

# Report of the Community Conservation Resilience Initiative in Ghana



**Country report on Ghana  
Community Conservation Resilience Initiative (CCRI)  
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**Author:** Ken Kinney

**Assessment facilitation:** The Development Institute

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# GHANA COMMUNITY CONSERVATION RESILIENCE ASSESSMENT REPORT

By Ken Kinney, Ghana.



Accra, Ghana, [kkinney@thedevin.org](mailto:kkinney@thedevin.org) +233 20 819 2239

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## **1.0 Introduction**

Sustainable development, encapsulates the need for humankind to co-exist with nature; balancing conservation, livelihood and economic development as this is the guarantee for quality of human life without adversely affecting other components of the environment. This was the vision of governments during the Earth Summit, in 1992 in Rio[1]. The current environmental crisis typified by increasing deforestation, land degradation, loss of biodiversity, drying and pollution of water bodies, climate change effects of high temperatures, draught and flood, sea level rise and coastal erosion are but the symptoms of poor relationship between humankind and other components of the environment.

Though there are attempts to prescribe solutions to reducing green house gases in the earth's atmosphere and thus reducing temperature for example REDD+ projects [2], the temperature of the earth continues to increase beyond the pre-industrial era[3]. Within this context some communities in the south who's livelihood depend mainly on nature are expected to be become more vulnerable to the changing climate and development paradigm. The idea of the Community Conservation Resilience Initiative (CCRI) is therefore to capture and learn about factors that make some communities resilient and how they could continue to be resilient in spite of the global and national policies that say one thing and do another.

This report captures the results of the assessment in three communities in Ghana and covers what CCRI stands for, how the assessment was carried out, the findings including the policy, legal and institutions that supports or otherwise the traditional conservation practices that enables community resilience. The report also captures capacity building and actions there after by communities to resolve challenges and treats; and finally recommendations towards making CCRA communities resilient.

## **2.0 The Community Conservation Initiative**

The Community Conservation Resilience Initiative (CCRI) began as an informal alliance of national and international Indigenous Peoples' organizations, non-governmental organizations and social movements with the goal to *"sustain and strengthen the resilience of community conservation practices, including Indigenous Peoples' and community conserved territories and areas"* across the globe that make communities resilient to internal and external threats that would otherwise will affect communities' survival and quality of life[4]. Community resilience is therefore a measure of the sustained ability of a community to utilize available resources such as local instruments: policies, institutions and practices to respond to, withstand, and recover from adverse situations[5].

The shared believes of the CCRI alliance include: community stewardship, governance and rights-based approaches to biodiversity, ecosystem conservation and restoration. The goal of the Initiative is to sustain and strengthen the

resilience of community conservation practices, including Indigenous Peoples' and community conserved territories and areas (ICCAs), in light of existing or potential external and internal threats. The overarching motivation for CCRI is to empower communities in the south toward their own development within their context and rights[6].

The initiative has three main objectives:

- i. to perform a bottom-up assessment the resilience of Indigenous Peoples' and local communities' initiatives and approaches to conservation and restoration and
- ii. to perform a bottom-up assessment the legal, political, socio-economic, financial, technical, and
- iii. to support capacity development that could assist in sustaining and strengthening such initiatives and approaches, and subsequently to secure those forms of support through strategic advocacy efforts[7]

### **3.0 Ghana and Biodiversity**

#### ***3.1 Ghana's economic development profile***

Ghana is a multi-party democratic country where civil rights of the citizens are guaranteed. Located in West Africa it is boarded by Republic of Togo to the East, La Cote d'Ivoire to the West, Burkina Faso to the North and the Atlantic Ocean to the south[8]. It has a population of about 28 million (2016)[9]. Ghana has turned a lower middle level income country and has GDP of \$120.8 billion (2016 est.)[10] with a market-based economy with relatively few policy barriers to trade and investment. Well-endowed with agriculture and natural resources, about 50% of the population depend mainly on small scale production units which accounts for nearly one-quarter of her GDP[11]. The services sector accounts for about half of GDP with gold and cocoa exports, and individual remittances, being the major sources of foreign exchange. The current expansion seen in the Ghanaian economy could be attributed to Ghana's new found oil industry. However, the country's unemployment rate is 5.2% with 24.2% population below poverty line[12].

#### ***3.1 Biodiversity conservation in Ghana***

Ghana has six ecological zones: Sudan Savannah, Guinea Savannah, Coastal Savannah, Forest/Savannah transitional zone, Deciduous Forest zone and the Rain Forest zone.

Total annual rainfall ranges from 780 mm in the dry eastern coastal belt to 2,200 mm in the wet southwest corner of the country[13].

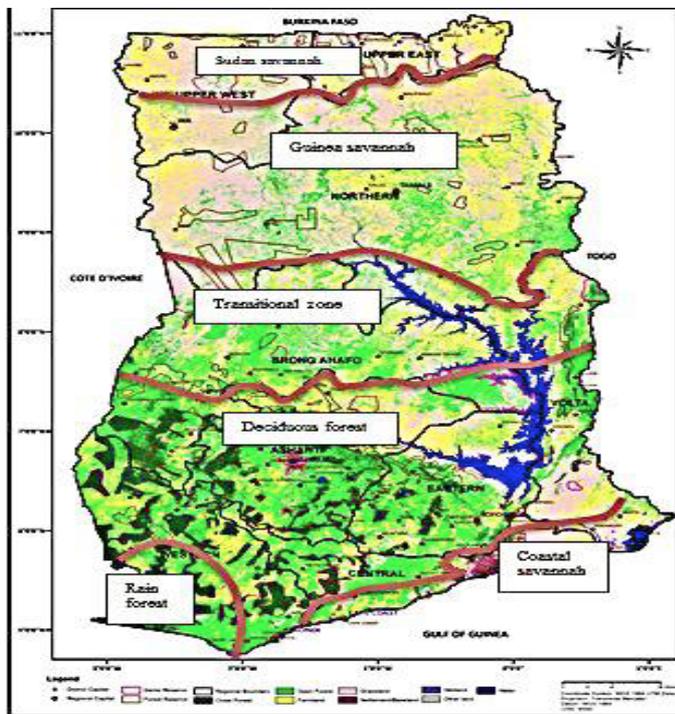


Fig. 1 : Ecological zones of Ghana and protected areas of high biodiversity.  
 Source: Forest Development Master Plan (2016-2036)

These diversity in ecological zones has resulted in relatively high degree of diversity in plant and animal species. The following are the categorization of nature reservations in Ghana: national parks-seven, wildlife sunctuary-4, resource reserves-6, strict nature reserve-1 and wetlands/Ramsar sites-6. These cover a total area of 14, 173 Km<sup>2</sup> [14]. It is estimated that Ghana is losing an equivalent of 10% her GDP annually through unsustainable management of the country's forest, land resources, wildlife, fisheries and through health costs related to water supply and sanitation, and indoor and outdoor air pollution[15]. The rate of deforestation is estimated to be 2% per annum [16].

#### 4.0 The Community Conservation Resilience Initiative in Ghana

The Ghana Community Conservation Resilience Assessment (CCRA) was undertaken by the national NGO; The Development Institute (The DI) that is engaged in supporting community sustainable development initiatives:- biodiversity conservation, livelihoods and economic development in rural Ghana and active in the Greater Accra, Western, Northern and Volta Regions of Ghana, using the community resource management areas (CREMAs) approach.

The DI is also noted in the water resources sector for promoting and advocating for the establishment of buffer zones along water bodies in Ghana. The Development Institute supports her work with policy analysis, dialogue and advocacy to duty bearers while educating communities on relevant government policies they could take advantage of. Three communities participated in the CCRA in Ghana; Kpoeta, Saviefe Gborgame and Avuto. These are located in two different unique ecosystems in Ghana. While Kpoeta and Saviefe Gborgame are located about 85kms apart at different elevations along the Weto Range of the Upper Guinean Forest of West Africa [17], Avuto on the other hand is located

around the Avu Lagoon within the Keta Lagoon Complex Ramsar Site (KLCRS), south east coastal savannah zone; an important site for migratory birds and the only site for threatened *Sitatunga* (amphibious mammal) found in Ghana [18].

## **5.0 Community Conservation in Ghana**

In Ghana the traditional methods of nature conservation are mainly the sacred groves/ sacred sites which are in the form of shrines, forest, rivers/streams or mountain areas. Currently this form of community conservation has reduced appeal due to modernity. However, those that stood the test of time and not destroyed have become a repository of the remains of critical high biodiversity value in some ecosystems. Replacing and also complementing and integrating the sacred groves for community based nature conservation is the CREMA approach. Since the 2000s, the Wildlife Division that developed and piloted initial CREMAs is unable to have a strong political backing in terms of policy until the Forest and Wildlife Policy of 2012. To make it attractive, and encourage communities who are always suspicious of the government intentions, there is the call by conservation NGOs for a legislation that guarantees ownership of CREMA initiatives by communities. In spite of the call for such a law, it remains a draft bill for the past four years.

## **6.0 Community Conservation Resilience Assessment in Ghana.**

As indicated earlier, The Development Institute led the CCRA in Ghana from 2016 to 2017. The process began with the constituting the Advisory Committee made up of natural resources related government agencies. These were; Forestry, Wildlife, Water Resources, Agriculture, Tourism and Local Government and Gender expert to provide technical direction and networking needed for the successful implementation of the project. The AC were in agreement of participating communities before the start of the assessment. In order to ensure commitment, ownership, effective participation of critical stakeholders during the entire process period and beyond, there was a collective preparation and strategic visioning exercise involving the Project Advisory Committee and selected leaders from the participating communities. This took place in Accra at the offices of Water Resources Commission. During this meeting coordination and facilitation mechanisms were agreed upon and plans for the implementation approved with support from community representatives especially about availability the communities to actively participate in the assessment.

The first engagement with the communities was to conduct the Free Prior and Informed Consent (FPIC). This was a major rights principle adherence setting the CCRI apart in engaging communities, which involved information sharing about the CCRI process, objectives and the opportunity it offers the communities on their choice of development path; self reliance or dependence on political elites who could not provide them with their critical needs. During the FPIC, it was also made known to the communities that there was not going to be any financial resources for them directly but they will receive capacity building that empowers

them for their own development path. Again communities were also informed they can only be part of the assessment, if they expressed interest by getting back to The DI team after the FPIC activity with the community. This they were expected to do in any form; a telephone call, a visit to the office or through a third party and indicate their availability for the first meetings. The CCRI was communicated beyond the selected communities by the means of the local radio stations and as well as by posters.

With the help of community leaders assessment teams were selected and taken through the CCRI Methodology and the assessment tools/participatory methods: Participatory Learning and Actions (PLA) which includes administration of questionnaire, focus group discussion process, transect walk, mapping and in addition to setting of a baseline. The groups were then supported to carry out participatory strategic planning/visioning workshops and assessment using the tools they were trained in; on the resilience of their conservation initiatives such as the CREMAs and sacred sites including the effectiveness of traditional practices in conservation.

During the assessments, The DI team including some of the Advisory Committee members supported in creating a very participatory interactive sessions where mutual learning and skills sharing were encouraged. Communities were encouraged and supported to map their community territories and resources, their conservation practices, taboos and also forgotten sacred sites. There was an excellent interaction between youth, elderly, women and men during the various activities. Some of the youth were surprised at the origin of some cultural practices; how animals became a totem and places a sacred sits. Another important aspect of the assessment was the strategic planning and advocacy skills training to enable them plan activities and to engage duty bearers for policies and laws to ensure resilience and sustainable development.

Another important water shed of the CCRA in Ghana was the National validation, learning and advocacy workshop. Besides the various capacity building events in the participating communities the national workshop did not only served as an added capacity development but also for the CCRA communities but others communities and actors. The workshop participants were community representatives, CSOs, governmental, traditional leaders and political leaders. It was also graced by The Executive Director and the Africa Coordinator of Global Forest Coalition. The workshop covered the GFC and the CCRI, gender and nature conservation, institution, policy and legal issues, challenges to CCRI in Ghana and sharing of community visions and action plans after the CCRA.



Fig. 2: The Ghana National CCRI workshop. Ken Kinney-The DI

The practical results of CCRA assessment was ensuring strategic planning processes, help identify priorities and key issues, timelines, and clear recommendations to assist communities to gain recognition of their natural resource rights as owners, managers users and the support needed for community conservation and restoration initiatives.

### **6.1 Socio-cultural of the CCRA communities**

The participating communities share the similar demography of more youth and women than men and also social institution viz a hierarchical chieftaincy; the chief and council elders and the women queen mother and elders but with differential roles based on gender. These communities are part of the larger Ewe ethnic group, of Ghana, Togo, Benin and South West Nigeria and have their conception of the cosmos made up of a Supreme Being: Mawuga Sogbo-Lisa (Male-Female God) who created everything, animate and inanimate and also smaller gods who support in the taking care of the universe [19]. Though with colonialism and attended Christianity which is now the dominant religious practice, people still ascribe and believe in this traditional belief and chieftaincy institutions which cannot be devoid of traditional religious practices. One critical traditional belief is that of reincarnation; that a soul (Se) does not die but will come back as a different person to complete a specific mission.

In additional to the above the three communities have different significant cultural events which were taken up on the differences in their migration routes from Ile Ife (Nigeria) Notsie (Togo) to present day Ghana. However, they perform similar burial ceremonies and reverence of nature through taboo, and totems[20]. The specific issues of the respective communities are below:

## 9.2 Avuto

Avuto means “on the banks of Avu lagoon” is one of the Avu Lagoon CREMA communities along the fresh water lagoon in the Keta Lagoon Complex Ramsar Site(KLCRS). It is an important site for migratory birds and the only site for threatened *Sitatunga* (amphibian mammal) found in Ghana as stated earlier. This community was engaged through a women leader who was participating in another project for empowering women and environmental justice groups in the KLCRS organized by The Development Institute. A letter was sent through her to community leaders to communicate CCRA project to them and to select someone to represent the community in the vision workshop indicated earlier in Accra. Avuto is a traditional Ewe fishing community that fishes mainly in the Avu Lagoon. However due to climate change with less precipitation and inflow from Tordzie River up stream, the Lagoon is shrinking in size due to drying. Fishing is no more profitable due to over exploitation of the fisheries resources; through violation of traditional conservation norms such as inappropriate fishing methods, observation of taboo days for fishing and non observance of off seasons. Sugarcane is the most suitable agriculture crop and widely grown here and to some extent some vegetables due to the nature of soil found here which is Vertisols/heavy black soils that is not easily workable. The nature of the soil poses a serious challenge to crop production. The sugarcane grown by the community however, is used for the production of local gin which has the potential to be transformed into Ethanol for domestic energy or brown sugar. Avuto, has also identified the use of monofilament nets for fishing as an internal threat to sustainable fishing and the youth unemployment. The Avuto community is engaged in restoration activities of the habitat of the *Sitatunga* through the support of Calgary Zoo of Canada and also introduced to ecotourism to encourage protection of the animal[21]. However, the community is worried about the plans for oil and gas exploration in the Keta Basin [22] which could have a negative impact on their environment especially gas flaring on both flora, fauna and children.



Fig 3: CCRA meeting with youths in Avuto- Dzifa Kumaga- Communication officer, The DI

### 9.3 Kpoeta

Kpoeta is located about 840Km above sea level along the Weto range, a mountain forest ecosystem part of the Ghana-Togo Mountain Range rich in biodiversity and found in the Northern part of Ho Wby est district. Kpoeta is located about 840Km above sea level along the Weto range, a mountain forest ecosystem part of the Ghana-Togo Mountain Range rich in biodiversity and found in the Northern part of Ho West district.



Fig 4: CCRA meeting in Kpoeta- Daniel Akoto, The DI project Officer

It shares immediate boundaries with Leklebi, Logba and Avatime to the North which are in Afadzato south district, Worme and Klor to the South in Ho West District, Hanyigbo, Todzi, Anidi and Hatormegbe to the East of Ho west district and Kpedze, Anoe and Holuta to the West also in the Ho West District. The first appointment with the community was through a telephone call to their political representative at Ho West District Assembly to set up meeting with leaders of Kpoeta. The first meeting with the chief and opinion leaders, followed by separate meetings with men, women, youth groups and then, entire community. The main economic activity include food crop farming such as banana, plantain, cassava and maize. Kpoeta is located about 840m above sea level along the Weto range, a mountain forest ecosystem part of the Ghana-Togo Mountain Range rich in biodiversity and found in the Northern part of Ho West district. Cash crops grown are oil palm, cocoa and coffee in addition to collection of no-timber forest products although some community members have heed to the call to cultivate some tree spices such as *Xylopiya eathiopica* (Ethiopia peper) and *Monodora meristica* (Africa nutmeg). Temporal barn on the collection of *Tomatococus* (ergot) to allow regeneration and setting up rules on collection to avoid over exploitation and benefit sharing.

### 6.4 Saviefe-Gbogame

Saviefe-Gbogame is also located along the Weto range, but at the foot of the mountain and also found in the northern part of Ho West DA. It shares boundaries

with Deme to the North, Anfoeta to the South, Matse to the East and the Weto Mountain to the West, all in the Ho West DA. It is instructive to note that while Saviefe Gborgame is located the foot at the of Weto mountain Range Saviefe Gborgame it shares both the mountain forest and the savanna vegetation. Consequently, both forest and savanna crops are grown in Saveiefe Gborgame and therefore produces cocoa, coffee, oil palm and less non timer forest products but noted for vegetables that are produced in the savanna areas.



*Fig 5: Conducting FPIC in Saviefe Gborgame-George Ampah, The DI Project Assitant*

## **10 Legal , Institutional and Policy Framework**

The legal, policy and institutional review involved a team of related nature resources management senior civil servants of forestry, wildlife, water, agriculture, tourism, local government and gender/natural resource lawyer who are also the members of the advisory committee. The objectives of the CCRI was explained to them in a workshop where they selected a team leader. Three teams were set up according to sections of the review; legal, institutions and policies and also agreed on the relevant documents to be reviewed. After the end of teams reviewed work the leader compiled and return it to them for comments. The final report as presented here is a synthesis report. Apart from the review being a brief of legal, policy and institutional framework for natural resources management in Ghana is also a snap short of how natural resources management systems have evolved during the various phases of attaining a nationhood as Ghana. These phases are; pre-colonial, colonial and more importantly the current struggles for inclusivity and appropriation of rights to natural resources in modern Ghana.

The Ghanaian pre-colonial ethnic states like most African countries considered their existence intricately interwoven with nature where conservation of nature was critical to their survival. They achieve much conservation and sustainable management through laws, practices and managing the ecosystem in three main ways; by protecting specific ecosystems; particular plant/animal species; and by regulating the exploitation of plant and animal resources [23]. These have been

possible through the traditional institutions of chieftaincy and belief systems. The one most important traditional conservation model common to all communities in Ghana is Sacred groves/ Sacred sites. The Sacred grove is defined by International Union for Conservation of Nature (IUCN) as “specific virgin forest areas said to be imbued with spiritual powers beyond those of humans, a place for ceremony and a sense of community” [24]. Consistent with the traditional conservation practices; Sacred groves could be a burial grounds or cemeteries, repositories of important traditional plant medicines and animal species and emblems or totems and taboos of particular cultures for example monkeys, crocodile and weaver bird[25]. Again a stay in sacred groves was also regulated depending on the weather, time of entry, size and richness of the grove [26]. The most important rationale therefore is that sacred groves are perceived as sacred and restricted sites which should not be subjected to any form of disturbance for long then came the colonial era[27].

For most ethnic states of Ghana the colonial era progressively brought them under one dominant foreign rule with mixed consequences especially that of erosion of traditional conservation practices due to it been largely associated with Christianity. Most community conservation areas progressively lost their importance, value and status. According to Agyare, 2017 [28] this was indirectly caused by the colonizers through their influence such as science and technology, monetization of natural resources and export trade in timber. During the colonial periods, the first attempt legally by non traditional institution at nature reservation started with the Native Jurisdiction Ordinance 1883 which empowers traditional councils to make a by-law to protect water courses and conserve forest[29].

This was kicked against by timber merchants who were mostly colonial companies [30]. Then in 1906 the Colonial government made a law to control feeling of commercial timber tree species and establish the Forestry Department for its implementation in 1908 [31] and a Conservator was appointed in 1909 [32]. Again the first forest Bill drafted for establishment of forest reserves was in 1911 but was vehemently opposed by the local people and thus prevented to become a law[33]. In spite of opposition the colonial government managed to pass the Bill into a law in 1927; popularly referred to as Cap 157 leading to the achievement of colonial reservation of 15, 500 km<sup>2</sup> by 1937 which enclosed many sacred groves[34] and designated one fourth as “protective” reserves and three fourth as “production” reserves which is broadly and informally managed so called off reserves without much restrictions on exploitation.

Although reserves for the preservation of game animals were also made in 1909, followed by Wild Animals Preservation (Amendment) of 1952, the Department for Game and Wildlife was established only in 1965 after Ghana become an Independent nation [35]. It was then till only in 1948 that the first forest policy was promulgated with much emphasis on sustained supply of timber, alienation and to the exclusion of local people.

Even after independence and with the gain of republican status; the Ghanaian

political elites continued the exclusionist policies in natural resources governance of the colonialist and had even deepened its application. For example while the Forests Act, 1927 (CAP 157) under the colonial government, forests under reservation can be managed by the land owner as well as the government for the benefit of the owner the 1962 Concessions Act vested the reserved forests in the President in trust for and on behalf of the people. Most of government actions and inactions during the first thirty-five years after independence were very much geared toward exploitation of natural resources especially the forest resources which was readily available in abundance with less investment; harvesting to support government budgets. This went on without counting the environmental cost and the real market value for the wood which thus exported. It was also during this period that Ghana had unstable government and was under military rule.

The coming into force of the 1992 Constitution is indeed the water shed for citizens' rights appropriation in Ghana including rights to natural resources[36]. This was influenced largely by the increasing awareness of the knowledge of the consequences of man's unbridle exploitation of the environmental through the agenda of environmental movements and calls to democratize governance processes all over the world. It is reflective to noted that although the 1992 Constitution does not mention forests as a separate natural resource as invested in the President referred to earlier in 1962 Concessions act (Act 124), as it did for mineral resources including oil and gas, it provides for the establishment commissions of natural resources including the Forestry Commission (FC) that is responsible for the regulation, the management of and the utilization of forest resources [37]. It is instructive to note that Ghana also collaborated in and signed the prevailing environmental protocols before the 1992 Constitution. These included; The Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES), 1973 [38]; Convention on the Conservation of Migratory Species and of Wild Animal 1979[39].

However, using the 1992 Constitution as the base where the rights and access to natural resources by citizens, a lot happened both in collaborating with international protocols and development of national policy frameworks. Those for complying with international commitments include; UN Convention on Biological Diversity (CBD), 1994[40]; which supports the conservation of biological diversity, sustainable use of its components and the fair and equitable sharing of benefits arising from the utilization of genetic resources. Ghana is also signatory to the UN Framework Convention on Climate Change (UNFCCC) 1995 [41]and UN Convention to Combat Desertification (UNCCD), 1996[42] and also Strategic Action Programmes (SAPs) for shared international water-bodies; 2006[43].

On the domestic front the following natural resources related policies were also formulated: A Convention on Biological Diversity; National Biodiversity Strategy and Action Plan (NBSAP was developed by the state in 1994 with and revised in 2016[44], National Climate Change Policy 2012 [45]and National Environment Policy[46]. All these support the need for biodiversity conservation.

The rest are Land Policy of 1999 amongst all, dealing with tenure issues to ensure land use planning thus zoning areas of high biodiversity for protection[47]. But it was only until 2016 that the Land Use and Spatial Planning Act, (ACT 925) was established to replace the erstwhile Town and Country Planning Department which had existed since 1945 which did not speak to issues of land use[48] specifically by putting land aside for agriculture, conservation or housing. With the new Act 925 the resources for implementation is pushed to the District Assemblies who have little technical capacity and resources for implementation. Another very important policy is the Water Resources Policy, 2007 [49] and the Buffer Zone Policy, 2014 [50] ensuring protection, sustainable use and that needed for the environment and biodiversity. Consultation for a legislation to back the implementation of this policy is being drafted with inputs from CSOs. The Agriculture Policy: Food and Agriculture Development ( FASDEPII) [51]for ensuring food security also emphasized the need for environment conservation[52]. Although these policies capture the participation of civil society, the nature of participation especially providing them with resources to enable them play their designated role is yet to be practically define.

Of all the policies mentioned above those of most importance to the review were the; National Biodiversity Strategy, National Climate Change Policy, National Environment Policy, Forest and Wildlife Policy 1994 and reviewed 2012 [53]. It is a relief to note that the 1994 and 2012 Forest and Wildlife Policy provide for managing and enhancing ecological integrity of forests, savanna, wetlands and other ecosystems not only the high forest. It has the strategic directions: “to promote traditional autonomy for the management of sacred forests and community conservation forests for biological and cultural diversity on and off reserve, review relevant legislation to recognize the rights of local people and the customs and belief systems that lead to the management o their sacred sites, ensure that economic and development planning authorities as well as other land use agencies at all levels of governance recognize sacred natural sites as legitimate managers”. This is indeed a ground breaking and change in paradigm to recognize communities initiatives and give them the right and support to manage their resources.

The revised NBSAP 2016 is quite promising, different and based fully on the implementation of all the Aichi Targets. For example “ensuring that the traditional knowledge, innovations and practices of indigenous and local communities and their customary use, are respected” is consistent with (Aichi Target 18) [54].

Though Ghana has impressive policies on natural resources management, there are challenges with implementation. These included poor policy coordination, harmonization, communication to the citizens, civil society participation and resources for implementation. Although the CREMA approach could be a very important means to decentralize natural resources management sustainability to fully work with communities by guaranteeing their rights.

The CREMA approach developed during the collaborative forest management in

the 2000s, is the product of the 1994 Forest and Wildlife Policy and consistent with the principles Community Based Natural Resources Management as a practical demonstration of decentralization of natural resource governance. It is a strategy for community mobilization, participation and also consistent with traditional conservation practices of sacred groves. The CREMA approach did not receive any support as a means for, restoration of the environment and reducing poverty until the Forest and Wildlife Policy of 2012 finds it critical to open up for participation by communities. There have been attempts through several engagement of the NGOs with duty bearers to give it a legal backing through a new Wildlife Bill process which started in 2013 and on going. The Bill as it stands now has the following loop holes identified by consortium NGOs which includes The DI. Without dealing with the gaps identified; the Bill will not benefit local communities.

The gaps and inputs being suggested include:

- issue of processes of devolution of management responsibility of natural resources to CREMAs is not clear. This is the only way to guarantee ownership status to the communities and to guarantee their interest and motivation;
- Inclusion of Free Prior and Informed Consent (FPIC) process as a condition for entry by a third person to CREMAs as FPIC is an internationally recognized legal norm imposing clear affirmative duties and obligations on States;
- Protection of CREMAs from threats of monoculture as a means of plantation development using invasive species like teak tree is a huge threat biodiversity;
- Is not clear if CREMAs are beneficiaries of incentive packages under REDD+ activities to support restorative and Carbon as a by-product.

The need for the recognition of CREMAs as a form of a protected area and treated as such.

- The issues of management and supervision of mineral resources exploitation within the CREMAs is not specified;
- Recognizing that wildlife includes flora and fauna and not only fauna. As it is now all natural timber resources in the CREMA areas presumably belong to the state.
- Clear definition of and the role Civil Society Organizations (CSOs) in the Bill.

## **11 The gender dimension of conservation in Ghana**

Women are more than men in CCRA communities as generally in Ghana. In the participating communities women's knowledge on nature conservation is evident; for example, women have translated their knowledge into production, processing, marketing, and improvement of health of their families as well as energy generation for the home. Gender roles are well defined though both men and women do the same kind of work and participate in communal meetings for decision making. Women however shy away from leadership position once they

mixed with men. Traditional patrimonial inheritance has adversely affected women involvement in decision making and are not of the first choice in inheriting land but can buy and own land once they have the means to purchase one.

There is the need to respond to strategic gender needs that are critical to women's empowerment such as promoting their financial autonomy thus enhancing women's economic power. The CCRA team has documented the successful introduction of Village Loans and Saving Associations (VSLAs) that has been taken up seriously by both Kpoeta and Saviefe Gborgame who have three and two groups respectively of thirty five members per group. These are fully run by women and have men as members. This kind of savings mobilization is necessary to effectively make women groups financially literate which is a major step to build their own business. Avuto is however, yet to start this savings scheme. Another important strategic gender need is ability to participate in the decision making processes at the local government level and up to the national level. All the three communities have no woman representation at the district assembly. This a poor reflection that women participation in decision making generally in Ghana is low. Even at the national level the participation of women at the national parliament is only 8.2% though Ghana has ratify all international conventions and instruments with respect of women rights and non discrimination that are guaranteed under the 1992 constitution as well.

Practical gender needs of the CCRA communities are more about energy, health and livelihoods. However, another area of resilience initiative for these communities is the women's creativity to use of biomass as energy source for domestic usage. These are derived from by-products of either processing oil palm or coconut into oils; oil palm kernel shell and husk and coconut kernel and husk respectively are. These forms of biomass energy have been known and used by women over the year in these communities. There is the need to investigate these forms of energy sources in the quest for alternate sources of energy for rural development.

## **9.0 Threats to community conservation**

The resilience of community conservation practices in Avuto, Kpoeta and Saviefe Gborgame faces several internal and external threats. These include inadequate participation in political decision making processes at the District Assembly due to weak decentralized structures and low capacity to participate in local government processes. Thus affecting decision-making that is attended by elite capture and susceptible to corruption and compromise, exclusion of women and therefore their rights to development. Others include; loss of traditional knowledge and practices that support sustainable living, migration of the youth to the cities and poverty driven environmental degradation such as illegal logging and poaching. Kpoeta and Saviefe Gborgame have noted with fear that the use of

synthetic weedicides is responsible for the loss of biodiversity; useful plants and animals. For example, farmers in both Kpoeta and Saviefe Gborgame communities observed that cover crops such as *Mucuna* and *Crotolaria*; legume species responsible for fixing atmospheric nitrogen into the soil thus improving soil fertility naturally do not emerge again on their farms any more after use of weedicides and are therefore becoming less common in their environment. This is also the case for the population of pollinators such as butterflies and bees with the claim by communities that the volumes of wild honey they used to harvest has decreased over the years . They have observed that farms and areas that they have used weedicides or close of persistent use of agrochemicals.

External threats frustrates communities tenure rights such as land and tree tenures. The external threats include oil exploration activities in case of Avuto in the Keta Basin and prospects of industrial agriculture in the Weto area where Kpoeta and Saviefe Gborgame are located. Currently there is a search for 50,000 ha by the District Assembly for agro-industrial company from Israel to engage in cassava production and the presence of a Swiss Oil company doing exploration for oil and gas in the Keta Basin. Specific internal and external challenges identified by communities during the various engagements are as follows:-

#### **a) Avuto**

##### **Internal threats**

- i. Poor agriculture practices such as farming close to water ways and use of pesticides
- ii. Household energy demands, firewood and timber, construction leading to deforestation;
- iii. Annual bush burning which affects indigenous flora and fauna;
- iv. Poor leadership especially community representatives at the district assembly;
- v. Use of unauthorized fishing methods leading to over exploitation of fishing resources;
- vii. Pouching of wildlife especially endangered *Sitatunga*.

##### **External threats**

- i. Effect of potential gas flaring on biodiversity, people and pollution of the environment;
- ii. Investors buying lands at public space such as water fronts and thus preventing community access for recreation and fishing;
- iii. Speculative land buying affecting livelihood and housing of the poor;
- iv. Government officials and agencies protecting investors against local people;
- vii. Industrial agriculture of rice production destroying the wetlands and biodiversity and
- viii. Damming of Tordzie River for commercial agriculture up stream affecting the life of Avu lagoon.

### **Specific recommendations to address the threats**

- i. Mobilization and sensitization of the community on land rights and paralegal training on how to seek redress in the law courts;
- ii. Leadership and organization development training for leaders of community institutions
- iii. Building capacities of community institutions in Environmental Impact Assessment (EIA) so they can interrogate issues arising for EIA hearing.
- iv. Develop advocacy skills of CSOs operating in the area to actively engage duty bearers on sustainable development of the area.
- v. Invest in and the develop the eco-tourism potentials of the community while adhering to the ban on unsustainable fishing practices and also effective marketing with linkages to the entire Keta Lagoon Complex Ramsar site.

### **b) Kpoeta**

#### **Internal threats**

- i. Poor agriculture practices such as application of agro-chemicals that is harmful to the environment (flora and fauna) and the health of farmers;
- ii. Increasing demands for charcoal, firewood and timber for construction,
- iii. Illegal logging leading to forest degradation and fragmentation of habitats;
- iv. Encroachment on forest through expansion of agriculture instead of intensification;
- v. Cultivation in water catchment areas;
- vi. Migration of the youth to cities for unavailable jobs;

#### **External threats**

- i. Commercial agriculture that will increase degradation of the mountain ecosystem;
- ii. Educated and political elites buying/grabbing mountain areas for commercial agriculture;
- iii. Erosion of cultural heritage by mass media and social media;
- iv. Poor accessibility thus often forgotten by decision makers.

### **Specific recommendations to address the threats**

- i. Introduction of conservation agriculture practices to replace environmental harmful practices;
- ii. Promote commodity certification and also the landscape and organize and support farmers for capacity development in this direction.
- iii. Support NGOs like The Development Institute to continue work in the community to increase capacity building for the community.
- iv. Develop capacity of community institutions on governance and related skills to effectively engage duty bearers.

### **c) Saviefe Gborgame**

#### **Internal threats**

- i. Poor agriculture practices such as use of agrochemicals;

- ii. Farming close to rivers and streams and sources;
- ii. Demands for household energy for cooking such as charcoal, firewood;
- iii. Demands for home construction materials such as timber, sand and thatch;
- iv. Unplanned development take up community open spaces and green areas;
- v. Disrespect towards traditional norms due to poor understanding of their values.

### **External threats**

- i. Industrial agriculture using harmful agrochemicals.
- ii. Citing of stone quarrying producing noise pollution affecting bird habitats;
- iii. Erosion of cultural heritage by foreign influence through mass media;
- iv. Expansion of cocoa and coffee farms into conserved territories;

### **Specific recommendations to address the threats**

- i. Mobilizing and developing community skills to demand safe and secured environment;
- ii. The need to research into alternative agro- processing by-products as sources of energy;  
Introduce environmentally friendly production technologies and provide their access to farmers.
- iii. Train and equip community institutions to demand from district Assembly the implementation of Land use and Spatial Planning in the community.
- iv.** Institute regular awards schemes on nature conservation and traditional conservation practices among basic schools in the District to increase understanding, value and respect for traditional conservation practices.

## **10.0 Challenges**

Like many rural communities in Ghana, the CCRI participation communities have the following challenges:

**a). Land title registration:** This is very prohibitive and as a result communities and individual land owners are not able to demarcate and register their lands. Most rural land owners are not- in all the CCRI sites, have only traditional titles. This has implications for ownership when there is no official registration of title.

**b) Security of land tenure:** Most tenant farmers in the CCRI sites and similarly, do not have secure titles to the land they occupy because the agreement with the land owner is only oral and by drinks, not officially documented and when the original landowner passes on, the new owner (by inheritance) most of the time changes the rule and the user rights of the tenant farmer is compromised. This is a disincentive for investing in sustainable practices such as agroforestry by most migrant farmers.

**c) Appropriate Agricultural extension services:** The CCRI communities needs specific agricultural technologies for example conservation agriculture or agroforestry or organic farming which are environmentally friendly and reduce loss of biodiversity but not the conventional agriculture that leads to disruption of the environment and lost of biodiversity.

**d) Targeted policy:** For sensitive ecosystems such as CCRI sites; need a more targeted policies for natural resource management and livelihood. For example the general agriculture policy will not satisfy the communities located in the

wetlands like Avuto Lagoon or the Kpoeta and Saviefe Gborgame who are located on the highlands. The highlands of Weto where the later two communities are located would need a specific policy on tree crops and to benefit from government subsidies as others in the low lands who grow arable crops and similarly for Avuto community.

**e) In adequate knowledge of governance issues:** Before the CCRA, the participating communities were oblivious of their rights to participate in governance and policies that support their rights. It was also clear that citizens education is not penetrating these communities. Consequently, participating in governance in the communities is poor. Therefore **it** was also clear that communities do not know about laws that support their rights not even the understanding of how the local government administration works apart from the fact that they need to cast a vote for someone to represent them.

**f) Migration of the youth to cities because of jobs:** Another critical challenge in the CCRI communities is the fact that youth are no more interested in the kind of farming or fishing their parents are into and seeking a better future by going to the cities for non available jobs. Apart from disrupting the family, it also has implication for carrying on with traditions of nature conservation. These communities fear that they will wake up one day only to realize that their cultural practices are eroded and lost forever.

### ***10.1 Recommendations to address challenges:***

i. Support community leaders to apply to the district assembly for the sitting a customary land secretariat (CLS) as provided for in the Land Policy of 1999. This will ensure government support for boundary demarcation and titling for the communities. Customary land secretariat will ensure recording of local level land transactions, documentation of user rights affordable to poor land users and guarantee security of tenure, thus encouraging investments in sustainable resources use practices.

ii. Empower community institutions such as land owners, tenant farmers, women and youth groups on governance and rights and how they can appropriate their rights through engaging duty bearers.

iii. Advocating for targeted and appropriate policy for specific ecosystems to ensure technologies for agriculture and poverty reduction are eco friendly and leads to environmental sustainability.

iv. Advocate for investment into the rural communities by an elaborate value chain development that will enable community youths to find suitable jobs along the value chains so they could live a more dignified life while staying in their communities.

v. Sensitization of the youth on their heritage and encourage them to take pride in their culture. This could be through rising awareness on the community culture and usage in schools.

### **11.0 Solution oriented approaches, strategies and policies**

### **i. The need for legislation in support of community conservation**

**initiatives:** Although the introduction of CREMAs approach, spurred the CCRA three communities on to action such as; buffer zone planting (to protect watershed/bodies), there is the need to enact a by-law by the District Assemblies to recognize these designated areas for further support from Forestry Commission. This can be given heavier weight by the Wildlife Bill which is waiting to be passed as a law.

### **ii. Agriculture extension policy on environmentally friendly production technologies:**

In Kpoeta and Saviefe Gborgame, Cocoa Agro-forestry is being introduced using budded cocoa for early maturing and improved agro-biodiversity, the application of cocoa certification standards to minimize pollution of the environment due to pesticides use. This also applies to Avuto community who already produces vegetables and with a appropriate extension services could produce organic vegetables which is in high demand in Ghana and is a better production system for the sensitive ecosystem as the Avu Lagoon. Farmers in these territories need a sustained extension services on environmentally friendly productive techniques which is not yet available to them.

**iii. Innovative rural youth policies:** There is an urgent need for policies that will enable engaging the rural youth creatively in production and in primary processing of agriculture products that also have systems aimed at providing mentoring of young girls through leadership and economic empowerment will reduce teenage pregnancies and procure a better future for young women and status the community.

**iv. Strategies for rural economic empowerment:** Ensuring economic empowerment begins with money formation for investment in economic activities which is difficult for the CCRA communities. Financial sustainability by discipline through village savings and loan associations (VSLAs) are immediate strategies to be employed in these territories to move them from the current level of subsistence to a more productive economic units.

**iv. Coordinating conservation and tourism strategies:** The Avuto community is engaged in restoration activities of the habitat of the *Sitatunga* through the support of Calgary Zoo of Canada and also introduced to ecotourism to encourage protection of the animal while adhering to the ban on unsustainable fishing practices but needs effective marketing and linkage to the entire Keta Lagoon Complex Ramsar site. The same applies to sacred mountain of Saviefe Gborgame and the Tsii water falls area of Kpoeta.

### **v. Diversifying and developing existing community energy sources:**

Another important policy is that of energy production by the use of sugarcane which is already being produced by the Avuto community for the production of local gin; this can be transformed into Ethanol as source of energy for households and thus reducing deforestation due to collection of fuel wood from the forest. By the same vein by products from processing palm oil and coconut oil also have

the potential to transformed into more reliable forms of energy. However, such a policy needs to be guided so it is not taken over by multinational business interest.

## **12.0 Recommendation and conclusion**

### **12.1 Recommendation:**

- Empower communities and CSOs to be able to effectively engage duty bearers in the on going Wildlife Bill development to address the issues of ownership of resources they have actively conserved in their own territories especially timber, tree tenure and the human rights provision of Free, Prior Informed Concern (FPIC). Also that the new law to make clearer the implementing institutions.
- Support CSOs and communities living in sensitive ecosystems to demand the implementation of the spatial and land use planning and the strategic environmental assessment (SEA) to recognized community conserved territories as permanent conservation areas to guarantee the security of these sites for the communities and posterity without alternative use.
- Promote and support communities to develop eco-cultural tourism, so benefits from such ventures will retain the wisdom and practices of communities while generating employment for poverty reduction in communities.
- Build capacity in and institute certification of community conserved territories as areas for sustainable commodities sourcing.
- Develop the capacities of communities to engage in climate resilience agriculture based on their current traditional practices and promote conservation agriculture.

### **12. 2 Conclusion:**

The CCRI is in deed a well thought out initiative. It is an eye opener to some practices of communities that make them resilient to external threats. The CCRA served as a support to understand the actions of the past to alienate communities from their own resources which is indeed at variance to democratic rights of Ghanaians by our political elites though guaranteed by 1992 constitution and in compliance of Ghana to United Nation's protocols on Human Rights. The CCRA has also served as a revival of the traditional conversation, reliance and resilience systems that is rooted in these community practices over centuries of accumulate knowledge of their ancestors. This wealth needs to be rediscovered and could be polished by science to improve the quality of life of the people. For example waste products of oil palm and coconut processing for edible or industrial use are vital and important reliable forms of domestic energy in the CCRA communities. The CREMA approach that is being introduced to communities strengths the traditional conservation practices and therefore an excellent approach to bridge the old a with modernity. This however, needs a legal backing that is consistent with rights of the communities as owners of resources in their territories and

therefore have all the decision making powers; management, access and control. The current Wildlife Bill will therefore be relevant only if the right of the communities are taken into consideration without which the law will be of no effect and useful for the conservation of the community territories. The resilient of communities is also linked to the resources they conserve and use and therefore without supporting and strengthening these practices humanity will be the loser of wealth of knowledge that could be adopted for resilience of the world in crisis.

- [1] United Nations, 1992, Earth Summit, United Nations Conference on Environment and Development ( UNCED), Rio de Janeiro, 3-14 June 1992. Available at [www.un.org/geninfo/bp/enviro.html](http://www.un.org/geninfo/bp/enviro.html) Access July 10, 2017
- [2] Friends of the Earth International, 2014, Nine reasons why REDD is a false solution: New Report from Friends Available at <https://foe.org/2014-10-nine-reasons-why-redd-is-a-false-folution-friends-of/>. Access July, 10, 2017
- [3] Climate Analytics, 2015, Global warming reaches 1°C above preindustrial, warmest in more ... Available at <http://climateanalytics.org/hot-topics/global-warming-reaches-1c-above-preindustrial-warmest-in-more-than-11000-years.html> Accessed July, 10, 2017
- [4] Global Forest Coalition 2014, Community Conservation Resilience Initiative, Methodology I Available at [www.globalforestcoalition.org/wp.../New-Last-CCR-Initiative-methodology\\_May-2014.pdf](http://www.globalforestcoalition.org/wp.../New-Last-CCR-Initiative-methodology_May-2014.pdf). Accessed 5<sup>th</sup> November, 2016
- [5] Ibid
- [6] Ibid
- [7] Ibid
- [8] World Bank Group, 2017, Economic Development Profile of Ghana. Available at [https://www.indexmundi.com/ghana/economy\\_profile.html](https://www.indexmundi.com/ghana/economy_profile.html). Access on November, 2016
- [9] Ibid
- [10] Ibid
- [11] Ibid
- [12] Ibid
- [13] Ministry of Lands &Forestry, 2016, Forest Development Master Plan. Available at [https://www.fcghana.org/userfiles/files/MLNR/FDMP%20Final%20\(2\).pdf](https://www.fcghana.org/userfiles/files/MLNR/FDMP%20Final%20(2).pdf). Access on November, 2016
- [14] UICN/PACO (2010). Parks and reserves of Ghana : Management effectiveness: Assessment of Protected areas. Ouagadougou, BF: Available at <https://portals.iucn.org/library/sites/library/files/documents/2010-073.pdf>. Accessed November, 2016
- [15] World Bank Report, 2006, Report No: 36985-GH. Ghana Country Environmental Analysis. Available at [www.Siteresources.worldbank.org/INTRANETENVIRONMENT/3635842../Ghana..CEA.P](http://www.Siteresources.worldbank.org/INTRANETENVIRONMENT/3635842../Ghana..CEA.P)
- [16] Food and Agriculture Organization. 2010. Global Forest Resources Assessment, 2010. Country Report, Ghana. Available at <http://www.fao.org/013/a/53e/a/53e.pdf> Accessed July 15, 2017
- [17] Critical Ecosystem Partnership Fund, 2000. Ecosystem Profile Upper Guinean Forest Ecosystem of the Guinean Forest of West Africa Biodiversity Hotspot . Available at <http://www.cepf.net/Documents/final.guineanforests.upperguineanforest.ep.pdf> Accessed July 10, 2017.
- [18] Jana M. McPherson 1, Joy Sammy 1,2, Donna J. Sheppard 1,2,3,4, John J. Mason 3, Typhenn A. Brichtieri-Colombi 1 and Axel Moehrenschrager 2016, Integrating traditional knowledge when it appears to conflict with conservation: lessons from the discovery and protection of Sitatunga in Ghana Available at <http://dx.doi.org/10.5751/ES-08089-210124> Accessed January, 20 2017
- [19] Dutor Anya, 2016, Ewe History. Available at [www.kganu.net/sitebuildercontent/sitebuilderfiles/ewesandafadivination](http://www.kganu.net/sitebuildercontent/sitebuilderfiles/ewesandafadivination). Accessed January 21 2017
- [20] Ibid
- [21] Angelia Husuke, 5<sup>th</sup> January, 2017, Personal Communication
- [22] Environmental Protection Agency, 2016, Strategic Environmental Assessment (SEA) on Opening up the Voltaian and Keta Basins for Oil and s Exploration and Production.

- [23] Dr. Andrew Agyare, January 20, 2017. Personal communication
- [24] IUCN, 1994, Definition of Sacred sites Available at [https://cmsdata.iucn.org/downloads/pa\\_guidelines\\_016\\_sacred\\_natural\\_sites.pdf](https://cmsdata.iucn.org/downloads/pa_guidelines_016_sacred_natural_sites.pdf). Accessed on December 05, 2016
- [25] Andrew Agyare, January 20, 2017 Personal communication
- [26] Ibid
- [27] Ibid
- [28] Ibid
- [29] Ibid
- [30] Benji Apraku Gyampoh cited in Geothinking 2011: Forest Sector legislation and regulation in Ghana. Available at <https://benjigyampoh.blogspot.com/2011/07/forest-sector-legislations-and.html>. Accessed on January 18, 2017
- [31] Forestry Commission of Ghana, 2012. Forest laws and regulations. Available at [www.fcghana.org/library\\_info.php?doc=43&publication:Forest%20...id=15](http://www.fcghana.org/library_info.php?doc=43&publication:Forest%20...id=15). Accessed December 10, 2017
- [32] Hall, JB and Swaine MD (1981), Distribution and Ecology of Vascular Plants in Tropical Rainforest in Ghana. Available at <https://books.google.com/gh/books?isbn=9400986505>. Accessed on February 2, 2017
- [33] Ibid
- [34] Ibid
- [35] Ibid
- [36] Ibid
- [37] The Constitution of Ghana, 1992. Available at <http://www.politicsresources.net/docs/ghanaconst.pdf> Accessed July 15, 2017
- [38] Client Earth, 2013: Overview of Legal Framework of the Forest and Wildlife Sector. Available at <https://www.clientearth.org/external-resources/ghana/forests-and-wildlife/Overview-and-collection-Forest-and-Wildlife-laws-Ghana.pdf> Accessed on 13 December, 2016
- [39] Ibid
- [40] Ibid
- [41] Ibid
- [42] Ibid
- [43] Ibid
- [44] Ibid
- [45] Ibid
- [46] Ministry of Environment, Science, Technology and Innovation, 2016, National Biodiversity Strategy and Action Plan. Available at <https://www.cbd.int/doc/world/gh/gh-nbsap-v2-en.pdf>. Accessed May 17, 2017.
- [47] Ministry of Environment, Science, Technology and Innovation, 2012, Ghana National Climate Change Policy Available at [www.pef.org.gh/documents/climate-change/national-climate-change-policy.pdf](http://www.pef.org.gh/documents/climate-change/national-climate-change-policy.pdf) Accessed May 17, 2017
- [48] Ministry of Lands and Forestry, 1999, Land Policy, Available at [www.rspo-in-ghana.org/sitescene/custom/.../file/NATIONAL\\_LAND\\_POLICY\\_.pdf](http://www.rspo-in-ghana.org/sitescene/custom/.../file/NATIONAL_LAND_POLICY_.pdf), Accessed June 20, 2017
- [49] Ministry of Lands and Forestry, Land Use and Spatial Planning Act 2016, Available at [prime-statsvc.com/blog/.../LAND-USE-AND-SPATIAL-PLANNING-ACT-2016.pdf](http://prime-statsvc.com/blog/.../LAND-USE-AND-SPATIAL-PLANNING-ACT-2016.pdf) Accessed on July 12, 2017.
- [50] Ministry of Water Resources, Works and Housing, 2007, National Water Resources Policy, Available at [www.gwcl.com.gh/national\\_water\\_policy.pdf](http://www.gwcl.com.gh/national_water_policy.pdf). Accessed on May 20, 2017
- [51] Ministry of Water Resources, Works and Housing, 2011, Riparian Buffer Zone Policy, Available at [www.wrc-gh.org/dmsdocument/47](http://www.wrc-gh.org/dmsdocument/47).

[52] Ministry of Lands and Forestry, 2012. Forest and Wildlife Policy, Available at <http://www.gh.chm-cbd.net/convention/2012-ghana-forest-and-wildlife-policy.pdf>  
Accessed August 20, 2017

[53] Food and Agriculture Development Policy(FASDEP II) 2008 . Available at [https://mofa.gov.gh/site/?page\\_id=598](https://mofa.gov.gh/site/?page_id=598)

[54] United Nations Environment Program, 2011, Aichi Biodiversity Target. Available at <https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>. Accessed March 10, 2017