



INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSMENT
CAPACITY BUILDING IN BIODIVERSITY AND IMPACT ASSESSMENT

IMPACT ASSESSMENT AS A TOOL FOR REGULATING ACTIVITIES IN AND AROUND PROTECTED AREAS FOR THE BENEFIT OF BIODIVERSITY

Summary of 2005 reports

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CBBIA-IAIA PROJECT - IMPACT ASSESSMENT AS A TOOL FOR REGULATING ACTIVITIES IN AND AROUND PROTECTED AREAS FOR THE BENEFIT OF BIODIVERSITY

Summary of 2005 Reports

1 BACKGROUND TO THE PROJECT

The Association for Impact Assessment (IAIA) is a forum for advancing innovation, development and communication of best practice in impact assessment. Its international membership promotes development of local and global capacity for the application of environmental assessment in which sound science and full public participation provide a foundation for equitable and sustainable development

In 2004-2005 the IAIA developed a sub-project under its CBBIA programme (Capacity Building in Biodiversity and Impact Assessment) following the theme “Impact Assessment as a tool for regulating activities in and around protected areas for the benefit of biodiversity”. This is referred to as the CBBIA-IAIA Protected Areas Project (PAP).

The principle aim of the PAP is to provide information and case studies in support of the work undertaken by the Convention on Biological Diversity (CBD) on developing guidelines for impact assessment and the conservation of protected areas. This has included the draft guidelines adopted at the CBD’s sixth Conference of Parties (COP6) under Decision VI/7A, their subsequent further development and most recent revision as approved in March 2006 at CBD COP8 under Decision (see <http://www.biodiv.org/doc/reviews/impact/EIA-guidelines.pdf>), hereafter referred to as the CBD guidance. The CBD has also called for case studies and further information to support the incorporation of biodiversity issues into impact assessment.

In 2004 CBD COP7 developed a programme of work under Decision VII/28 to support protected areas. As part of the work towards goal 1.5 (“to prevent and mitigate the negative impacts of key threats to protected areas”) it called for the CBD Executive Secretary to collaborate with the IAIA and other relevant organizations on further development and refinement of the impact assessment guidelines particularly to incorporate all stages of environmental impact assessment (EIA) processes in protected areas taking into account the ecosystem approach (as developed by the CBD under Decisions V/6 and VII/11).

This report summarises the results of five CBBIA PAP projects and identifies some lessons that may support the practical implementation of CBD guidance on impact assessment, and application of the ecosystem approach.

2 PROJECT OBJECTIVES

The five projects listed below (with their specific objectives) were carried out in 2005/06 and although they all differed from each other in some respect, each attempted to increase the national or regional capacity for EIA in relation to protected areas. Further details and their overall results are summarised in their respective Executive Summaries, which are provided in Appendix 2. A summary of the main issues that each covered with respect to application of the current CBD guidelines is provided in Table 2.1. A discussion of the key issues and conclusions that arose from these studies is then presented in the Chapter 3.

2.1 PREPARATION OF ENVIRONMENTAL GUIDELINES FOR DEVELOPMENT ACTIVITIES AROUND PROTECTED AREAS

IUCN Nepal

Project objectives

The specific objectives for preparation of guidelines for development activities in Protected Areas are to ensure:

1. That any activities in and around the Protected Areas are socio-culturally acceptable, economically feasible and environmentally benign;
2. That development activities respect people's participation in determining impacts and propose mitigation measures;
3. Park-people conflicts are considered while addressing codes of conduct of development activities;
4. That Buffer Zone delineation encompasses access of local populace and equitable benefit sharing with the people of surrounding areas;
5. Tourism activities do not jeopardize conservation issues; and
6. Commercialization of Protected Areas does not supersede biodiversity conservation aspects.

2.2 MONITORING OF INFRASTRUCTURE IMPACTS ON BIODIVERSITY: NAM HA NATIONAL PROTECTED AREA

IUCN LAO People's Democratic Republic

Project objectives

1. Build capacity for natural resources planning and management at the central and local government level and site level.
2. Train protected area staff and local officials in methods for designing monitoring plans, analyzing data, and reporting findings.
3. Provide participants with the knowledge necessary to prepare and implement a plan for monitoring the impacts of roads on nature and wildlife (biodiversity) during the construction period.
4. Familiarize the participants with the main aspects of monitoring the impacts of road use on nature and wildlife (biodiversity).
5. Training of trainers from central level STEA and MAF staff to complete program in the future.

2.3 DEVELOPING BIODIVERSITY INDICATORS AS A TOOL FOR REGULATING DEVELOPMENT ACTIVITIES IN AND AROUND PROTECTED AREAS AND WETLAND REGIONS IN THE NORTH WEST PROVINCE.

Community Initiative for Sustainable Development (COMINSUD), Cameroon

Project objectives

To ensure that sufficient capacities for biodiversity impact assessment monitoring exist for the regulation of activities in the protected areas and wetland regions based on indicators developed by key stakeholders.

Project goal: people in the North west manage protected areas and wetland regions for the benefit of the local communities while maintaining their ecological value in the long term.

2.4 DEVELOPMENT OF ENVIRONMENTAL ASSESSMENT GUIDELINES FOR IDENTIFIED SENSITIVE AREAS IN GHANA'S EA LEGISLATIVE INSTRUMENT (LI 1652), 1999

Environmental Protection Agency (EPA), Ghana

Project objectives

The overall objective of this proposal is to develop guidelines for sector specific sensitive areas as an improvement on the provision in the LI 1652, 1999 as the current situation does not facilitate compliance. The specific objectives are:

1. To give a clear definition of what these sensitive areas are, in relation to specific sectors.
2. To come up with ways to preserve protected areas together with the associated species in relation to Environmental Impact Assessment

2.5 A PROCEDURE TO EVALUATE IMPACTS PRODUCED BY THE DEVELOPMENT OF INFRASTRUCTURE IN AND AROUND PROTECTED AREAS.

M. Castro, H. Méndez and J. Rodríguez, independent consultants, Costa Rica

Project objectives

1. To elaborate a procedure (using a methodology or a tool) to evaluate the impact of development projects (roads, water pipelines, public buildings, hotels, etc.) taking into account the effects on migratory species, wetlands, endangered species and flagship species (such as Jaguar).
2. To discuss the application of the procedure and to valid it with a group representing the EIA Department and the Protected Area Department (using Costa Rica as a pilot).
3. To share the procedure with the rest of the Central American countries.

Table 2.1 A summary of the key issues addressed in each CBBIA PAP project in relation to the key stages of an EIA

EIA Stage	IUCN Nepal: Development guidelines	IUCN Lao PDR: Infrastructure impacts	COMINSUD, Cameroon: Biodiversity indicators for regulating activities	EPA Ghana: EIA guidelines	Costa Rica: Procedure for impact assessment
1. Screening (to determine which projects require a full or partial impacts assessment)				New definitions for environmentally sensitive areas, and sector-specific decision matrix created	Screening procedure
2. Scoping (to identify which potential impacts should be assessed)					
3. Assessment and evaluation of impacts and development of alternatives	Types and categories of impact and mitigation measures	Possible impacts of road construction and mitigation measures for road projects	Identification of impacts on wetland protected areas		Impact appraisal system and guidance given on mitigation options
4. Reporting (i.e. preparation of the Environmental Impact Statement (EIS) or EIA report)					Generic guidelines and indicative issues for project-specific ToRs
5. Review of the EIS					Key issues identified
6. Decision-making (on whether to approve the project or not)	Framework for public participation		Capacity building for local communities		Guidance of stakeholder involvement. Four decision options proposed
7. Monitoring, compliance, enforcement and environmental auditing	Monitoring and auditing framework	Training in monitoring biodiversity impacts of road construction and operation	Biodiversity indicators identified		Key environmental variables

3 KEY LESSONS FROM THE CBBIA PAP STUDIES

Although the PAP studies were relatively diverse in the subjects and geographical areas that they addressed, some clear common lessons are apparent. First and foremost, there is an obvious need for capacity building in the field of biodiversity and impact assessment if EIAs are to be carried out in accordance with the CBD guidance. Similar capacity building issues will also need to be addressed if other forms of biodiversity impact assessment, such as Strategic Environmental Assessment, are to be carried out effectively. Thus the projects have demonstrated a clear justification for the existence of the CBBIA PAP and the need for further similar activities.

Some of the most important capacity building related lessons identified during the PAP studies are discussed further below and include:

- Legislation on protected areas and EIA often exists, but this needs to be better implemented and, where necessary, updated.
- There is an urgent need for greater awareness amongst decision makers and other stakeholders of biodiversity values.
- EIAs need to relate to protected area objectives and management plans.
- Biodiversity surveying and monitoring skills are severely limited in many countries.
- Local stakeholders need to be fully involved in protected area management and impact assessments.

3.1 IMPLEMENTATION OF EXISTING LEGISLATION ON PROTECTED AREAS

A typical problem affecting the conservation of protected areas, observed in several of the PAP studies and in many situations elsewhere, is that national legislation that aims to ensure that protected areas really are protected is often inadequately implemented. In many cases this is due to a lack of awareness of the impacts of activities on protected areas (e.g. over-grazing, timber extraction and hunting), inadequate resources for employing rangers or other protected area staff, or a perception that socio-economic issues should override concerns for biodiversity. However, the latter is often misguided as the true values of biodiversity are often overlooked, or undervalued in economic appraisals.

Such problems were found in some of the PAP studies. For example the COMINSUD study reported that although eight wetland protected areas were created in the North West Province of Cameroon they are all seriously degraded due to poor management and neglect. This has arisen as a result of variety of factors including a lack of awareness of the importance of the areas and the impacts of activities on them, and inadequate involvement of local people in management planning. These problems have been mainly caused by, and exacerbated by, a severe lack of resources for protected area management, with just one full time ranger being responsible for all the sites.

Similar issues affect the implementation of EIA legislation. For example, the study by Castro *et al.* in Costa Rica noted that all of the countries within Central America have established EIA legislative systems mostly dating from the 1990s. However, the limited institutional capacities of authorities responsible for EIAs commonly results in inadequate implementation of the regulations. As a result the authors consider that there is inadequate control over many developments, and little monitoring of project impacts. Public participation is also minimal, despite this being a requirement of existing legislation.

In Ghana problems have arisen because the Environmental Assessment Regulations include a definition of Environmentally Sensitive Areas that is too broad, which undermines the EIA screening process. The Ghana EPA PAP therefore directly addressed this issue by developing proposals for revising the legislation, as well as increasing stakeholder

involvement in the EIA process. As a result the legislation is now more practical and sector specific guidance has been developed, which should facilitate the proper implementation of the regulations and the integration of biodiversity considerations across all relevant government departments (e.g. Forestry Service Division). It is clearly important that the consideration of biodiversity in EIAs is not seen as the sole responsibility of wildlife or nature conservation divisions of government, but instead is integrated across all relevant departments.

3.2 AWARENESS OF THE IMPORTANCE OF BIODIVERSITY AND ITS VALUES

The Millennium Assessment¹ has recently highlighted the vital role of biodiversity in its contribution to important ecosystem services (i.e. the benefits that people obtain from ecosystems). Thus biodiversity impacts have substantial social and economic consequences because they result in the degradation of ecological services. However, it is important to recognise that biodiversity benefit people through more than just its contribution to material welfare and livelihoods; it also contributes to security, resiliency, social relations, health, and freedom of choices and actions. In accordance with these considerations the recent CBD guidance on impact assessment recommends that the ecosystem approach is followed and assessments focus on impacts on ecosystem services.

Though theoretically well justified, it is very difficult in practice to identify and, in particular, to quantify and value all ecosystem services that a protected area provides. Thus, the ability to focus EIAs on ecosystem services is frequently highly constrained by available knowledge.

A common observation amongst the projects was that governmental authorities, local communities and other stakeholders were often unaware of the actual value of biodiversity within their protected areas. Consequently, many EIAs tend to be rather narrowly focussed on nature conservation impacts (e.g. on particularly well-known threatened species). Important though such issues are, there are often other reasons for conserving protected areas that are more easily quantifiable in socio-economic benefits (e.g. water resource protection). But these biodiversity benefits may be overlooked, especially if local communities are not adequately consulted (see below).

3.3 PROTECTED AREA OBJECTIVES AND MANAGEMENT PLANS

Another problem relating to biodiversity in protected areas is that there is often inadequate information on the status of biodiversity within the area. This is particularly the case for large and remote protected areas in the tropics, because these tend to be very rich in biodiversity and often little studied. This lack of information makes it difficult to identify particularly valuable biodiversity components and ecosystem services (see above) that need to be considered in EIAs. Even if such components are known there is often inadequate information available to assess their status (i.e. establish baseline conditions) and reliably predict and quantify the likely impacts of proposed developments on them.

Because of such data limitations and other reasons (such as inadequate staff resources) many protected areas do not have clearly identified biodiversity conservation objectives or management plans. As for example noted in Cameroon by the COMINSUD project, there is limited knowledge and information on the status of biodiversity in some sites (i.e. Bafut-Ngemba, Mbembe and Ndop Wetlands). Baseline biodiversity assessments of protected areas need to be undertaken to provide a proper valuation of each site to determine management objectives for each site. Functional management plans are also needed that

¹ Millennium Ecosystem Assessment 2005. *Ecosystems and human well-being: Biodiversity synthesis*. World Resources Institute, Washington, D.C.

follow the ecosystem approach and focus on people-nature interactions and stakeholder involvement.

The development of such plans facilitates the EIA process because important biodiversity and ecosystem services should be identified in such plans. EIAs can also relate possible impacts to management plan objectives. For example, zoning plans could be used to guide possibly damaging developments away from particularly sensitive areas. Mitigation measures may also be identified that can contribute to the protected area's objectives. For example, in the Costa Rica study, an example was given of a development where nesting turtles were protected from a hotel by the screening of potentially hazardous lighting. Such measures could have been overlooked if the importance of turtles and their susceptibility to lighting had not been known about and documented.

3.4 AVAILABLE BIODIVERSITY SURVEYING AND MONITORING SKILLS

Where information is lacking on a protected area it is (as noted above) difficult to assess the potential impacts of a development on it. In such situations new surveys are required to identify and, where possible, quantify important biodiversity components. However, such surveys require considerable expertise in the identification of species and habitats, and associated field survey methods.

Unfortunately, as noted in a couple of the PAP studies, such biodiversity skills are often lacking and capacity needs to be built up in this area. The IUCN Nepal project therefore included some outline guidance on baseline data collection in its guidelines. The IUCN project in Lao PDR also attempted to address this issue by carrying out training workshops (and producing a Resource Manual) for government staff involved in overseeing EIAs. Although this was very valuable and has trained some staff sufficiently for them to carry out further training, it was constrained by the time available and background knowledge held by the trainees. It was found that the trainees generally had an inadequate understanding of key theoretical aspects of biodiversity (species richness, ecosystems, habitats etc). It was also observed that many participants lacked an appropriate educational background for conducting EIAs. This knowledge gap was an important constraint on some of the most important issues that were addressed by the training including: the interconnected nature of ecosystems; the value of biodiversity; and how to integrate biodiversity conservation concerns into road development activities at the planning, implementation and post monitoring stages.

Such experiences indicate that it is important to plan biodiversity training exercises within the wider in-country capacity building context. It is also important to maximise long-term benefits and continuity by encouraging institutions to send participants to successive training events so that the learnt skills can be practiced and built upon.

The experience also highlights the importance of ensuring that key biological and ecological concepts are taught in schools and colleges. There is also a clear and substantial gap in the teaching of species identification skills that poses a major challenge that is relevant to all aspects of biodiversity monitoring.

3.5 LOCAL STAKEHOLDER INVOLVEMENT IN PROTECTED AREA MANAGEMENT AND IMPACT ASSESSMENTS

Many EIA reference books and international guidelines (including the recent CBD guidance) stress the importance of ensuring comprehensive stakeholder involvement through the EIA process. For example, the Costa Rica Project notes that there is often considerable awareness and sensitivity amongst local people and other stakeholders regarding issues affecting protected areas. Consequently proposed projects may quickly lead to concern and negative reactions amongst local communities. It is therefore recommended that EIAs are transparent and involves full stakeholder participation, which:

- Improves the quality of EIA decisions.
- Reduces costs and prevents delays.
- Brings transparency and facilitates the acceptance of decisions.
- Reduces controversy and public confrontations.
- Improves the understanding of potential impacts.
- Facilitates the identification of mitigation measures.
- Helps determine the need for compensation.
- Clarifies values and the process used to identify and assess alternatives.

The COMINSUD project noted the importance of developing management plans with community involvement. This helps to ensure that biodiversity values of importance to local people are recognised. It also helps develop ownership of the plans amongst local communities and their participation in the protection and management of the areas. This facilitates EIAs, by ensuring good locally relevant information is available that is trusted by stakeholders. Local involvement in management also provides opportunities for engagement with stakeholders on possible impacts and mitigation measures for potential developments.

To help encourage such participation, the guidelines produced by the Costa Rica project include a section on citizen participation in EIAs. Similarly, the guidelines produced by IUCN Nepal include a framework for public consultation which encourages participation at all stages of the EIA process. The COMINSUD project involved local stakeholders in biodiversity workshops, which raised their awareness of the importance of biodiversity in protected areas and the need to assess potential impacts from land use and developments. Such awareness raising will help increase the capacity for local communities etc to engage in impact assessments when these are carried out.

APPENDIX 1: ABBREVIATIONS AND ACRONYMS

CBD	Convention on Biological Diversity
EIA	Environmental Impact Assessment
EA	Environmental Assessment
IAIA	International Association for Impact Assessment
CBBIA	Capacity Building in Biodiversity and Impact Assessment
PAP	Protected Area Project

APPENDIX 2: PROJECT EXECUTIVE SUMMARIES

APPENDIX 2.1: PREPARATION OF ENVIRONMENTAL GUIDELINES FOR DEVELOPMENT ACTIVITIES AROUND PROTECTED AREAS

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To enable the Parties to the Convention on Biological Diversity (CBD²) to effectively conserve biodiversity and implement the provisions of the Convention, international guidelines have been developed on biodiversity-inclusive Environmental Impact Assessment (EIA). Nepal has initiated efforts to integrate biodiversity into impact assessment, and it is felt that there is an urgent need to develop national guidelines to provide guidance to project developers, professionals, practitioners and decision-makers for the *ex ante* consideration of biodiversity during the preparation and approval of Environmental Assessment (EA) reports. In recognition of this IUCN Nepal has prepared these guidelines with the support of the *Capacity Building in Biodiversity and Impact Assessment (CBBIA) Project*, an undertaking of the International Association for Impact Assessment (IAIA) and funded by the Government of The Netherlands.

The aim of these guidelines is to provide a basis for the integration of biodiversity concerns into EIAs of developments that are planned in protected areas. Consideration of biodiversity within EIAs is a recent phenomenon although biodiversity and EIA policies have existed in Nepal since the 1980s. The legal system regulating biodiversity and impact assessment in Nepal is well established but the implementation of biodiversity conservation requirements is often weak due to a lack of proper monitoring and the limited capacities of stakeholders. EA processes are often interpreted differently by proponents and protected area authorities, causing mistrust, project delays and adverse impacts on biodiversity.

These guidelines indicate potential impacts of different development activities on biodiversity in protected areas. It outlines key aspects of the EA process and identifies ways to incorporate biodiversity concerns. It also provides guidance on the methods for collection of baseline data, identification, prediction and evaluation of significant impacts, and approaches to selecting mitigation measures. An example is provided of the potential impacts of a development project on physical, biological, socio-economic and cultural aspects of a protected area, together with corresponding possible mitigation measures. Guidance is provided for the implementation of mitigation measures and environmental monitoring. Monitoring indicators and procedures have also been included in the guidelines to help select indicators and methods for monitoring physical, biological, socio-economic and cultural aspects of the environment. The guidelines include a basis for project auditing, which includes parameters, indicators, location of, and methods for auditing.

Public participation is a key aspect of biodiversity conservation and EA. The guidelines therefore include approaches to public consultation. A framework is provided to help project developers and decision-makers ensure public involvement during the preparation and approval of EA reports and their implementation. The major activities that should be performed during public participation are described for different stages of the project, such as the pre-feasibility and feasibility studies, detailed design and approval stages.

The guidelines also recommend important future actions such as consolidating and linking biodiversity in protected area processes, encouraging authorities to institutionalize biodiversity concerns in EA processes, awareness raising amongst key stakeholders,

² See Appendix 1 for a full list of acronyms.

improving understanding between proponents and PA authorities and incorporating contemporary conservation issues into future revisions of EA regimes.

APPENDIX 2.2: MONITORING OF INFRASTRUCTURE IMPACTS ON BIODIVERSITY: NAM HA NATIONAL PROTECTED AREA

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The Capacity Building for Biodiversity Impact Assessment (CBBIA) - Small Grants Programme provided funding for “Monitoring of Infrastructure Impacts on Biodiversity of Nam Ha National Protected Area”, a project implemented by IUCN in Lao PDR. The project consisted of a training workshop on monitoring the impacts of roads on protected areas and wildlife in the Nam Ha National Protected Area (NPA) in Louang Namtha Province. This training workshop supplemented the work that IUCN has been doing with the Northern Economic Corridor Project (R3). This project aims to further develop National Route 3 to connect China to Thailand via northern Lao, and by way of the Nam Ha NPA. The Environmental Research Institute (ERI), under the Science, Technology and Environment Agency (STEA) is the third party monitor for this project. IUCN is providing technical support to build ERI’s capacity to undertake this task and assist it in meeting its third party monitoring responsibilities. To supplement the training to central-level staff covered under the existing project, IUCN is helping with specific training on biodiversity monitoring related to the road construction for relevant protected area managers, and provincial level and key central-level officials.

A four-day training workshop was conducted by IUCN between 13th-16th November 2005, in Luang Namtha, within the Nam Ha NPA. A resource manual was prepared with relevant theoretical information, including monitoring checklists and guidelines, to facilitate the training. A group of 13 participants from the central and provincial government agencies attended the training, which included interactive lectures, participatory discussions to share lessons learned, field visits in Nam Ha NPA and group exercises. Outputs from the workshop included an upgraded resource manual and other supplementary materials relating to the biodiversity of Nam Ha NPA. The training programme has helped develop the capacity amongst protected area staff and local officials to monitor the biodiversity impacts of road development projects in and around Nam Ha Protected Area. Participants were able to gain knowledge on the biodiversity (habitats, vegetation types and species etc) of Nam Ha NPA, and learn data recording and reporting techniques, as well as formats for biodiversity monitoring. They were also able to assess potential impacts on Nam Ha NPA from road related infrastructure development. The checklists and monitoring plans prepared by the resource personnel were field tested by the participants in Nam Ha NPA. The most important outcome of the training was that key partners from the central level of the government are now able to conduct future training programmes for officials of provincial authorities.

APPENDIX 2.3: DEVELOPING BIODIVERSITY INDICATORS AS A TOOL FOR REGULATING DEVELOPMENT ACTIVITIES IN AND AROUND PROTECTED AREAS AND WETLAND REGIONS IN THE NORTH WEST PROVINCE.

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This COMINSUD (Community Initiative for Sustainable Development) project is one of five projects selected under the CBBIA-IAIA Protected Areas Project (PAP). Its aim is to enhance capacities for biodiversity impact assessment, regulation and monitoring in

protected areas and wetland regions in the North West Province, using indicators developed by key stakeholders. This region has very rich biodiversity and contains some globally rare and endemic species, according to some projects carried out by Bird Life International in the area. Protected areas in the North West Province were created between 1934 and 1971. However, although more than eight of such areas exist, due to poor management and neglect, they are all seriously degraded.

The overall goal of the project is, therefore, that people in the North West manage protected areas and wetland regions for the benefit of the local communities while maintaining their ecological value in the long term.

The project was implemented between May – December 2005, according to the following five key steps:

1. CBBIA-PAP training and capacity building activities preceding the 25th annual conference of the IAIA.
2. Discussion meetings with key project partners (SNV Highlands, CAMCOF, WHINCONET) to select the areas where activities will take place and to further develop the project's methods.
3. Consultation and awareness meetings with respect to conservation issues on the state and perception of protected areas and wetlands were carried out at six selected sites with different stakeholders. This was followed by a presentation of the findings to Government Departments at provincial level with major interests in these sites.
4. Six community-based workshops were organised in various sites and over 300 people informed of the issues and trained, so that they are better able to respond to conservation issues and use resources sustainably.
5. Production of a user manual with biodiversity indicators, using information generated during the consultation events and community-based workshops.

The project has succeeded in stimulating conservation and sustainable resource use in all the six sites where activities took place. According to the community members in the areas where reserves are found, it was the time that they had discussions with government officials about the reserves. Natural resource management committees were created in the six sites to continue with awareness activities and the development of action plans to enhance conservation efforts and sustainable resource management practices. As a result, municipal councils and village authorities are strongly motivated to continue with the initiatives set in motion and the government's Technical Services are ready to collaborate with them.

This CBBIA-IAIA PAP initiative should be viewed as a rapid measure to deal with current urgent requirements, as well as providing a basis for future action in this fragile ecological region.

APPENDIX 2.4: DEVELOPMENT OF ENVIRONMENTAL ASSESSMENT GUIDELINES FOR IDENTIFIED SENSITIVE AREAS IN GHANA'S EA LEGISLATIVE INSTRUMENT (LI 1652), 1999

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The Ghana Environmental Assessment (EA) Regulations, Legislative Instrument (LI) 1652 of 1999 attempted to ensure adequate consideration of biodiversity and related sensitive resources in Environmental Impact Assessments (EIAs) by classifying certain areas as Environmentally Sensitive Areas (ESAs). However, application of the ESA procedures in

Ghana over a decade has revealed some important shortcomings in the ESA list and its usefulness, especially in EIA screening procedures. The general conclusion is that in its attempt to comprehensively provide for biodiversity and related resource considerations the 1999 EA Regulations have classified virtually the whole of Ghana as “environmentally sensitive”. This has not helped to achieve effective protection and conservation of biological and other sensitive resources in Ghana. Furthermore, the collaboration required from relevant stakeholder institutions in applying and enforcing Schedule 5 of LI 1652 has not been forthcoming as expected.

This study, which was conducted with financial support from the International Association for Impact Assessment (IAIA) as part of its Capacity Building in Biodiversity in Impact Assessment (CBBIA) Protected Areas Project, therefore aimed to develop:

- A relevant revised and appropriate list of ESAs in Ghana.
- A biodiversity and ESA-inclusive screening system.
- Environmental Assessment sector-specific environmental sensitivity guidelines.
- A collaborative partnership involving all the relevant national institutions.
- Inputs for revision and amendment of LI 1652.

The study approach involved the collaboration of all key stakeholders in biodiversity and related resource conservation issues. The aim of this was to ensure ownership and application of the project outputs by all the collaborating institutions.

The twelve types of ESA listed in Schedule 5 of LI 1652 were examined and revised to improve the clarity of their definitions and their applicability. Structured questionnaires were used to collect important information and views on each ESA, including their definitions, geographical extent and locations, institutional support, statutory mandates for regulation and the practicality of their inclusion and enforcement of protection.

The exercise led to the modification of the ESA list and a reduction from 12 to the following eight ESA types:

1. All areas declared by law as Wildlife Conservation Area (including National Parks, Resource Reserves, Wildlife Reserves, Strict Nature Reserves, Ramsar Sites and Wildlife Sanctuaries), or Forest Reserves or Globally Significant Biodiversity Areas
2. Areas, which constitute the natural habitat of any threatened (endangered, data deficient and vulnerable), rare or endemic flora and fauna.
3. All known historical, cultural, archeological and scientific sites that are of public interest
4. All areas known to be prone to natural environmental disturbance such as coastal erosion, flooding, geological hazards (including earthquake, tremor and landslide) and radioactive emissions.
5. Hilly areas with gradient greater than 45 degrees and prone to erosion or rock fall or mudslide or landslide.
6. Areas (of land) adjoining water bodies of minimum distance of 50 meters away from the bank of the water body.
7. Water bodies (surface or ground) characterized by one or more of the following conditions:
 - tapped or abstracted for domestic purposes;
 - water within a controlled and/or protected area;
 - supports wildlife and fish;
 - head waters
8. Mangrove area/forest characterized by one or more of the following conditions:

- adjoining mouth/estuary of a river/stream system;
- habitat for wildlife;
- spawning ground for fish;
- near or adjacent to traditional fishing ground;
- acting as natural buffer against shore erosion, strong winds or for storm floods.

Other related outcomes of the study were the modification of the Environmental Assessment Screening Form (to include land cover and topography, biological resources, cultural resources, water quality and hydrology and noise concerns) and the production of an Environmentally Sensitive Areas and Sectoral Compatibility Matrix.

To help implement the outcomes of the study it is recommended that a national consultative workshop be held to solicit public inputs and endorsement. In addition relevant sections of LI 1652 should be amended to give the necessary legal backing as appropriate for the revised EIA procedures.

APPENDIX 2.5: A PROCEDURE TO EVALUATE IMPACTS PRODUCED BY THE DEVELOPMENT OF INFRASTRUCTURE IN AND AROUND PROTECTED AREAS.

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The Central American region is working towards the integration of all the countries that form it (Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica and Panama). There is a Central American Integration System (SICA – Sistema de Integración Centroamericana), which includes several organizations. One of those, the Central American Commission on Environment and Development (CCAD) gathers all seven ministries of the environment and is dedicated to the harmonization of environmental policies and legislation, to the conservation of biodiversity, and to guarantee a healthy environment in order to enhance the quality of life of Central Americans.

Working together, the Central American countries have consolidated the Central American System of Protected Areas (SICAP), which includes approximately 25% of all Central American lands and which is today one of the main attractions for the growing tourism in the region.

In the field of environmental impact, the work has involved the search for harmonious environmental policy and legislation in all seven countries of Central America. Nevertheless, no specific tool has been developed to evaluate the environmental impacts caused by infrastructure development in and around protected areas, despite the growing importance of the issue with increased visitors and the development of new infrastructure in and around such areas.

This study aimed to address this by developing a standard procedure for the evaluation of environmental impacts of infrastructure development projects in and around protected areas. We initially based the procedure on the “*Guidelines on biodiversity inclusive Environmental Impact Assessment (EIA)*” (NCIA 2005) and followed the definition of EIA included in the guide: “Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse”.

Then, all relevant agreements and proposals prepared in the region that aimed to harmonize EIA legislation and procedures were reviewed. A specific EIA procedure was then designed – as opposed to the general one used so far, taking into consideration the ecosystems present in the region, their status in Central America and their potential limitations regarding development activities.

The standard procedure is based on the fundamental components of an EIA, including the following stages: screening, scoping, impact analysis and development of mitigation initiatives, reporting, review, decision-making and monitoring, compliance, enforcement and environmental auditing.

It is anticipated that the proposed standard procedure for EIAs should be widely applied because it provides clear guidance on the explicit consideration of biodiversity in environmental impact evaluations. This should help administrations comply with article 14a of the Convention for Biological Diversity, which states: “Appropriate procedures will be established, which will require the environmental impact evaluation for proposed projects that may have important detrimental effects on the biological diversity, so as to avoid or reduce to a minimum such effects and, when appropriate, will allow stakeholders' participation in such procedures.”