to minimize conflicts.

KEYWORDS: local communities, conflict, Digya National Park, Ghana, policy, stakeholders, assessment

INTRODUCTION

Protected areas constitute a major component of national and regional strategies to counter biodiversity loss. They are considered as *in situ* repositorys of genetic wealth as well as relics of pristine landscapes that deeply touch the spiritual, cultural, aesthetic and relational dimensions of human existence (Chape et al., 2003; Putney, 2003). In recent times however two terminologies 'paper parks' and 'island parks' have become synonymous with many protected areas, depicting how most protected areas have failed to maintain their ecological character (Laurance, 2008). Invariably, humans are the main agents of park degradation and are responsible for the failure or abysmal performance of most protected areas.

Past conservation efforts viewed local people as destroyers of the forest, who must be 'excluded' in order to conserve biodiversity. This mindset led to the adoption of the preservationist approach, otherwise referred to as 'fences and fines', 'fences and guns' and/or 'colonial approach', which promoted the establishment of protected areas with little or no regard for local people (King, 2009; Vig & Kraft, 2012). Research has shown that such a militaristic defence strategy only heightens conflict between park managers and local communities living within and around protected areas (Sharachandra et al., 2010). A different approach of protected area management, the utilitarian view, which respects the rights and existence of the local people emerged later to avert conflicts and to encourage mutual respect and benefit sharing between local people and protected areas management (Nelson & Hossack, 2003).

The two divergent approaches have influenced the philosophical underpinnings in protected area management and have so far dominated the nature

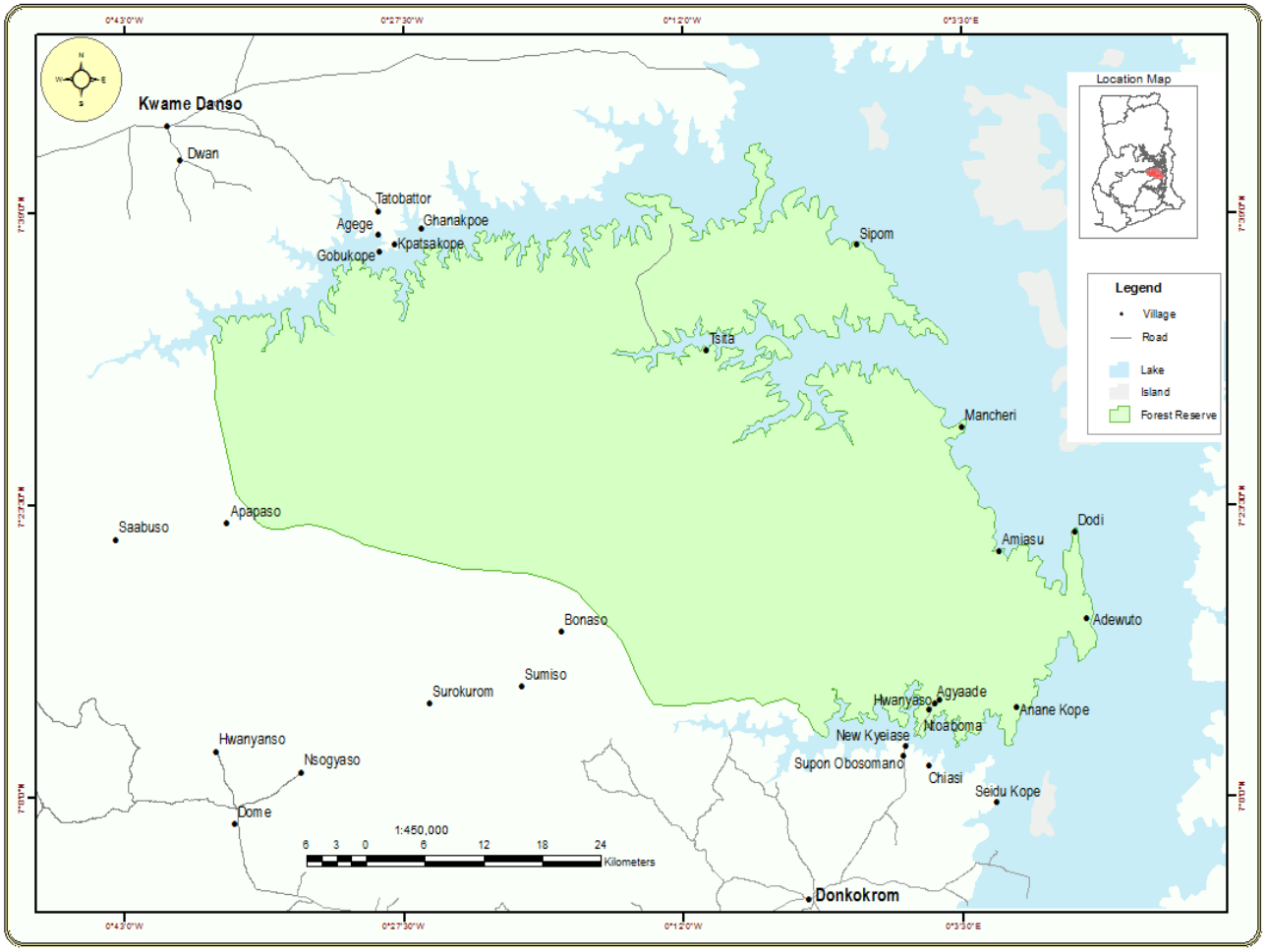

Figure 1. Map of Digya National Park in Ghana

conservation discourse in contemporary times. The preservationists believe in the intrinsic beauty and value of all things within 'the one great unit of creation', and hold the view that nature should be preserved for its own sake and that man should be able to live in harmony with nature without destroying it (Fox, 1981). The utilitarians, on the other hand, believe that wild nature is not to be preserved but actively managed through scientifically based interventions to improve and sustain yields (Pinchot, 1910). The preservationists adopted the 'exclusive model' in which human activities are excluded whereas advocates of the utilitarian view adopted the 'inclusive model', which sees the interests of local societies and sustainable management as central to protected area management (Borrini-Feyerabend, 2003).

Conflicts between protected area managers and fringe community members generally suggest that there are significant lapses in the strategies adopted by protected area officials in integrating local residents in the overall management framework. Conflict in this context refers to disagreements or disputes arising over access to, and control over natural resources, loss of livelihoods and food insecurity (Mukherjee, 2009). Conflicts between protected area managers and local communities in Ghana arise out of the externally enforced exclusion of the communities from the protected area and the resources they had access to before the designation of the areas. The conflicts range from disagreements over illegal entry and development of settlements in the park, to major confrontations, arrests, prosecutions and even deaths (see Box 1). According to Stern (2008), conflicts arise as a result of struggles over access to resources or historical land disputes. Though other divergent views have been expressed to explain causes of the conflicts, the dominant view attributes conflict to the system of protected area governance (West & Brechin, 1991; Borrini-Feyerabend et al., 2004).

Earlier works on conflicts in nature conservation focused on the concept of 'economic rationalization' suggesting that fringe communities respond foremost to economic livelihood issues, and arguing that only strict regulations would prevent local residents from being a threat to park management (Brandon & Wells, 1992; Terborgh, 1999). An alternative solution to conflict is benefit-sharing (Brandon, 2002; McShane & Wells, 2004).

BOX 1. EXAMPLES OF CONFLICTS IN PROTECTED AREA MANAGEMENT IN GHANA

Conflict in between protected area officials and local communities living close to protected areas is a major issue in nature conservation. These conflicts involve disagreements and disputes over access to and control over resources and may lead to arrests and prosecution, and violent confrontation sometimes resulting in death.

In 2006, a border dispute in Kyabobo National Park resulted in the tragic death of two Wildlife Officials (Ghanaweb, 2006). Another incident occurred in Bui National Park in 2007, when a poacher lost his life for resisting arrest and attacking a Wildlife Official (Ayivor, 2007). Local communities attacked Wildlife Officials and burnt down one of their camp sites. Both incidents were resolved through the intervention of local chiefs and Wildlife Officials from the national headquarters.

In 1989, 2002 and 2006, three major eviction exercises were carried out in Digya to move mainly migrant communities and their families (squatters) who were allowed entry into portions of the park by local chiefs. These chiefs claimed that cash compensation for expropriation of their lands had been paid to wrongful claimants and, therefore, considered themselves as rightful owners of these portions of the park. The exercises mostly targeted squatters who often resisted eviction, thus, compelling Wildlife Officials to seek the support of the military to evict them. During the 2006 eviction exercise, nine people lost their lives through a boat accident that occurred while they were being ferried across Volta Lake. The eviction exercise of 2006 was abandoned due to public outcry and a court injunction (Myjoyonline, 2006, CHRE/CHRIPD, 2006).

Animal raids, particularly elephants and rodents, on farms adjacent to protected areas in Ghana have also been a source of disenchantment between fringe communities and Wildlife Officials. Farmers suffer economic losses but they risk prosecution if they are found to have killed animals raiding their farms. This situation creates antagonism between Wildlife Officials and local people leading to mistrust, hatred and sometimes violent confrontations.

Other schools of thought reflect a human-centred approach, focusing on: economic empowerment of residents (Pimbert & Pretty, 1995; Kothari et al., 1997; Borrini-Feyerabend, 2003); changing relationships between fringe communities and protected area managers (Hulme & Murphree, 2001; Barrow & Fabricius, 2002); and the complex links between biodiversity degradation and rural poverty (Wood et al., 2000; Hartman, 2002; Rachman, 2002; Adams et al., 2004). According to Gillingham & Lee (2003), local people who disproportionately bear the cost of protection and feel 'excluded' cannot be expected to provide the needed support if the costs of doing so outweigh the benefits they derive.

A number of national parks in Ghana have been scenes of conflicts between Wildlife Officials and local communities in recent times (box 1). However, there is a paucity of information on these conflicts in the literature in spite of the widespread media attention such conflicts normally receive, see for example Amnesty Press Release (2006a; 2006b), Myjoyonline.com (2006) and CHRE/ CHRIPD (2006). This paper investigates conflicts between local communities and protected area managers using the Digya National Park as a case study, with a view to understanding the nature, causes and consequences of such conflicts. The ultimate goal is to inform policy makers about possible interventions that could avert or minimize future conflicts.

MATERIALS AND METHODS

- **Site description**

The study focused on Digya National Park, one of the six national parks legally designated in Ghana. This park is situated on a peninsular off the central section of the western shore of Lake Volta (Figure 1). The park had an area of 65,000 ha when it was first established in 1909 during the British colonial era (Twumasi et al., 2005). The creation of the Volta Lake in 1965 resulted in expansion of the park to its present size of 347,830 ha, including the original location of some sixteen settlements. The reserve was legally gazetted as a national park in 1971 on the basis of its importance as wild animal habitat and also as part of the complex policy related management issues of the Volta basin. Digya is considered as very strategic in the stabilization of the shores of the Volta Lake. It is surrounded by a large human population made up of fishers and farmers, comprising indigenous communities as well as migrants who moved into the area with the creation of the Volta dam. Most of the people in the fringe communities live in houses constructed out of improvised local materials, notably switch for wall construction and thatch for roofing.

Mud/thatch houses are a common feature in the fringe communities of Digya National Park where poverty levels, according national statistics, are relatively high © J. S. Ayivor

The park supports low populations of the African Elephant (*Loxodonta africana*), together with a number of ungulates including Hartebeests (*Alcelaphus buselaphus*), Roan Antelope (*Hippotragus equines*), Bushbuck (*Tragelaphus scriptus*), Bay Duiker (*Cephalophus dorsalis*), Bush Duiker (*Sylvicapra grimmia*), Red-flanked Duiker (*Cephalophus rufilatus*), Waterbuck (*Kobus ellipsiprymnus*) and Burron's Kob (*Kobus kob*). The African Buffalo (*Syncerus caffer*), Oribi (*Ourebia ourebi*) Bongo (*Tragelaphus euryceros*), Bush Pig (*Potamochoerus larvatus*) and Common Warthog (*Phacochoerus africanus*) are also known to occur in the park. Additionally, the park harbours aquatic species of conservation significance such as the Manatee (*Trichechus senegalensis*), Hippopotamus (*Hippopotamus amphibious*) and African Clawless Otter (*Aonyx capensis*) together with numerous fish species in the adjoining Lake Volta (Wildlife Department, 1995; EPA, 1996). At least six primate species including Olive Baboon (*Papio anubis*), Velvet Monkey (*Cercopithecus pygerythrus*), Mona Monkey (*Cercopithecus mona*), Lesser Spotnosed Monkey (*Cecopithecus nictitans*), the Western Pied Colobus (*Colobus polykomos*) and Patas Monkey (*Cercopithecus (Erythrocebus) patas*) are reported to occur in the park. Common carnivores are the Cusimanse (*Crossarchus obscures*) and some mongoose species. The park is reported to be the historical home of two species that are presently locally extinct namely the Black Rhinoceros (*Diceros bicornis*) and the Wildebeest (*Connochaetes taurinus*) [1] (Twumasi et al., 2005).

Digya spans three political regions, and five administrative districts of Ghana: the Atebubu and Sene Districts in the Brong Ahafo Region, Afram Plains District in the Eastern Region, and Sekyere East and Sekyere West Districts in the Ashanti Region. The park has two main parts, the northern and southern sectors, and is managed by the Wildlife Division (WD) of Ghana Forestry Commission through the Atebubu office of the Division. There are 13 camp sites spread around the park. Camp sites are sub-stations established at strategic points within and along the boundaries of the park to ensure the day-to-day protection of the park. The Atebubu office is headed by a Park Manager who has oversight responsibility over all the 13 camp sites (Wildlife Department, 1995).

- **Methods**

Field work was carried out within selected communities bordering the park by a three-member research team, between August 2010 and March 2011. The field-based approach employed focused group discussions, direct interviews and on-site observations to extract qualitative data. Twelve focused group discussions were carried out in nine communities involving 139 individuals between the ages of 18 and 75. The discussants were made up of 27 per cent females and 73 per cent males. Female representation was low because most of the married women whose husbands participated said that they shared the same views about the subject matter as their husbands and therefore saw no need to participate. In order to increase female participation, separate female group discussions were organised. Seven separate

Participants at a focus group discussion in one of the fringe communities of Digya National Park © J. S. Ayivor

interviews were carried out also with two traditional chiefs and their elders and five WD officials. Communities surveyed were selected with the help of a base map and advice from Wildlife Officials on accessibility. Four of the communities located about 8 km apart on the average, were selected from the northern sector. In the southern sector where the landmass is more extensive, five communities located about 12 km apart, were selected to ensure a fair geographical representation. The Community Liaison Officer of the Wildlife Division, who already had a good rapport with the communities, led the research team into the communities, but as a result of existing tensions, the team considered it best that he was not present at the discussions. Participants comprised women and youth group leaders, representatives of the Collaborative Resource Management Area (CREMA), members of District Assembly Unit Committee, and other prominent and knowledgeable citizens of the communities. The discussions, which generated qualitative data mostly, focused on the nature, causes and effects of conflicts between communities and park managers; individual perceptions about the national park concept; community's relationship with Wildlife Division officials; and measures to curb future conflicts. On-site observations recorded the types of living structures, availability of utility services and road network. Housing condition was used as an indicator of poverty and lack of social infrastructure as a sign of community marginalization (also alluded to by the discussants). These indicators are supported by national and regional poverty indices (GSS, 2007). Housing structures and external housing conditions have been used as an indicator for poverty, for example Simanowitz et al., (2000) used CASHPOR House Index (CHI) and Participatory Wealth Ranking (PWR) as means for identifying the very poor. Nearness of communities and farm units to the park was also recorded to give an indication of likelihood of conflicts between farmers and wild animals (see for example Parry & Campbell (1992) in Botswana, Hill (1997) in Uganda, and Gillingham & Lee (2003) in Tanzania).

Data for pressure and threats facing the park were derived from an evaluation of protected area management effectiveness , which employed the Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology (Ervin, 2003). This assessment covered eight protected areas in the Volta Basin of Ghana and was carried out from 16th to 17th April 2009, in a workshop setting held at the University of Ghana. Twenty-five participants comprising protected area managers and administrators from Wildlife Division Headquarters, and personnel from NGOs and academics participated in the workshop. The RAPPAM methodology is based on a pre-designed questionnaire covering six main assessments elements, of which the evaluation of pressure and threats constitute just a part of one of the elements. Based on the methodology, every activity which is a pressure or threat to the park has three main attributes namely: extent, impact and permanence. The extent could be localized, scattered, widespread or throughout. Impact could be mild, moderate, high or severe, whereas permanence, which refers to time scale, could be short-term, medium term, long-term and permanent. Each of the four elements describing the

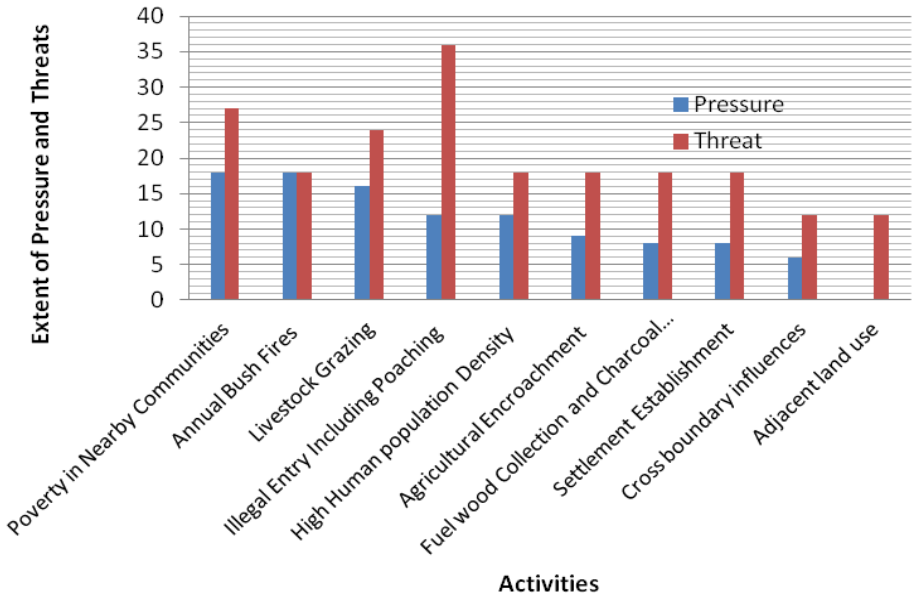

Figure 2. Pressures and threats Facing Digya National Park. Note: Numbers on Y axis represent the product of scores for all three attributes (i.e. extent, impact and permanence) on the scale of 1-64, based on the RAPPAM methodology.

nature of the attributes carries a score ranging from one to four. For each activity, the product of scores given by respondents for all three attributes gives the degree of pressure or threat that the activity poses. Each pressure or threat has a score of between 1 and 64, which is the product of the *extent* (scale 1 to 4: localized, scattered, widespread, throughout) the *impact* (scale 1 to 4: mild, moderate, high, severe) and the *permanence* (scale 1 to 4: short term, medium term, long term or permanent). It is therefore not a linear scale. A score from 1-3 is weak, 4 -9 moderate, 12-24 high and 27-64 severe (figure 2).

Institutional data in relation to illegal activities in the park were obtained from unpublished official reports of the district and divisional offices of Wildlife Division responsible for Digya covering the period 2005-2009. This information was provided by Wildlife Officials. Secondary data were extracted from both published and unpublished sources such as Wildlife Division field records and annual reports. The quantitative data obtained from the RAPPAM assessment and institutional sources were entered into Microsoft Excel (2007) and were used to generate bar graphs to illustrate the distribution of elements that were measured (figure 3).

RESULTS AND DISCUSSIONS

- **Pressure and threats facing Digya**

Results from the evaluation of management effectiveness of Digya indicated that the park faced a lot of pressures and threats emanating from surrounding communities. Pressure in this context refers to processes, activities, or events that have already had a detrimental impact on the integrity of the protected area. Threats, on the other hand, are potential processes, activities or events in which a detrimental impact is likely to occur or continue in the future (Ervin, 2003). In terms of pressure, poverty in nearby communities had the highest score, followed by annual bush fires and livestock grazing. Other factors or activities that exerted pressure on the park included illegal entry including poaching, high human population density, agricultural encroachment, charcoal production and settlement establishment (Figure 2).

A critical look at illegal activities and encroachment reveals that they are fundamentally linked to poverty and economic livelihood issues. Most of the houses were constructed using improvised local materials, notably mud/swish for wall construction and thatch for roofing, a common feature in poorer rural communities in Ghana.

The participants at the management effectiveness evaluation workshop based their assessment of poverty in fringe communities on a regional poverty index (GSS, 2008). While the poverty index in Ghana has decreased from 52 per cent in 1991/92 to 28 per cent in 2005/06 (GSS, 2008), incidence of poverty in rural savannah areas, which include the northern parts of Brong Ahafo Region where Digya National Park is located, had remained pervasive according to earlier studies (Coulombe & McKay, 2004).

Of the threats facing the park, the one that scored highest was illegal entry, including poaching, followed by poverty in nearby communities and livestock grazing. Other

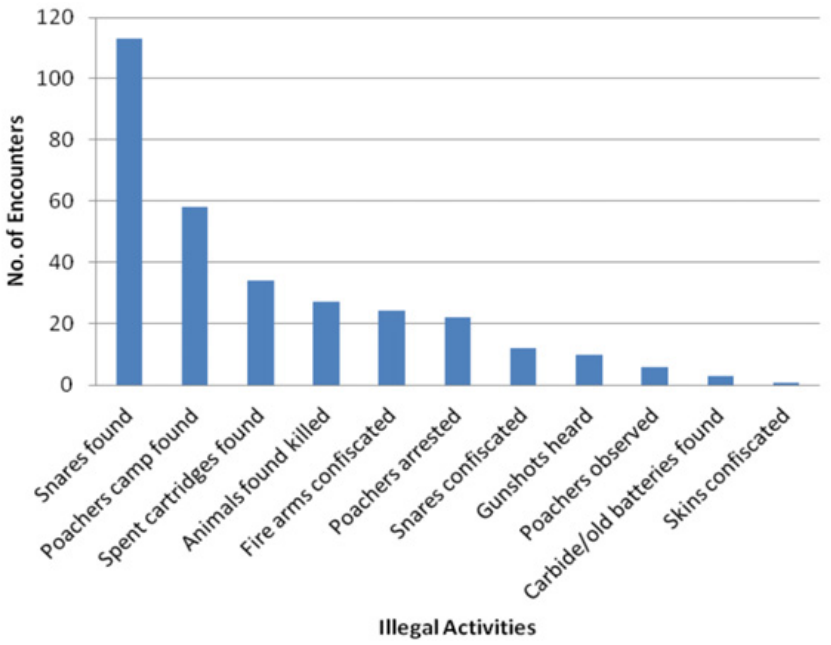

Figure 3. Illegal activities encountered in Digya National Park in 2009

threats in order of severity were annual bush fires, high human population density, agricultural encroachment, charcoal production and settlement establishment (Figure 2). It was clear from the findings that poverty in nearby communities and human population pressure were the main underlying causes of the threats facing Digya. On population growth, available figures of selected fringe communities from Ghana Statistical Service have shown that in Nsogyaso, Hwanyaso and Kpatsakope, for instance, the population increased from 75 to 1,121; 185 to 750; and 82 to 295, respectively, between 1970 and 2000 (GSS, 2005).

While some of the threats and pressures such as agricultural encroachment are direct illegal activities, others such as poverty in nearby communities and high population density may not be direct, but may aggravate illegal activities. Protected area officials are required to enforce a set of regulations which prohibit local people from engaging in illegal activities but more often, the prohibitions are flouted and result in conflict.

- **Prohibited activities carried out by Local People**

Figure 3 shows a frequency chart of illegal activities encountered within the park based on records of field monitoring and law enforcement by officials of the park in 2009. The activities include snaring of animals, establishment of camps by poachers within the park, littering of spent cartridges from gun shots and animals found killed, bushmeat confiscated and poachers arrested, among others.

Park monitoring records in Digya, from 2005 to 2009 as illustrated in Figure 4, show that although a large number of illegal activities were encountered annually, only a few culprits were arrested. In 2005, there were a total of 360 illegal activities compared to 21 arrests; in 2006, the numbers were 345 and 23; 280 and 18 in 2007; 358 and 23 in 2008; while 2009 recorded 310 illegal activities and 22 arrests. The small number of arrests suggest that Digya lacks the requisite law enforcement capacity to prevent illegal activities in the park. In 2006 for instance, the park had only 0.016 effective patrol staff per km^2 and an operational budget of UD$2.5/km^2 compared to 0.198 patrol staff and UD$58/km^2 operational budget for Shai Hills Resource Reserve in the coastal savannah region of Ghana (Jachmann, 2008). The ideal cost of effectively managing a protected area is estimated at US$250/km^2 (James et al., 2001). The lower number of poachers arrested in 2007 could be the result of the backlash from both local and international media following a forced eviction exercise, and boat disaster (see box 1) in 2006 (Ayivor, 2007). This might have forced Wildlife Officials to exercise some restraint. It is worthwhile to note that though the arrests recorded may be considered as successful law enforcement efforts, continuous arrests and prosecutions of local people only aggravate conflict (Stern, 2008), which negates the principles of the 'inclusive concept' (Borrini-Feyerabend, 2003).

- **Other causes of conflict**

Reports from the field discussion indicate that the damming of the Volta at Akosombo in 1964 and its

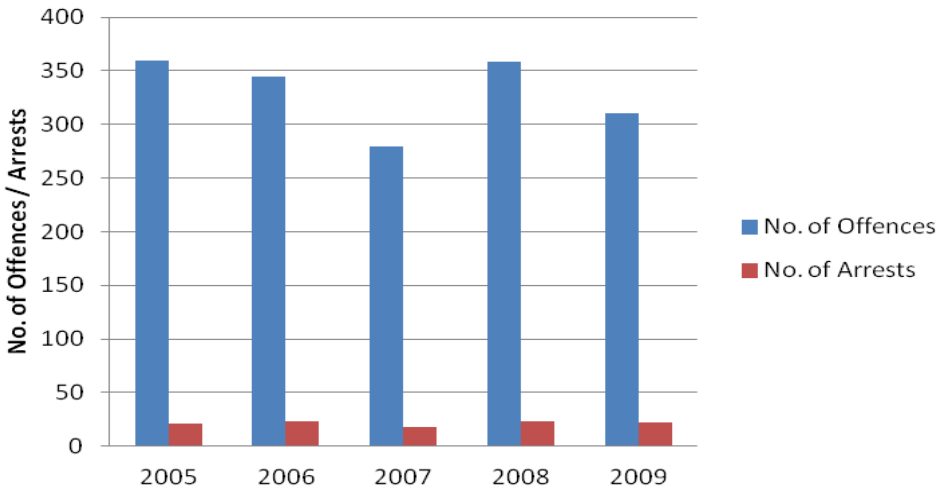

Figure 4: Illegal activities encountered in Digya National Park Compared to number of arrests from 2005-2009

aftermath resulted in the influx of three categories of migrants: (i) those displaced by inundation of the Volta Lake and resettled in four communities within the vicinity of the southern sector of the park; (ii) fisher folks from lower Volta area who were affected by downstream hydrological changes as a result of damming; and (iii) famers and petty traders who were attracted generally by the new economic opportunities provided by the dam. These migrants, together with indigenes who were displaced after the establishment of the park, live in over 200 communities within the vicinity of the park.

For those who had to be relocated, the issue of compensation had been a major source of conflict. According to the Ghana legal system, persons displaced as a result of government acquisition/expropriation of land are entitled to cash compensation from the government for both loss of property, including crops, paid to individuals, and land expropriation (paid mainly to the chiefs). Some local residents claimed that compensation due them was paid to undeserved claimants. They have vowed, therefore, to continue to annex the portions of the park belonging to them until they received their compensation. This confirms the observation by Kiss (1990) that local people are not motivated to conserve wildlife resources if they have not been compensated for the sacrifices they had made. As Muller & Albers (2001) noted, ecologically valuable lands are also economically valuable and so in the absence of development interventions that would provide the residents with alternative means of livelihood, illegal activities, which aggravate conflict, would continue.

The poor handling of resettlement arrangement was another source of conflict according to local residents. Apart from the fact that no housing was provided to those who had to be moved, some of those affected claimed they have been detached from their traditional roots. A number of communities in the southern sector of the park were living within the park in a location that was part of the Ashanti Region. After the demarcation of the park between 1974 and 1976, they were relocated to Kwahu lands in the Eastern Region. Presently, these communities consider themselves as half Ashantis and half Kwahus. These are ethical issues bordering on human rights and respect for local people, which according to Beltran (2000) have to be properly handled to avoid conflict.

Human-wildlife conflict was another source of disaffection among local residents. Studies have shown that when fringe communities of protected areas are forced to absorb the costs of living with wildlife, local support for conservation may be seriously undermined (Brandon et al., 1998; Ogra & Badola, 2008). Elephant raids were common in communities within the southern sector, where damage to crops was reported to be extensive. Though actual data on elephant raids were scanty, every cocoa farmer who was at the focus group discussion in the southern sector reported being a victim at one time or the other. Additionally, rodents, ungulates, primates and birds were reported to destroy crops within all the fringe communities. When farmers kill these animals pests, they are arrested and are sometimes openly paraded and humiliated before being prosecuted, thus, deepening conflict. As Naughton et al., (1999), noted, human–wildlife conflicts remain a major obstacle to community support for conservation. This requires the establishment of another form of compensation system

Two poachers arrested by Wildlife Guards with their carcasses awaiting prosecution © W D Kyabobo

that pays for part or all of the losses suffered by local farmers from wild animal activities in particular elephant raids, which often means the loss of the entire crop of the farmer for the year.

Another issue of concern that tends to reduce local support for protected area management is the high handedness by Wildlife Officials. Some respondents at the focus group discussions narrated the ordeal they went through including physical assaults and imposition of fines when they were arrested for protected area offences. As Stern (2008) noted, when potential collaborators who should help achieve a common goal are criminalized for offenses that border on livelihood, the chances are that they will not cooperate. In Digya, protected area officials were determined to clamp down on offenders, by advocating for the imposition of a more deterrent punishment on culprits. Unfortunately, stiffer punishment will not engender the win-win-win solutions advocated by Meffe et al., (2002) but would only deepen conflict.

During field discussions, all the participants in eight out of the 12 groups were emphatic that protected area establishment did not bring any tangible benefits to them. A 42 year old woman reported: *"I derive no benefit from the park but instead crop losses. When I get to my farm and encounter an elephant feeding on my crops, I can only create noise to drive it away; if that fails, I just look on helplessly as my farm is destroyed. Often, I get so devastated and have no option but to weep all the way back home".*

The only tangible benefit according to them was bushmeat hunting, which, in itself, is an illegal activity. Respondents from four out of the 12 groups indicated that they disliked the establishment of the park in their neighbourhood because it has reduced their land size, exposed their farm produce to raids by wildlife, denied them access to bushmeat and restricted their access to traditional economic activities such as harvesting of non-timber forest products. Their apprehension was rooted in the fact that poverty within the fringe communities had worsened as a result of the protected area establishment, whilst they were paying an additional price of high handedness and arrest for encroachment. Though all the participants shared similar sentiments regarding livelihood challenges resulting from the establishment of

the park, five of the groups indicated that they liked the park establishment concept, while three groups were indifferent. Groups which had accepted the concept indicated that periodic outreach programmes organized by Wildlife Officials had sensitized them to support nature conservation.

The fisher folks along the lakeshores of the park also claimed that the protected sections of the lake were more productive in terms of fish size and abundance. This confirms Roberts et al., (2001) assertion that prohibiting fishing in reserves lead to increase in biomass, abundance and average size of fishes. According to the fisher folks, whenever they encroached into these areas and were caught, apart from being manhandled by 'gun wielding' Wildlife Officials, their fishing gears were also destroyed, which put a lot of economic burden on them. Clearly, this situation only deepens the animosity between local people and the officials.

EXISTENCE OF SQUATTER SETTLEMENTS AND FORCED EVICTION

The establishment of illegal settlements inside Digya National Park has been another major source of conflict between the settlers and Wildlife Officials. The squatter settlements emerged after the creation of the Volta Lake, which provided fishing and farming opportunities. It was reported that in 1971, when the park was gazetted, the settlers were notified to vacate the area. Most of them did not comply with the eviction order because there were no resettlement arrangements in place. Whilst compensation was paid by government to some of the chiefs who owned the lands, the settlers who were directly affected were left out and were expected to return to their original lands. In 1989, the Wildlife Division embarked on an eviction exercise with the backing of the military government that was in power. According to resident victims, the exercise was rather highhanded and traumatic. Below is a quote from a 55 year old man at one village about the ordeal they went through: "*We were served an eviction notice without us being told where to go. Two weeks after the notice, we were forcefully evicted and were not allowed even to salvage our belongings, including food crops and livestock. Wildlife Officials were highhanded on us and there was no one to speak for us. We had to move at night to the opposite bank of the Sene River with our children without any protection against the harsh environment. We had to pitch tents using improvised local materials as temporary houses. It took the goodwill of the paramount chief of Dwan, to give us this land to resettle ourselves. We had to start life all over again*".

Unfortunately the action was *ad hoc* as the Wildlife Division lacked the capacity in terms of staff and logistics to enforce the eviction order. Communities along the Sene River arm of the park complied because of the proximity of the Tato Bator wildlife camp site, which enabled effective monitoring. On the other hand, about twelve communities at the Digya River arm of the park returned to the park after the exercise because of lack of monitoring. The main challenge according to Wildlife Officials was the high financial cost of accessing the Digya River arm which was possible only by means of a high powered motor boat over the Volta Lake.

Another eviction order was announced in 2002, with the support of the local political heads. The plan was not implemented due to budgetary constraints. However, in 2006, there was yet another eviction exercise, which resulted in ten of the evacuees losing their lives through a boat disaster. The settlers were allegedly overloaded in a boat by private operators, apparently, to escape the wrath of the task force that was set up to enforce the eviction order. This attracted a lot of public outcry and condemnation and had to be discontinued as a result of a court injunction by human rights activists. From the research team's interactions with community members, it could be inferred that the squatter settlements had the backing of some traditional leaders who claimed ownership of those portions of the park where the squatters were and collected rent from them.

CONCLUSION

The study identified two main sources of conflict in Digya National Park. The first relates to residents of fringe communities acting individually or as groups to carry out illegal activities for economic survival, which exerted pressure on the park and posed threats on its survival. The authors concluded that poverty, population growth and livelihood issues were the root causes of most of the pressures and threats identified. The second source of conflict involved squatter communities living inside the park. This group had experienced at least three major eviction exercises, but would always return once the exercise was over.

There was no evidence of attempts to mainstream local community participation in the management of Digya, or systematically address their needs and expectations. Under these circumstances, it is likely that the illegal activities within the protected areas will continue, leading to arrests and prosecutions, which in turn will fuel the antagonism and lack of cooperation from the local people. Instead of Wildlife Officials seeing local

Children in fringe communities of Digya National Park look into the future with optimism in spite of poor living conditions
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communities as allies in the management of the park, what pertains is distrust on both sides.

An important way forward to resolve some of these issues would be to link community development to wildlife management. This includes the promotion of self-sustaining economies in these remote areas including alternative livelihoods such as bee keeping, local handicraft production and small livestock raising. Enhancing income generating opportunities and quality of life for human populations in proximity to protected areas will contribute to the attainment of the objectives of wildlife conservation in the park.

Dialogue with local communities affected by nature conservation is also vital in curtailing conflicts. Alongside provision of alternative livelihood enhancement opportunities, Wildlife Officials need to have the capacity to embark on regular outreach programmes to dialogue with community members and to listen to their concerns. Regular dialogue will help to promote mutual trust, reduce acrimony and curtail conflict situations. This will require the assignment of Community Liaison Officers to each wildlife protected area.

Payment of compensation to groups and individuals who were seriously disadvantaged as a result of protected area establishment would be vital also in reducing conflicts. It would be necessary first to develop pricing and compensation mechanisms that take into account the value of ecosystem services as well as the lost livelihood services and separates the issues of indigenes and migrants. The compensation system would not be limited only to lands expropriated for protected area establishment and property lost, but also to consistent damages caused by wildlife to farm crops.

Opportunity costs for conservation should not be the burden of only the communities living close to the protected area, but should be a national as well as an international concern. Programmes aimed at supporting those whose livelihoods were directly affected by protected area establishment, therefore, have to be the collective responsibility of local, regional and national administrative institutions backed by international financial mechanisms. The concept of empowering communities around protected areas (Community Resource Management Area –CREMA) recently adopted by the Wildlife Division of the Ghana Forestry Commission, has a lot of potential to minimize conflicts with surrounding communities and to encourage collaboration. The CREMA concept seeks to build the capacity of, and provide incentives for, local communities to sustainably manage and conserve natural resources.

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NOTES

[1] All the species names are based on Kingdon's nomenclature (Kingdon, 1997)

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RESUMEN

El Parque Nacional Digya de Ghana ha sido escenario de conflictos entre las comunidades locales y los administradores de la fauna silvestre desde su creación en 1971. Los conflictos que van desde la detención de los pobladores locales por las autoridades de vida silvestre por ingresar al parque para la recolección de productos forestales no maderables, hasta confrontaciones serias con cazadores furtivos, arrestos y desalojos que a veces resultan en muertes. Sin embargo, la información documentada sobre estos conflictos es escasa. Este estudio examina las causas fundamentales de los conflictos en el Parque Nacional Digya, con vistas a recomendar intervenciones normativas que ayuden a reducir los conflictos. La información para el estudio se obtuvo a través de discusiones con grupos focales, entrevistas con los interesados directos, observaciones sobre el terreno, además de un ejercicio de evaluación de la eficacia de la gestión que implicó la administración de un cuestionario pre diseñado para administradores de áreas protegidas. Los resultados revelaron que una de las causas fundamentales de los conflictos en el parque era la situación de pobreza que agobiaba a las comunidades vecinas. Esto, sumado a las cuestiones pendientes en lo referente al pago de indemnizaciones, las incursiones de animales en las tierras agrícolas y la exclusión de las comunidades locales del proceso de gestión, han impulsado actividades ilegales, principalmente la caza y la invasión, que han resultado en frecuentes situaciones de conflicto. La detención de los culpables y los desalojos forzosos por parte de las autoridades de vida silvestre no había ayudado a reducir las actividades ilegales y los conflictos. El estudio recomienda vincular la gestión de la vida silvestre al desarrollo comunitario para garantizar que se mantengan las economías locales y los medios de subsistencia de las comunidades marginales al tiempo que se procura alcanzar los objetivos de conservación de la vida silvestre para reducir los conflictos.

RÉSUMÉ

Le Parc national de Digya au Ghana est le théâtre de conflits entre communautés locales et gestionnaires de la vie sauvage depuis sa création en 1971. Les conflits vont de l'appréhension des responsables de la vie sauvage envers les habitants locaux, qu'ils soupçonnent de vouloir entrer dans le parc pour récolter des produits forestiers non ligneux, à de graves confrontations avec les braconniers, avec des arrestations et des expulsions se soldant parfois par la mort d'hommes. Néanmoins, une information sérieuse sur ces conflits fait défaut. Cette étude examine les origines du conflit dans le Parc national de Digya, dans l'optique de recommander des interventions politiques qui puissent y mettre un terme. Les données utilisées pour l'étude sont tirées de débats menés avec des groupes ciblés, d'entretiens directs avec les parties prenantes, d'observations sur le terrain ainsi que d'un exercice d'évaluation d'efficacité de la part des gestionnaires, où les gestionnaires et administrateurs d'aires protégées devaient répondre à un questionnaire pré-rempli. Les résultats ont ainsi révélé que la pauvreté des communautés voisines est une des sources principales de conflits dans le parc. Cette pauvreté, associée à des questions non résolues de paiements compensatoires, de raids des animaux sur les fermes et d'exclusion des communautés locales dans le processus de gestion, a nourri les activités illégales, notamment la chasse et l'empiétement de propriétés, aboutissant à plusieurs situations conflictuelles. Cependant, les arrestations des coupables et les expulsions forcées par les gardes de la vie sauvage n'ont pas permis de réduire les activités illégales et les conflits. L'étude recommande donc d'établir un lien entre la gestion de la vie sauvage et le développement communautaire afin de préserver les économies locales et les moyens de subsistance des communautés avoisinantes, tout en cherchant à atteindre les objectifs de la conservation de la vie sauvage, ce qui minimiserait les conflits.