

DRAFT REPORT:

STRENGTHENING THE ROLE OF UNIVERSITIES IN CONSERVATION

INTRODUCTION

Like the forests of the region, West Africa's institutional landscape for conservation is highly fragmented. Different sectors of the conservation community that could benefit from synergy – academic, non-governmental organizations (NGOs), and government agencies -- often have little ongoing contact with each other. And within any particular sector, contacts with other countries, and at times even within countries, are limited.

Universities are perhaps the most uneven of these sectors in terms of their involvement in conservation. The traditional strengths of universities in research and training have not been uniformly integrated into national and regional conservation initiatives. In the "Upper Guinea" forest region, extending from Guinea to Togo, urgent conservation needs include filling information gaps and increasing the human capacity within countries to implement conservation action. Universities should, in theory, meet these needs, serving as implementers of research, sources of expertise, repositories of knowledge, information, and scientific collections, and educators of future conservationists.

Unfortunately, a range of barriers prevents the full benefits of university involvement in conservation from being realized. With this in mind, the Critical Ecosystem Partnership Fund (CEPF) sponsored a project with Conservation International (CI) to identify factors that limit the role that universities play in conservation in West Africa, to recommend mechanisms or interventions for circumventing or reducing those barriers, and to build support for these approaches. There are two principal outputs:

1. An assessment of needs and opportunities for strengthening academic institutions in the region; and
2. The development of at least 3 conservation-based projects that would serve to demonstrate how strengthening university involvement in conservation can be done.

I. ASSESSMENT

Barriers to University Involvement in Conservation in West Africa

Some of the constraints that limit the conservation contributions of the academic sector in West Africa reflect broad-based, systemic problems that apply to institutions of higher education in general in the region. Other constraints are more germane to the specifics of conservation. While it is possible for the conservation-specific limitations to be addressed, at least in the short and medium terms, they are nonetheless “nested” within the larger institutional issues, which ultimately will need to be addressed if universities are to bring their full potential to bear upon conservation challenges.

It must be noted that for every generality about limitations of university involvement in conservation, there are exceptions. Indeed, while the overall situation may at first glance appear daunting, in many cases the exceptions define an alternative path to achieving greater integration of the academic sector with other players in the conservation field.

Systemic University Constraints

Financial resources for higher education are limited and inadequate, leading to low productivity, limited opportunities, weakened infrastructure, and loss of capacity through demoralization or “brain drain.”

All six West African countries that encompass the Upper Guinea forest ecosystem (Guinea, Sierra Leone, Liberia, Côte d'Ivoire, Ghana, and Togo) are among the 41 “HIPC” countries (Heavily Indebted Poor Countries) identified by the IMF and World Bank; and 5 of the 6 fall into the lowest quartile of the Human Development Index of the UNDP (Liberia is not ranked). With low revenues in national coffers, and competing development needs for health, primary and secondary education, energy, roads, etc., only limited financial resources exist to be allocated to higher education. Annual university budgets are most often determined by national budget line items. Limited financing has led to deferred maintenance, and outdated equipment and laboratories. Salaries in some institutions are not consistently paid, and government commitments to provide free or inexpensive university education to students have created chronic deficits. Increases in fees often results in student strikes, further disrupting educational opportunities. Many African academics received doctoral degrees at universities outside their countries, and returned home with high hopes for contributing to a surge in academic excellence. Unfortunately, the institutions in place were not prepared financially to support these aspirations. Inadequate funding leads to low productivity, weakened infrastructure, limited opportunities, demoralization of faculty, or even brain drain as faculty leave for better opportunities in other sectors or even outside of their home countries.

Lack of a cohesive regional identity prevents cross-border collaboration, limits economies of scale, promotes duplication of effort, and exacerbates donor fragmentation.

The Upper Guinea countries are united by a common ecosystem, but to date this has provided little basis for other common ground. Differences in language, academic degrees, administrative structures, national histories, and currencies complicate collaboration not only at the regional level, but even between adjacent countries. Political instability and civil conflict in some countries have a corrosive effect on outsiders' views of the region overall. Few "umbrella" entities have successfully bridged these divides, leaving the region a mosaic of disconnected countries, economies, institutions, and practices. In a parallel fashion, the donor community is fragmented, with spotty distribution across the region, often biased by language or colonial history, and little impetus to provide regional support. The lack of a strong regional identity promotes inefficiencies, and destines the region to be perceived as a cluster of small and disconnected countries, without unity that merits collaboration or investment.

Information and communications technologies are inadequate to reliably connect academic professionals to the rest of the world.

The strands of the "World Wide Web" remain tenuous in West Africa. While public Internet cafes have proliferated in cities in the region, connections are unpredictable and slow. On campuses, demand for access exceeds supply, and technical limitations of bandwidth, server structure, number of simultaneous users, and connection modes, fail to enable contact between academics and their peers, their disciplines, professional societies, electronic library and journal resources, alternative funding sources, and partner institutions. Few of the academics consulted made use of email addresses using an institutional domain; most used "hotmail" or "Yahoo" email addresses. Most of the universities in the region do not have active or functional web sites. Technical barriers must be identified, then financial barriers overcome in order for the academic professionals to emerge from relative isolation, and be engaged with the rest of the world, gaining access to information about the opportunities they could pursue.

Library resources are in dire need of improvement.

Collections of books and journals generally require improved, computerized cataloguing; acquisitions of publications are limited; journal subscriptions are few and often expensive (though support for free or inexpensive journal access is becoming available); collections (videos, ethnographies) based on local knowledge need to be fortified. Library collections that have relied on donations are likely to be incomplete or outdated; they may not be specific to West Africa or Sub-Saharan Africa. Limitations on the quality of information available limit the quality of education that can be provided.

Sources of research funding are scarce, and the means to access them are limited.

There are few funding sources available to support conservation research, or for that matter research in general, in West Africa. The region lacks institutions that support research on an ongoing basis. Donor agency support for research is often short-term or highly focused, and precludes development of a strong, long-term research program

that includes training of undergraduates and graduate students. Basic support for transportation, field equipment, computer hardware and software, laboratory supplies, student assistantships, and conference attendance – all essential ingredients for successful research projects – is in extremely short supply. Academics who have been trained in the rigors of research are thus unable to direct their intellects and energies to broadening the weak knowledge base of the region; combined with poor communications technologies, they also lack the ability to compete for research funds and draw attention to the possibilities that exist in the Upper Guinea region.

Current Conservation Constraints

Conservation is just emerging as a career path in West Africa, and opportunities for jobs remain limited.

“The better students are in the hard sciences; and conservation is still seen as soft, though it’s changing,” remarked one university professor. By this account, those who enter the field have often not gotten into their fields of choice. If jobs are not available in the field of conservation, students will be reluctant to study it. So far, government employment is the most likely (and lowest paid) sector in conservation. The NGO sector in the region has grown, but remains small. The needs of conservation require many more capable professionals to take up the challenge, but significant growth in job opportunities has not yet materialized.

Expertise in conservation biology, especially for endangered taxa, is limited.

In-region expertise about many taxa is weak. It is especially serious for taxa of high conservation concern, such as large mammals (elephants, primates) that require large ranges or specialized habitats in ever-decreasing forests; and for amphibians, for which alarming declines have been documented elsewhere in the world. There are large gaps in knowledge about many species’ abundance and distributions. This makes it difficult to know how effective protected areas systems are, or where scarce management funds should be allocated. Concerns brought about by the fragmentation of the Upper Guinea forest, such as management of small populations, and estimates of population viability, are generally not being addressed. Without in-region capacity to address these problems, solutions will remain dependent on periodic interventions by expatriates, with limited opportunity to expand the work force and instill knowledge and capacity in nationals of the region.

Lack of sustained funding prevents development of university programs in research and teaching that relate to conservation.

Efforts to integrate departments and course offerings, to revamp curricula, and develop research programs, such as for conservation, require access to funds and materials that are currently unavailable to many of the universities in the Upper Guinea region. Few funds are available for scholarships, to attract high-caliber students to the field of conservation. Conservation projects often include a short-term scope of work for university personnel, but these arrangements offer little to the growth or development of their institutions. Consultancies may supplement the meager salaries academics earn,

but they can have a negative impact on education, drawing faculty away from their primary responsibilities.

Grant opportunities are limited in West Africa.

Research money for establishing biological baselines and distributions of species is extremely limited. There is more money for conservation projects, but these may be implemented without acquiring the fundamental scientific or technical knowledge that is important to inform wise management. Because academics have had few sources for funding research, many do not undertake fieldwork. Consequently their publishing activity is limited, as is their exposure to professional associations and new opportunities. Overcoming limited grant opportunities would significantly expand the knowledge base on taxa, habitats, and priorities for conservation in the region.

Institutional niches have not been clearly defined among NGOs, government agencies, and universities to facilitate collaboration.

Institutional divides persist among the different sectors that should be full collaborators in conservation: NGOs, government agencies, and universities. Mistrust and competition for limited funds often motivate the 3 principal sectors to work individually, rather than as a group. Different areas of expertise and different modes of action become stumbling blocks to cooperation, if participants are unable to see how sectors can enable and facilitate each other's work. NGOs are relatively new organizations, and at times threaten the traditional roles held by public agencies and academia. Unless clear roles are defined in partnerships, and strengths maximized, collaboration – leading to lasting progress in biodiversity conservation -- will be restrained.

There are few active professional associations in the region that focus on conservation.

Counterparts in adjacent or nearby countries often have not met, hindering the development of momentum for regional activities and transboundary collaboration. While many individuals are members of professional associations, there are few regional meetings, and limited funding is available to attend international venues or conduct joint transboundary conservation research. The high degree of threat to biodiversity in the fragmented forests of the Upper Guinea hotspot requires concerted, collaborative efforts if barriers are to be overcome and negative trends reversed.

Opportunities for Strengthening Universities' Roles in Conservation

1. Partner with funding sources and organizations focused on higher education to strengthen university conservation research and training.

Conservation organizations wishing to support the strengthening of universities' roles in conservation would be well advised to keep themselves apprised of higher education initiatives and needs beyond the conservation sphere. The amount of funding available for higher education improvement in West Africa is likely to be significant, and could effectively augment support for biodiversity conservation programs in the region. Curriculum development, infrastructure improvement, faculty exchanges, small grants

programs for research, interdisciplinary integration, and collaborative research are among the needs identified by higher education donors, and shared by conservation academics. Conservation's interdisciplinary nature, integrating basic science with social sciences and policy, casts a wide net across multiple disciplinary divides at universities, and is congruent with funders' priorities for higher education. The long-term success of donor programs that envision universities as viable and vibrant centers of knowledge and inquiry, contributing to measured and informed national and regional development, will be enhanced if the universities' abilities to study, interpret, and teach about natural resources and ecosystems are in place.

Representation in several, though usually not all, of the Upper Guinea countries exists with USAID, the European Community, World Bank, the Global Environmental Facility (GEF), the United Nations Development Program (UNDP), and several European bilateral missions, all of which have been or are supporters of higher education. Bilateral missions in-country are best approached from in-country institutions. However, regional projects may be more effectively supported from central offices.

The Partnership for Higher Education in Africa, a consortium of four private foundations, includes Ghana as a focal country, as does the Carnegie Corporation of New York, one of the consortium members. In three years the Partnership and its 4 foundation members directed \$62 million to higher education funding in Africa, with a primary focus on 6 countries. The Carnegie Corporation will identify in 2003 the institution(s) in Ghana to which it will direct its support. USAID (US Agency for International Development) continues to support higher education in a range of ways, administering programs such as EDDI (Education for Development and Democracy Initiative), in support of partnerships for education at all levels.

2. Promote an Upper Guinea regional identity and set of goals among a core group of academic and conservation institutions.

Conservationists in West African universities have lacked regional cohesion, partially due to internal institutional weaknesses, but also due to few opportunities to act regionally and overcome barriers mentioned earlier. Yet, at the 1999 West Africa Conservation Priority-Setting workshop, coordinated by Conservation International in Elmina, Ghana, and supported by the Global Environmental Facility (GEF) and UNDP, cross-border and regional collaboration emerged as a key priority among researchers and implementers. The need and enthusiasm for a regional focus were evident; the means to operationalize the notion was not identified. The potential is great for identifying a small group of key institutions that would work as a consortium to promote a set of regional goals for conservation research and training. Likely lead academic institutions would be the University of Science and Technology's Institute for Renewable Natural Resources (Kumasi, Ghana), and the Université d'Abobo-Adjamé in Abidjan, Côte d'Ivoire, both of which offer interdisciplinary degrees, have strong institutional commitments to conservation, and encourage their faculties to maintain broad international perspectives in their training and research.

3. Cultivate donors to provide sustained support for conservation research, education, and training in the Upper Guinea region.

Donors and the programs they support are geographically scattered, and no existing regional donor initiatives focused specifically on the Upper Guinea forest countries were found. The GEF offers perhaps the best opportunity for building momentum for conservation for the overall region, as a follow-on to its support for the regional workshop in 1999. The Ford Foundation has a West Africa office in Lagos, which focuses on Nigeria, Ghana, and Francophone countries of the region. Ford Foundation support for higher education initiatives through the Partnership for Strengthening Higher Education in Africa is primarily administered from its New York office; the Association of African Universities coordinates its fellowships program for West Africa. The Council on Foundations develops “Affinity Groups” among its member foundations; a West Africa affinity group could develop widespread understanding of the needs and opportunities of this geographic region.

Initiatives for other regions exist, such as CARPE (USAID’s Central Africa Regional Program for the Environment), the Congo Basin Forest Partnership, and the Southern Africa Development Community (SADC) (supporting water, fisheries, forestry and wildlife projects through its Food, Agriculture, and Natural Resources Directorate). Links with these and similar regional initiatives elsewhere could benefit West African institutions by learning from their experiences, and perhaps accessing their services, given the lack of such regional programs in the Upper Guinea zone. But it also would behoove Upper Guinea countries and supporters to cultivate donors to consider the Upper Guinea group of countries as a region meriting attention; this emerges as an immediate priority that could yield medium-term results. Regional entities such as ECOWAS, the Economic Community of West African States (with functions similar to those of SADC) and the African Development Bank could play a stronger role in supporting regional efforts for the environment and higher education in West Africa. Similarly, organizations such as the Association of African Universities could support a regional working group comprised of those institutions in the Upper Guinea region.

4. Assess and advocate for improved information technology and library resources for the Upper Guinea countries.

Establishing effective connectivity among academic institutions is essential for their productive engagement with peers, disciplines, publications, funding opportunities, and organizations elsewhere. With support from the Carnegie Corporation of New York, and in collaboration with the International Network for the Availability of Scientific Publications (INASP), the Association of African Universities convened member institutions in 2001 to assess options for enhancing library resources at African universities. Working groups were established to follow through with recommendations.

The American Association for the Advancement of Science (AAAS), with support from UNESCO, undertook an “Online Journals Feasibility Study” in 1999 at four universities on the continent (Senegal, Ghana, Zambia, and Uganda). The report highlights the technical barriers that must be resolved in order for African academic institutions to be web-accessible. For instance, even if universities can get access to electronic journals,

the connections, bandwidths, and servers they utilize may render some journals relatively inaccessible if articles are only available in PDF formats: download times of PDF files are significantly longer than times for HTML files. The study points out that the networking infrastructure of many institutions will need investment in improvements in order to facilitate access to materials that are currently available. A similar assessment of the technical barriers faced by the West African universities in the Upper Guinea zone would provide a clear guide to the effort necessary to facilitate reliable electronic networking in the region.

5. Explore options for creating alternative, dedicated revenue streams to strengthen universities and create conservation employment.

Finance mechanisms are needed to provide alternatives to universities' entrenched dependency on inadequate state-provided budgets, and the insufficient size of the conservation work force in the region. Efforts to support alternative university financing structures and mechanisms have been undertaken by the Working Group on Higher Education, a project of ADEA (Association for Development of Education in Africa) managed by the Association of African Universities (AAU). Many of these studies have been university-specific, however, and often focus more on procedural cost-recovery methods (stratified fee structures, greater efficiency) than on external revenue streams. An effort to create diversified funding sources at the national or regional levels would complement the internal reforms that are currently under consideration at institutions.

If mechanisms can be developed to support conservation-focused higher education and work force development, both quality and quantity of conservation outcomes can be improved. Resource-based export industries (commercial agriculture, mining, oil, energy facilities, and forestry) and their industry associations (cocoa, oil, timber) represent potential private sector sources for mitigation funds that could be directed to land protection, research, capacity building, or employment in the conservation sector. Endowments or trust mechanisms to provide sustained revenue for higher education have not been explored for the region, and universities have not been specifically targeted as beneficiaries.

6. Develop regional conservation networks of professionals and institutions, and work with professional associations to sponsor conferences in the region.

Peer group affiliations within countries and across borders can provide fertile opportunities for information exchange, collaborative research, grant opportunities, employment, and professional development among faculty. Professional networks require coordination and management in order for them to be effective. Networks can support a range of needs, such as particular disciplines (i.e. marine scientists), educational pursuits (development of interdisciplinary curricula), or field initiatives (monitoring protocols or protected area studies). Virtual networks are fortified when they also lead to meetings, conferences, or symposia; a periodic regional conservation conference, combining presentations and workshops, would serve to promote coordinated research and harmonized conservation strategies. Web sites, networks, and conferences need to be bilingual in order to maximize their effectiveness and promote the regional identity among the Upper Guinea countries and institutions.

Existing organizations with potential for supporting networks, or regional or sub-regional interest groups, include the Society for Conservation Biology's recently established Africa section, the American Advancement for Science's Africa Program, and the Association for African Universities (for higher education issues in general; no specific natural resource groups have been formed to date). Existing networking mechanisms supporting West Africa include the West Africa Science Association and BIONet (with its sub-regional network for taxonomists, WAfrinet). The universities in the six West African countries would be well served if linked as part of a West African Conservation Network (See Appendix I).

7. Invest in regional hubs that service broad-based conservation training, networking, and education needs for multiple countries.

Economies of scale suggest that investments in strengthening training and education programs should be targeted in ways that do not unduly duplicate each other; reinventing the educational wheel with similar university programs in each country of the region will preclude investment in other important areas, and reinforce isolation among countries. Universities and schools operating as regional hubs for students from throughout the Upper Guinea region could support a consolidated, critical mass of expertise and knowledge, and reinforce a regional perspective that is important for Upper Guinea conservation. For practical reasons, such hubs may need to be divided along language lines. Ideally, they would offer broad-based, interdisciplinary conservation education and training, and boast international faculties. Regional hubs could serve to absorb or support individuals whose academic careers are thwarted by political instability, through rotating faculty exchanges, visiting scholar appointments, and faculty development grants. Distance education opportunities could also be developed to serve the broader region.

Shifting political instability cautions against significant infrastructure investment in institutions located in areas civil conflict. That is not to say that support of any kind should be directed away from academic institutions and individuals weathering conflict; on the contrary, sustained external support for teaching and research, even in small amounts, can effectively maintain continuity when normal flows of funds are constricted or suspended.

Ghana has been an anchor of relative stability among the Upper Guinea countries. Thus its university programs in natural sciences and natural resources (universities in Accra, Cape Coast, Kumasi, and Tamale) can present an attractive option for Anglophone students from the region. The University of Science and Technology's Institute of Renewable Natural Resources in particular offers degrees that prepare many graduates for careers (primarily in government) in wildlife management and forest management. Curricula are integrated, with an applied focus. Foreign students are welcome. UST's access to research funds, however, has been limited; its role is directed toward training. Research activities in forestry are more often carried out by the Forestry Research Institute of Ghana, which has received multi-year grant support from ITTO.

Among Francophone universities, the Université d'Abobo-Adjamé in Abidjan offers degree programs in Environmental Science and Management, and in Natural Sciences, with curricula that integrate social sciences and offer an applied focus. The University's Center for Ecological Research (CRE) has research responsibilities for scientific work (research and monitoring) in the country's protected areas, in an agreement with the national parks directorate (DPN). This link with the government creates an effective and ongoing mechanism for university contributions to conservation.

The Center for African Wetlands, hosted by the University of Ghana (Legon), is notable not only for what it does, but also as a model for locally-established centers supported partially by international initiatives. The CAW operates as a specialized hub that links aquatic biologists and freshwater conservation projects from around the continent, serving an essential need in the region for coordination and information relating to critical habitats. As a center based in a university, it enriches the academic community with the visitors it brings, and it is able to offer opportunities to students who are enrolled in courses in the university; one of the newer degree programs is an M.Sc. in Environmental Sciences, one of the few such programs in the Upper Guinea region. In addition to support from grants, the Center serves as a coordinating body for GLOMIS (Global Mangrove Information System), supported by ITTO. Local institutions supported by links with international bodies (such as ITTO, and potentially others such as IUCN, CITES, etc.) are able to diversify their funding bases, adopt an international scope, gain access to international working groups and steering committees, and position themselves for additional grants by virtue of the access gained through networking/hub activities.

Beyond West Africa, but still on the continent, the ERAIFT School (Ecole régionale post-universitaire d'aménagement et de gestion intégrée des forêts tropicales) based at the University of Kinshasa, established in 1999 with support from UNESCO, UNDP and other international donors, offers opportunities for Masters- and doctoral-level studies of tropical forest management. Courses are in French, and the student body draws from many francophone countries in Africa. The South African university system also offers opportunities to English-speaking graduate students, especially for doctoral studies.

8. Complement institutional university strengthening with other capacity-building efforts.

Capacity-building covers a large scope of activities, including non-degree training at the technician level, professional development and refresher courses for faculty, focused sessions for acquisition of skills with new technologies, and project and organizational structures that promote learning on the job. Though capacity building goes beyond the primary focus of this project (assessing potential for strengthening universities), it is important to note that academic institutions' functions are embedded in a broad context of learning opportunities, and they are strengthened when skills and knowledge are bolstered at many levels, not just through formal degree programs or academic channels.

In West Africa, different levels of education, research, and training are based at different types of institutions: universities offer degrees and some research opportunities; research centers and institutes (such as FORIG, the Forestry Research Institute of Ghana, and SODEFOR in Côte d'Ivoire, or Rogbane in Guinea), sometimes based in separate ministries, conduct research but rarely offer courses nor confer degrees; and technical training institutes such as those mentioned above focus on technician preparation that feeds most often into government employment. These various institutional bases often have limited contact with each other, though their activities share a focus on natural resources.

Non-degree training of Anglophone wildlife managers that leads to certificates and diplomas is lacking in the West Africa region. Many early- or mid-career professionals from Ghana and other countries are sent by their employers to improve their skills at the College of African Wildlife Management in Mweka, Tanzania. Mweka graduates populate many of the Anglophone wildlife agencies on the continent. Despite its excellent reputation, Mweka has potential limitations for Anglophone residents of the Upper Guinea region who work in the forest zone. Mweka's location in savanna naturally focuses on that habitat, and therefore offers little preparation for management practices in forest ecosystems. Nevertheless, it has operated effectively for 40 years to provide opportunities to personnel from all over the continent. Forestry technician training in Ghana is conducted at the Forestry School in Sunyani.

Professional training for Francophones in wildlife management is available in Côte d'Ivoire at the Ecole de Faune in Bouaflé, and in forestry at the Ecole Nationale Supérieure d'Agronomie (ENSA) in Yamoussoukro. Guinea hosts ENATEF (Ecole Nationale des Agents Techniques des Eaux et Forêts) at Mamou, established with support from Coopération Suisse in 1992. Guinea's approach to forestry training includes strong elements of social forestry and community forest management. Wildlife training for professionals similar to that offered at Mweka is also available to francophones in Cameroon, at the Ecole de Faune at Garoua.

The GEF's Capacity Development Initiative, though still in formative stages, will greatly expand capacity-building opportunities around the world, not only with universities but also with other types of institutions.

9. Promote exchanges, partnerships, and collaboration between Upper Guinea universities with universities or university associations in Europe and North America.

Universities in the Upper Guinea region often have partnerships with foreign universities, some of which are based on inter-institutional agreements, some formalized with MOUs, and some simply based on handshakes and personal connections. In many cases, such partnerships are paper-based agreements, with little substantive activity, or they reflect past collaboration that has waned. Most often, these inter-institutional relationships were driven by external demand, and supported by short-term grants (less than 4 or 5 years).

There are examples of long-term, bilateral collaboration for research or degree programs, especially between European universities (Wageningen, Bradford, DICE) and African counterparts. Proximity and greater familiarity with African opportunities probably lead to greater numbers of individual European collaborators from any single institution, in comparison to American institutions, which may have relatively few Africa-oriented faculty in any one location. Effective collaborations also take time to build, and many grant opportunities are of short duration. Collaborations that are sustained by longer-term funding have greater opportunity to make lasting impacts in development of professional capacities, improvements in curricula, maintenance and upgrades to equipment and technologies, collaborative research, and the building of trust and understanding of expectations that must undergird effective partnerships. With time, both partners can develop commitments to joint work that transcend the particulars of any single grant agreement.

The conservation arena is sufficiently broad that integration of multiple disciplines into conservation research and education is more needed than ever, and many African universities will welcome visiting scholars, research partners, and cutting-edge expertise relating to information management. Experts in research and management of key conservation taxa – elephants, primates, and amphibians – are sorely lacking in most of the Upper Guinea countries. Universities that have not integrated disciplines sufficiently to offer cohesive conservation-related degrees (Guinea, Liberia) acknowledge this need in their development strategies and national biodiversity action plans.

Professional associations such as the US-based National Association of Professional Forestry Schools and Colleges (NAPFSC) and the National Association of University Fisheries and Wildlife Programs (NAUFWP) have the potential to develop collaborative programs with African universities by drawing on the broad pool of member institutions, and therefore a wider range of expertise, than is likely to be found in any single institution.

10. Create meaningful representational roles for faculty from Upper Guinea universities on advisory committees, task forces, etc., to define opportunities and seek support for them.

African universities have many well-qualified, capable individuals on their faculties. But in many cases the institutions are unable to provide the means for many of those individuals to wield their talents to catalyze institutional development and advancement. External funding can support African experts in a range of international activities; notable examples include support for participants on Species Survival Commission groups, and with CITES negotiations. These activities can benefit both the individuals and their institutions by exposure to trends and inclusion in decision-making, as well as creating other opportunities for development of collegial relationships and partnerships. Professional associations, conservation NGOs, and others can follow suit, and benefit from perspectives of West African academics by supporting their participation in round tables, strategic planning sessions, project and proposal design workshops, etc. Identifying individuals with entrepreneurial spirit, or supporting that spirit with support for

developing skills such as grant writing or networking, will create the likelihood of maximizing the potential for such roles.

11. Seek to connect promising students or young conservation professionals with scholarships abroad for postgraduate and doctoral level studies.

Opportunities for international fellowships for Africans to undertake post-graduate and doctoral studies abroad are abundant, but dispersed. Unfortunately, many are also targeted only for individuals from specific countries, and like many other donor-based programs, Upper Guinea countries (with the exception of Ghana) are often excluded from these priority lists. Nevertheless, the long-term benefits of supporting the development of academic conservation capacity with a global view are significant.

Opportunities that exist, or which should be cultivated for the Upper Guinea countries, include the ATLAS (Advanced Training for Leadership and Skills) program, administered by the Africa-America Institute for USAID; the Education for Nature fund of the World Wide Fund for Nature – US; and the United Nations Educational, Scientific, and Cultural Organization. Foreign universities with links to African countries and institutions also can be sources of educational scholarships, but tapping these opportunities is difficult; they need to be cultivated.

Even if web access is available, finding such opportunities is difficult; information and programs are very dispersed, and often in flux. A central clearinghouse for grant information or periodically updated review of opportunities, circulated widely to conservation organizations, would help to promote training and education for many African conservationists. The African Biodiversity Collaborative group, a consortium of conservation organizations based in the US that has a special focus on Africa, might be the appropriate outlet for maintenance and distribution of such information.

12. Facilitate cooperation among different sectors (NGOs, government agencies, and academic institutions) through working groups and activities with continuity, rather than on a short-term project basis.

Just as universities suffer internally from disciplinary divides (wildlife managers and foresters often train and operate in different spheres, and acquire different professional jargons), the conservation community frequently suffers from “sectoral divides,” with few bridges built between the key players: NGOs, government agencies, and academic institutions. Yet marshalling these forces, making best use of the talents each sector brings to the table, should accelerate conservation progress.

Many conservation projects involve academic institutions. But often, the academic unit is included as a sub-contractor on a project, rather than an equal partner in project design or in maintaining continuity in the project. As consultants, academics are asked to provide a specific output, after which their participation is no longer sought. Relegating this sector to a consultancy diminishes an institution’s commitment to a project, and in the consultant’s mind it simply becomes a way to earn extra income, rather than an initiative that can grow to produce institutional benefits (funds for

research or infrastructure, improved educational opportunities, access to additional project activities, connections with donors, opportunities to publish, etc.) over time.

University participation in conservation activities will be strengthened when there is ongoing institutional interaction on committees, advisory groups, planning sessions, and proposal development. The role of the Université d'Abobo-Adjamé with the national parks agency (DPN) is one of research in and around protected areas. This role clearly fits the university, and gives it ongoing involvement, from which numerous research projects, field opportunities, and training modules can develop. An MOU between agencies and universities can define this role and set the foundation for collaboration that is mutually beneficial. Similarly, conservation NGOs can benefit from holding periodic roundtables or annual reviews, inviting academic colleagues to provide feedback, offer help, and suggest modifications to ongoing projects. These periodic meetings can also provide a forum for discussion of new initiatives that would serve the interests and utilize the talents of both parties.

Similarly, proximity of educational institutions to protected areas can facilitate data collection and an ongoing role for academic institutions in conservation. For example, the University of Cape Coast in Ghana is physically near (25 km) Kakum National Park. An ongoing role of research and monitoring in Kakum implemented by UCC for the Wildlife Division would generate much-needed information, as well as provide opportunities for training and research to university personnel. The Wildlife School (Ecole de Faune) in Bouaflé, Côte d'Ivoire, could potentially perform a similar function for Kakum National Park. These types of relationships, however, are best undertaken with participation of all parties in design: in some cases, park priorities for research have not been identified, and the key conservation research questions need to be formulated.

II. Demonstration Projects

The notion of accessing university services and expertise was not ingrained within the projects of CI-West Africa at the outset; while there was general agreement among program staff that universities could play significant roles with conservation, that involvement had not materialized in tangible ways. Nor had it materialized between government agency personnel and universities in our project areas. Thus there was a gap between conservationists and academics that required a bridge to allow exchange and interaction to take place.

It therefore became clear at the beginning that putting theory into practice, and demonstrating ways in which universities could contribute to joint conservation projects with NGOs and/or government agencies, would require concerted effort. It was decided that this effort would rely on a project "hook", and would best be achieved by integrating university involvement into ongoing projects. Several projects added university involvement as a component of implementation. In Ghana, the projects were the Elephant Biology and Management (EBM) project, with University of Science and Technology (UST), and support for research in Kakum National Park with the University

of Cape Coast. In Côte d'Ivoire, the projects were the EBM (with Université de Cocody and Université d'Abobo-Adjamé) and the adaptation of the priority-setting methodology, with Université d'Abobo-Adjamé (UAA) (both EBM and priority-setting). In Liberia, it was the possibility for a conservation concession with University of Liberia. We tried out a range of things to see which would take hold and thrive.

These projects became the focus for integrating universities into our conservation work. The EBM collaborations with UST and UAA have been the most effective, for the following reasons:

- EBM has been a multi-year, rather than short-term project;
- A clear role befitting a university without trampling on other institutions' territory was easy to define;
- Funding, while at times limited, allowed continuity in relationships;
- It was seen to have growth potential for the university partners;
- Periodic advisory meetings to review progress and discuss future plans kept the partnerships active;
- The CI/NGO principal representative is respected as an academic, though he works for a conservation NGO;
- The university representatives have a personal interest in the project;
- The universities have a conservation or management mission, either through the curriculum they offer or the type of research they pursue.

The other projects lacked this combination of characteristics, and worked less well. For instance, the Université de Cocody has less of a conservation bent, no "official" role with conservation, and the chief representative assigned to the project did not have a strong field-based biodiversity orientation. The conservation concession project with the University of Liberia suffered simply from the turbulence of the country, but also because the concession was more of a "deal" than collaboration, and somewhat removed from the traditional norms of academic inquiry. The University of Cape Coast relationship has been more incidental than consistent, since the Kakum research project has not had a sustained focus or funding from CI, and other sources have not been identified. Similarly, the Université d'Abobo-Adjamé's adaptation of the priority-setting methodology has not had active, consistent engagement with CI, though relations are cordial; indeed, in this case, a partnership was probably not necessary, since the University personnel have moved forward independently.

The successes of the demonstration projects are the following:

1. The EBM Advisory Committee has served as a meeting ground for the government agencies, universities, and CI each coming to understand the others' needs and expertise.
2. The research and training initiative at Kakum started by CI has been "adopted" by the other members of the Advisory Committee (Wildlife Division, UST, and UCC), with a goal of taking over the functions that CI started, and broadening the role to become a regional center providing training for ecological (not exclusively elephants) research and management. The Wildlife Division suggested that it would dedicate building space to the center, and recently accepted a delegation of Ugandans to arrive for training in Elephant Biology and Management.
3. UST (Ghana) and UAA (Côte d'Ivoire) have accepted CI trainees into graduate programs; simultaneously, they have invited CI's Principal Investigator to serve on student committees and to support curriculum development.
4. UCC (Ghana), prompted largely by the EBM project, developed a course in elephant biology and management similar to the syllabus used for the EBM.
5. UAA in Côte d'Ivoire has committed to hiring one of the EBM graduates, and will serve as his institutional "home" after completion of his degree to undertake a national inventory of elephants in the country, with agreement from the DPN (national wildlife agency).

The roles of the different sectors were well-defined, and drew on each one's strength: the universities identified the topic and approach as offering them new opportunities to expand offerings for course work and research projects; the Wildlife Division saw the potential of developing a facility that would serve its own needs for training, as well as needs from beyond Ghana; and Conservation International catalyzed the project with funds and expertise that did not exist in the country.

Continued success requires ongoing infusion of funds, energy, and motivation for the partners to meet periodically, develop a long-term plan, assign tasks and roles, and use this core project to meet their needs for improved instruction and research (UST and UCC), improved management (WD), and expansion of the model to other projects (CI).

Appendix I. Upper Guinea Universities

The following universities have programs or activities that relate to natural resources and conservation.

Discussions in the context of this project have been held with representatives of those that are starred:

Ghana

Kwame Nkrumah University of Science and Technology *

Kumasi, Ghana

www.knust.edu.gh

University of Cape Coast *

Cape Coast

University for Development Studies *

Tamale

University of Ghana *

Legon, Accra

www.ug.edu.gh

Côte d'Ivoire

Université d'Abobo-Adjamé *

Abidjan

Université de Cocody *

Abidjan

Guinea

Université de Conakry

Conakry

Liberia

University of Liberia *

Monrovia

Sierra Leone

University of Sierra Leone

Freetown

Togo

University of Lome

Lome

Appendix II. Contacts consulted for the Assessment

Dr. Oscar Aalangdong, University for Development Studies, Ghana

Dr. Daniel K. Attuquayefio, University of Ghana

Mr. Maadjoh Bah, Ministère de l'Environnement, Guinea

Dr. J.R. Cobbinah, Director, Forestry Research Institute of Ghana

Dr. Ben Dawson-Andoh, Forestry Division, West Virginia University

Dr. Carl Gallegos, US Agency for International Development

Nancy Bell Gelman, African Biodiversity Collaborative Group

Dr. Chris Gordon, University of Ghana and Center for African Wetlands

Fredrick Hunder, Dean of College of Science and Technology, University of Liberia

Dr. Souleymane Konaté, Université d'Abobo-Adjamé

Dr. Lisbeth Levey, Partnership for Higher Education in Africa

Dr. Eliezer N'Goran, Université de Cocody, Côte d'Ivoire

Dr. William Oduro, Director, IRNR, University of Science and Technology, Ghana

Dr. E.C. Quaye, University of Cape Coast

Mr. Reeves, Dean of Forestry and Agriculture, University of Liberia

Dr. François Rajaoson, Association of African Universities

Dr. Dominic Tarpeh, Association of African Universities

Dr. Martine Tahoux Touao, Centre de Recherche en Ecologie, Université d'Abobo-Adjamé

Dr. Jérôme Tondoh, Université d'Abobo-Adjamé

Dr. Sam Yeboah, University of Cape Coast