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***MONITORING STRATEGY ON PROTECTED
AREAS OF CENTRAL AMERICA***

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Monitoring Strategy on Protected Areas of Central America

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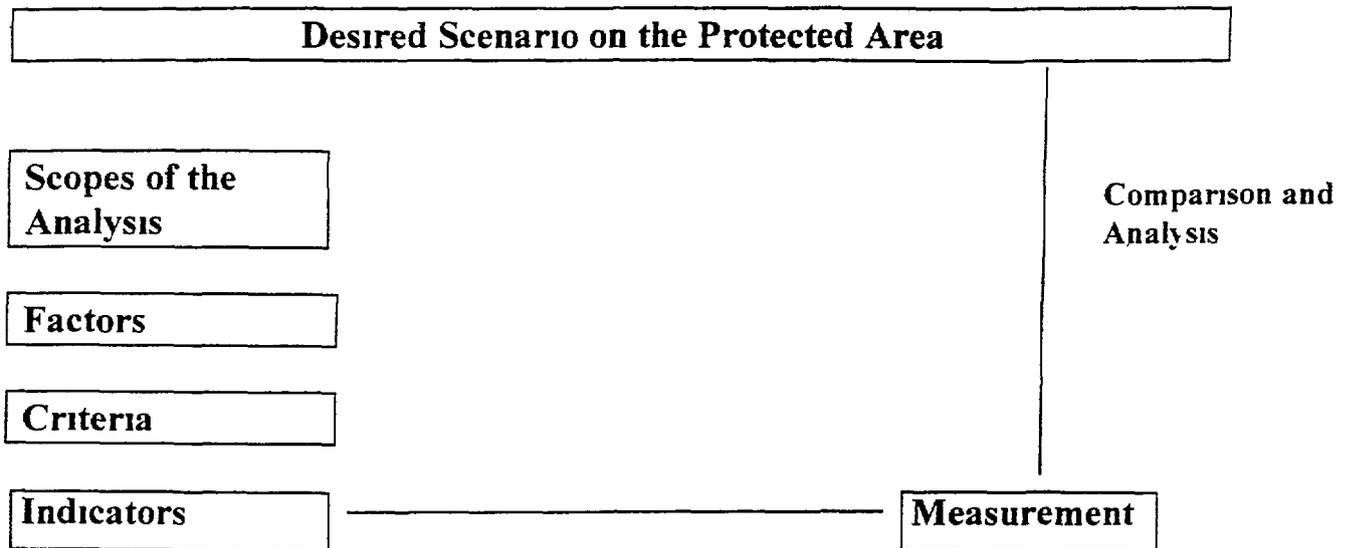
Introduction

This workshop was organized and carried out by Programa Ambiental Regional para Centroamerica (PROARCA) in its Central American Protected Area System (CAPAS) component together with the Consejo Centroamericano de Bosques y Areas Protegidas (CCAB-AP)

The main goal of the workshop was to develop the components for a monitoring strategy on Central American protected areas. This tool had to meet some of the basic requirements that were agreed upon at the beginning of the workshop. The requirements are as follows: simplicity, low cost, short period of time to generate the data, and for it to promote management excellency on protected areas. Due to a lack of a tool of this kind, once it has been validated in the field, it should be adopted at a regional level as the monitoring strategy on Central American protected areas.

The workshop took place with participatory meetings where the various components were developed and from which the monitoring strategy on protected areas of Central America must be composed. In addition, special attention and detail was paid to the criteria and component of the criteria.

The strategy developed as a result of the workshop contains the following components: a desired scenario on protected areas, scopes of the analysis, factors that surround each scope, criteria for each factor, and indicators of each criteria. These components are related as follows:



Conceptually this strategy is based on the method developed by The Nature Conservancy (TNC) known as "Scorecards Consolidation Criteria". This method has been applied on protected areas in Latin America which have been part of the program *Parks in Peril Program* of TNC during two consecutive years. It has shown to be very simple in its application but very worthwhile due to the information it generates and the comparability of such information through time, a very important element for monitoring. On the other hand, the strategy has benefited with the conceptual contribution and experience of Central American experts who participated in the workshop.

Background

It is very important to monitor the biological, social, and management elements for any protected area. Ecosystems, communities, fauna, and flora suffer from habitat fragmentation and other negative impacts which are the product of human activities inside and outside protected areas. As these impacts tend to increase, there is a greater need to monitor the biotic and human communities in order to be able to be aware of changes through time. Monitoring is like the "barometer" that measures changes. At the same time, these measures support the decision-making and allow a better conservation of the protected areas.

The Central American countries do not have systematic monitoring programs for their protected areas. Likewise, the information that could support that monitoring strategies be implemented is fragmented, outdated, lacking scientific validity, or it simply doesn't exist. To this, we can add the lack of trained staff in the protected areas and the lack of an institutional culture conserved for research. Finally, the situation worsens in cases where protected areas budgets are cut short.

The IV World Congress of National Parks and Protected Areas held in Caracas Venezuela in 1992 suggested the following

- Monitoring programs on protected areas are an important element in the environmental management of a region
- The coordinated and comprehensive research as well as monitoring programs are essential and urgently required. To properly manage protected areas it is also vital to carry out investigations regarding the structure of the human community, including analysis of how resources are being used, labor usage, gender role, ages structure and economic situation

Therefore it is very important to obtain and organize relevant information about natural processes and changes in a protected area for those who are in charge of decision-making. Any activity that takes place within a protected area must be monitored to avoid negative impacts on the natural and cultural resources, and also to maximize the positive changes. The protected areas managers use "intuition" and experience for decision-making. However the administrative actions merely based on intuition and experience can have a lack of precision, inconsistency, lack of support, and are hard to trace.

At PROARCA/CAPAS as a part of our workplan, we want to contribute with this growing interest on protected areas monitoring. Therefore, we present a strategy on Central American protected areas monitoring. This strategy tends to complement the existent efforts that we hope can be improved through time.

The main characteristics of this strategy are defined by

- a. **Simplicity**
It is very easy to use. It does not require technology or specialized training. The average staff members of protected areas should be able to use it.
- b. **Inexpensive**
The procedure does not require a great investment of equipment or time which makes it very attractive for Central American protected areas due to the well-known logistic and economic limitations.
- c. **Allows improvement**
This strategy presents the appropriate format to improve and evolve as it is used. New criteria and indicators can be developed to tune the existing ones and to fill the empty gaps.

d Applicability

Although Central American protected areas have notorious differences of ecosystems management and level of development the presented method may be applied

e Promotes the excellency in the conservation of protected areas

The application of this method through time (e.g. annually) promotes that the efforts of a given protected area can be improved through time. For example, if on 1996 the obtained score by the protected area was of 20, the next year, this same protected area will be stimulated to raise this score. Directly by improving its score the protected area may improve its conservation. At the same time it allows the protected area to prove all the management efforts and can use the information to keep the decision-makers informed. This documentation of the efforts of a successful management of the protected area is the key to develop an institutional memory over such area. The permanent monitoring, therefore, will help the protected area to provide documentation for the management that has been given through time. The existence of an institutional memory of the management of the area is of a very high value for its future management.

Monitoring Strategy on Central American Protected Areas

First Part The Structure

In its structure the strategy is divided in the following way

Scopes	Factors	Criteria	Indicators
Social	Communications	Willingness of the protected area towards communication	<p>5 = There is an on going communication plan which is evaluated to have a greater impact on the target population</p> <p>4 = The plan is carried out and its impact in the target population is evaluated</p> <p>3 = There is technical availability enough equipment and material to carry out the communications program and it is carried out</p> <p>2 = Communications needs have been identified or isolated actions</p> <p>1 = There is no communications plan or isolated actions there is no desire to have one</p>
	Participation	Participation	<p>5 = Interest groups participate in absolutely every aspect of planning, management and decision making of the protected area</p> <p>4 = Interest groups participate in planning and management of the protected area (not so in the decision making)</p> <p>3 = Interest groups participate in some of the planning activities of the protected area</p> <p>2 = Interest groups have shown their willingness to participate and the protected areas administrators consult with the interest groups</p> <p>1 = Interest groups do not participate in planning nor the management the protected area The decisions are centralized</p>
	Land Tenure	Information about Land Tenure Status	<p>5 = The information on land tenure is available and mapped and it is constantly used to carry out negotiations on adequate management of the protected area with a minimum level of conflict</p> <p>4 = Information on land tenure is available (and mapped) and it is partially used in the management of the protected area</p> <p>3 = Information on land tenure is available in the protected area but it is not used to solve conflicts related with the protected area</p> <p>2 = There is information on land tenure or it is dispersed but access to it is difficult</p> <p>1 = There is no information on land tenure and this is identified as an important concern</p>

Scopes	Factors	Criteria	Indicators
		Education Program	<p>5 = Executes the environmental education program (EEP) and its impact is permanently evaluated</p> <p>4 = Some of the EEP actions are executed</p> <p>3 = There is EEP but it is not implemented due to lack of resources</p> <p>2 = An EEP is being designed</p> <p>1 = There is no EEP</p>
Administrative	Infrastructure	Internal Access to the Protected Area	<p>5 = 100% of the access allows an integral management of the area</p> <p>4 = 75% of the access allows an integral management of the area</p> <p>3 = 50% of the access allows an integral management of the area</p> <p>2 = 25% of the access allows an integral management of the area</p> <p>1 = there is no access</p>
		Equipment	<p>5 = 100% of the suitable equipment for the efficient management of the protected area</p> <p>4 = 75% of the equipment for the priority management activities</p> <p>3 = 50% of the suitable equipment has been purchased</p> <p>2 = 25% of the suitable equipment has been purchased</p> <p>1 = there is no equipment</p>
		Facilities	<p>5 = 100% physical facilities to manage the area are available are built</p> <p>4 = 75% of the physical facilities to manage the area are ready</p> <p>3 = 50% of the physical facilities are ready there are significant gaps</p> <p>2 = 25% of the physical facilities are available</p> <p>1 = 0% there are no physical facilities to manage the area</p>

Scopes	Factors	Criteria	Indicators
	Personnel	Number of personnel	<p>5 = 100% of the necessary personnel for the basic administration of the area</p> <p>4 = 75% of the necessary personnel for the administration of the area</p> <p>3 = 50% of the necessary personnel for the administration of the area</p> <p>2 = 25% of the necessary personnel for the administration of the area</p> <p>1 = There is no personnel for the administration of the area</p>
		Training Level	<p>5 = 100% of the personnel are trained to carry out their responsibilities</p> <p>4 = 75% of the personnel are trained to carry out their responsibilities</p> <p>3 = 50% of the personnel are trained to carry out their responsibilities</p> <p>2 = 25% of the personnel are trained to carry out their responsibilities</p> <p>1 = the personnel has not been specifically trained to carry out their responsibilities</p>
		Stability	<p>5 = There is no rotation in the staff that has been working > 5 years</p> <p>4 = 25% of staff rotation < 5 years</p> <p>3 = 50% of staff rotation < 3 years</p> <p>2 = 75% of staff rotation < 1 year</p> <p>1 = 100% of staff rotation = instability < 6 months</p>
		Suitability	<p>5 = 100% of the staff meets the job requirements</p> <p>4 = 75% of the staff meets the job requirements</p> <p>3 = 50% of the staff meet the job requirements</p> <p>2 = 25% of the staff meet the job requirements</p> <p>1 = 0% of the staff meets the job requirements</p>
	Planning	Management Plan	<p>5 = Management plan fully completed and totally implemented</p> <p>4 = Management plan fully completed and implemented in some of its programs</p> <p>3 = Management plan completed but not implemented</p> <p>2 = Management plan being designed at its creation stage</p> <p>1 = There is no management plan</p>

Scopes	Factors	Criteria	Indicators
		Operational Planning	<p>5 = Operational plan being implemented according to the management plan</p> <p>4 = Operational plan being implemented according to some activities of the management plan</p> <p>3 = Operational plan implemented without using the management plan as a basis</p> <p>2 = Operational plan at its creation stage</p> <p>1 = There is no operational plan</p>
		Zoning	<p>5 = Area zoning allows responsible management of the unit</p> <p>4 = Area zoning is fairly responsible allows the management</p> <p>3 = Area zoning allows a low management</p> <p>2 = Zoning limits the management of the area</p> <p>1 = There is no zoning</p>
		Threats Analysis	<p>5 = 100% of the threats identified, prioritized and addressed by management actions</p> <p>4 = 75% of the threats have been identified and prioritized there is a specific strategy to address some of the threats</p> <p>3 = 50% of the threat analysis is ready a specific strategy has not been addressed to deal with the threats</p> <p>2 = 25% of the threat analysis in progress</p> <p>1 = 0% there is no threat analysis</p>
Natural and Cultural Resources	Use	Types of Use	<p>5 = There is compatible use with the objectives of the area and increases</p> <p>4 = Compatible use with the objectives and it is stable</p> <p>3 = Compatible use decreases</p> <p>2 = There is compatible use</p> <p>1 = There is no compatible use</p> <hr/> <p>5 = There is no incompatible use with the objectives of the area</p> <p>4 = Incompatible use with the objectives and decreases</p> <p>3 = Stable incompatible use</p> <p>2 = There is incompatible use</p> <p>1 = There is incompatible use and increases</p>

Scopes	Factors	Criteria	Indicators
		Impacts of the use of natural resources of the protected area	<p>5 = Impact over <25% of the natural and cultural resources</p> <p>4 = Impact over 25% of the natural and cultural resources</p> <p>3 = Impact over 50% of the natural and cultural resources</p> <p>2 = Impact over 75% of the natural and cultural resources</p> <p>1 = Impact over 100% of the natural and cultural resources</p>
		Impacts of the use on neighboring communities of the protected area	<p>5 = Impact over <25% of the communities</p> <p>4 = Impact over 25% of the communities</p> <p>3 = Impact over 50% of the communities</p> <p>2 = Impact over 75% of the communities</p> <p>1 = Impact over 100% of the communities</p>
	Protection	Law Enforcement Plan	<p>5 = There is a plan and it is thoroughly applied</p> <p>4 = There is a plan and it is almost thoroughly applied</p> <p>3 = There is a plan and it is partially applied</p> <p>2 = There is no plan but there are systematic actions being carried out</p> <p>1 = There is no plan not organized actions</p>
		Impact of the Law Enforcement Plan	<p>5 = There are no illegal actions or non permitted activities</p> <p>4 = Exceptionally illegal actions/non permitted activities take place</p> <p>3 = Sporadic illegal actions/non permitted activities take place</p> <p>2 = Few but frequent illegal actions and/or non-permitted activities</p> <p>1 = Illegal actions without control and/or non permitted activities</p>
		Limits Demarkation	<p>5 = There are legally defined limits and totally marked in the field</p> <p>4 = There are legally defined limits and partially marked</p> <p>4 = There are no legally defined limits but they are totally marked</p> <p>3 = There are legally defined limits but not marked</p> <p>2 = There are legally defined limits and partially marked</p> <p>1 = There are no legally defined or marked limits</p>

Scopes	Factors	Criteria	Indicators
	knowledge	Research Program	<p>5 = There is a research program structured and suited for the management needs</p> <p>4 = There is a research structured program but not very suitable for the management needs</p> <p>3 = Program does not exist but there is a suitable research for the management needs</p> <p>2 = Program does not exist but there is an isolated research not very relevant to the management</p> <p>1 = There is no program or research</p>
		Research Administration	<p>5 = There are regulations and the research is followed up</p> <p>4 = There are no regulations but the research is followed up</p> <p>3 = There are regulations but the follow-up is scarce</p> <p>2 = There are regulations but no follow up</p> <p>1 = There are no regulations and follow up</p>
		Information Organization	<p>5 = There is a registry system that appears to be very functional with a great amount of useful information and technological resources</p> <p>4 = Simple registry system but large enough to give good support to the administration of the protected area</p> <p>3 = Partial registry system with no order with minimum functionality</p> <p>2 = Poorly conditioned registry system, incomplete without any order</p> <p>1 = There is no registry system</p>
Environmental Monitoring		Indicator Species	<p>5 = The indicator species of the protected area ecosystems are identified using valid scientific information and the staff members in field have available information</p> <p>4 = Some of the indicator species of the protected area have been identified and the available information for the staff members in the field is scarce</p> <p>3 = There are research efforts to identify the indicator species of the protected area and to be able to obtain information for the staff members of the field</p> <p>2 = There are previous research documents regarding the indicator species in the protected area</p> <p>1 = There is no information whatsoever regarding the indicator species in the protected area</p>

Scopes	Factors	Criteria	Indicators
		Protected Area Connectivity	<p>5 = The actual and potential connectivity for the protected area have been evaluated and have been well documented</p> <p>4 = The actual connectivity for the protected area has been evaluated and it is in the process of being documented</p> <p>3 = The actual connectivity for the protected area has been evaluated</p> <p>2 = The actual connectivity for the protected area is in process of being evaluated</p> <p>1 = There is no information whatsoever regarding the connectivity for the protected area</p>
		Abiotic Factors	<p>5 = There is data of over 5 years of the main abiotic factors of interest for the protected area</p> <p>4 = There is data of under 5 years of the main abiotic factors of interest for the protected area</p> <p>3 = There is data of the main abiotic factors of interest for the protected area</p> <p>2 = There are efforts to begin collecting data about the main factors of interest for the protected area</p> <p>1 = There is no information whatsoever about the main abiotic factors of interest for protected area</p>
Political-Legal	Legal Framework	Legal Status of the Protected Area	<p>5 = Official declaration from the highest possible level on the protected area fully acknowledged</p> <p>4 = Official declaration not from the highest possible level on the protected area fully acknowledged</p> <p>3 = A proposal for a declaration on the protected area in process</p> <p>2 = There are proposals to declare the area as a protected area but the process has not yet been initiated</p> <p>1 = There is no official declaration or proposal whatsoever to support the wild area</p>
		Law Enforcement	<p>5 = The necessary legal procedures exist for the enforcement of the law and all the executors are aware of them</p> <p>4 = The necessary legal procedures exist many executors are aware of them and there are programs to improve this</p> <p>3 = There are legal procedures but they are not 100% suitable and the executors are not fully aware of them However there are programs working to improve this</p> <p>2 = Insufficient procedures very few executors are aware of them and there is no program to improve this</p> <p>1 = There are no legal procedures to enforce the law</p>

Scopes	Factors	Criteria	Indicators
	Institutional Framework	Administrative authority of the protected area	<p>5 = The protected area does have authority on administration and technical matters</p> <p>4 = The protected area has full authority over administrative matters but not in those regarding technical matters</p> <p>3 = The protected area has authority over administrative matters, but sometimes it needs to consult headquarters</p> <p>2 = Many times the protected area must consult headquarters and the regional office before decision-making</p> <p>1 = The protected area has no authority regarding its administrative matters</p>
		Inter-organizational relations	<p>5 = There are organizations on-going agreements relations with >75% of the organizations involved in on going projects</p> <p>4 = There is a relation with 75% of the organizations involved in on going projects and there are actions in progress</p> <p>3 = There is relation with 25-50% of the organizations involved in on going projects</p> <p>2 = A relationship has begun with < 25% of the involved organizations in on going projects</p> <p>1 = There are no inter-institutional relations</p>
Economical / Financial	Self sustainability	Financial plan	<p>5 = There is a long term financial plan there are financial mechanisms working and income is enough for the management</p> <p>4 = There is no long term financial plan there are financing mechanisms and income is enough</p> <p>3 = There is no long term financial plan there are financing mechanisms but income is not enough</p> <p>2 = There is no long term financial plan there are a few financing actions and income is not enough</p> <p>1 = There is no long term financial plan there are no financing mechanisms working</p>
		Availability for expenditures	<p>5 = The protected area has the money that it generates available to cover 100% of the investment it needs</p> <p>4 = The protected area has the money that it generates available to cover 75% of the investment it needs</p> <p>3 = The protected area has the money that it generates available to cover 50% of the investment it needs</p> <p>2 = The protected area has the money that it generates available to cover 25% of the investment it needs</p> <p>1 = The protected area does not have the money it generates available</p>

Scopes	Factors	Criteria	Indicators
	Production of goods and services	Identification of goods and services	<p>5 = The protected area has identified and assessed the goods and services it produces</p> <p>4 = The protected area has identified its goods and services and 75% of them are assessed</p> <p>3 = The protected area has identified its goods and services and 50 % of them are assessed</p> <p>2 = The protected area has identified its goods and services and has 25% of them assessed</p> <p>1 = The protected area has not identified its goods and services</p>
		Perception of value of goods and services	<p>5 = >75% of the interest groups acknowledge the goods and services of the protected area</p> <p>4 = 50 75% of the interest groups acknowledge the goods and services of the protected area</p> <p>3 = 25 50% of the interest groups acknowledge the goods and services of the protected area</p> <p>2 = <25% of the interest groups acknowledge the goods and services of the protected area</p> <p>1 = 0% of the interest groups acknowledge the goods and services of the protected area</p>
	Benefits	Direct benefit sources	<p>5 = >75% of the interest groups receive some kind of direct benefit</p> <p>4 = 50 75% of the interest groups receive some kind of direct benefit</p> <p>3 = 25 50% of the interest groups receive some kind of direct benefit</p> <p>2 = <25% of the interest groups receive some kind of direct benefit</p> <p>1 = 0% of the interest groups receive some kind of benefit</p>

Basic Monitoring Strategy Principles

The following basic monitoring strategy principles are the basis on protected areas

- 1 The goal of the monitoring strategy is to promote management excellency at its highest level on protected areas in Central America
- 2 Defining an optimum scenario for management on protected areas is a very important step that determines the most necessary aspects to obtain excellency in managing protected areas This scenario would represent a standard against which the real situation of the protected area would be compared
- 3 The plan for protected areas management if it existed would determine the optimum scenario Even so this plan would have to be reviewed and updated
- 4 If a plan for handling protected areas does not exist the operative plans could be taken as a beginning point in order to establish the optimum scenario
- 5 In any case even when lacking of an operative plan, consulting the field staff at every level would allow to build the scenario
- 6 The measurements of the indicators must be quantitative in order to allow comparison
- 7 The development level that wants to be achieved is the one assigned by the indicators or group of indicators that deserve the highest rank in the table
- 8 The procedure is not normative or of absolute application It establishes basic criteria and is flexible so that it may adjust to the development conditions of each one of the areas It depends on knowledge capacity of the evaluating team funding and information availability
- 9 The measurements have to be carried out by national authorities on protected areas in each country
- 10 It is advisable that indicators are measured at least every six months This will allow to show significant changes
- 11 If there is an indicator that is not applicable to one of the protected areas a score does not have to be assigned but a detailed justification must be attached to the particular case

II The Optimum Scenario of the Protected Area

The optimum scenario of the protected area is defined as the detail of a "view" of the area. This view defines where is the area addressed in a determined term expressed in years.

Once the monitoring staff of the protected area has defined the accomplishment level of all the indicators it is necessary to achieve an exercise in which the optimum scenario is defined. Preferably this exercise will be conformed out of a work session of all the people that participates in the planning and decision-making of the protected area. The exercise must be addressed by the monitoring staff of the area.

Some indicators do not need lots of details to include them in the optimum scenario. For example the existence of an in force and implemented management plan which implies very obvious actions that do not need to much details. On the contrary to have the personnel for the basic management of the area requires that for the optimum scenario the actual personnel is described and to analyze what other kind of personnel is needed based on the activities of the area that are not normally achieved to give a basic management (how many persons what positions and to accomplish which activities for example). This same happens with the necessary equipment for the basic management (how many shovels machetes communication radios etc). For the optimum scenario it is necessary to check for the on hand inventory and to analyze which is the missing equipment which is necessary to fulfill the basic activities of management.

Therefore, the optimum scenario can be formed out of a detailed description in an narrative way or as a detailed chart of the optimum scenario of each indicator. This detailed description must be accompanied by a chart where every indicator and the proposed goal to be accomplished is presented after a period of time. This term must be agreed by the staff. Preferably it is recommended a five-years horizon. However this will depend of the conditions and possibilities of each protected area. The chart to present the optimum scenario at the same time must include columns to divide the levels of each indicator that will be carried out every year of the proposed horizon. For example with a five-years horizon to acquire the 100% of the equipment for the basic management of the area it is wise to plan it in a stepped way: what amount of the equipment is going to be acquired during the five years?

Chart # _____ Optimum scenario for five years of the protected area X (Illustrative example)

	Year 1	Year 2	Year 3	Year 4	Year 5
Indicator 1					
Suitable Equipment Indicator, etc	25% of the acquired equipment 3 shovels 2 machetes one communication radio etc	50% of the acquired equipment slides projector a boat an onboard motor etc	75% of the acquired equipment a computer with its printer 5 binoculars field guides for birds plants etc	Etc	Etc

Once having the detailed description and the chart this must be considered the optimum scenario against which the monitoring of indicators of the protected area will follow.

III The Monitoring Staff of the Protected Area

It is recommended that the protected area counts on a permanent monitoring staff. This staff will be in charge of organizing the monitoring sessions the same as to be sure that the protected area counts with the necessary evidence to review every indicator and to give the necessary follow up to the results of each measurement of the indicators. The follow up implies to annotate and to organize (charts graphics) the results of all the respective measurements of their protected area to carry out comparisons of the indicators through time and to report the results to it may concern.

Preferably the staff of monitoring will be conformed of at least, by the persons in charge of the programs, processes or activities within the protected area, the person in charge of the management of the area, NGO's representatives of the protected areas in the country. It must be explained that this staff must be of wide participation and permanent to obtain a constant follow up.

At the same time it is important that the members of the staff to be acknowledged about the monitoring strategy and the process for its application. For this a training meeting can be considered or at least for two attendees.

IV The Meeting of Monitoring of the Protected Area

The Monitoring Meeting will be organized by the monitoring staff of the protected area. To such meeting besides the staff any person that can give opinions and enriching ideas about the management of the area in the term that the evaluation is being carried out should be invited.

For this meeting it is important to count with a whole day to work. The Monitoring staff must be sure that the attendees of the meeting can attend the meeting site on time. The working materials and the evidence must be ready and reviewed with anticipation. One of the members of the Monitoring Staff must facilitate the work meeting to maintain order and time to be well-spent.

The work meeting can start with a results of last monitoring meeting review and the optimum scenario of the area. In the case that this is the first meeting, this can start with a discussion of the process to follow and the previously defined optimum scenario. Following, it is necessary to initiate to check each of the indicators using the "Monitoring of Protected Areas Field Report Form", the evidences for each indicator and the optimum scenario to compare and to evaluate. For each indicator once its current status is being discussed a grade of an existing scale must be assigned to it. If this is the first monitoring meeting the results must be considered the base line ("baseline") for the protected area.

After reviewing and assigning grades to all the indicators the work meeting can be ended with a brief discussion about the protected area status and the following steps to improve its management.

Monitoring Strategy Scopes

1 SOCIAL SCOPE

This scope takes into account that the protected area must communicate with and participate the interest groups in planning and managing aspects as well as in the decision-making process

- 1 Communications element
Organized and planned communication between the protected area and its interest group is of great importance

a 1 Willingness towards communication on the protected area

This criterion takes into account the preparation and execution of a communication plan as well as the measurement of its impact

INDICATOR An evaluated and in-progress communication plan on the protected area

Indicator justification

The basic concept of this indicator is that the protected area has to have a communication plan that spreads true information efficiently, about the way in which the protected area is managed its species and ecosystems. At the same time it is important to measure the impact this program has. It is of vital importance to establish appropriate communication links between the interest groups of the protected area.

Indicator measurement

This indicator can be measured by comparing the initial optimum scenario against the condition of this component on the protected area at the time of measurement. This condition is ranked based on the presence or lack of a communication plan and its execution.

- 5 There is an on-going communication plan which is evaluated and oriented to have a greater impact at the target population
- 4 The plan carried out and its impact is evaluated in the target population
- 3 There is sufficient technology, equipment and material available to carry out the communications program and so it is carried out
- 2 Communication needs have been identified
- 1 There is no communication plan or isolated actions, there is no desire to have one

2 Participation element

b 1 Participation criterion

The participation of interest groups on a protected area promotes the democratization principle in management

INDICATOR Participation

Indicator justification

The protected area must guarantee enough spaces and mechanisms to allow the participation from interest groups in management, planning and decision-making processes in order to be successful in the future

Indicator measurement

This indicator may be measured with methods that have different complexity levels. Starting with the various planning meetings and decision-making process of the protected area where representatives of the interest groups take part, up to interviews with interest groups to measure their perception and satisfaction in the participation. The ranking of the indicator will be determined according to the following table

- 5 Interest groups participate in absolutely every aspect of planning, managing and decision-making on the protected area
- 4 Interest groups participate in planning and managing the protected area (not so in the decision-making)
- 3 Interest groups participate in some of the planning activities of the protected area
- 2 Interest groups have shown their willingness to participate and the protected area administrators consult with interest groups
- 1 Interest groups do not participate in planning and managing the protected area. The decisions are centralized

c Land Tenure element

c 1 Information about Land Tenure Criterion

This criterion considers aspects of the status of land tenure and information usage to influence the management

INDICATOR Land Tenure in the Protected Area

Justification of the Indicator

This indicator promotes the idea that the protected area must be acknowledged of the situation of the land tenure in the case of the existence of conflicts. These must be solved. In governmental protected areas, mainly, is very important to take into account accurate information about land tenure

Measurement of the Indicator

This indicator can be measured by checking the files of land tenure of the protected area (maps official plans etc), then, information can be compared through time to measure its progress. Other important measurement is to measure by an interview to the person in charge of the protected area to find out if the information about land tenure is being used in the decision-making. The corresponding grading will be assigned with the following scale

- 5 Information about land tenure is available (and mapped), and it is constantly used to negotiate the adequate management of the protected area with a minimum conflict level
- 4 Information about land tenure is available (and mapped) and is partially used in the management of the protected area
- 3 Information about land tenure is available in the protected area but is not used to solve the related conflicts in the protected areas
- 2 Information about land tenure already exists or it is spread and it is very difficult to access it
- 1 There is no information about land tenure and it is identified as an important topic

d Education factor

d 1 Education program criterion

This criterion takes into account everything that refers to the commitment of the protected area of having and executing an environmental education program

INDICATOR Education

Indicator justification

This indicator takes into account the concept that the protected area must have an education program emphasized on the environment to promote behavioral and attitude changes in the interest groups

Indicator measurement

This indicator is measured with the existence of an environmental education plan its execution and evaluation. The table to assign an assessment is as follows

- 5 Executes the environmental education program and it permanently evaluates its impact
- 4 Some actions of the environmental education program are executed
- 3 There is an environmental education program but it is not implemented due to lack of resources
- 2 An educational environmental program is being designed

- 1 There is no educational environmental program

II ADMINISTRATIVE SCOPE

This context covers different factors of a protected area such as infrastructure staff members and planning

- 1 Infrastructure factor
 - a 1 **Criterion of internal access to the protected area**

INDICATOR Access

Indicator justification

This indicator deals with the staff members working at the protected area so that they may have access allowing an integral management of the area

Indicator measurement

To measure this indicator the access to every zone must be measured because this indicator allows the integral management of the protected area. Asking the area staff should be enough to find out if the available access is the one needed. Based on this information this indicator can be assessed according to the following table

- 3 100% of the access allows an integral management of the area
- 4 75% of the access allows an integral management of the area
- 3 50% of the access allows an integral management of the area
- 2 25% of the access allows an integral management of the area
- 1 There is no internal access of the Protected Area

a.2 Criterion on protected area staff equipment

INDICATOR Equipment

Indicator justification

This indicators considers that the protected area staff has to have enough and good quality equipment in order to carry out an efficient management on the protected area

Measurement indicator

This indicator can be measured by reviewing the last equipment inventory that belongs to the protected area and comparing it with the equipment described in the optimum scenario. At the same time the staff may be requested to evaluate if the available equipment is suitable for the management of the protected area. After analyzing the information gathered an assessment should be assigned according to the following table

- 5 100% of the suitable equipment for an efficient management of the protected area
- 4 75% of the equipment for the prioritized management activities
- 3 50% of the suitable equipment has been purchased
- 2 25% of the suitable equipment has been purchased
- 1 there is no equipment

a 3 Criterion on physical facilities necessary to manage the protected area

INDICATOR Physical facilities on the protected area

Indicator justification

This indicator takes into account all aspects regarding physical facilities on the protected area that allow an efficient management such as buildings, vigilance posts, roads, signs and others.

Indicator measurement

This indicator can be measured comparing the locations proposed in the optimum scenario with the ones existing at the time the measurement is done. Based on this difference, an assessment should be assigned according to the following table:

- 3 100% physical facilities to manage the area are available
- 4 75% of physical facilities to manage the area are ready
- 2 50% of physical facilities are ready, there are significant gaps
- 2 25% of physical facilities are available
- 1 there is no physical facility for managing the area

1 Staff factor of the protected area

This element covers every criteria related with staff members of the protected area, such as number of personnel in the protected area, training level, staff stability and suitability level with the jobs that are being carried out by them.

b 1 Criterion of number of personnel on the protected area

INDICATOR Number of personnel**Indicator justification**

Every protected area has to have an adequate number of personnel in order to be able to accomplish a successful management of the area

Measurement of indicator

Measuring this indicator is relatively simple. First, there must be a review on the number of personnel described in an optimum scenario. Second, this data must be compared with the actual number of personnel that work at the protected area. The difference between both values must be expressed in a percentage. Afterwards, an assessment should be assigned according to the following table

- | | |
|---|--|
| 2 | 100% of the necessary personnel for the basic administration of the area |
| 4 | 75% of the necessary personnel for the basic administration of the area |
| 3 | 50% of the necessary personnel for the basic administration of the area |
| 2 | 25% of the necessary personnel for the basic administration of the area |
| 1 | There are no personnel for the basic administration |

b 2 Criterion on staff training**INDICATOR Training level of staff members****Indicator justification**

This indicator supports the idea that besides having enough personnel, the staff must be well trained for the jobs they are to carry out. This will contribute to a better and more successful management of the protected area.

Indicator measurement

This indicator can be measured with a short consultation with the area staff members of the area regarding the training they have received during the last months. This data must be compared with the optimum scenario defined for the protected area. After comparing, an assessment should be assigned according to the following table

- | | |
|---|---|
| 3 | 100% of the staff members are trained to carry out their responsibilities |
| 4 | 75% of the staff members are trained to carry out their responsibilities |
| 3 | 50% of the staff members are trained to carry out their responsibilities |
| 2 | 25% of the staff members are trained to carry out their responsibilities |

1 the staff members have not been specifically trained to carry out their responsibilities

b 3 Staff stability criterion

INDICATOR Staff stability

Indicator justification

With the purpose of guaranteeing the best possible protected area management the staff members have to find stability in their jobs in order to avoid staff rotation. At the same time this principle guarantees that the management programs, training and protected area knowledge have continuity.

Indicator measurement

This indicator can be measured by making a detailed revision of the appointment of officers carried out at the protected area, the frequency of staff transfers and the amount of years each staff member has been working at the protected area. Once the area rotation rate in time has been determined, an assessment must be assigned according to the following table.

- 5 There is no staff rotation in staff in the management that has been working >5 years
- 4 25% of staff rotation < 5 years
- 3 50% of staff rotation < 3 years
- 2 75% of staff rotation < 1 year
- 1 100% of staff rotation = instability < 6 months

1 Planning element

This element takes into account the criteria related with an appropriate planning for the protected area such as a management plan, operative planning, zoning and threat analysis

c 1 Management plan criterion

INDICATOR Protected area management plan

Indicator justification

The main principle that supports this indicator is that every protected area must have a management plan as the main tool for long term planning that must direct the management actions

Indicator measurement

This indicator may be measured through consultations with the administration of the protected area in order to review the development level of the management plan Based on this consultation, an assessment should be determined according to the following table

- 5 Fully completed plan and totally implemented management
- 4 Fully completed management and implemented in some of its programs
- 3 Complete management plan but not yet implemented
- 2 Management plan at its creation stage
- 1 There is no management plan

c 2 Operative planning criterion

INDICATOR Protected area operative plan

Indicator justification

This indicator promotes the idea that every protected area must have an operative planning derived ideally from a management plan This kind of planning is represented with annual operative plans that detail goals and activities of the protected area during a specified year

Indicator measurement

This indicator can be measured through consultations with the protected area administration and by reviewing approved and implemented operative plans. The evidence of operative plans must be compared with objectives, goals and activities detailed in the management plan of the protected area. Activity reports of previous years can also be used as evidence. Once this analysis is carried out, it is necessary to assign an assessment according to the following table

- 5 Operative plan being implemented according to the management plan
- 4 Operative plan implemented according to some activities from the management plan
- 3 Operative plan implemented without basing it on the management plan
- 2 Operative plan at its creation stage
- 1 There is no operative plan

c 3 Zoning criterion**INDICATOR Protected area zoning****Indicator justification**

This indicator marks the importance of having an efficient zoning of the protected area. The zoning allows a better organized management.

Indicator measurement

This indicator can be measured by means of a consultation with the administration of the protected area and reviewing the documentation that details zoning. Consultations with the administration must include an evaluation of the zoning and the management of the area. Afterwards, an assessment should be determined according to the following table

- 5 Area zoning allows a responsible management of the unit
- 4 Area zoning is fairly responsible allowing the management
- 3 Area zoning allows a low management
- 2 Zoning limits the management of the area
- 1 There is no zoning

c 4 Threat analysis criterion**INDICATOR Protected area threat analysis****Indicator justification**

This indicator expresses the need of the protected area to carry out a threat analysis that helps to address management actions and enriches planning.

Indicator measurement

This indicator can be measured with a brief consultation with the area directorship about the existence of this kind of analysis if it is in its development stage, according to what is described in the optimum scenario. Once the analysis existence has been verified a grade must be assigned according to the following scale

- 4 100% of the threats identified, prioritized and addressed by management actions
- 1 75% of the threats have been identified and prioritized, there is a specific strategy to address some of the threats
- 2 50% of the threats analysis ready, a specific strategy has not been addressed to deal with threats
- 2 25% of the threats analyses in progress
- 1 0% there is no threats analysis

1 Use of the protected area

This element includes criterion regarding the use of the protected area by the society and its possible impacts on natural resources and neighboring communities. Some of the criteria covered are types and impact of use on the protected area

d 1 Types of use criterion**INDICATOR Types of use criterion****Indicator justification**

This indicator promotes the idea that the protected area allows different types of use by the society according to its goals and management category

Indicator measurement

The measurement of this indicator can be done through a brief consultation with staff members of the protected area in order to identify the different kinds of exploitation and analyze their compatibility with the goals of the area. Once the information is obtained an assessment should be determined according to the following table

- 5 Compatible use and growing with the goals of the area
- 4 Compatible use with goals decrease
- 3 Compatible use with goals increase
- 2 Non-compatible use decrease
- 1 Non-compatible use stable or increase

d 2 Use impact criterion**INDICATOR Negative impacts of the type of use of natural resources on the protected area****Indicator justification**

The evaluation of any kind of negative impacts of any kind of use on the protected area allows to define of measures of possible problems that could cause damage to the area

Indicator measurement

In order to measure this indicator it is necessary to carry out a pre-evaluation of the negative impacts that any kind of permissible use could generate on the protected area. This analysis must be simple and has to take into account the area staff members as well as experts when the situation so requires. Once identified negative impacts should be put into perspective of the percentage of the area that would be affected. Once this has been estimated an assessment should be determined according to the following table

- 5 Impacts of use on <25% of the land
- 4 Impact of use over 25% of the land
- 3 Impacts of use over 50% of the land
- 2 Impacts of use over 75% of the land
- 1 Impacts of use over 100% of the land

Note

The natural resources imply air water land flora and fauna

INDICATOR Impacts of the use kind on neighboring communities of the protected area

Indicator justification

This indicator represents for the protected area the concern to measure and avoid negative impacts as well to promote the positive ones, of any kind of use that is allowed within the area on the neighboring communities

Measurement of the indicator

This indicator may be measured using different methods and levels of complexity. Since this tool must be simple to use it is suggested to measure the indicator through brief consultations to the managers of the communities closer by to the protected area. The communities to be consulted must be defined in the optimum scenario of the protected area. Once the communities have been defined the percentage of the impacted communities by any kind of use in the area an assessment must be assigned from the following table. In case the one of the protected areas does not have any use no assessment must be placed

- 5 Use impacts over <25% of the communities
- 4 Use impacts over 25% of the communities
- 3 Use impacts over 50% of the communities
- 2 Use impacts over 75% of the communities
- 1 Use impacts over 100% of the communities

e Monitoring and Law Enforcement on the protected area

This element takes into consideration the criteria related to the protection and monitoring of the protected area such as law enforcement plans and their impact as well as the demarcation of limits

E 1 Criterion Law enforcement on the protected area

INDICATOR Law enforcement plan for the protected area

Indicator justification

This indicator is important for the management of the protected area since it is related to other monitoring measurements patrolling and protection of the area. The need to organize these activities within a plan is the key to guarantee success against the direct threats to the protected resources

Indicator measurement

This indicator may be measured with a brief consultation from the management on the protected area. The existence or lack of existence of the plan and the actual performance of such will bring into consideration enough arguments to assign an assessment in the following table

- 5 There is a law enforcement plan and it is completely applied
- 4 There is a law enforcement plan and it is almost fully applied
- 3 There is a law enforcement plan and it is partially applied
- 2 There is no law enforcement plan but there are systematic actions being carried out
- 1 There is no law enforcement plan and no actions have been ordered

e 2 Criterion Impact of the law enforcement plan

INDICATOR Impact of the law enforcement plan on the protected area

Indicator justification

The impact of the law enforcement plan is measured according to the amount of times that illegal actions and non-permitted activities take place within a protected area. A successful plan guarantees that no illegal action or activities which are not allowed within a protected area will exist.

Indicator measurement

This indicator will be measured according to the frequency that illegal actions or non-permitted activities take place within the protected area. This information can be obtained in the management of the area in statistics form of detentions, denunciations, reports and other. On the basis of this information, a grade must be assigned based on the following scale:

- 5 There does not exist any illegal actions or non-permitted activities
- 4 In very rare occasions illegal actions/non-permitted activities take place
- 3 Rare illegal actions/non-permitted activities
- 2 Few but frequent illegal actions and/or non-permitted activities
- 1 Illegal actions without control and/or non-permitted activities

e 3 Criterion Protected area limits

INDICATOR Limits demarcation

Indicator justification

The limits demarcation of the protected area is a very important priority. In such way that it makes it easier to manage the area and specially the law enforcement. At the same time, this helps to keep good relations with the direct neighbors of the area.

Indicator measurement

This indicator may be measured through the consultation with the management on the protected area asking if there is a legal definition of the limits of the area and if these are clearly marked in the field. According to the result of this consultation you must assign an assessment from the following table

- 5 There is legally defined limits and totally marked in the field
- 4 There is legally defined limits and partially marked
- 4 There is no legally defined limits but they are totally marked
- 3 There exist legally defined limits but with no demarcation
- 2 There are legally defined limits and partially demarked
- 1 There do not exist legally defined limits or demarked

f Knowledge of the resources element within the protected area

This element includes the criteria related with the development administration organization and use of the knowledge about the protected area. With the purpose to be able to obtain a successful management of the area it is necessary to be able to know in order to protect the area. In this way, it is possible to improve the conservation of the resources and the information may be disclosed based on the facts

f 1 Criterion Research program**INDICATOR Research program of the protected area****Indicator justification**

The need for scientific research on protected areas increases every day. Every protected area must organize their research priorities and efforts in a way that it allows improvement of the management of the area

Indicator measurement

This indicator may be measured by means of a consultation with the management of the area and the physical evidence of an research plan which may answer to the needs of the management of the protected area. Based on this consultation an assessment must be assigned from the following table

- 5 There is a research program structure and adequate for the needs of the management
- 4 There is a structured research program but not very adequate to the needs of the management

- 3 A research program does not exist but there is an adequate research for the needs of the management
- 2 A research program does not exist but there is an isolated research not very relevant to the management
- 1 There is no program or research

f2 Criterion Research administration

INDICATOR Research administration on the protected area

Indicator justification

Each protected area must have research regulations that define the instruments of the administration of the same

Indicator measurement

This indicator may be measured with the presence or the lack of regulations for research of the protected area and with evidence of the convenient follow-up that the management of the area must give the same. After reviewing this information an assessment must be assigned from the following table

- 5 There are regulations and the investigation has been followed-up
- 4 There are regulations but the investigation is being followed-up
- 3 There are regulations but the follow-up is scarce
- 2 There are regulations but no follow-up
- 1 There are no regulations or follow-up

f3 Criterion Information

INDICATOR Information organization

Indicator justification

Since the protected area brings forth vast amounts of information that must be organized and available it is important to establish the need to have the support of the organization

Indicator measurements

This indicator must be measured based on a consultation and review of the evidence of any information organization system. If it is necessary you must review if the information gathered is useful for the management of the protected area through a consultation with the personnel. After reviewing an assessment must be assigned from the following table

- 5 There is a registry system that appears to be very functional with a great amount of functional information and technological resources
- 4 Simple registry system but large enough to give good support to the administration of the protected area
- 3 Partial registry system with no order without any minimum functionality
- 2 Poorly conditioned registry system incomplete, without any order
- 1 There is no registry system

f 4 Criterion Environmental Monitoring

INDICATOR Indicator species of the ecosystem integrity

Indicator justification

This indicator will allow developing a knowledge database regarding the main species of the protected ecosystems in the protected area. The identification and monitoring of the state of these species is crucial to be able to know ahead of time any negative effect on the ecosystem.

Measurement of the indicator

The indicator may be measured when you obtain the evidence that the protected area has identified its indicator species according to a valid procedure. In addition, the personnel must pay attention to specifically directing to monitor the species identified as indicators. Later on an assessment must be placed that is in accordance to the following table.

- 5 The indicator species of the ecosystems on the protected area are identified using the valid scientific information and the personnel in field have available information
- 4 Some of the indicator species on the protected area are identified and the information for the personnel in the field have scarce information
- 3 There are investigation efforts to identify the indicator species in the protected area and to be able to obtain information for the personnel in the field
- 2 There are previous research documents regarding the indicator species in the protected area
- 1 There is no information whatsoever regarding the indicator species in the protected area

INDICATOR Protected area connectivity

Indicator justification

It is of great value for the Central American region to evaluate the connectivity for all the protected area with the purpose of promoting the concept of the Mesoamerican biological

corridor This connectivity may be well understood as the proximity of the protected areas with other continuous or semi-continuous ecosystems that may allow the flush of species and genes

Indicator measurement

This indicator may be measured with the evidence of a formal and responsible evaluation of the connectivity of the protected area that has been evaluated and documented by the staff members in the area in cooperation with the universities and NGO that have experience in that field After reviewing this information an assessment from the following table must be assigned

- 4 The actual and potential connectivity of the protected area has been evaluated and has been well documented
- 4 The actual connectivity for the protected area has been evaluated and it is in the process of being documented
- 3 The actual connectivity for the protected area has been evaluated
- 2 The actual connectivity for the protected area is in the process of being evaluated
- 1 There is no information whatsoever regarding the connectivity for the protected area

INDICATOR Monitoring abiotic factors on the protected area

Indicator justification

The abiotic factors are one of the main components for the long term environmental monitoring that may be able to let us understand how the ecosystems work However this indicator must not only include the use of sophisticated and expensive technology it must be within the flexibility to obtain all the information possible under the development and financing conditions on the protected area

Indicator measurement

This indicator can be measured by reviewing the evidence that the protected area is carrying out by taking notes of the abiotic factors mainly rainfall temperature medium sunlight speed and direction of the wind tide level and contents of oxygen in the water The main abiotic elements of interest on a protected area must be defined in its optimal scenario After reviewing this evidence an assessment must be assigned from the following scale

- 5 There is data of over 5 years of the main abiotic factors of interest on the protected area
- 4 There is data of under 5 years of the main abiotic factors of interest on the protected area
- 3 There is data of the main abiotic factors of interest on the protected area
- 2 There are efforts to begin collecting data about the main abiotic factors of interest on the protected area

- 1 There is no information whatsoever about the main abiotic factors of interest on the protected area

III POLITICAL-LEGAL SCOPE

This scope includes factors and approaches related with legal and governmental framework that surrounds any protected area

a. Legal framework on the protected area factor

a 1 Criterion Legal status

INDICATOR Legal status on the protected area

Indicator justification

The consolidation of the legal status on the protected area is of great importance to guarantee the existence of such. This consolidation may come about from the legal structure of greatest hierarchy that avoids promoting total or partial segregation of private enterprises on the area and so that it may efficiently regulate the rules established for that specific area

Indicator measurement

This indicator may be measured with a brief review of the legal support that the protected area has (decree, proposal, law, etc.) Later on an assessment from the following table must be assigned

- 5 Official declaration from the highest possible level on the protected area, fully acknowledged
- 4 Official declaration of the protected area not from the highest possible level
- 3 A proposal for a declaration on the protected area in process
- 2 There are proposals to declare the area as a protected area, but the process has not yet been initiated
- 1 There is no official declaration or proposal whatsoever to support the wild area

a.2 Criterion Legal matters

INDICATOR Law enforcement

Indicator justification

Every protected area must have legal mechanisms to enforce the law that establishes its creation and status. It is very important that the staff members in charge of enforcing the law on the protected area have enough resources and knowledge to be able to be successful.

Indicator measurement

This indicator may be measured by making a brief review of the legal instruments on the protected area to enforce the law. At the same time, a brief consultation to the personnel on the protected area may help as evidence to measure if there is full knowledge of these. Once the review has taken place, an assessment from the following table must be assigned.

- 5 The necessary legal procedures exist for the enforcement of the law and all the executors are aware of them
- 4 The necessary legal procedures exist, many executors are aware of them and there are programs to improve these
- 3 There are legal procedures, but they are not 100% adequate and the executors are not aware of them. However, there are programs working to improve this
- 2 Insufficient procedures, very few executors are aware of them and there is no program to improve this
- 1 There is no legal procedures to enforce the law

b Institutional framework element on the protected area

b 1 Criterion Administration of the protected area

INDICATOR Administrative autonomy on the protected area

Indicator justification

The administration on the protected area is influenced by the new ideas of decentralization and administrative autonomy that have to be studied and monitored.

Indicator measurement

The best way to measure this indicator is by a brief consultation to the administration on the protected area and the governing authorities of the national system for protected areas. Once you are able to determine the level of administrative autonomy of the protected area, you must assign an assessment from the following table.

- 5 The protected area does have authority on administration and technical matters

- 4 The protected area has full authority over its administrative matters but not in those regarding technical matters
- 3 The protected area has authority over its administrative matters, but sometimes it needs to consult headquarters
- 2 Many times the protected area must consult headquarters and the regional office to make decisions
- 1 The protected area has no authority regarding its administrative matters

b 2 Inter-organizational relations criterion

INDICATOR Inter-organizational relations on the protected area

Indicator justification

The protected area does not exist in an isolated context rather it interacts with several actors represented by governmental and non-governmental organizations. This condition demands that the protected area keep tight inter-organizational relations.

Indicator measurement

As a way to measure this indicator it is necessary to verify the existence of the following: a list of institutions with which the protected area keeps in touch regularly, cooperation agreements and its actual status. The protected area must supply a percentage of institutions with which it keeps relations. After calculating this result it must assign an assessment from the following table:

- 5 There are organizations on-going agreements and relations with > 75% of the organizations involved in on-going projects
- 4 There is a relation with 75% of the organizations involved in the on-going and there are actions in progress
- 3 There is a relation with 25-50% of the organizations involved with on-going projects
- 1 A relation has begun with < 25% of the organizations involved with the projects being carried out
- 1 There are no inter-institutional relations

IV ECONOMICAL-FINANCIAL SCOPE

The scope includes the factors and criteria related with financing and availability of funds production and assessments of goods and services and the direct benefits of the protected area of the interest groups

a Economical self-sustainability factor on the protected area

a.1 Criterion Financing

INDICATOR Long term financing plan on protected areas

Indicator justification

It must be an indispensable requirement to always have a long term financing plan which in turn guarantees enough funds for the optimal administration of the area

Indicator measurement

The measurement of the indicator is based on the existence or absence of a financing plan its execution and availability of funds for the optimal management of the area Based on this information you must assign an assessment from the following table

- 5 There is a long term financing plan there are mechanisms of financing working and income is enough for the management
- 4 There is no long term financing plan there are financing mechanisms working income is enough
- 3 There is no long term financing there are financing mechanisms working but income is not enough
- 2 There is no long term financing plan there are a few financing actions and income is not enough
- 1 There is no long term financing plan there are no financing mechanisms working

a.2 Criterion Expenditure availability

INDICATOR Expenditure availability

Indicator justification

Every protected area must have with enough financing for its management However the area must have these expenditures funds available specially if these are generated by itself It must be guaranteed that the funds generated by the protected area be enough income for the optimal management

Indicator measurement

This indicator may be measured through a brief consultation with the management of the protected area to verify the existence of policies to guarantee expenditure funds availability generated by the protected area. In addition, the protected area must calculate the percentage of the investment necessary for the management covered by the funds available for expenses. After having performed the consultation you must assign an assessment from the following table

- 5 The protected area has the money that it generates available to cover 100% of the investment that it needs
- 4 The protected area has the money that it generates available to cover 75% of the investment that it needs
- 3 The protected area has money that it generates available to cover 50 % of the investment that it needs
- 2 The protected area has money that it generates available to cover 25% of the investment that it needs
- 1 The protected area does not have the money that it generates available

c Goods and services production factor

c 1 Criterion Goods and Services

INDICATOR Goods and services identification

Indicator justification

The protected area must be well acknowledged of the goods and services it provides to society. Many of these goods and services are of great importance such as drinking water, hydroelectric energy, tourism and wood among others. The identification and assessment of these are valid discussions to justify the existence of the area.

Indicator measurement

In order to measure this indicator, it is necessary for the protected area to show evidence of the identification and valuation of its goods and services. After reviewing this evidence, an assessment of the following table must be assigned.

- 5 The protected area has identified and assessed the goods and services it produces
- 4 The protected area has identified its goods and services and has a 75% of them assessed
- 3 The protected area has identified the goods and services and has a 50% of them assessed
- 2 The protected area has identifies its goods and services and has a 25% of them assessed
- 1 The protected area has not identified its goods and services

c 2 Criterion Value of goods and services perception

INDICATOR Value of goods and services perception

Indicator Justification

Not only the staff members of the area must know the assessment of goods and services generated by the protected area, but also by the interest groups. This condition will generate the support of these groups towards the protected area.

Indicator Measurement

This indicator may be measured against the results of a consultation to interest groups on the protected area. Such consultation must show the percentage of the interest groups that acknowledge the goods and services of the protected area. Based in these consultations an assessment from the following table must be assigned.

- 5 >75% of the interest groups acknowledges the goods and services on the protected area
- 4 50-75% of the interest groups acknowledges the goods and services of the protected area
- 3 25-50% of the interest groups acknowledges the goods and services of the protected area
- 2 <25% of the interest groups acknowledges the goods and services of the protected area
- 2 0% of the interest groups acknowledges the goods and services of the protected area

d Benefits element

d 1 Criterion Direct benefits sources

INDICATOR Direct benefits sources

Indicator justification

This indicator highlights the interest of the protected area to know the direct benefits the interest groups gains from it.

Indicator measurement

This indicator may be measured after reviewing the evidence of the protected area since part of the percentage of the interest groups receive direct benefits generated by the area. After checking the evidence an assessment must be assigned from the following table.

- 5 >75% of the interest groups receive some kind of direct benefit
- 4 50-75% of the interest groups receive some kind of direct benefit
- 3 25-50% of the interest groups receive some kind of direct benefit
- 2 <25% of the interest groups receive some kind of direct benefit

- 1 0% of the interest groups receive some kind of direct benefit

Part Three Future Indicators

This part shows a list of proposed indicators to be developed in the coming years. Such list represents only a proposal and it is expected to call the attention of all the persons involved in protected areas of Central America.

The development of such indicators must be under the responsibility of both the Consejo Centroamericano de Areas Protegidas (CCAP) as well as the existing projects of the national systems and the national directors of protected areas through participation meetings. We must not forget that some of following indicators stated require equipment and technologies that are not available in all the protected areas of the region. Therefore when developing and proposing any indicator the costs implied must be considered.

Some future indicators

- Existence of recent air photos maps of vegetable coverage
- Inventories of flora and fauna species
- Changes in the populations of cynergetic species on the protected area
- Presence of uncommon species or undergoing threat
- Behavior distribution and abundance of indicator species of the integrity of the ecosystems (birds micromammalian invertebrated anfibiun etc)
- Behavior distribution and abundance of animal species that need big territory spaces (earth water or sea)
- Behavior distribution and abundance of animal species with connections of distribution with other protected areas
- Flora and fauna inventories (vegetable associations)
- Meteorologic or weather elements Rainfall sun light speed and wind direction barometric pressure oceanic flows erosion others
- Changes in superficial water Oxigen Coliforms Nitratum, others
- Global climatic changes
- Changes in air quality
- Change in vegetable coverage in protected areas (remote sensors SIG)

- Representativity of ecoregions for Central America
- Changes of human settlements within the protected area and in amortization area
- Pressure of communities around the protected areas
- Existence and changes of ethnic groups in or neighboring communities
- Main sources of employment (jobs generated by the protected area)
- Composition of the population of communities near to the protected area
- Changes in human activities (tourism fishing tree cutting and others, etc), that may affect the protected area
- Changes in sites of archeological interest
- Organization level on the protected area

4/8

PROTECTED AREAS MONITORING FIELD REPORT FORM

Name of the Protected Area

Measurement date

Testers name

Indicators	Revised evidence	Assessment	Notes
<p>Protected Area Communication Plan</p> <p>5- There is an on going communication plan which is evaluated to have a greater impact on the target population</p> <p>4- The plan is carried out and its impact in the target population is evaluated</p> <p>3- There is technical availability enough equipment and material to carry out the communication program and it is carried out</p> <p>2- Communication needs have been identified</p> <p>1- There is no communication plan or isolated actions there is no availability to have</p>			
<p>Participation of Interest Groups</p> <p>5- Interest groups participate in absolutely every aspect of planning management and decision making of the PA</p> <p>4- Interest groups participate in planning and management of the PA (not so in decision making)</p> <p>3- Interest groups participate in some of the planning activities of the PA</p> <p>2- Interest groups have shown their willingness to participate and the PA administrators consult with the interest groups</p> <p>1- Interest groups do not participate in planning or manage the PA The decision are centralized</p>			
<p>Land tenure of protected area</p> <p>5- The information on land tenure is available (and mapped) and it is constantly used to carry out negotiations on an adequate management of the protected area with a minimum level of conflict</p> <p>4- Information on land tenure is available (and mapped) and it is partially used in the management of the PA</p> <p>3- Information on land tenure is available in the PA but it is not used to solve problems related with the PA</p> <p>2- There is information on land tenure or it is dispersed but access to it is difficult</p> <p>1- There is no information on land tenure and this is identified as a relevant concern</p>			

Indicators	Revised evidence	Assessment	Notes
Protected Area Environmental Education Plan			
5= Executes the EEP and its impact is permanently evaluated 4= Some of the EEP actions are executed 3= There is a EEP but it is not implemented due to lack of resources 2= An EEP is being designed or there are isolated actions 1= There is no EEP no isolated actions			
Access for the Protected Area Management			
5= 100% of the access allows an integral management of the area 4= 75% of the access allows an integral management of the area 3= 50% of the access allows an integral management of the area 2= 25% of the access allows an integral management of the area 1= 0% there is no access for the management of the area			
Right Equipment for the Protected Area Management			
5= 100% of the suitable equipment for the efficient management of the ASP has been purchased 4= 75% of the equipment for the priority management activities 3= 50% of the suitable equipment has been purchased 2= 25% of the suitable equipment has been purchased 1= 0% there is no equipment			
Services for the Protected Area Management			
5= 100% of the physical facilities to manage the area are ready 4= 75% of the physical facilities to manage the area are ready 3= 50% of the physical facilities there are important steps 2= 25% of the physical facilities are available 1= 0% there are no physical facilities to manage the area			
Necessary Personnel on the Protected Area Management			
5= 100% of the necessary personnel for the basic administration has been hired of the area 4= 75% of the necessary personnel for the basic administration has been hired of the area 3= 50% of the necessary personnel for the basic administration has been hired of the area 2= 25% of the necessary personnel for the basic administration has been hired of the area 1= There are no personnel for the administration			

Indicators	Revised evidence	Assessment	Notes
<p>Trained Personnel for the Area Management</p> <p>5= 100% of the personnel are trained to carry out their jobs</p> <p>4= 75% of the personnel are trained to carry out their jobs</p> <p>3= 50% of the personnel are trained to carry out their jobs</p> <p>2= 25% of the personnel are trained to carry out their jobs</p> <p>1= the personnel has not been specifically trained to carry out their jobs</p>			
<p>Protected Area Personnel Rotation</p> <p>5= There is no rotation in the staff that has been working >5 years</p> <p>4= 25% of staff rotation < 5 years</p> <p>3= 50% of staff rotation < 3 years</p> <p>2= 75% of staff rotation < 1 year</p> <p>1= 100% of staff rotation = instability < 6 months</p>			
<p>Protected Area Management Plan</p> <p>5= Management plan fully completed and totally implemented</p> <p>4= Management plan fully completed and implemented in some of its programs</p> <p>3= Management plan completed but not implemented</p> <p>2= Management plan being designed</p> <p>1= There is no management plan</p>			
<p>Protected Area Operational Planning</p> <p>5= Operational plan being implemented according to the management plan</p> <p>4= Operational plan implemented according to some activities of the management plan</p> <p>3= Operational plan implemented without basing it on the management plan</p> <p>2= Operational plan at its creation stage</p> <p>1= There is no an operational plan</p>			
<p>Protected Area Zoning for the Management</p> <p>5= Area zoning allows responsible management of the unit</p> <p>4= Area zoning is fairly responsible allowing the management</p> <p>3= Area zoning allows a low management</p> <p>2= Zoning that limits the management of the area</p> <p>1= There is no area zoning</p>			

Indicators	Revised evidence	Assessment	Notes
<p>Threat Analysis of Protected Areas Ready</p> <p>5= Threats are identified, prioritized and addressed by management actions</p> <p>4= Threats are identified, prioritized and addressed, there is a specific strategy prepared to address some of the threats</p> <p>3= Threats analysis is ready a specific strategy has not been addressed to deal with the threats</p> <p>2= Threat analysis at its stage of creation</p> <p>1= There is no analysis of threats</p>			
<p>Compatible Use on Protected Area</p> <p>5= Compatible use and stable with the goals of the area</p> <p>4= Compatible use with goals decrease</p> <p>3=Compatible use increase</p> <p>2= Not compatible use</p> <p>1=no compatible use stable or increase</p>			
<p>Non-compatible Use on Protected Area</p> <p>5= There is non-compatible use with objectives of the area</p> <p>4= Non-compatible use with objectives and it is decreasing</p> <p>3= Steady non-compatible use</p> <p>2= Non-compatible use</p> <p>1= There is a non-compatible use and it is decreasing</p>			
<p>Impact of Use over Natural Resources</p> <p>5= Use impact over < 25% of the land</p> <p>4= Use impact over 25% of the land</p> <p>3= Use impact over 50% of the land</p> <p>2= Use impact over 75% of the area</p> <p>1= Use impact over 100% of the land</p>			
<p>Impact of Use in Communities</p> <p>5= Impact of use over < 25% of the communities</p> <p>4= Impact of use over 25% of the communities</p> <p>3= Impact of use over 50% of the communities</p> <p>2= Impact of use over 75% of the communities</p> <p>1= Impact of use over 100% of the communities</p>			

Indicators	Revised evidence	Assessment	Notes
Protected Area Law Enforcement Plan			
5= There is a law enforcement plan and it is thoroughly applied 4= There is a law enforcement plan and it is almost thoroughly applied 3= There is a law enforcement plan and it is partially applied 2= There is not a law enforcement plan but there are systematic actions being carried out 1= There is no law enforcement plan and no actions have been ordered			
There are Illegal Actions those not allowed			
5= There does not exist any illegal actions or non permitted activities 4= Exceptionally occasions illegal actions/non permitted activities take place 3= Sporadic illegal actions and/or non permitted activities take place 2= Few but frequent illegal actions and/or non permitted activities 1= Uncontrollable illegal actions and/or non permitted activities			
Stated and Indicated protected Area Limits			
5= There are limits of the ASP legally defined and totally marked in the field 4= The limits of ASP not legally defined but totally marked in the field 3= The limits of ASP legally defined, and partially marked in the field 2= The limits of ASP legally defined but without indication in the field 1= The limits of ASP not legally defined and without indication in the field			
Adequate Research Program for the Protected Area			
5= There is an research program structured for the needs of the management 4= There is a structured research program but not very adequate to the management needs 3= There is a structured research program fairly adequate to the management needs 2= An research program does not exist but there is adequate investigation for the needs of management 1= An research program does not exist but there is an isolated investigation not very relevant to the management 1= There is no program or research			
Regulations and Follow-up of the Research			
5= There are regulations and the research has been followed up 4= There are no regulations but the research is being followed up 3= There are regulations but the follow up is scarce 2= There are regulations but no follow up 1= There are no regulations and follow up			

Indicators	Revised evidence	Assessment	Notes
Information Regarding the Systematized Protected Area			
<p>5= There is a registry system that appears to be very functional with a great amount of functional information and technological resources</p> <p>4 Simple registry system but large enough to give good support to the administration of the protected area</p> <p>3 Partial registry system with no order without any minimum functionality</p> <p>2 Poorly conditioned registry system, incomplete without any order</p> <p>1 There is no registry system</p>			
Identified and Investigated Indicator Species of the Area			
<p>5 The indicator species of the ecosystems on the protected area are identified using the valid scientific information and the staff members in field have available information</p> <p>4 Some of the indicator species on the protected area are identified and the information for the personnel in the field have scarce information</p> <p>3 There are investigation efforts to identify the indicator species in the protected area and to be able to obtain information for the personnel in the field</p> <p>2 There are previous research documents regarding the indicator species in the protected area</p> <p>1 There is no information whatsoever regarding the indicator species in the protected area</p>			
Assessed and Investigated Protected Area Connectivity			
<p>5 The actual and potential connectivity of the protected area has been assessed and has been well documented</p> <p>4 The actual connectivity for the protected area has been evaluated and it is in the process of being documented</p> <p>3 The actual connectivity for the protected area has been assessed</p> <p>2 The actual connectivity for the protected area is in the process of being assessed</p> <p>1 There is no information whatsoever regarding the connectivity for the protected area</p>			
Monitoring Abiotic Factors on the Protected Area			
<p>5 There is data of over 5 years of the main abiotic factors of interest on the protected area</p> <p>4 There is data of under 5 years of the main abiotic factors of interest on the protected area</p> <p>3 There is data of the main abiotic factors of interest on the protected area</p> <p>2 There are efforts to begin collecting data about the main abiotic factors of interest on the protected area</p> <p>1 There is no information whatsoever about the main abiotic factors of interest on the protected area</p>			

Indicators	Revised evidence	Assessment	Notes
Legal framework on the protected area factor			
5 Official declaration from the highest possible level on the protected area fully acknowledged 4 Official declaration not from the highest possible level on the protected area fully acknowledged 3 A proposal for a declaration on the protected area in process 2 There are proposals to declare the area as a protected area but the process has not yet been initiated 1 There is no official declaration or proposal whatsoever to support the wild area			
Appropriate Legal Procedures			
5 The necessary legal procedures exist for the enforcement of the law and all the executors are aware of them 4 The necessary legal procedures exist many executors are aware of them and there are programs to improve these 3 There are legal procedures but they are not 100% adequate and the executors are not aware of them However there are programs working to improve this 2 Insufficient procedures very few executors are aware of them and there is no program to improve this 1 There is no legal procedures to enforce the law			
Administrative Authority on the Protected Area			
5 The protected area does have authority on administration and planning matters 4 The protected area has full authority over its administrative matters but not in those regarding planning 3 The protected area has authority over its administrative matters but sometimes it needs to consult headquarters 2 Many times the protected area must consult headquarters and the regional office to make decisions 1 The protected area has no authority regarding its administrative matters			
Inter-institutional relations on the Protected Area			
5= There are organizations work agreements required in the complete execution of >75% of relations of organizations related with the ongoing project 4= There is 75% of relations and ongoing actions 3= There is 25-50% and ongoing actions 2= Relation has been initiated < 25% 1= No relations with organizations			

Indicators	Revised evidence	Assessment	Notes
<p>Protected Area with Long Term Financing</p> <p>5= There is a long term financing plan, there are ongoing financing mechanisms income are enough for management</p> <p>4= There is a plan mechanisms income are enough</p> <p>3= No plan mechanisms enough income</p> <p>2= No plan there are mechanisms but not enough income</p> <p>1= There is no plan, no mechanisms</p>			
<p>Availability of Autoproducted Funds</p> <p>5= ASP counts with the money that it produces to cover 100% of the investment it needs</p> <p>4= ASP counts with the money it produces to cover 75% of the investment it needs</p> <p>3= ASP counts with the money it produces to cover 50 % of the investment it needs</p> <p>2= ASP counts with the money it produces to cover 25% of the investment it needs</p> <p>1= ASP does not count with the money it produces</p>			
<p>Area with Goods and Utilities Identified and Assessed</p> <p>5= ASP has identified and assessed the goods and utilities it produces</p> <p>4= ASP has identified and assessed the goods and utilities, and a 75% of them are assessed</p> <p>3= ASP has identified the goods and utilities and a 50% of them are assessed</p> <p>2= ASP has identified the goods and utilities and a 25% of them are assessed</p> <p>1= ASP has not identified its goods and utilities</p>			
<p>Interest Groups Recognize Goods and Utilities of the Area</p> <p>5= >75% of the interest groups recognize the goods and utilities of AP</p> <p>4= 50 75% of the interest groups recognize the goods and utilities of AP</p> <p>3= 25 50% of the interest groups recognize the goods and utilities of AP</p> <p>2= <25% of the interest groups recognize the goods and utilities of AP</p> <p>1= 0% of the interest groups recognize the goods and utilities of AP</p>			
<p>Interest Groups Receive Direct Benefits</p> <p>5= >75% of the interest groups receive some kind of direct benefits</p> <p>4= 50 75% of the interest groups receive some kind of direct benefits</p> <p>3= 25 50% AP produced 50% of the interest groups</p> <p>2= <25% AP produced 25%</p> <p>1= AP did not produced direct income sources</p>			

Indicators	Revised evidence	Assessment	Notes
Totals			