❖ Standard 14. Produce a long-term financial plan to support strategies and measures, implementation, further data development, and analyses.

Case Study: MARFIN: A Financial Planning Tool for Coastal and Marine Protected Areas in the Mesoamerican Reef Ecoregion

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Purpose and region of analysis

This financial tool was initially developed as a financial model for the Mesoamerican Reef (MAR) Ecoregion. The MAR extends nearly 1,000 km from the Bay Islands of Honduras, north through Guatemala and Belize, up to the tip of Mexico's Yucatán Peninsula. It contains the largest barrier coral reef system in the Western Atlantic and is part of a larger interconnected system of coastal habitats and currents that stretches throughout the Caribbean basin and beyond. Although the MAR ecoregion sustains the livelihoods of over two million people from the four countries, an array of anthropogenic threats are resulting in the deterioration of this globally outstanding priority ecoregion,

Coastal and marine protected areas, including no-take zones, are a long-term alternative for the conservation of marine and fishing resources. Establishing an interconnected network of protected areas is considered a conservation strategy for a region such as the MAR because it fosters the conservation of biodiversity and of the ecological processes of various areas.

Sixty-three coastal and marine areas have been identified within the MAR that can constitute a regional network of protected areas. One of the greatest challenges facing protected areas is to achieve long-term financial sustainability. A marine protected area network requires financial support for both the management of the protected areas and costs associated with the network coordination body.

A financial model for the Mesoamerican Reef (MAR) – called MARFIN – was developed to:

1. Gather and analyze field information to determine the present and future management costs for each category of coastal and marine areas in the MAR.

2. Develop a tool that provides present and future financial scenarios for managing the coastal and marine protected areas in the MAR, and that can present different possible scenarios at a national and regional scale.

3. Develop a tool that will support the development of a strategy to secure the funds needed to establish a functional network of coastal and marine areas in the MAR.

The development of the financial model was a joint effort between the World Wildlife Fund (WWFUS) Conservation Planning and Design Program, the IBM Global Strategies Group (which provided pro-bono consulting support) and the Mesoamerican Reef Fund (MAR Fund). Although this tool was developed for the MAR region, it can be applied, with some modifications, to other coastal, marine or terrestrial protected areas in any part of the world.

Criteria/Methods

The protected area is the principal calculation unit. Data is entered by individual protected areas (PAs), although analyses may be performed by sets of PAs, by country or for the whole region.

For the MAR region, financial information was classified into the following groups or "dimensions" for modeling purposes:

- **Country**: Belize, Guatemala, Honduras, and Mexico.
- **Type of protected area**: coastal or marine
- **Size**: small (<1,000 ha); medium (from 1,000 to 10,000 ha), and large (>10,000 ha).
- **Development phase**: Three stages in the growth and development of protected areas: start-up, consolidation, full operation.
- **Use of bookkeeping accounts**: financial information on income and expenditures of protected areas can be entered as general ledger accounts, such as salaries, training and fuel, among others. Running expenses and investments/maintenance are analyzed in separate modules since investments and maintenance are handled differently from running expenses through time.
- **Administrative Programs**: financial information can also be entered by administrative programs, such as Monitoring and Evaluation, Research, Environmental Education, and Public Use, among others.
- **Financial Assumptions**: physical contingency, price contingency, inflation, and devaluation are some of the assumptions that can be applied to the data for projecting information through time.

The financial model allows users to design the database according to their needs and requirements. The database can be adapted to any type of protected area and any

number of PAs: one PA, sets of PAs, systems of protected areas in one country, and sets of PAs in more than one country or a full ecoregion such as the MAR.

Aspects such as types of PA, size, development phase, administrative programs, and accounts to be used are completely modifiable based on the needs of the users.

As in all financial plans, the model has income and expenditure sections in which to enter the information that is available on each protected area. It also has sections on financial assumptions, which are applicable at the national or regional level. The model also accounts for information on the cost of the activities to manage and monitor across the full network.

One of the most important and powerful features of MARFIN is a sophisticated analysis and reporting function that produces tables and graphs with projections on income and expenditures, as well as the relationship between them (gaps or surplus) for a period of years. The analysis functionality in the financial tool can provide support for developing cost sensitivity and other scenarios, and also support for progress and results monitoring, such as:

1. Establishing present and future management costs for each category or program of coastal and marine protected areas;
2. Determining the changes in costs and revenues due to changing circumstances or to improvement in management effectiveness (indicators); and
3. Tracking progress toward fundraising goals needed to establish a functional network of CMPA in the MAR (impact).

MARFIN Version 2, the next generation of the tool, was recently completed. This newer tool is an Access database that runs in Visual Basic, and is built upon the conceptual framework taken from the MARFIN Version 1.0. The model gets its "logic processes" and reporting functionality from Access and Crystal Reports. It runs on Windows 2000 or later Windows version (XP). .

Outcomes

The centerpiece of the MAR Fund's grants program is the development of an interconnected network of priority coastal and marine protected areas of high ecological and practical value. The MAR Fund will provide funding for a wide array of essential services of the protected areas. Because there are at least 63 coastal and marine protected areas, it is necessary to work in stages, by establishing and focusing on priorities.

The information generated by the financial tool for the MAR region is being used by the MAR Fund to determine the financial gaps for the priority areas in the region and

the size of the endowment required to finance the network. This information is being presented to and discussed with potential donors.

The tool has also generated interest from different stakeholders in the MAR region. The National Council for Protected Areas of Guatemala (CONAP) wants to use the MARFIN model to centralize financial information on the Guatemalan System of Protected Areas. The Honduran agency for protected areas (AFE-COHDEFOR) is also interested in applying the tool at the national level.

During the coming months, the tool will be applied to a limited number of marine protected areas in the Gulf of California. It will be an interesting trial, as the MARFIN model will be used for another region for the first time. Funders with an interest in supporting the long-term conservation of the MPAs will use the resulting information on current expenses and income, as well as financial projections for the next 10 years, to define a long-term financial strategy for the protected areas.

Products and Tools

Throughout the process of developing the financial model, several products have been completed and updated. At present, we have the following products and tools:

- Financial model MARFIN, Version 2.0. There are versions with data from the MAR region in the three languages and empty versions, without data, also in the three languages.
- Installation Manual for MARFIN V.2.0. The installation manual also includes instructions for making backups and reinstalling the model.
- Detailed MARFIN V. 2.0 User's Manual.
- Booklet on the "Financial Model for the Coastal and Marine Protected Areas of the Mesoamerican Reef (MAR) Version1.0". Although this document was prepared based on the first version of the model, the information it contains is still valid because it explains the objective of the model, the criteria used for its development, and its structure.

All of these products are available via the WWF web site panda.org/standards and on the MAR Fund web pages at www.marfund.org and www.fondosam.org. Most materials are available in Spanish and English. Some materials are also available in French. Additionally you may contact the MAR Fund offices for further details or for copies of the materials on CD. Write to: María José González mjgonzalez@marfund.org

Strengths and weaknesses

Strengths:
- The program is flexible enough to adapt to the local realities in other parts of the world (measurement systems, types of currency, types of protected areas, etc.).
- This is one of a number of financial planning tools created to analyze the needs of protected area systems, but has the additional capacity to analyze and provide detailed reports on individual protected areas or groups of PAs, based on multiple criteria.
- The sophisticated reporting functionality of the tool allows the user to visualize different financial scenarios due to changing financial conditions or varying administrative decisions at the national or regional level.
- The tool provides the opportunity to standardize criteria, such as accounts catalog, maintenance and depreciation indices, and management phases.
- Ease of reporting and analysis give national protected area authorities a new tool to assign national budgets based on real management costs.
- The tool has an unlimited capacity for assigning criteria for analysis: by size, management programs, projects, geographic location, country, or any other criterion that has influence on the management costs.
- The possibility of grouping similar protected areas allows the preparation of reports and graphs that indicate the future cost of protected areas with similar characteristics, but that are not currently managed.
- The tool allows professionals that manage the protected areas, but that have no financial background, to project the operating costs of the protected areas in the coming years.
- The model also allows use of data for protected areas where detailed financial information is not available. What data is available can still be used by the model to make cost and gap projections, but with less detailed levels of classification or analysis.

Limitations of the tool and/or of its use:
- The tool is not a business plan. It is, however, an important complement to a business plan. Financial plans are, in effect, an important part of business plans.
- The tool is not an accounting program or a program for fiscal control. It is a model that extrapolates income, expenses and cash flow, and there are some differences in the way depreciation and benefits are accrued.
- The current categories for income to protected areas will require more detail and specificity. In the current model, income categories are based on the information obtained from the MAR region. These categories can be expanded with use of the model in other parts of the world.
- There are limited human and material resources for the preparation of financial projections for protected areas, and often times the financial information needed to build a model is disperse or non-existent.

- Financial planning is usually not a priority for newly created protected area systems. This may imply that resources for using and adapting this tool to individual protected areas or systems of protected areas may be scarce.
- Resistance to change or fear of accepting the cost of sustained management of protected areas may be an obstacle.
- The accuracy of the model's predictions depends on the quality of the data entered into the model. Precise data will provide precise results.
- Some financial assumptions, such as price contingency, may have a large variability that cannot be projected for long periods of time with any certainty, as is the case with fuel or staff costs.
- Training is required for adequate use of this financial tool.