

Evaluation of the Catalytic Role of the GEF

Technical Paper #2

A Qualitative Analysis of Project Documents

Prepared by

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This evaluation was prepared by the GEF Evaluation Office; the Task Manager for the evaluation was Siv Tokle, Senior Evaluation Officer, GEF Evaluation Office, assisted by Lee Alexander Risby, Evaluation Officer, GEF Evaluation Office.

Abbreviations

BD	biodiversity
CC	climate change
EFCC	externally fired combined cycle
IW	international waters
GEF	Global Environment Facility
GHG	greenhouse gas
MAPS	medicinal aromatic and plant species
PAD	project approval document
UNDP	United Nations Development Programme

1 Introduction

In June 2006 the Global Environment Facility (GEF) Council approved an evaluation of the GEF's catalytic role. The catalytic role of the Global Environmental Facility is identified as a key operational strategy for GEF work as follows, "In seeking to maximize global environmental benefits, the GEF will emphasize its catalytic role and leverage additional financing from other sources" (Operational Principle 9, Operational Strategy, 1994).

Given the limited amount of money available for projects related to its ambitious mandate, the GEF hopes to design projects in a way that attracts additional resources, pursues strategies that have a greater result than the project itself, and/or accelerates a process. However, several evaluations conducted by the GEF Evaluation Office revealed difficulties in implementing and assessing this principle. An initial review of terminal evaluations for completed GEF projects found little common usage of the term catalytic and a lack of systematic reporting on catalytic effects (see technical paper: A Qualitative analysis of terminal evaluations, GEF EO, 2008).

This paper provides inputs to the GEF Evaluation Office in developing a conceptual framework for evaluating the catalytic role of the GEF. It summarizes findings from a review of project design factors that promote the catalytic role of GEF projects.

2 Main Findings

Finding 1: The GEF project documentation examined provides no *explicit* conceptualizations or measures of the catalytic role of the GEF. In the 77 GEF executive summaries of project documents and project approval documents examined for this report, the word catalysis never appeared. The term catalytic appeared at least once in 26.0 percent (20) of the 77 documents examined. This represents a mention in 26.8 percent (11) of the 41 projects for which documentation was examined. However, these were all isolated mentions without any systematic discussion of the term, its meaning, or precisely how such an effect might be conceptualized, measured, or evaluated. Annex E lists some of these explicit mentions and categorizes them according to different meanings of catalysis. In general, however, project documentation underdevelops the catalytic role, complicating future attempts to measure or evaluate it.

Finding 2: A key impediment to clear conceptualization of GEF projects' catalytic role is the absence of stated timeframes during which catalytic effects are believed to occur. Each of the three theories of catalytic change identified above suffers from the absence of explicit or implicit timeframes during which catalytic changes may occur; therefore, only five of the conceptual building blocks could be examined in identifying these theories of catalytic change. Project documents neither state nor provide clues on *when* to expect a detectable catalytic effect from a GEF project; this means that it is difficult to conceptualize the nature of any such catalytic effect. The greatest issue exists in identification, that is, establishing that the GEF project and not other factors (contextual and otherwise) caused or contributed to the desired catalytic effects,

introducing the temptation of the GEF taking credit for favorable outcomes of its projects, while diminishing its responsibility for unfavorable outcomes. Such conceptual confusion complicates the evaluation of catalytic effects.

Finding 3: Where GEF project documents explicitly mention the term catalytic, they tend to confuse the concept with at least four actually dissimilar concepts. Four especially frequent meanings (see annex E for examples) employed are

- attraction of **cofinancing**,
- promotion of the **replication** of the project or project activity,
- launch of **mainstreaming** processes through which national, state, or local governments internalize and pursue the GEF project objective,
- a temporary, single infusion of funding or **jump start** that is not necessarily intended to generate cofinancing.

These other meanings differ in one way from the conceptualization of catalytic role that this report develops: they tend to mean the *scale-up* of a project. A scale-up of an existing project does not imply that the original project succeeded in promoting catalytic effects.

Finding 4: GEF project documentation *implicitly* refers to six conceptual building blocks for catalytic changes from GEF projects. Theories about the GEF’s catalytic effects implicit in project documents can be disaggregated into six conceptual building blocks:

- **Preexisting phenomena** that GEF interventions intend to improve or otherwise change
- **Catalytic actors**, whose actions may have catalytic effects
- **Catalytic goals** or intended results of the intervention
- **Plans of action** considered to induce various catalytic effects
- **Timeframe**—often underestimated—between the GEF intervention and catalytic effects
- **Geographic space**, that is, how projects delimit the physical space within which the desired catalytic effects are expected

Finding 5: These conceptual building blocks together suggest that GEF projects induce three types of catalytic change: demonstration for market transformation, changes in local practices, and policy advocacy and institutional improvement. This report develops a typology for these three theories on catalytic change (annexes A to C present examples of each ideal type) and then shows how they are integrated in GEF project documents. The typology was constructed by examining different combinations of the necessary conditions for the six conceptual

building blocks of catalytic change, which underlie implicit theories on how GEF projects induce catalytic change.

3 Methodology

The review identified and compiled project documents within the three main GEF focal areas.¹ It then identified strategies and content, and analyzed and reviewed this documentation by summarizing and codifying findings through an analytical software package. The review explored the following questions:

- Which actors involved should play a catalytic role?
- At what geographic scale do GEF projects produce catalytic effects?
- Who specifically is involved in producing such catalytic effects?
- What are the different means through which GEF projects produces catalytic effects?
- What are the underlying goals of a catalytic role?
- How do project documents define catalytic effects and how are the concepts used related?
- How long does it take for GEF project catalytic effects to emerge?

The main research strategy applied was that of content analysis using Atlas.ti, a software program for the qualitative analysis of large bodies of textual, graphical, audio, and video data (see www.atlasti.com). Content analysis is an inductive, qualitative research technique that is intended to uncover the meanings implicit within discourse, in this case the text of GEF project documents. It is particularly appropriate when text does not explicitly refer to a subject.

3.1 Research Design

As part of the analytical framework, the review defined the following elements for study:

- **Research question**—what, if any, theories of catalytic change do GEF projects explicitly or implicitly embrace?
- **Research goal**—to build a typology of these theories of catalytic change
- **Unit of analysis**—the GEF project
- **Cases**—41 GEF projects (see annex D)
- **Project documents reviewed**—77 project documents for the 41 projects. For some projects, both a GEF executive summary of the project document and a project implementation document were available, whereas for other projects, only one or the other was available.

¹ These project documents are available in the GEF Secretariat database, at www.thegef.org under “Projects.”

- **Observation plan**—content analysis of GEF project documentation, using Atlas.ti.

The analysis conducted for this report involved the following four stages of coding:

Step 1: Descriptive Coding

Goal. Explore the data by describing the features of each case (similar to brainstorming in that, initially, no answers are wrong to the question of what theories of catalytic change guide GEF projects). The analyst codes all terms, phrases, and passages in the text that appear relevant to the question at hand. This stage of coding aims to build preliminary perceptions on how projects operate and what elements of them exhibit catalytic properties, using a definition in the *GEF Approach Paper on Evaluating Catalysis in International Aid* (2007).²

Practical application. The descriptive coding generated more than 100 codes linked to specific terms, phrases, or passages in the GEF project documents. This initial coding identified the full range of concepts relating to catalysis mentioned in the text, a necessary step in any theory-building exercise. Step 2 then addressed redundancy, irrelevance, or misidentifications contained in these descriptive codes.

Step 2: Topic Coding

Goal. Identify patterns among the descriptive codes and group descriptive codes into “topic codes.”³

Practical application. Two layers of topic codes are often created: broad topic “parent” codes and “child” codes, which consist of more specific cases of parent codes.

Example. Six parent codes were created from the 100+ initial descriptive codes, eliminating many descriptive codes that overlapped with each other. The six parent codes included *preexisting phenomena* (similar to context), *catalytic actors*, *catalytic goals*, *plans of action*, *timing*, and *geographic space*. Each of these, in turn, were given several different nominal *values*, that is, child codes. For example, there were five descriptive codes for different examples of devising plans to meet GEF project goals, so they were grouped under the parent code of plans of action. The five child codes included conducting and disseminating research; designing, operating, and building a model project; holding training for public/civil servants; providing technical assistance; and holding consultations with policymakers.

In practical terms, there is often a “who,” “what,” “where,” “when,” “how,” and “why” to dynamic processes such as a theory of catalytic change, and it is common practice to use these pre-

² GEF Evaluation Office, 2007, Evaluation of the Catalytic Role of the GEF, Draft Approach Paper, Washington, D.C.

³ A rough analogy for topic coding is the creation of multiple nominal variables, each of which may have multiple values.

liminary categories as an organizational starting point after finishing descriptive coding. For example, the parent code *catalytic actors* essentially answer the question of *who* generates catalytic effects. Such query words are indicated below in the discussion of each theory of catalytic change.

Step 3: Axial Coding: the Analysis of Topic Codes by Network Building

Goal. To determine if any internal coherence exists among child codes.

Practical application. This analysis attempted to identify any internal coherence among particular child codes of the six parent topic codes. The basic question was how these child topic codes are linked in the context of projects. This technique is an adaptation of the more general process known as *axial coding*, which is so named because this type of coding attempts to build types or categories around an “axis” or central idea that gives the multiple child codes internal coherence.⁴ The “Network View Editor” in Atlas.ti is a useful tool for performing this type of analysis, especially for visual thinkers who prefer to use visual media to map out how otherwise unrelated concepts may fit together.

Example. The first type of catalytic effect—demonstration of market transformation—was constructed by identifying patterns in the child codes that were developed during the topic coding stage. From the example of a climate change project—the Externally Fired Combined Cycle (EFCC) Advanced Technology Cogeneration Project for the Costa Pinto Sugar Refinery in Piracicaba, Brazil (GEF Project 1039)—the review found that climate change project documentation often implies the same meaning for catalysis, even when it never explicitly mentions catalysis in itself. The EFCC project provided a model with which to compare other projects that seemed similar and then deciding whether they had the same constituent parts.

Specifically, this EFCC demonstration of market transformation project in Brazil illustrated a clear relationship among five more specific child codes, each of which shared a parent code with all other projects. The more specific child codes included the following:

- **Catalyzed actor: investors.** In this case, investors were owners of sugar-refining plants who have an interest in the EFCC technology as a long-run, cost-saving measure, but otherwise would not invest in it because of its high cost in the short term (a barrier). The GEF project was supposed to catalyze these actors because its investment in the project would lower their cost of investing in EFCC technology. Ultimately, the GEF intervention would induce behavior change on the part of investors by shifting their incentives. For many projects classified as a type 1 demonstration of market transformation project, the type of actor is the same, although the specific actors vary by project.

⁴ This axis of coherence plays the same role that the axis of a wheel plays: it provides a central point that joins together conceptual categories that may otherwise seem unrelated. Some analysts using quantitative analysis consider axial coding to be similar to cross-tabulation or correlational analysis.

- **Catalytic goal: expand the market for EFCC.** This case involved opening up a large market for EFCC technology, an outcome likely to occur after the project ends. Although the specific market to be developed by the project varies by project, the goal of expanding the market remains constant across many projects classified as a type 1 project.
- **Plan of action: build a model.** In this case, this meant “to develop, design, finance, build and operate a ‘first-of-its-kind’ 80-megawatt two-train bagasse-fired EFCC cogeneration facility supplemented by a 250 ton per hour conventional steam generator.” Although the model to be built by the project varies by project, the plan of building the model to expand the market remains constant across the many projects classified as type 1.
- **Timeframe.** In the case of the Brazil EFCC project, this meant some relatively ill-defined point in the future, after project completion.
- **Geographic space: technologically defined.** Catalytic effects could occur within an industry for which the technology is useful, in this case the cane-refining industry worldwide. It is important to note that the technology itself defines the space of catalysis.

Step 4: Conduct Coding Reliability Checks

Goal of reliability checks. The goal of reliability analysis in qualitative coding is to determine whether the topic codes attached to certain text passages are apt representations or summaries. A last stage of coding verifies the aptness of the topic codes and types. Are they too abstract or do they fit the data reasonably well? Do they tell a meaningful and accurate story about the relationships among the different topic codes?

In projects with two or more coders, this process is formalized through inter-coder reliability tests. These tests capture whether different analysts, when coding the same passages of text, coded the text using the same codes or different codes, or whether one analyst applied coding and the other did not to the same text passage.

Practical application. This analysis was conducted by one coder and also included a review of a sampling of several quotations coded by each of the parent and child codes with the goal of re-considering the match of the codes to the quotations.⁵ Another analyst and the catalytic role evaluation team conducted additional review.

3.2 Limitations of the Methodology, and How to Mitigate Them

The review addressed the following limitations:

⁵ In quantitative analysis, this is the reliability analysis conducted among variables used to create an index. Common tests include Cronbach’s Alpha tests and Spearman’s Correlational Analysis.

- The project documentation examined did not offer *explicit* discussions of “catalysis” or “the catalytic role.” A content analysis is well suited for describing underlying meanings of underdeveloped concepts in a documentation review, but depends on interpretations that can be made in a consistent manner.
- The typology of catalytic roles developed in this report is based on inferences, not direct observations, about the theories of catalytic change in GEF project documents. The typology and conceptual building blocks identified could be further verified in fieldwork.
- Additional insights could be offered through interviews with project proponents or designers on their understanding of the GEF’s catalytic role and the extent to which they may have designed projects to play such a role. This represents a promising avenue for future work on the conceptualization and evaluation of the GEF’s catalytic role.
- The review was conducted without extensive inter-coder reliability tests of coding. This lack was compensated for by consultations between the analysts and other GEF Evaluation Office researchers, who were analyzing the conceptualization and measurement of the catalytic role through content analysis of terminal evaluations and terminal evaluation reviews of GEF projects. Also, multiple presentations of this methodology and the findings of the analysis were undertaken within the GEF Evaluation Office. Comments and contributions gained from these presentations were integrated into later stages of coding and analysis.
- The review was undertaken using project documentation from 2005, as was done for the *Evaluation of the Incremental Cost Assessment* (2006), for example, under the project cycle in effect during the GEF-3 replenishment period.⁶ The new project cycle, with limited information in the project identification form, does not lend itself to a detailed content analysis. Full project documents of the current fiscal year were not numerous enough to permit a similar analysis. The sample is representative for GEF-3 and will allow for field assessment, as most of the projects have now started.

4 Defining “Catalytic” in Project Design

The desk review of project design yielded a number of findings that may be relevant as the GEF designs a conceptual framework for evaluating the catalytic role of GEF projects.

Finding 1: The GEF project documentation examined provides no explicit conceptualizations or measures of the catalytic role of GEF project. In the 77 GEF executive summaries of project documents and project approval documents (PADs) examined for the report, the word

⁶ GEF Evaluation Office, 2006, *Evaluation of the Incremental Cost Assessment*, Washington, D.C.

catalysis never appeared. The term catalytic appeared at least once in 26.0 percent (20) of the 77 documents examined. This represents a mention in 26.8 percent (11) of the 41 projects for which documentation was examined. However, these were all isolated mentions without any systematic discussion of the term and its meaning, or precisely how such an effect might be conceptualized, operationalized, or evaluated. Annex E categorizes these mentions of catalysis as best guesses of their intended meaning.

GEF project documents do not dedicate sections to how projects should play a catalytic role. This contrasts with other key GEF concepts such as “incremental cost,” for which specific sections within project documentation provide detailed conceptualizations and measures. The lack of such sections on catalytic role complicates attempts to assess or measure the concept.⁷

Of the few explicit mentions of “catalytic role,” the most commonly observed understanding of the term was that the GEF provides temporary, but long-lasting, “jump starts.” For example, in the Renewable Energy Market Transformation project:

In formal terms, the project has a limited scope and reach, as it provides only funds for technical assistance. However, this technical assistance is **catalytic** in nature, and is designed to help South Africa reach its 10,000 GWh [gigawatts] goal. In other words, on looking beyond the specific outputs associated with technical assistance, the ultimate outcome is **a jump start** and significant progress towards meeting the long-term target, which will be met many years after this project is over (Climate change [CC], 1894, IBRD, executive summary: 361, emphasis added).⁸

This implies that the project provides a one-time, nonrenewable infusion of funds or implementing projects with short time spans that jump-start self-sustaining processes of value creation. In general, the value of a GEF project is conceptualized in terms of “global environmental objectives,” whose achievement is expected to come to fruition long after project completion.

In terms of evaluation, catalytic role can best be substantiated empirically by effects that occur *after* the GEF project ends. In practice, this means that the GEF need not assess, monitor, or evaluate the effect of its interventions until long after project completion. Furthermore, the jump-start definition of the catalytic role of GEF projects is promising if the technology that it im-

⁷ The project cycle and the requirements for incremental cost analysis in project documents changed in 2007, following two evaluations, one of the GEF activity cycle and the other on incremental cost assessment. The new project identification form does not provide the necessary details for a similar analysis. The project explanation of incremental costs has also been simplified.

⁸ Sources for project quotes in this report have been shortened to the GEF focal area, project number, implementing agency, source document, and line number from ProDoc. This database is accessible at www.thegef.org, under “Projects.”

plies—essentially a “big bang for small bucks”—actually works and can be observed through intermediate outcomes.

Although the jump-start view is the most clearly stated in project documents, it was found in less than 20 percent of all documents examined in the review. Given the lack of explicit references to intended catalytic effects, a content analysis on the project documents was needed to derive implicit references of other ways that catalytic effects are expected through GEF projects.

Finding 2: A key impediment to clear conceptualization of GEF projects’ catalytic role is the absence of stated timeframes during which catalytic effects are believed to occur. Each of the three theories of catalytic change suffers from the absence of timeframes during which catalytic change is intended to occur. Project documents do not indicate when to expect a catalytic effect from a GEF project; therefore, it is difficult to identify the scale of catalytic effects and when to evaluate them.

The lack of timeframe raises the following questions on catalytic effects:

- Do they occur within ongoing project activities or outside the scope of the project?
- Do they occur before, during, or after the project?
- Is GEF accelerating a preexisting process (one that existed before the intervention of the GEF project) or starting a new process altogether?
- Are GEF project activities *catalyzed* by something or do they catalyze something new?

Finding 3: Where GEF project documents explicitly mention the term catalytic, they tend to confuse the concept with at least four actually dissimilar concepts. Four especially frequent meanings (see annex E for examples) employed are

- attraction of *cofinancing*,
- promotion of the *replication* of the project or project activity,
- launch of *mainstreaming* processes, through which national, state, or local governments internalize and pursue the GEF project objective,
- a temporary, one-time infusion of funding or *jump-start*, not necessarily intended to generate cofinancing.

These four meanings differ from the conceptualizations of catalytic role developed in this report in that they tend to mean *scale-up* of the size of a project. Yet, the simple fact that any agency has increased initial levels of funding to a project (for scale-up or replication) does not necessarily mean that the original project has had a catalytic effect. The content analysis revealed a con-

sistent pattern of confusing these two different goals with each other. Scale-up and replication more commonly refer to increases in the size of the project or the funds the GEF has committed to it.

There is a conceptual difference in analyzing what good GEF projects do, not how big they get or how much they reproduce themselves. A useful contribution of an evaluation would be to undertake case studies on how GEF projects created measurable value, as opposed to how projects created more projects or project activities. Here, the concept of catalysis simply means that GEF interventions create value (of one kind or another) at some initial point in the project cycle—and that this value then generates spinoffs that create additional, similar kinds of value either inside or outside of the project.

5 Project Strategies and Their Catalytic Nature

From the analysis of project documentation, it emerged that design contains common elements that serve as a basis for a potentially catalytic projects (section 4.1). These conceptual building blocks, in turn, can induce three types of catalytic change in projects. These three theories of catalytic change are described in section 4.2.

5.1 Conceptual Building Blocks

Finding 2: GEF project documentation *implicitly* refers to six conceptual building blocks of catalytic changes from GEF projects. The uses and meanings of six conceptual building blocks in the project documentation analyzed include

- **preexisting phenomena** (context) that GEF interventions are intended to catalyze, improve, or otherwise change,
- **catalytic actors** who are envisioned to play a causal or contributory role in inducing catalytic changes,
- **catalytic goals** or intended results of a GEF intervention,
- **plans of action** that such actors will perform in order to play this role,
- **timeframes** that elapse between the intervention and the catalytic goal,
- **geographic space**, that is, how projects delimit the physical space within which the desired catalytic effects are expected.

Table 5.1 defines all six conceptual building blocks indicates which query word they address. Finding 3 discusses integrated examples of these conceptual building blocks in the context of overarching theories on the implied causal mechanisms of catalytic change, that is, “how” GEF projects induce catalytic change.

Table 5.1: Conceptual Building Blocks of Implicit Catalytic Change Theories

Building block	Definition	Shorthand definition
Preexisting phenomena (context)	The baseline condition that GEF interventions should improve, speed up, or otherwise change	“What” is targeted for change?
Catalytic actors	<ul style="list-style-type: none"> • <i>Catalyzing actors</i>, who are thought to induce catalytic change • <i>Catalyzed actors</i>, whose behaviors are themselves changed, sped up, or otherwise improved 	“Who” is involved in catalytic change?
Catalytic goals	The intended result of the actor’s action, often a change in the preexisting phenomena	“What” could emerge if catalytic change occurs?
Plans of action	The actual GEF interventions that can induce catalytic change	“What” do actors do that is expected to induce catalytic change?
Timeframe	The period that elapses between the GEF intervention and realization of the catalytic goal	“When” is catalytic change specifically projected to occur?
Geographic space	The physical space within which catalytic effects occur, often defined by the preexisting phenomena that projects address	“Where” does catalytic change takes place, specifically, the geographic space in which it occurs, and how it is defined?

The following descriptions of each building block define them as analytical elements for differentiating the theories of change underpinning GEF project documents. However, GEF documentation does not *explicitly* name these preexisting phenomena, catalytic actors, catalytic goals, plans of action, timeframes, or geographic spaces for GEF projects’ catalytic role, which were instead derived through content analysis. Furthermore, because all projects omit discussions of timeframe—a fact that is discussed in finding 4—the following sections describe only the other five conceptual building blocks.

Conceptual Building Block 1: Preexisting Phenomena (Context)

One basis for catalytic change theories in GEF project documents is their description of *preexisting phenomena*, often baseline processes, or other specific environmental or development problems that GEF projects are intended to accelerate, improve, or help solve in some way. Preexisting phenomena concern the “what” of a catalytic role, that is, what is targeted for change. The content analysis of GEF project documentation identified the following four preexisting phenomena:

- A particular technology or technology-diffusion process
- Local livelihood practices or practice-diffusion processes
- Policy-making processes
- Policy administration processes

All projects discuss preexisting processes of one kind or another, although the four listed above vary in frequency across projects. Table 5.2 shows the percentage of projects in a given focal area whose documentation discussed certain preexisting phenomena at least once.

Table 5.2: Percentage of Projects by Focal Area That Discuss Certain Preexisting Phenomena

Preexisting phenomenon discussed	Focal area		
	Climate change (n = 16)	Biodiversity (n = 18)	International waters (n = 8)
Technology or technology diffusion	94	17	13
Livelihood practice or diffusion	25	89	25
Policy making or administration	19	28	88
Any of the above	100	100	100

Note: Boldface indicates the preexisting phenomenon mentioned the most for that focal area.

Four findings emerge from table 5.2. First, a great majority (94 percent) of climate change projects discuss technology or technological diffusion as a preexisting phenomenon that the GEF project catalyzed.⁹ Few biodiversity (17 percent) and international waters (13 percent) projects discuss these phenomena. Second, a large majority (89 percent) of biodiversity projects discuss livelihood practices as preexisting phenomena that projects should catalyze. In contrast, few climate change (25 percent) and international waters (25 percent) projects discuss livelihood practices. Third, a large majority (88 percent) of international waters projects discuss policy-making or policy administration processes as preexisting phenomena that the project should catalyze. In contrast, proportionately few climate change (19 percent) and biodiversity (28 percent) projects discuss these processes. Fourth, the last row of table 5.2 shows that every project examined in the content analysis discussed at least one of the preexisting processes named in the table. This illustrates that preexisting phenomena are a necessary condition for any conceptualization of catalysis. Consider the definition of catalysis provided in the GEF Evaluation Office paper, *GEF Approach Paper on Evaluating Catalysis in International Aid* (2007).¹⁰

In chemistry and biology, catalysis is the acceleration (increase in rate) or slowing down of a chemical reaction by means of a substance, called a catalyst, that is itself not consumed by the overall reaction. Catalysts participate in reactions but are neither reactants nor products of the reaction they catalyze. More generally, one may at times call anything that accelerates a reaction, without itself being consumed or changed, a “catalyst,” for example, a “catalyst for political change” or in the discussion that follows below “catalyst for development.” The key notion is that a small substance or agent can cause larger change?” (p. 2)

⁹ In this section, the term catalyze can mean improve, speed up, or favorably change.

¹⁰ GEF Evaluation Office, 2007, “Evaluation of the Catalytic Role of the GEF,” Draft Approach Paper, Washington, D.C.

A strict interpretation of this definition suggests that catalytic change cannot occur without a preexisting process that interventions hope to speed up, slow down, or otherwise change. Evaluation of catalytic effects benefit from identifying the preexisting processes that interventions are intended to catalyze.

Conceptual Building Block 2: Catalytic Actors

A second building block of the implicit catalytic change theories in GEF project documents is their discussion of *catalytic actors*. Catalytic actors concern the “who” of a catalytic role, specifically, who is involved in catalytic change. Project documentation generally implies that two types of actors do the work of generating catalytic effects: those *catalyzed* and those *catalyzing*. The behavior of *catalyzed* actors is changed, sped up, or otherwise improved by other people, processes, or institutions. *Catalyzing* actors, however, induce catalytic changes in other people, processes, or institutions. It is no revelation that a catalytic effect requires actors who play catalyzing roles, or champions who show leadership in promoting change. However, as demonstrated in finding 3 below, the same type of actor can often be both *catalyzed* and *catalyzing*. Thus, defining the specific roles of both catalyzing and catalyzed actors is required for useful analysis of *catalytic actors* in an evaluation. Three roles can be highlighted:

- Private sector actors, typically investors
- Local champions, typically civil society actors
- Public/civil servants and policy makers

Table 5.3 shows the percentage of projects per focal area whose documentation discussed one of these three types of catalytic actors at least once.

Table 5.3: Percentage of Projects by Focal Area That Discuss Certain Catalytic Actors

Catalytic actor discussed	Focal area		
	Climate change (n = 16 projects)	Biodiversity (n = 18 projects)	International waters (n = 8 projects)
Private sector actors, typically investors	94	28	13
Local champions, typically civil society actors	19	89	25
Public/civil servants and policy makers	6	17	75
Any of above	100	100	75

Note: Boldface indicates the catalytic actor mentioned the most for that focal area.

Four findings emerge from table 5.3. First, nearly all climate change projects (94 percent) discuss private sector investors in technology as catalytic actors. In contrast, few biodiversity (28 percent) and international waters (13 percent) projects discuss private sector investors. Second, a large majority (89 percent) of biodiversity projects discuss local champions in civil society as catalytic actors that induce favorable change. In contrast, few climate change (19 percent) and international waters (25 percent) projects discuss local champions. These two types of actors—

private sector actors and local champions—are discussed in terms that match the ideal type of the *catalyzing* actor better than they do the ideal type of the *catalyzed* actor. Third, a majority (75 percent) of international waters projects discuss public/civil servants and policy makers as catalytic actors. In contrast, few climate change (6 percent) and biodiversity (17 percent) projects discuss these processes. This category of actor falls less neatly into the *catalyzing*, as opposed to *catalyzed*, actor definitions presented above. Discussions of policy makers fit the ideal type of the *catalyzing* actor rather neatly; however, public/civil servants do not fall neatly into either ideal actor type, because they are understood to improve institutional machinery, while being influenced by politicians who may work with projects more directly. Fourth, the last row of table 5.3 shows that every project examined in the content analysis (except for two in international waters) discussed at least one of the catalytic actors named in the table.

Conceptual Building Block 3: Catalytic Goals

A third building block of the implicit catalytic change theories in GEF project documents is their discussion of *catalytic goals*, defined here as intended results of project interventions that indicate some sort of change in the preexisting phenomena identified by the project. Catalytic goals concern the “what” of a catalytic role, specifically, what is projected to change as a result of the intervention.

Project documents discuss four types of catalytic goals:

- Accelerated transformation of markets for favored technologies
- Accelerated diffusion of a favorable livelihood practice
- Improved policies on resource usage
- Improved institutional capacity to implement policies

Table 5.4: Percentage of Projects by Focal Area That Discuss Certain Catalytic Goals

Goal discussed	Focal area		
	Climate change (n = 16 projects)	Biodiversity (n = 18 projects)	International waters (n = 8 projects)
Accelerated transformation of markets for technology	88	22	13
Accelerated diffusion of a favorable livelihood practice	19	83	13
Improved policies on resource usage	25	33	75
Improved institutional capacity to implement policies	13	28	88
Any of above	100	100	100

Note: Boldface indicates the catalytic goals mentioned the most for that focal area.

Four findings emerge from table 5.4 on understanding catalytic goals within the GEF project documents examined. First, a great majority of climate change projects (88 percent) discuss ac-

celerated transformation of markets for energy-efficient production technologies as a kind of catalytic goal. In contrast, fewer biodiversity (22 percent) and international waters (13 percent) projects discuss market transformation of this kind as a catalytic goal. Second, most biodiversity projects (83 percent) imply that the accelerated diffusion of a favorable livelihood practice is a goal of the project. In contrast, few climate change (19 percent) and international waters (13 percent) projects discuss local practice diffusion. Third, a majority of international waters projects discuss either policy improvement (75 percent) or improved institutional capacity to implement policy (88 percent) as a goal of the project. In contrast, proportionately few climate change and biodiversity projects discuss policy improvement (25 percent and 33 percent, respectively) or improved institutional capacity (13 percent and 28 percent, respectively) in these terms. Fourth, the last row of table 5.4 shows that every project examined in the content analysis discussed at least one of the catalytic goals named in the table.

The approach taken to identifying catalytic goals in this content analysis was open ended, in that it relied on coding entire documents. A few sections—for example, the “objectively verifiable indicators” proposed in the project logical framework analysis section of GEF executive summaries—proved especially useful. Because these indicators ultimately measure the work that projects do, they represent a more accurate source for identifying the goals of projects than the language under “project goals” and “project objectives.”

Conceptual Building Block 4: Plans of Action

A fourth building block of the implicit catalytic change theories in GEF project documents is discussion of plans of action, defined here as strategies of GEF interventions that induce catalytic changes. Plans of action concern the “what” of a catalytic role, specifically, what actors do that is expected to induce catalytic change. Project documents discuss five types of catalytic goals:

- Build a model
- Conduct/disseminate research
- Hold training
- Provide technical assistance
- Convene decision makers

Table 5.5: Percentage of Projects by Focal Area That Discuss Certain Plans of Action

Plan of action discussed	Focal area		
	Climate change (n = 16 projects)	Biodiversity (n = 18 projects)	International waters (n = 8 projects)
Build a model	81	28	25
Conduct/disseminate research	19	78	38
Hold training/provide technical assistance	6	83	75
Convene decision makers	13	17	88
Any of the above	100	100	100

Note: Boldface indicates the plans of action mentioned the most for that focal area.

Five findings emerge from table 5.5 on how plans of action operate within the GEF project documents examined. First, a great majority of climate change projects (81 percent) describe a plan of action for designing, operating, and building a model of the preexisting phenomena that the project identifies, typically a climate-friendly production technology. Fewer biodiversity (28 percent) and international waters (25 percent) projects identify model building as a projected plan of action. Second, most biodiversity projects (78 percent) discuss research production and dissemination as a key plan of action to be undertaken by the project. In contrast, far lower proportions of climate change (19 percent) and international waters (38 percent) projects discuss research production and dissemination. Third, a majority of both biodiversity (83 percent) and international waters (75 percent) projects discuss the provision of technical assistance and training as a plan of action. In contrast, few climate change projects (6 percent) discuss technical assistance and training in these terms. Fourth, a majority of international waters projects (88 percent) discuss the convening of decision makers as a central plan of action, whereas 13 percent of climate change projects and 17 percent of biodiversity projects discuss such a plan. Fifth, the last row of table 5.5 shows that every project examined in the content analysis discussed at least one of the plans of action named in the table.

Conceptual Building Block 5: Geographic Space

A fifth building block of the implicit catalytic change theories in GEF project documents is their discussion of geographic spaces, defined here as the physical space within which catalytic effects occur. Geographic space is often thought of in terms of the preexisting phenomena that projects address. One can think of geographic space as the “where” of catalytic change, specifically, where catalytic change takes place. Project documents discuss three types of geographic spaces:

- Industry defined
- Local practice defined
- Jurisdictionally defined

Table 5.6: Percentage of Projects by Type That Discuss Certain Geographic Spaces for a GEF Project Catalytic Role

Geographic space of catalysis	Focal area		
	Climate change (n = 16 projects)	Biodiversity (n = 18 projects)	International waters (n = 8 projects)
Industry defined	81	6	25
Local practice defined	13	89	13
Jurisdictionally defined	13	33	88
Total	100	100	100

Note: Boldface indicates the geographic space mentioned the most for that focal area.

Four findings emerge from table 5.6. First, project documents view the catalytic role of most climate change projects (81 percent) as being played within an industry-defined geographic

space. Because many of the technologies that these project documents discuss are applicable in industries that operate globally, they often consider the geographic space in which catalysis occurs to be global. In contrast, few biodiversity (6 percent) and international waters (25 percent) project documents discuss industry-defined spaces. Second, project documents view the catalytic role of a large majority (89 percent) of biodiversity projects as being played on a local or subnational level that is defined by the preexisting practice that projects are intended to change. In contrast, few climate change (13 percent) and international waters (13 percent) projects discuss local, practice-defined spaces. Third, a large majority (88 percent) of international waters projects discuss catalysis occurring in jurisdictions of the particular government agencies with which the project deals. In contrast, few climate change projects (13 percent) and proportionately few biodiversity projects (33 percent) discuss jurisdictionally defined geographic spaces for catalysis. Fourth, the last row of table 5.6 shows that every project examined in the content analysis discussed at least one of the catalytic actors named in the table.

5.2 Typology of Catalytic Strategies and Effects

Finding 3: The six conceptual building blocks together suggest that GEF projects induce three types of catalytic change: demonstration for market transformation, changes in local practices, and policy advocacy and institutional improvement. This review develops a typology for three theories of catalytic change that are implicit in GEF project documents:

- Type 1—catalysis through demonstration for market transformation
- Type 2—catalysis through changes in local practices
- Type 3—catalysis through policy advocacy and institutional improvement

These types were constructed by examining different combinations of the necessary conditions for the five conceptual building blocks (omitting timeframe as explained above). Type 1 is the simplest conceptually, type 3 is the most complex, and type 2 is intermediate in complexity. (Annexes A to C present examples of each ideal type.)

The sections below describe each of the three theory types with representative examples from GEF projects. Classification of a project as one of these types depends on the extent to which the project exhibits the necessary conditions of the five conceptual building blocks:

Type 1: Demonstration for Market Transformation

Some project documents, typically from projects in the climate change focal area, discuss a type of intended catalytic effect that is best called “demonstration for market transformation.” Its definition is the acceleration of a technology’s entry into an open marketplace. Five necessary conditions define type 1 projects, in that their project documentation identifies

- a perceived *technology* as the **preexisting phenomenon** that the GEF intervention is intended to catalyze;

- *private sector investors in the technology* as the **catalyzed actors**, whose changes in behavior ultimately generate the intended catalytic effect;
- accelerated transformation of markets for technology as the **goal** of particular GEF interventions that are intended to change these behaviors;
- a **plan of action** in which a GEF project designs, builds, and operates a model of the technology at work that demonstrates hitherto unrecognized benefits;
- an *industry-defined geographic space* where the catalytic effect is intended to occur (because the preexisting phenomenon is often a technology, the industry-defined geographic space is further defined by the particular industries in which potential investors might need the technology).

A project that is representative of type 1—the EFCC Advanced Technology Co-generation Project for the Costa Pinto Sugar Refinery in Piracicaba, Brazil (hereafter, the Brazil EFCC project)—illustrates the five components of type 1 projects. Examples of other projects help to expand the definition and illustrate limitations of the type 1 theory of catalytic change.

First, type 1 projects typically identify a commonly accepted technology as the preexisting phenomenon, whose uptake in the market the GEF intervention intends to speed up or catalyze. In identifying this preexisting technology, GEF projects adhere most closely to the generic definition of catalysis listed earlier (that is, acceleration of a preexisting chemical reaction by an agent that is neither a reactant nor a product of the process). The related preexisting *process* is the gradual diffusion of a technology on the open market place composed of potential investors in that technology. In the climate change focal area, a preexisting climate-friendly technology is typically in limited use within the commodities, transportation, or energy sectors, but remains too costly for investment by private sector investors. In the GEF project documents examined, examples of such technology include bagasse-refining cogeneration, photovoltaic, wind energy, and, microhydro technologies, as well as fuel cell buses fueled by hydrogen drawn from natural gas and hydrogen-rich gas by-products.

The following quote from the Brazil EFCC project (no. 1039) exemplifies type 1:

The development, financing, design, building, and operating of an 80 MW [megawatt] two-train bagasse fired Externally Fired Combined Cycle (EFCC) cogeneration facility supplemented by a 250 tonne per hour conventional steam generator (the ‘Project’). The facility would represent the first ever commercial application of the EFCC technology (CC 1039 World Bank/IFC: 1).¹¹

¹¹ The project identifier for this and other quotes in this report includes the GEF focal area, project number, implementing agency, and line number from ProDoc, available at www.thegef.org, under “Projects.”

It is important to note that the GEF project is not intended to develop an entirely new technology, but to make a preexisting technology more cost-effective on the open market.

Second, type 1 projects typically identify potential investors in the preexisting technology as the catalytic actors whose behaviors the GEF project attempts to change. The investors are *catalyzed* actors in the sense that the GEF project is intended to change their behavior by shifting the incentives and disincentives that shape whether they choose to invest in the preexisting technology.

The main novelty comes from the project's focus on maximizing the exportable power of co-generation plants in the Brazilian sugar industry and, potentially, operating these plants on an arms-length basis from the mills. This entails a rethinking by **sugar producers** of their current business model. This first commercially operated EFCC plant will serve as a demonstration of the feasibility and potential profitability of this new line of business for the sugar industry (CC 1039 IFC: 7).

Although project documentation clearly identifies sugar producers as the *catalyzed* actors, it does not identify a *catalyzing* actor who induced the *initial* behavior change of the catalyzed investors. For such projects, the GEF project is generally considered the catalyzing actor.

Third, type 1 projects state the catalytic goal of creating a more dynamic market for the technology. Identifying the goals of type 1 projects helps to understand how the intended process of catalytic change occurs. The goal is to change the behavior of those investors so that they consider investing in the previously cost-prohibitive technology. Although not specifically named as a “catalytic goal” or intended “catalytic effect,” the Brazil EFCC project documentation does state a catalytic goal:

If the Project were successful, a large market for this technology could potentially open up in countries such as Brazil, Peru, India, China and other sugarcane producing countries...The Project's global environmental objective is to contribute to improving the economic attractiveness of EFCC technology globally and of reducing CO₂ [carbon dioxide] emissions (CC 1039 IFC: 7).

Fourth, type 1 projects identify a particular, demonstrative plan of action for achieving their catalytic goals, which typically involves designing, building, and operating a model of the technology in action. This particular plan of action *assumes* that the GEF intervention will have the catalytic effect of increasing the amount of investment that flows into the preexisting technology. As such, plans of actions represent an entry point for evaluators to assess whether the assumption holds.

Fifth, type 1 projects identify geographic spaces of intended catalytic effects that are industry defined. The Brazil EFCC project most clearly exemplifies this in the statement above on a potential market opening up in several sugarcane-producing countries. In essence, the relevant

geographic space of a catalytic effect is defined by the locations of the industry for which the given technology may be relevant. In the case of sugar refining, the geographic space of the intended catalytic effect is global.

The five necessary conditions described above as defining type 1 projects suggest a catalytic causal chain in which *GEF demonstration of the benefits of a technology ultimately induces a process of investor behavior change*. It is assumed that early converts will signal higher demand for the technology, in turn highlighting perceived payoffs and minimizing perceived disincentives to would-be investors. In the case of the Brazil EFCC project, it was believed that the project would speed up adoption of EFCC technology by improving sugar producers' perception of incentives to invest in EFCC technology. The lever that would permit the GEF project to have a catalytic effect was a shift in the set of choices that executives of sugar-refining corporations face regarding the kinds of technologies they use in their sugar-refining operations. Before the GEF project, these executives considered EFCC technology to be too expensive for investment, compared with other technologies. If and when the project demonstrates the value and cost-effectiveness of EFCC, these executives may anticipate a potential payoff to investing in it—and change their behavior.

The implicit theory of change here, which a careful content analysis of project documentation reveals, echoes literature in economics dealing with the role of *signaling* to overcome *information asymmetry* problems. What is catalytic about the GEF intervention is the intent to change the calculations that investors make when considering investment in a technology. This is similar to the common reference to “removal of barriers” throughout GEF project documentation in the climate change focal area. The barriers identified in the GEF executive summary of the EFCC project document are identified explicitly: “These barriers come mainly from the lack of practical experience in this technology and the Project’s innovative business model.” (CC 1039 IFC: 7

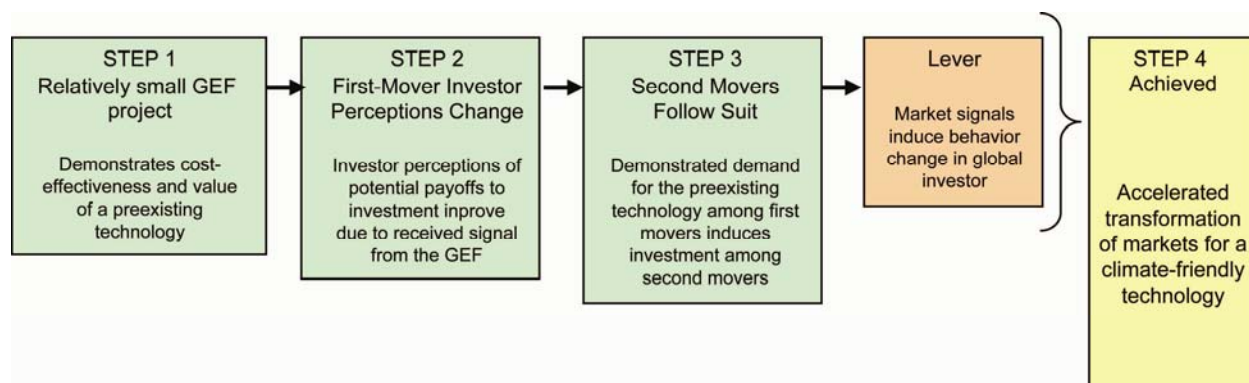
In the case of the Brazil EFCC project, the targeted barrier is *lack of knowledge* on whether EFCC technology can be operated cost-effectively by sugar producers. In this sense, the barrier that the GEF intervention is intended to remove is a knowledge barrier, which if overcome, would reduce the investors' risk of not recovering an investment made in EFCC technology.

This discussion of barriers reveals a theory of catalytic change that operates in the project. Although not explicitly identified as “catalysis” or a “catalytic” effect, the GEF intervention is intended to be catalytic in the sense of *speeding up the rate at which EFCC technology diffuses into the open marketplace*. The main catalytic lever is provision of information on the cost-effectiveness, potential payoffs, and risks of investment in a technology. If EFCC technology predated the project, but was prohibitively costly for investors, the information provided by the project might function as a lever that changes the business models of sugar producers by shifting their perceived incentives to invest. The following project document statements reveal this theory of change:

The main novelty comes from the Project’s focus on maximizing the exportable power of co-generation plants in the Brazilian sugar industry and, potentially, operating these plants on an arms-length basis from the mills. This entails a rethinking by sugar producers of their current business model. This first commercially operated EFCC plant will serve as a demonstration of the feasibility and potential profitability of this new line of business for the sugar industry (CC 1039 IFC: 7).

Figure 5.1 summarizes how these elements of a type 1 catalytic effect work together in the causal process chain.

Figure 5.1: Causal Process Chain in Type 1 “Demonstration of Market Transformation” Projects: How GEF Projects May Induce Market Transformation



In type 1 projects, private sector investors may play both *catalyzed* and *catalyzing* roles. The causal chain involves three steps:

1. Initial investors are catalyzed by the GEF intervention, typically the project’s demonstration of financial benefits from using a particular technology. For example, GEF demonstration of the benefits of EFCC technology in sugar refining is intended to speed up sugar refiners’ and investors’ willingness to invest in EFCC technology.
2. Initial investors will then ideally induce subsequent investors to invest in the technology as well, mostly by virtue of the signal they send to these investors on the EFCC’s long-term cost-saving benefits.
3. The combined behavior change among initial and subsequent investors then ideally accelerates uptake of EFCC technology in the broader marketplace, thereby achieving the catalytic goal. The ultimate result is the acceleration of market development for EFCC technology.

Issues for Future Evaluation of Type 1 Catalytic Effects

One overarching implication for fieldwork flows from this discussion of type 1 catalytic theories of change:

A systematic, small-n comparative case study analysis could be undertaken within the same industry-defined geographic space to examine necessary and sufficient conditions for four types of outcomes in four types of cases. These possible case studies in order of declining importance follow:

- **A positive case of market transformation in which the GEF project has intervened.** This case study could work backwards from the ultimate outcome of market transformation to identify underlying causes. Research could focus on the early stages in the process chain, specifically on whether the GEF demonstration project affects investor perceptions on the cost-effectiveness and financial benefits of the technology involved. In other words, is there a linkage between steps 1 and 2 in figure 5.1? Potential data sources include surveys and in-depth interviews with executives.
- **A positive case of market transformation in which the GEF project has not intervened.** The purpose of this case could be to approximate a plausible counterfactual in which step 4—quick or accelerated (at least compared with the other three cases) market transformation—occurs in the absence of the GEF intervention. This is essentially a search for cases in which step 4 occurs without the GEF intervention in step 1 launching steps 2 and 3. Such a case, if found, could help clarify how markets for favored technologies transform for the better without GEF intervention. Alternatively, it may identify portions of preexisting market transformation processes that a GEF project may have some comparative advantage in accelerating.
- **A negative case of absent or hindered market transformation in which the GEF project has intervened.** This comparison case could shed light on what elements, if any, of the GEF project may have impeded market transformation processes that might already have been underway. For example, did the GEF intervention (step 1) interrupt steps 2 or 3 already under way? Do GEF demonstration projects provide disincentives to investors in a technology or do they interrupt market signaling in ways that slow or hinder market transformation?
- **A negative case of absent or hindered market transformation in which the GEF project has not intervened.** The purpose of this case could be to approximate a comparison case in which failed or impeded market transformation occurs in the absence of a GEF intervention. By extension, learning from this type of case could have design implications for GEF projects, namely, identification of market transformation processes that the GEF project may be able to improve.

Examples of Type 1 Projects: Market Transformation Demonstration

Four projects stand out as clear examples of type 1 catalytic effects. These projects include

- EFCC Co-Generation Technology for Sugar Refining, Brazil (project no. 1039, World Bank/IFC);

- transformation of Rural PV (Photovoltaics) Market, Burkina Faso (project no. 2660, United Nations Development Programme or UNDP);
- regional Program on Electrical Energy Efficiency in Municipal Heat and Water, Central America (project no. 1899, UNDP);
- removing Barriers to Large Scale Commercial Wind Energy Development, Iran (project no. 1146, UNDP).

Type 2: Changes in Local Practices

Some project documents, typically from projects in the biodiversity focal area, discuss a type of intended catalytic effect, for the purposes of this report termed “changes in local practices.” Five necessary conditions of project documentation define this type:

- A particular *local livelihood practice* as the **preexisting phenomenon**, which the GEF intervention is intended to change
- *Local-level resource users, turned local champions*, serving as both **catalyzed and catalyzing actors**, whose actions ultimately generate the intended catalytic effect
- Accelerated diffusion of a favored livelihood practice as the **catalytic goal** of particular GEF interventions (typically considered to involve inducement of behavior change on the part of local resource users)
- A **plan of action** in which GEF *trains local resource users or provides technical assistance to nongovernmental organizations (NGOs) who train these users, and/or disseminates research and findings to local resource users*
- A *local, practice-defined geographic space* in which the intended catalytic effect will occur

The combination of these five qualities suggests that the main catalytic mechanism is a process in which *disincentives and incentives are extended to local actors* (incentives are for participation by the local actors and would-be local champions; whereas disincentives are typically in the form of increased regulations and the threat of enforcement of sustainable resource usage guidelines and laws)

A particularly representative project—Mainstreaming Conservation and Sustainable Use of Medicinal Plant Diversity in Three Indian States (project no. 1156), hereafter the Indian medicinal aromatic and plant species (MAPS) project—illustrates the six conceptual building blocks of type 2 well. Examples of other projects to which the type 2 definition applies help expand the definition of this type.

First, type 2 projects typically identify a local-level practice—often a resource-use or livelihood behavior—as the preexisting phenomenon, which the GEF intervention intends to change. The meaning of catalysis here is two pronged: stifling a common resource-use practice *not* favored by the GEF project and encouraging a less common local practice that *is* favored by the GEF project. In the projects examined, examples of such preexisting local practices include wild harvesting of medicinal plants, invasive plant management, hunting, agriculture, waste management, and energy.

One example of preexisting local livelihood practices typically identified in type 2 catalytic effects is found in the Indian MAPS project. Project documentation identified both *favored* and *disfavored* local livelihood practices. Although the Indian MAPS project has multiple objectives (many of which might also qualify it as a type 3 project), what distinguishes its type 2 strategy is the stated focus on on-site conservation. The project strategy first identifies the *favored* practice as “the sustainable use and in situ conservation of medicinal plants” (Biodiversity [BD] 1156 UNDP: 10). The section titled “Project Rationale, Objectives, Outcomes, and Outputs” identifies *disfavored* practices, including

- key threats to the conservation of MAPS that include the loss of traditional rules and knowledge,
- limitations of traditional rules and knowledge under commercial extraction regimes,
- income generation potential of MAPS” for the rural poor,
- weak community property rights,
- competition for land and other resources. (BD 1156 UNDP: 6).

Discussions of these specific disfavored practices are typically found in a description of the overarching market conditions that promote them. Again, the India MAPS project is a useful example:

There is, however, growing concern about the impacts on wild medicinal plant stocks of growing national and international demand for herbal products, and increasing commercialization of the medicinal plant economy (BD 1156 UNDP: 4).

Project documentation is often more specific about disfavored practices, which the project aims to discourage through disincentives, than it is about favored practices, whose adoption it will encourage through incentives.

Second, type 2 projects typically identify local champions, who are involved in community-based organizations or NGOs as the catalytic actors, whose advocacy for the favored practice GEF projects are intended to speed up or deepen. More specifically, project documentation tends to establish local champions as both the *catalyzed* and *catalyzing* actors of the GEF

project, in the sense that the GEF project intends to first harness, supplement, or simply use the existing capacities of these actors and organizations to shift the incentives and disincentives that local resource users face in using livelihood practices. The Indian MAPS project exemplifies this identification of catalyzed actors:

Partnerships with **local community groups** and NGOs have been established at many sites in these states for the conservation and sustainable use of medicinal plants (BD 1156 UNDP: 6, emphasis added).

[The project involves] working with **existing community institutions** wherever these already exist in community-owned or managed forests at each demonstration site to develop forest management norms and practices that favour the sustainable use and conservation of MAPS. These institutions include the Van Panchayats of Uttaranchal as well as various Village Forest Committees, Forest Protection Committees, Ecodevelopment Committees and Women's Self-Help Groups in all the project states (BD 1156 UNDP: 16, emphasis added).

This passage appears to indicate that the GEF intends such actors to play both *catalyzing* and *catalyzed* roles, which indicates who is supposed to create value—and in so doing—who is supposed to generate a catalytic effect in the project: although the GEF project is nearly always considered the initiator of a causal chain of catalytic effects, actors and organizations other than the GEF project typically do the most work in generating such an effect. As described above, the most important of these actors are local champions of type 2 projects, but actors are not necessarily limited to the local level. A good example is the project Regional Biodiversity Conservation in Coffee: Transforming Productive Practices, Central America (project no. 2371, UNDP):

The project will work closely with coffee producers in these countries to promote certification of coffee farms in particular biodiversity-rich coffee landscapes as a strategy to maximize biodiversity conservation benefits in the coffee landscape, and to respond to a growing market demand on coffee markets.

Finally, it will collaborate with other development and conservation NGOs, and other institutions which possess relevant knowledge, to improve certification practices and increase learning of how to achieve maximum biodiversity impact in coffee landscapes (BD 2371 UNDP: 135).

Yet typical type 2 projects also work with catalytic actors above the local level.

It will work with coffee companies throughout the supply chain, which already source certified coffee, to deepen their commitment to sustainability in coffee production and help them promote RAC [Rainforest Alliance Certification] coffee in the market place; and it will help increase the number of coffee companies which actively engage in the certification system by incorporating certified coffee in their coffee brands. It will work

with governments, trade agencies and coffee organizations in producer and consumer countries to promote biodiversity-friendly coffee production, trade, and sales, through improvement of policy and regulation to create incentives for sustainable production, or by removal of policy and incentive barriers (BD 2371 UNDP: 135).

Type 2 projects are thus more complex because of the relatively wider range of actors who must be effectively reached and influenced for catalytic change to occur. In other words, in type 2 projects, the theory of how GEF support generates catalytic effects in the field involves a more indirect and protracted process chain, in which disruptions of the intended effect are more likely than in type 1 projects.

Third, type 2 projects hold as a central goal of GEF intervention the accelerated diffusion of a favored livelihood practice. In other words, the project is intended to help instill desired practices through training and/or the creation of systems that generate greater knowledge (capacity building or development). In the India MAPS project, two goals are (1) favored methods for sustainable harvesting of MAPS and (2) certification systems to verify when these practices are and are not observed:

Additionally, the project will develop methods for sustainable harvesting of selected MAPS, particularly GSMPs [globally significant medicinal plants] in pilot demonstration areas. This project will attempt to tackle limited aspects of the demand side at the community level in selected demonstration sites, such as trying to obtain fair prices for collectors from local traders, local value addition, and exploring the possibility of a sustainable harvest certification system, and trialing the cultivation of selected species, particularly GSMP (BD 1156 UNDP: 11).

International waters projects have this goal as well—although with less frequency—particularly in projects intended to change fishing practices: “By helping to assure the sustainability of subsistence and artisanal fisheries critical to the **livelihoods of poor coastal communities**, the project will contribute directly to poverty prevention objectives” (International waters [IW] 1462 UNDP, emphasis added).

Regardless of the focal area in which such discussions of catalytic goals occur, several assumptions pervade discussions of this type of goal. Most important, these discussions often usefully address at least some of the incentives and disincentives that local resource users face in choosing to adopt favored practices and abandon disfavored practices. In this sense, the goals of the GEF intervention reflect theories of catalytic change that originate in a pragmatic framework of the motivations of resource users whose behaviors must change to meet the catalytic goal.

Fourth, type 2 projects identify two different plans of action for achieving their catalytic goals: conducting and disseminating research and providing technical assistance and/or training. The India MAPS project provides a typical example of these training and knowledge-creation plans:

One of the important conservation and sustainable use initiatives of this project will be the establishment and management of Medicinal Plants Conservation Areas (MPCAs) and Forest Gene Banks (FGBs) in state forests by the respective SFDs [state forest departments] in close collaboration with **local community groups**...These FGBs will be used as pilot sites for **developing and testing methods for sustainable harvest** of selected medicinal plant species as well as to supply seeds and planting material for medicinal plant nurseries and afforestation (BD 1156 UNDP: 16, emphasis added).

These examples illustrate two central features of these plans of action for training and knowledge creation: to be enacted, they require collaboration between the GEF project and *local community groups* and this collaboration must generate interventions by these local community groups in day-to-day practices of the villagers who are meant to adopt these *new sustainable livelihood practices*. Yet, the distance between the GEF intervention and the actor whom these plans of action are intended to catalyze casts doubt on the GEF project's ability to engage local community groups effectively, that is, in a way likely to instill the desired practices.

The central difference between type 2 plans of action and type 1 plans of action are that the former are intended to change day-to-day practices of multiple catalyzed actors and the latter involve the arguably more modest goal of changing the calculus of one-time investment decisions made by a finite number of executives. Thus, the use of demonstration of market transformation as a plan of action in type 2 projects involves the unfolding of a more complex and intricate chain of events for the intended catalytic effect to occur. This is illustrated in the language of the pilot demonstration site of type 2 projects:

Pilot demonstration sites for the **in situ** and **ex situ** conservation and sustainable management of medicinal plant diversity on community-owned or community managed forest land, including the establishment of 2 MPCA/FGB complexes in each project state (BD 1156 UNDP: 16, emphasis added).

In this example, the GEF project is demonstrating not simply the efficacy of a technology, as in a type 1 project, but the efficacy of a comparatively sophisticated set of practices and norms, which must be enacted and embraced by multiple individuals for an extended period, requiring extensive coordination. Thus, the plans of action involved in type 2 projects are in fact complex and extensive.

Fifth, the geographic space of a type 2 catalytic effect is a defined *local level*, across which the project attempts to instill desired practices and discourage unfavorable practices. The outcomes defined by a project typically indicate this geographic space. In the India MAPS project, for example: "Conservation and sustainable use of MAPS are mainstreamed *at the local level* into government and community forest management norms and practices at demonstration sites in the three project states" (BD 1156 UNDP: 16).

A tension exists between the national-level government institutions that projects often target and the provincial- and local-level sites where the catalytic effect is intended to occur. To induce changes in local practices identified in these projects, actors both at the national and local levels need incentives.

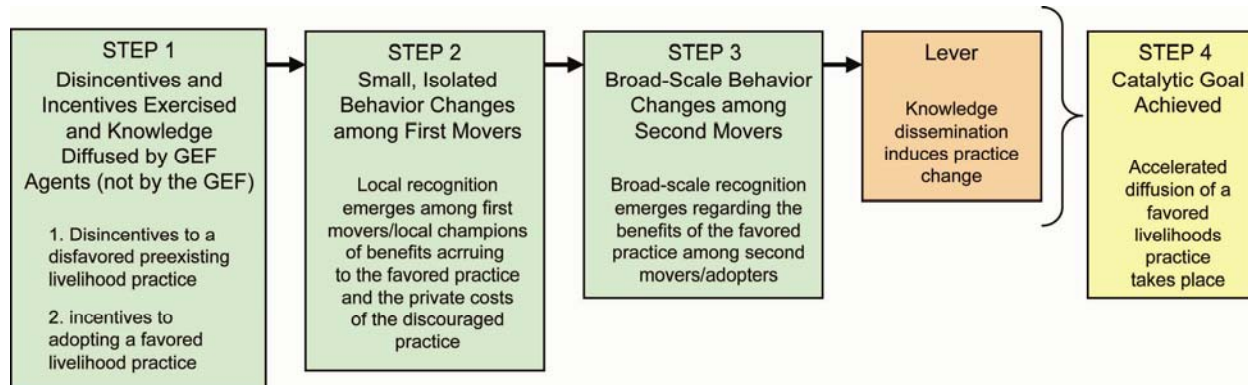
The combination of the five qualities described above suggests that the main catalytic mechanism for type 2 projects comprises the *various incentives and disincentives that the GEF project presents to local resource users and organizations that advocate for the desired practice changes at the local level*. Incentives are for participation by the local actors and would-be local champions; whereas disincentives are typically in the form of increased regulations and the threat of enforcement of sustainable resource usage guidelines and laws.

On the one hand, one intended mechanism of catalysis—disincentives—echoes the “fences and fines” approach, which characterizes integrated conservation and development project approaches to biodiversity conservation. Yet, a misalignment exists between the GEF project’s organizational capacity to use disincentives effectively on *national-level* actors and its limited capacity to offer disincentives or incentives to *local-level* civil society actors, that is, the actors whose behavior is typically slated for change in type 2 projects.

On the other hand, the incentives approach mirrors the investor behavior change mechanism, which drives type 1 projects and may more effectively emanate from market signals, rather than the GEF project itself. The difference is that, in type 2 projects, education on the favored practice serves as an incentive. It may be challenging to identify and provide the right incentives to local actors, ones that existing market signals do not already provide effectively.

In both the disincentives and incentives approach to catalysis, gaps are likely to exist between the protracted chain of catalytic effects in type 2 project documents and realities in the field. In type 2 projects, a third party (an NGO, community-based organization, or local champion) is expected to initiate a chain of catalytic effects. Figure 5.2 presents this process chain.

Figure 5.2: Process Chain in Type 2 “Changing Local Practices” Projects: How GEF Projects Are Intended to Shift Local Livelihood Practices



In short, type 2 catalytic effects entail conceptual and causal complexity, because they depend on actions by a range of local producers, NGOs, and community-based organizations, in addition to market actors in the supply chain (for example, in terms of coffee production or MAPS collection). All these actors must change their behavior in certain ways to initiate a chain of catalytic effects. Intermediate actors—not the GEF project—become initiators of catalysis in these projects, and they come to hold proximate responsibility for, and must do the practical work of, inducing behavior changes among local resource users. Yet, the competency and capacity of these intermediate catalyzing actors is likely to vary. In contrast, in type 1 projects, fewer opportunities for breakdown of a chain of catalytic effects exist (at least in the beginning stage and probably throughout the process chain): corporate executives either do or do not send and receive the market signals that GEF demonstration projects are intended to send.

Issues for Future Evaluation of Type 2 Catalytic Effects

This discussion of type 2 theories of catalytic change raises two implications for fieldwork:

- Future case study research on the type 2 catalytic role of GEF projects could focus on the initial step in the process chain of catalytic effects outlined in figure 5.2. The first stage may likely involve a substantial principal-agent problem, namely, whether GEF agents (community-based organizations, NGOs, and local resource users that the GEF project trains) can credibly offer disincentives and incentives and whether they diffuse knowledge that will set off a chain of catalytic effects among those resource users who initially respond through behavior change, that is, “first movers.”
- Systematic, small-n comparative case study analysis could be undertaken within the same local context to examine conditions for four types of outcomes in four types of cases:
 1. **A positive case of accelerated practice diffusion in which the GEF project has intervened.** This case study analysis would work backwards from either the ultimate outcome—accelerated diffusion of a livelihood practice (step 4 in figure 5.2)—or the

proximate outcome (step 2 in figure 5.2). This case could attempt to identify underlying causes of these outcomes. Hypotheses about the conditions for reaching step 2 might include whether and how the GEF project came to identify and train intermediate agents effectively; whether, how, and why these agents effectively offered disincentives and incentives to local resource users and educated local livelihood users on the benefits of the desired practice.

2. **A positive case of accelerated practice diffusion in which the GEF project has not intervened.** The purpose of this case would be to approximate a plausible counterfactual in which step 4—accelerated practice diffusion (compared with the other three cases)—occurs in the absence of the GEF intervention, in short, a search for cases in which step 4 occurs without going through steps 1 to 3 first. Such a case could increase understanding of how livelihood practices change for the better without the GEF project, inducing useful reflection on whether and how GEF can either accelerate or avoid hindering such diffusion processes.
3. **A negative case of stagnant or hindered practice diffusion in which the GEF project has intervened.** This case would work backwards from either of the following: (1) the ultimate outcome is that a favored livelihood practice is not diffused (step 4 in figure 5.2 does not occur) or is diffused less quickly (compared with the other three cases) or (2) the proximate outcome (step 2 in figure 5.2) does not occur. Interesting negative cases may include those in which GEF interventions impede the diffusion of the favored practice.
4. **A negative case of accelerated practice diffusion in which the GEF project has not intervened.** The purpose of this case would be to approximate a different counterfactual in which failed or impeded practice diffusion occurs in the absence of the GEF intervention. The case could help identify factors that GEF projects *may* need to avoid assisting in order to induce the best positive outcomes.

Examples of Type 2 Projects: Changes in Local Practices

Three projects illustrate type 2 catalytic effects well:

- Mainstreaming Conservation of Medicinal Plants, India (project no. 1156, UNDP)
- Biodiversity Conservation in Coffee: Transforming Productive Practices in the Coffee Sector by Increasing Market Demand for Certified Sustainable Coffee, Central America (project no. 2371, UNDP)
- Biodiversity Conservation in the Productive Landscape of the Venezuelan Andes (project no. 2120, UNDP)

Type 3: Policy Advocacy and Institutional Improvement

In general, type 3 catalytic effects fall into a broader category of intended catalytic effects than either type 1 or type 2 effects. At the simplest level, type 3 projects often discuss the attraction of cofinancing as an ultimate goal that is understood to be catalytic. This conceptualization of catalysis, however, describes nearly every GEF project: Full-size GEF projects are required to seek cofinancing.

This section sheds light on a more substantive theory of catalytic change underlying type 3 projects: that the GEF intervention can speed the approval of desired national policies and improve the performance of institutions in implementing such policies. Although project documentation discusses these effects more often in international waters projects, such language appears in some biodiversity and climate change projects as well.

Documents from projects in the international waters focal area typically discuss a type of intended catalytic effect termed for the purposes of this report as “policy advocacy and institutional improvement.” Six necessary conditions of project documentation define this type:

- A particular process of policy making or an institutional process of policy implementation as the *preexisting phenomenon* that the GEF intervention is intended to speed or improve
- Public/civil servants and policy makers as the *catalytic actors*, whose actions generate the intended catalytic effect
- Improved environmental policies and improved institutional capacity to implement policies as the *catalytic goals* of particular GEF interventions
- A *plan of action* in which the GEF project conducts training, provides technical assistance, or merely convenes public/civil servants and policy makers in dialogue about desired policy change
- A *geographic space* defined by the governmental jurisdiction in which the intended catalytic effect is intended to occur (because in this case catalysis is believed to occur within governments, the levels of the relevant agencies—national, subnational, and local—determine the space in which catalysis is considered to occur)

The combination of these five qualities suggests that the main catalytic mechanism is *dialogue between policy makers and training provided to public/civil servants*. The five qualities can be explained as follows:

1. **Projects with type 3 catalytic effects typically identify two different preexisting phenomena.** On the one hand, these projects may identify a *policy* whose diffusion throughout a legislative process or adoption by policymakers more generally would be accele-

rated or improved through the GEF project. On the other hand, they identify the performance of an institution or a particular agency that implements policy, as the preexisting phenomenon that the GEF project is intended to improve or accelerate. This criterion alone includes nearly all full-size GEF projects.

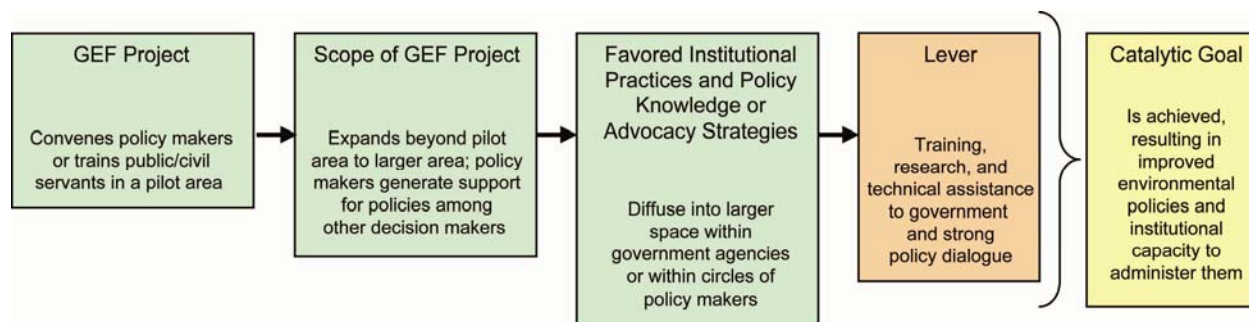
2. **Type 3 projects identify a broad range of catalyzed actors.** When the preexisting phenomenon is a policy, *policy makers* are the intended catalyzed actors; once the GEF project provides them with scientific findings that support a particular policy shift, their advocacy for a policy is expected to be quicker and more effective. When the preexisting phenomenon is an institution or a particular set of institutions, catalyzed actors typically include managers of these agencies.
3. **The overarching goal is to induce policy change or improve institutional performance.** This goal is often stated through such language as “policy mainstreaming,” creation of new “management frameworks,” and “re-aligning policy, regulations, and institutions.” Two premises underlie this goal. The first is that countries that agree to accept GEF funding lack adequate institutional capacity to implement the policies that they agree to pursue. The second is that political momentum may exist for a given policy, but the GEF intervention is required to induce legislators and policymakers to push through desired changes.
4. **At least three distinct plans of action promote these two overarching goals:** (1) *creating and disseminating scientific research and knowledge*, including training scientists to undertake the studies required to generate such knowledge, (2) *training public/civil servants and providing technical assistance* to government agencies that are ultimately tasked with implementing the policies, and (3) *convening policy makers*, for discussions that are meant to generate new policies.
5. **The geographic space in which catalysis is believed to occur in type 3 projects is quite broad.** For improving policy administration, the jurisdiction or scope of government agencies involved defines the geographic space; for GEF projects that convene policy makers, it is the jurisdiction of both elected and appointed political officials.

The five necessary conditions described above that define type 3 projects suggest a catalytic causal chain of *training and technical assistance to public/civil servants and forums for policy dialogue*. When compared with type 1 and type 2 catalytic effects, however, it is less clear that this lever is likely to generate a catalytic effect. The core of the type 3 theory of change seems to be that training at higher levels and dissemination of this knowledge downward will eventually reach the agencies where change must take place. The approach, particularly with training and technical assistance plans of action, is to pilot the intervention in some areas and expand or “replicate” it shortly thereafter.

Highlighted successful intervention practices will provide the basis for replication in other cities and states and will play a **catalytic** role in the achieving meaningful results under the Azov/Black basin-wide Environmental Management Plan as well as the Mediterranean Environmental Management Plan under the Barcelona Convention and elsewhere (IW 2143 IBRD, executive summary: line 215, emphasis added).

The theory of change seems to be driven by a predetermined need to expand (replicate or scale up) the project. Figure 5.3 illustrates this pattern. Type 3 projects seem to emphasize the size of the GEF project, deviating from the idea of catalysis as small interventions that improve or accelerate preexisting processes without expanding or changing the role of the GEF project itself. As such, the theories of change in type 3 projects identify no obvious incentives or disincentives to induce policy change or institutional performance. In short, a mismatch or lack of mechanisms may exist between the apparent goals of type 3 projects and their plans of action. For example, in GEF projects whose goal is to induce policy change and whose plan of action is to generate scientific knowledge justifying or demonstrating the need for the policy change, why or how the plan promotes the policy change is not clear. Nor is it explicit how provision of scientific knowledge will affect domestic policy processes or what GEF can do to induce change.

Figure 5.3: Process Chain in Type 3 “Policy Advocacy/Institutional Improvement” Projects: How GEF Projects Are Intended to Improve Policy Making and Public Administration



Examples of Type 3 Projects: Policy Advocacy and Institutional Improvement

Four projects stand out as candidates for research on type 3 projects:

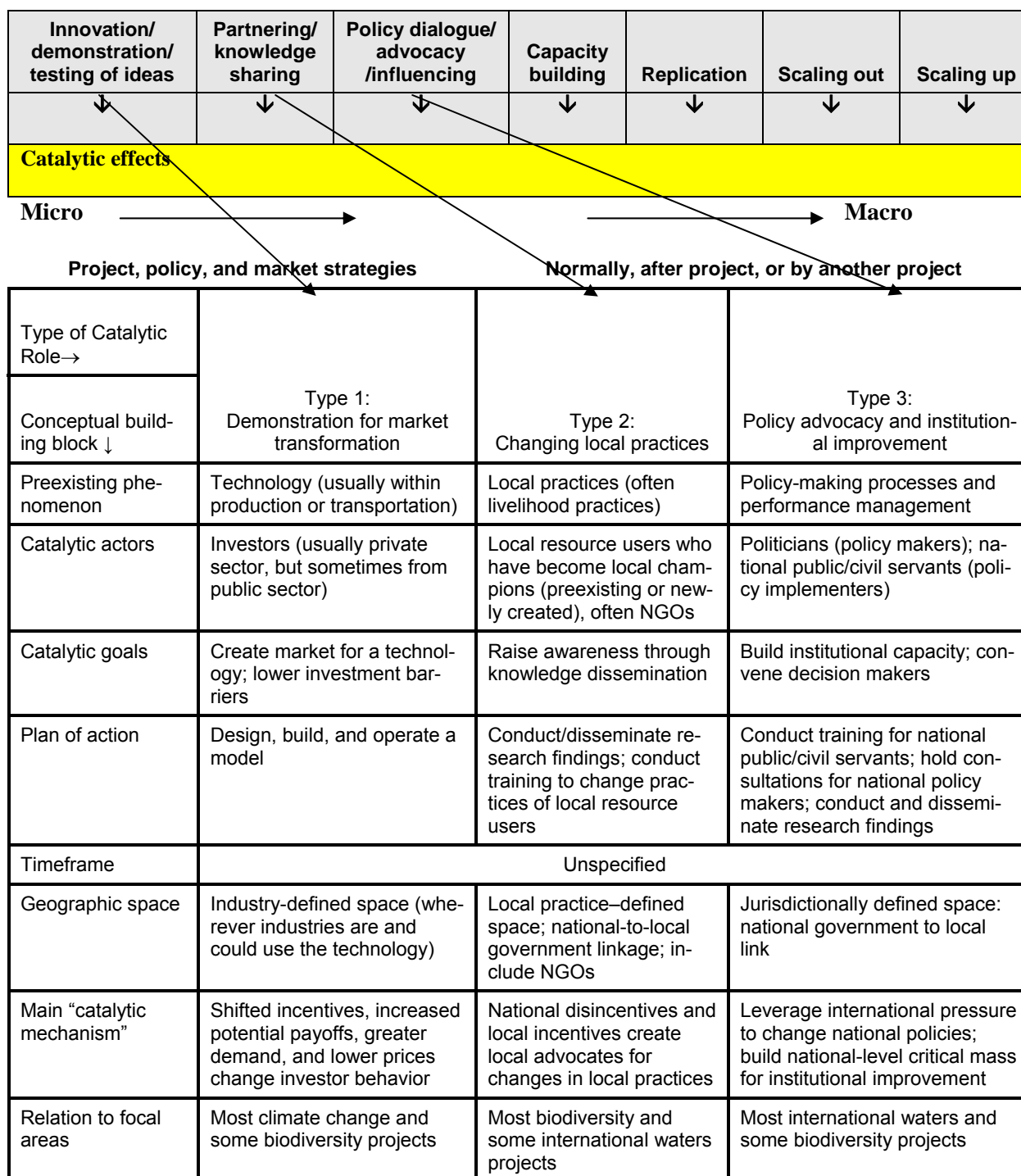
- Southwest Indian Ocean Fisheries Project (project no. 1082, World Bank)
- Integrated Management of Aquatic Resources in the Amazon, Brazil (project no. 1299, World Bank)
- Catalyzing Sustainability of the Wetland Protected Areas System through Increased Management Efficiency, Belarus (project no. 2104, UNDP)
- National Biodiversity Mainstreaming and Institutional Consolidation Project, Brazil (project no. 2764, World Bank)

The typology in figure 5.4 identifies observable implications of the chain of catalytic effects discussed in the approach paper. Conceptually, a catalytic process may be seen as a chain of activities (called catalytic efforts), in which different actors intervene at different times and with different immediate goals to further the results. Not all interventions go through each stage. While a catalytic element can be present at each stage; there seems to be agreement that a ‘catalytic effect’ often takes place somewhere at the end of one’s intervention – and at the beginning of someone else’s intervention, moving from the micro to the macro level. This corresponds generally to the results chain – of outputs, outcomes and impact. Different organizations intervene at different points in the chain, depending on their comparative advantage and mandate. For example, the International fund for Agricultural Development (IFAD) focuses on innovation, while the World Bank Group emphasizes scaling up.

The “early” strategies in the chain of results largely correspond to the three types of catalytic roles found in GEF project documents, namely demonstration of innovative ideas (common in climate change), changing local practices which is linked to knowledge sharing often emphasized in biodiversity, and policy dialogue and advocacy often pursued in international waters.

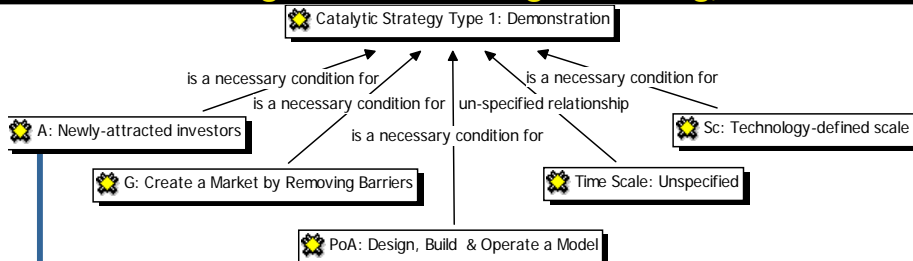
Figure 5.4: A Typology of Catalytic Roles in GEF Project Strategies

A Possible Chain of Catalytic Efforts



Annex A: Type 1 Example – Demonstration of Market Transformation

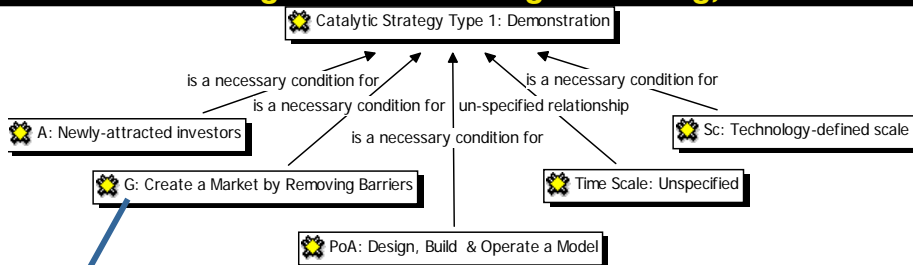
**Example of Catalytic Project Strategy Type 1
“Demonstration”:
EFCC Co-generation for Sugar Refining, Brazil**



“Catalyzed Actor: Newly-attracted Investors”:

“The main novelty comes from the Project’s focus on maximizing the exportable power of co-generation plants in the Brazilian sugar industry and, potentially, operating these plants on an arms-length basis from the mills. This entails a rethinking by **sugar producers** of their current business model. This first commercially-operated EFCC plant will serve as a demonstration of the feasibility and potential profitability of this new line of business for the sugar industry.”

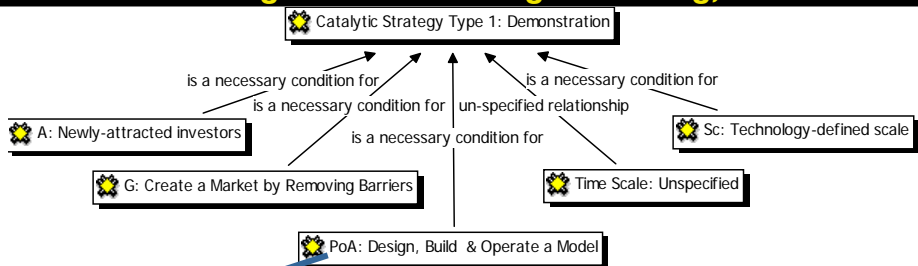
**Example of Catalytic Project Strategy Type 1
“Demonstration”:
EFCC Co-generation for Sugar Refining, Brazil**



Goal: Create a Market/Remove Barriers:

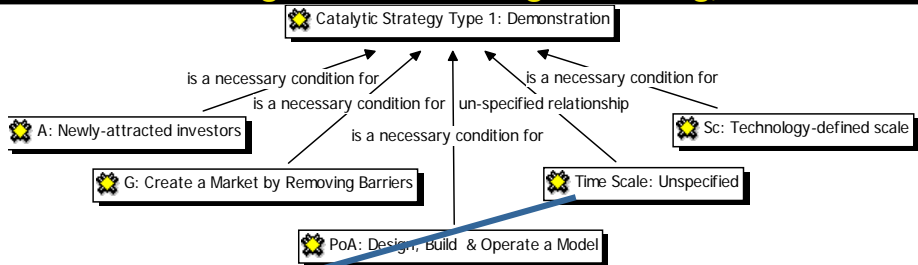
“If the Project were successful, a **large market for this technology could potentially open up** in countries such as Brazil, Peru, India, China and other sugarcane producing countries.” . . . “The Project’s global environmental objective is to **contribute to improving the economic attractiveness of EFCC technology** globally and of reducing CO2 emissions.”

**Example of Catalytic Project Strategy Type 1
“Demonstration”:
EFCC Co-generation for Sugar Refining, Brazil**



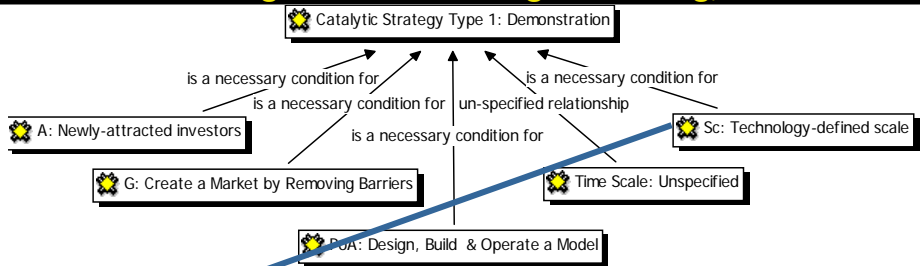
Plan of Action: Design, Build & Operate a Model:
 “To attain these outcomes, the Project seeks to **develop, design, finance, build and operate a “first-of-its-kind” 80 MW two-train bagasse fired EFCC cogeneration facility** supplemented by a 250 tonne per hour conventional steam generator (the “Project”).

**Example of Catalytic Project Strategy Type 1
“Demonstration”:
EFCC Co-generation for Sugar Refining, Brazil**



Time Scale: Un-specified:
 [a potential challenge for evaluating catalytic effects???)

**Example of Catalytic Project Strategy Type 1
“Demonstration”:
EFCC Co-generation for Sugar Refining, Brazil**

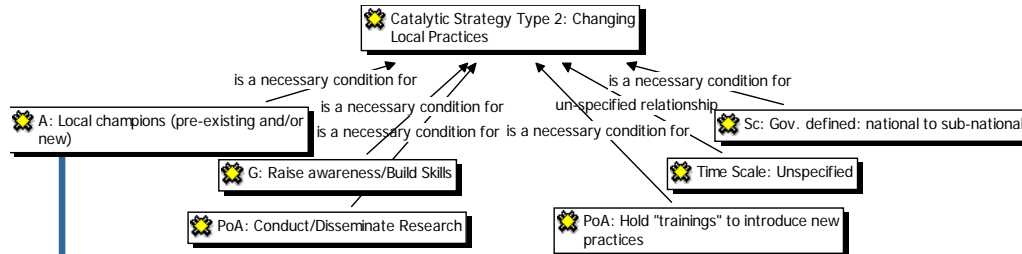


Geographic Scale: Technology-defined

“If the Project were successful, a large market for this technology could potentially open up in countries such as Brazil, Peru, India, China and **other sugarcane producing countries.**”

Annex B: Type 2 Example – Changing Local Practices

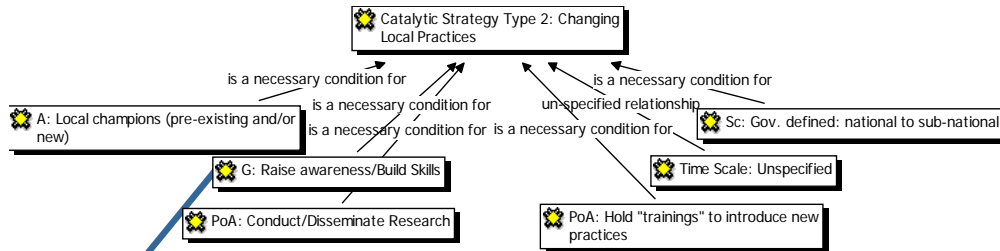
Example of Catalytic Project Strategy Type 2 “Changing Local Practices”: *Mainstreaming Medicinal Plants Conservation, India*



“Actor: Local Champions”:

“Partnerships with **local community groups and NGOs** have been established at many sites in these states for the conservation and sustainable use of medicinal plants.”

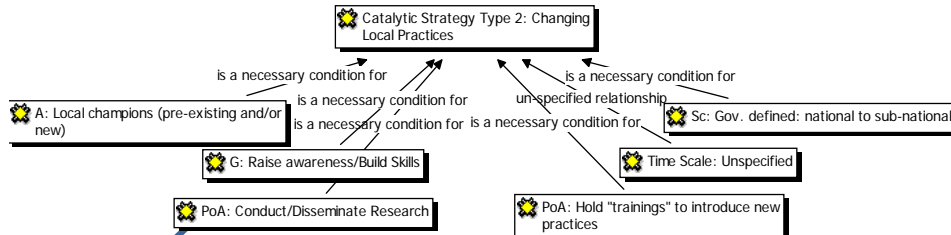
**Example of Catalytic Project Strategy Type 2
“Changing Local Practices”:
Mainstreaming Medicinal Plants Conservation, India**



Goal: Raise Awareness/Build Skills:

“The successful implementation of this project requires strong **technical leadership** and a high level of coordination due to its inter-sectoral nature and its implementation at the national level as well as in three project states and four replication states.”

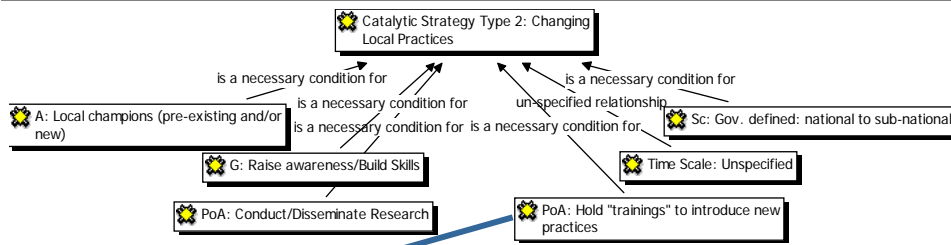
**Example of Catalytic Project Strategy Type 2
“Changing Local Practices”:
Mainstreaming Medicinal Plants Conservation, India**



Plan of Action 1: Disseminate Knowledge & Systems:

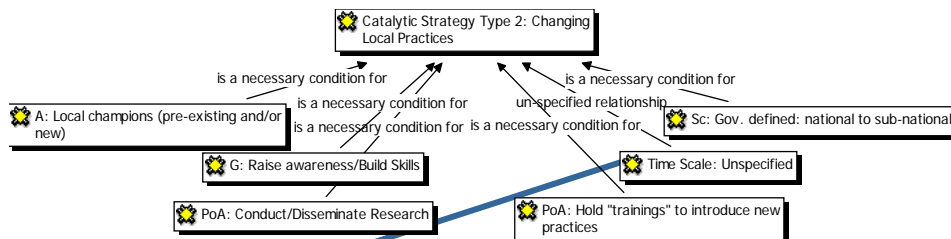
“The project will attempt to tackle limited aspects of the demand side...such as...exploring the possibility of a **sustainable harvest certification system**, and trialing the cultivation of selected species..”

**Example of Catalytic Project Strategy Type 2
“Changing Local Practices”:
Mainstreaming Medicinal Plants Conservation, India**



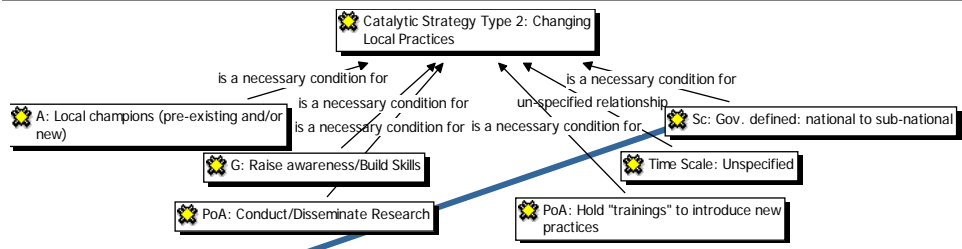
Plan of Action 2: Hold Trainings to Inculcate Practices:
 “The project will attempt to tackle limited aspects of the demand side...such as...exploring the possibility of a sustainable harvest certification system, and **trialing the cultivation of selected species..**”

**Example of Catalytic Project Strategy Type 2
“Changing Local Practices”:
Mainstreaming Medicinal Plants Conservation, India**



Time Scale: Un-specified:
 [a potential challenge for evaluating catalytic effects???)

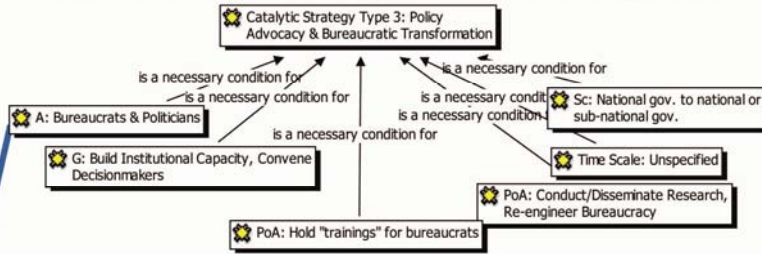
**Example of Catalytic Project Strategy Type 2
 “Changing Local Practices”:
 Mainstreaming Medicinal Plants Conservation, India**



Geo. Scale: Government-defined (national & sub-national)
 “Sustainable harvesting methodologies available and being used for high priority MAPs, including GSMPs in at least 21 demonstration Sites...The objective of this project is to achieve the long-term conservation and sustainable use of India’s medicinal plant diversity, particularly of its globally significant species, by mainstreaming these objectives into forest management **policy and practice at the national, state and local level in three Indian states**”

Annex C: Type 3 Example – Policy Advocacy and Institutional Improvement

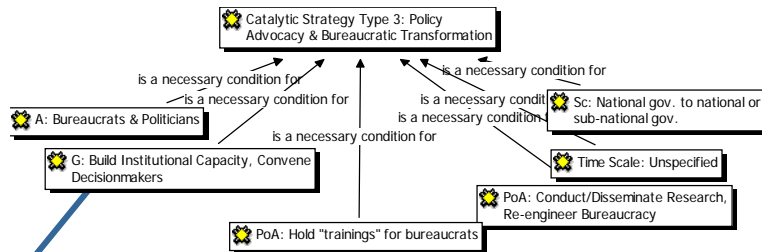
Example of Catalytic Project Strategy Type 3 “Policy Advocacy/Bureaucratic Improvement”: *Integrated Mgmt. of Aquatic Resources, Brazil*



Actor: Bureaucrats:

“Brazilian authorities have developed an integrated management approach referred to managing freshwater ecosystems in the Amazon known as GIBRAH...the proposed project assists the Government of Brazil to put GIBRAH in place and will help to make it effective and sustainable.”

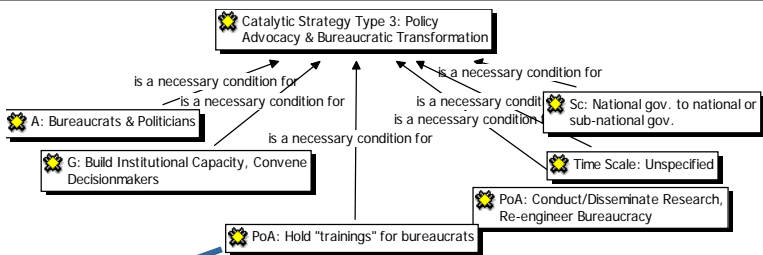
Example of Catalytic Project Strategy Type 3 “Policy Advocacy/Bureaucratic Improvement”: *Integrated Mgmt. of Aquatic Resources, Brazil*



Goal: Build Institutional Capacity:

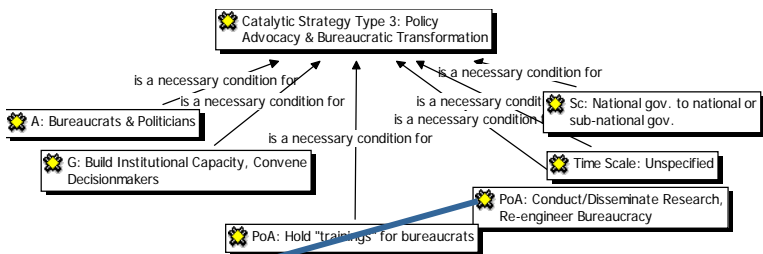
“The main expected outcomes are: **Institutional arrangements and processes** established in three sub-basins of the Brazilian Amazon, to support the adoption of a GIBRAH-based approach.

**Example of Catalytic Project Strategy Type 3
“Policy Advocacy/Bureaucratic Improvement”:
Integrated Mgmt. of Aquatic Resources, Brazil**



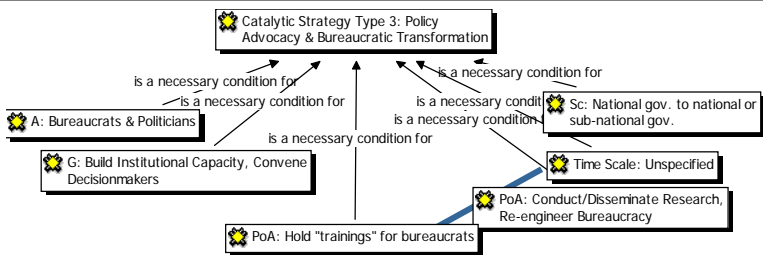
PoA 1: Coordinate bureaucratic capacity thru training:
 “The main expected outcome...is strengthened institutional capacity to manage and **coordinate actions** in the three sub-basins, monitor impacts, and disseminate the experiences generated by the project.”

**Example of Catalytic Project Strategy Type 3
“Policy Advocacy/Bureaucratic Improvement”:
Integrated Mgmt. of Aquatic Resources, Brazil**



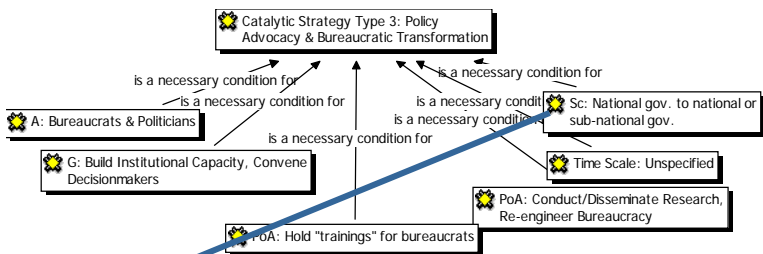
PoA: Re-engineer Bureaucracy/Disseminate Research:
 A series of constraints have made it difficult to effectively address the threats to the Amazon Basin...there is a **lack of organizational and institutional capacity** at the basin, state, and local levels to deal with these issues...there is a **lack of useful information** that policy makers and resource managers need to make good decision.”

**Example of Catalytic Project Strategy Type 3
“Policy Advocacy/Bureaucratic Improvement”:
Integrated Mgmt. of Aquatic Resources, Brazil**



Time Scale: Un-specified:
[a potential challenge for evaluating catalytic effects???]

**Example of Catalytic Project Strategy Type 3
“Policy Advocacy/Bureaucratic Improvement”:
Integrated Mgmt. of Aquatic Resources, Brazil**



Geo. Scale: National to sub-national government link in project area:
The main project activities are...support for a process leading to agreed institutional arrangements for the implementation of GIBRAH in **three participating States** ...and expansion of GIBRAH to **six other States** in the Basin.

Annex D: List of Projects

GEF ID	FA	Country	Region	Agency	Project Title	Amount (dollars)
1299	BD	Brazil	LAC	WB	Integrated Management of Aquatic Resources in the Amazon (AquaBio)	7.3949
2764	BD	Brazil	LAC	WB	National Biodiversity Mainstreaming and Institutional Consolidation Project	22
1039	CC	Brazil	LAC	WB-IFC	EFCC Advanced Technology Cogeneration Project for the Costa Pinto Sugar Refinery in Piracicaba SP Brazil	44.52
2104	BD	Belarus	ECA	UNDP	Catalyzing Sustainability of the Wetland Protected Areas System in Belarusian Polesie through Increased Management Efficiency and Realigned Land Use Practices	2.4109
2107	CC	Belarus	ECA	UNDP	Removing Barriers to Energy Efficiency Improvements in the State Sector in Belarus	1.595
2491	BD	Botswana	AFR	UNDP	Building Local Capacity for Conservation and Sustainable Use of Biodiversity in the Okavango Delta	4.275255
2143	IW	Bosnia-Herzegovina	ECA	WB	Water Quality Protection Project: under WB-GEF Strategic Partnership for Nutrient Reduction in the Danube River and Black Sea	8.5
1156	BD	India	Asia	UNDP	Mainstreaming Conservation and Sustainable Use of Medicinal Plant Diversity in Three Indian States	5.28
2433	CC	Indonesia	Asia	UNDP	Integrated Microhydro Development and Application Program (IMIDAP), Part I	2.121
1064	BD	Gabon	AFR	WB	Support to Gabon's Forest and Environment Sector Program	10.295
1535	BD	Azerbaijan	ECA	WB	Rural Environment Project	5.35
2624	CC	China	Asia	WB-IFC	China Utility-Based Energy Efficiency Finance Program	16.5
2257	CC	China	Asia	UNDP	Demonstration of Fuel Cell Bus Commercialization in China, Phase 2	5.767
2537	CC	Armenia	ECA	WB	Renewable Energy Project	3.25
2660	CC	Burkina Faso	AFR	UNDP	Transformation of the Rural PV Market (previously, Energy Sector Reform)	1.76
2551	BD	Colombia	LAC	WB	Colombian National Protected Areas Conservation Trust Fund	15.35
1146	CC	Iran	Asia	UNDP-WB	Removing Barriers to Large Scale Commercial Wind Energy Development	5.725
2105	BD	Croatia	ECA	UNDP	Conservation and Sustainable Use of Biodiversity in the Dalmatian Coast through Greening Coastal Development	7.3095
1894	CC	South Africa	AFR	WB	Renewable Energy Market Transformation	6
2499	CC	Guatemala	LAC	UNDP	Productive Uses of Renewable Energy in Guate-	2.65

GEF ID	FA	Country	Region	Agency	Project Title	Amount (dollars)
		la			mala	
2489	CC	Honduras	LAC	WB	Use of Renewable Energy in Offgrid Electrification	2.7
2607	CC	Peru	LAC	WB	Rural Electrification	10.35
2386	CC	Mauritania	AFR	UNDP	Adrar Solar Initiative and Decentralized Electrification in the Northern Coastline of Mauritania through Hybrid (Wind/Diesel) Systems	2.8
2638	BD	Turkmenistan	ECA	UNDP	Conservation and Sustainable Use of Globally Significant Biological Diversity in Khazar Nature Reserve on the Caspian Sea Coast (Resubmission)	1.4286
2120	BD	Venezuela	LAC	UNDP	Biodiversity Conservation in the Productive Landscape of the Venezuelan Andes	7.6994
1505	BD	Namibia	AFR	WB	Namib Coast Biodiversity Conservation and Management	5.235
1149	CC	Kazakhstan	ECA	UNDP	Removing Barriers to Energy Efficiency in Municipal Heat and Hot Water Supply	3.5519
1462	IW	Regional	AFR	UNDP	Programme for the Agulhas and Somali Current Large Marine Ecosystems: Agulhas and Somali Current Large Marine Ecosystems Project (Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, Tanzania)	12.923
2140	BD	Regional	AFR	UNEP	Removing Barriers to Invasive Plant Management in Africa (Ethiopia, Uganda, Zambia, Ghana)	5.725
2670	BD	Regional	LAC	UNDP	Central American Markets for Biodiversity: Mainstreaming Biodiversity Conservation and Sustainable use within Micro, Small and Medium-sized Enterprise Development and Financing (Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua)	10.225
2385	CC	Regional	AFR	UNDP	First Regional Micro/Mini-Hydropower Capacity Development and Investment in Rural Electricity Access in Sub-Saharan Africa (Cameroon, Mali, Central African Republic, Benin, Togo, Gabon, Rwanda, Congo, Congo DR, Burundi)	19.17397
2138	IW	Regional	Asia	WB	Livestock Waste Management in East Asia (China, Thailand, Vietnam)	7.7
2131	IW	Regional	Asia	UNDP	Pacific Islands Oceanic Fisheries Management Project (Cook Islands, Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tokelau, Tuvalu, Vanuatu)	11.64429
2099	BD	Regional	LAC	WB	Corazon Transboundary Biosphere Project (Nicaragua, Honduras)	12.4
2098	IW	Regional	AFR	WB	Western Indian Ocean Marine Highway Development and Coastal and Marine Contamination Prevention Project (Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, South Africa, Tanzania)	11.7
2093	IW	Regional	AFR	WB	Strategic Partnership for a Sustainable Fisheries Investment Fund in the Large Marine Ecosystems	13.19326

GEF ID	FA	Country	Region	Agency	Project Title	Amount (dollars)
					of Sub-Saharan Africa (Tranche 1 of 3) (Africa)	
1252	IW	Regional	Asia	WB	Bay of Bengal Large Marine Ecosystem (Bangladesh, India, Indonesia, Malaysia, Maldives, Myanmar, Sri Lanka, Thailand)	12.7819
1028	BD	Regional	REG	UNDP	Mainstreaming Conservation of Migratory Soaring Birds into Key Productive Sectors along the Rift Valley/Red Sea Flyway (Tranches 1 and 2) (Yemen, Lebanon, Palestinian Authority, Djibouti, Egypt, Eritrea, Ethiopia, Jordan, Sudan, Syria)	10.24324
1082	IW	Regional	AFR	WB	Southwest Indian Ocean Fisheries Project (Comoros, Kenya, Mauritius, Mozambique, Seychelles, South Africa, Tanzania)	12.725
2371	BD	Regional	LAC	UNDP	Biodiversity Conservation in Coffee: Transforming Productive Practices in the Coffee Sector by Increasing Market Demand for Certified Sustainable Coffee (Guatemala, Honduras, Brazil, El Salvador, Peru)	12.64009

Note: AFR: Africa; ECA: Europe and Central Asia; FA: focal area; IFC: International Finance Corporation; LAC: Latin America and the Caribbean; REG: Regional; UNEP: United Nations Environment Programme; and WB: World Bank.

Annex E: A Sampling of Explicit Mentions of “Catalytic”

Possible meanings of catalytic effect (emphasis added in quotes) include the following:

- **Meaning 1: Attraction of cofinancing:**

In particular, the cost efficiency of the project consists in a highly **catalytic** project intervention, where the GEF investment will be replicated in large areas, and generate high amounts of cofinancing and leveraged financing. The following figures show that the proposed GEF alternative is highly catalytic...The GEF alternative will help increase the number of certified hectares more than fifteen times, from 93,000 hectares in August of 2005 to 1.5 million hectares by the end of the project...The biodiversity value of certified farms in a coffee landscape is likely to reach well beyond the certified farms themselves, depending on the certification activity and the threats against biodiversity in the surrounding area, because species typical for much larger ecosystems can survive on sustainable coffee farms in conjunction with remaining tracts of intact habitat, even if the larger ecosystem is degraded...Driven by market incentives created by this project, farmers will undertake investments on their farms to become eligible for certification. (BD UNDP2371 Regional PAD for Regional Biodiversity Conservation in Coffee: Transforming Productive Practices, Central America: line 1275

Co-financing agencies are an essential partner to the BOBLME [Bay of Bengal Large Marine Ecosystem Project] Program. GEF resources are only catalytic in nature and additional sources of financing and expertise are essential to achieving the identified Project objectives and Program goal over the longer term (IW 1252 Regional PAD document: 1117).

The GEF project in particular will lend catalytic support in engaging various donors (international funding agencies, international NGOs and research institutions) through building synergies with them, in particular through reorienting their aims to meet the global objective of the project (BD 1064 IBRD, Gabon executive summary: line 65).

- **Meaning 2: Promotion of the *replication* of the project or project activity.**

The management models trialled in the Okavango Delta will be systematically replicated in other wetlands across Botswana as part of the National Wetlands Strategy. GEF intervention in the Okavango Delta will thus be highly **catalytic**, and is cost-effective (BD 2491 UNDP, Botswana PAD: line 597).

Highlighted successful intervention practices will provide the basis for replication in other cities and states and will play a **catalytic** role in the achieving meaningful results under the Azov/Black basin-wide Environmental Management Plan as well as the Mediterra-

near Environmental Management Plan under the Barcelona Convention and elsewhere (IW 2143 IBRD, Regional executive summary: line 215).

- *Meaning 3:* Launch of *mainstreaming* processes, through which national, state, or local governments internalize and pursue the GEF project objective.

The GEF support is largely in the form of technical support to investment activities financed by local and national stakeholders (both public and private sector). This symbolizes the **catalytic** nature of GEF support. GEF technical support will influence and modify national activities, thereby achieving the mainstreaming (BD 2105 UNDP, Croatia Project Document: line 924).

- *Meaning 4:* The *jump-start* as a temporary, one-time infusion of funding, but not necessarily an infusion intended to generate cofinancing.

Funding for this activity is intended to be **catalytic** and not permanent and it is focused upon community development and civil society strengthening. (BD 2638 Turkmenistan PAD: line 517)

- *Meaning 5:* GEF *awareness raising* that creates behavior change.

As indicated above, this project has built on the concept that mainstreaming is a process, hence, its design stresses its **catalytic** function in transforming systems primarily through raising awareness and altering social and cultural behaviours. The innovative technique of double mainstreaming is believed to offer a greater reach and deeper penetration into the key sectors than a traditional approach that looks to “inject” mainstreaming messages from outside the sectors, as a result its chances of producing enduring change are envisaged to be higher. Because the ultimate reach of the technique will in part be determined by the reform vehicles that it is able to partner, determining how far the mainstreaming process will go is difficult to determine. However, as the Biodiversity Advisory Note states, “*a project may launch a mainstreaming process but does not need to conclude it*” but the changes brought about by the project are intended to be permanent and irreversible as successful mainstreaming requires (BD 1028 UNDP, Regional PAD: line 417).

Annex F: GEF-4 Strategic Objectives and Programs

Strategic long-term objectives	Strategic programs for GEF-4
BIODIVERSITY	
1. To catalyze sustainability of protected area systems	1. Sustainable financing of protected area systems at the national level 2. Increasing representation of effectively managed marine protected areas in protected area systems 3. Strengthening terrestrial protected area networks
2. To mainstream biodiversity in production landscapes/seascapes and sectors	4. Strengthening the policy and regulatory framework for mainstreaming biodiversity 5. Fostering markets for biodiversity goods and services
3. To safeguard biodiversity	6. Building capacity for the implementation of the Cartagena Protocol on Biosafety 7. Prevention, control, and management of invasive alien species
4. To build capacity on access and benefit sharing	8. Building capacity on access and benefit sharing
CLIMATE CHANGE	
1. To promote energy-efficient technologies and practices in the appliance and building sectors	1. Promoting energy efficiency in residential and commercial buildings
2. To promote energy-efficient technologies and practices in industrial production and manufacturing processes	2. Promoting energy efficiency in the industrial sector
3. To improve the efficiency and performance of existing power plants	(Strategic objective not pursued directly in GEF-4)
4. To promote on-grid renewable energy	3. Promoting market approaches for renewable energy
5. To promote the use of renewable energy for the provision of rural energy services (off grid)	(Strategic objective not pursued directly in GEF-4)
6. To support new low GHG-emitting energy technologies	4. Promoting sustainable energy production from biomass
7. To facilitate market transformation for sustainable mobility in urban areas, leading to reduced GHG emissions	5. Promoting sustainable innovative systems for urban transport
8. To reduce GHG emissions from land use, land use change, and forestry	6. Management of land use, land-use change, and forestry as a means to protect carbon stocks and reduce GHG emissions
9. To support pilot and demonstration projects for adaptation to climate change	(Strategic Priority on Adaptation, Special Climate Change Fund, and Least Developed Country Fund, and the principle of GEF-wide climate proofing)
LAND DEGRADATION	

Strategic long-term objectives	Strategic programs for GEF-4
<ol style="list-style-type: none"> 1. To develop an enabling environment that will place sustainable land management in the mainstream of development policy and practices at the regional, national, and local levels 2. To scale up sustainable land management investments that generate mutual benefits for the global environment and local livelihoods 	<ol style="list-style-type: none"> 1. Supporting sustainable agriculture and rangeland management 2. Supporting sustainable forest management in production landscapes 3. Investing in innovative approaches in sustainable land management
INTERNATIONAL WATERS	
<ol style="list-style-type: none"> 1. To foster international, multistate cooperation on priority transboundary water concerns 2. To catalyze transboundary action addressing water concerns 	<ol style="list-style-type: none"> 1. Restoring and sustaining coastal and marine fish stocks and associated biological diversity 2. Reducing nutrient overenrichment and oxygen depletion from land-based pollution of coastal waters in large marine ecosystems consistent with the Global Program of Action 3. Balancing overuse and conflicting uses of water resources in surface and groundwater basins that are transboundary in nature 4. Reducing persistent toxic substances and testing adaptive management of waters with melting ice
OZONE-DEPLETING SUBSTANCES	
<ol style="list-style-type: none"> 1. To phase out production and consumption of ozone-depleting substances 	<ol style="list-style-type: none"> 1. Phasing out hydrochlorofluorocarbons and strengthening capacities and institutions
PERSISTENT ORGANIC POLLUTANTS	
<ol style="list-style-type: none"> 1. To reduce and eliminate production, use, and releases of persistent organic pollutants 	<ol style="list-style-type: none"> 1. Strengthening capacity for national implementation plan development and implementation 2. Partnering in investments for implementing national implementation plan 3. Partnering in demonstration of feasible, innovative technologies, and best practices for reduction of persistent organic pollutants
SOUND CHEMICAL MANAGEMENT	
<ol style="list-style-type: none"> 1. To promote sound management of chemicals for the protection of human health and the global environment 	<ol style="list-style-type: none"> 1. Integrating sound chemical management in GEF projects 2. Articulating the chemical-related interventions supported by the GEF within countries' frameworks for chemical management
SUSTAINABLE FOREST MANAGEMENT	

Strategic long-term objectives	Strategic programs for GEF-4
<ol style="list-style-type: none"> 1. To conserve and sustainably use forest biodiversity 2. To promote sustainable management and use of forest resources 	<ol style="list-style-type: none"> 1. Sustainable financing of protected area systems at the national level (same as for biodiversity #1 above) 2. Strengthening terrestrial protected area networks (same as for biodiversity #3 above) 3. Management of land use, land-use change, and forestry as a means of protecting carbon stocks and reducing GHG emissions (crosscutting biodiversity / land degradation) 4. Strengthening the policy and regulatory framework for mainstreaming biodiversity (same as for biodiversity #4 above) 5. Fostering markets for biodiversity goods and services (same as for biodiversity #5 above) 6. Promoting sustainable energy production from biomass (same as for climate change #4 above) 7. Supporting sustainable forest management in productive landscapes (same as for land degradation #2 above)

Annex G: Select Quotations from Qualitative Analysis of GEF Documentation

This annex presents select quotations from the project documents analyzed in the desk review, using Atlas.ti. The quotations are organized to give the reader a sense of how the typology presented in this report was constructed. First quotations are presented by the type of catalytic strategy employed and, second, by each child code of the five parent codes (which the typology calls analytic categories) that were used to define each type after a first stage of inductive coding.

Section G.1 presents all codes for type 1: demonstration for market transformation; section G.2 presents all codes for type 2: changes in local practices; and section G.3 presents all codes for type 3: policy advocacy and institutional improvement. Recall that the five parent codes—preexisting phenomenon, catalytic actors, catalytic goals, plans of action, and geographic space—each have multiple child codes. Because variation in the values of these child codes initially led to the creation of the three types, the quotations presented under each type are stratified by the particular values of these child codes. For example, section G.1, which covers type 1 demonstration of market transformation projects, begins by listing quotations coded as the child code “Preexisting Phenomena: Technology,” because the particular preexisting phenomena of this project type was technology and not local practices (as in type 2 projects) or policymaking or institutional improvement (as in type 3 projects).

Although space constraints preclude a comprehensive cataloguing of all passages of text coded under each code, the sampling aims to give a sense of actual passages of text that led to creation of these codes during the first inductive phase using Atlas.ti.

G.1 Quotations for Type 1 Projects: Demonstration for Market Transformation

Preexisting Phenomena: Technology

CC 1039 Brazil executive summary, line 52

The *Externally Fired Combined Cycle* (“EFCC”), a proprietary system of Hague Environmental Power (“Hague” or the “Company”), is claimed by the Company to be 75% more thermally efficient than alternative bagasse fired high pressure steam boiler/turbine power plant designs available to the sugar industry in Brazil. The EFCC system, which is yet to be proven commercially, is an extension of the gas fired combined cycle that makes it possible to utilize solid fuels by moving the combustion process from the gas turbine to an external source of thermal energy at atmospheric pressure. The attractiveness of the EFCC is due to its high thermal efficiency, which translates into it being able to export a significant portion of the power generated from the bagasse after meeting the sugar mill’s internal needs for steam and electricity. Conventional power generation technology that employs high pressure steam generation and a steam-driven turbine generator is capable of exporting no more than 55% of the amount of electricity that the EFCC produces for export after satisfying the sugar mills’ energy needs.

CC 1899 Regional, executive summary, line 69

Technology-wise, the project logic is to focus on sectors that react to price signals and within these sectors, focus on the technologies that represent a high portion of their energy costs. Based on data analyzed during preparation, the project is focused on refrigeration, AC [air conditioning], representing more than 50% of electricity consumption in the commercial sector, and motors in industry, representing 62% and 67% respectively for Costa Rica and El Salvador. Because motor consumption share in Nicaragua and Panama is notably inferior, the motors component if the project will mainly focus on Costa Rica and El Salvador.

BD 1156 India, executive summary, line 131

Low levels of subsistence-related medicinal plant harvesting generally do not pose a threat to the viability of harvested populations. There is, however, growing concern about the impacts on wild medicinal plant stocks of growing national and international demand for herbal products, and increasing commercialization of the medicinal plant economy. In 1997, a National Consultation on Medicinal Plants organized by the MoEF [Ministry of Environment and Forests] revealed that over 95% of medicinal plants used by the herbal industry were harvested from the wild. Over 200 medicinal plant species in southern and northern India are classified as rare, endangered or threatened. The true number of threatened species, including globally significant species, is likely to be far higher, but the status of many species is insufficiently known.

Fuel Cells

CC 2257 China, executive summary, line 55

Over the immediate term of the project, FCBs fueled by hydrogen drawn from natural gas and bi-product gases with rich hydrogen will be demonstrated and tested. Over the longer term, this project will lead to an increased production in FCBs, and eventually, the reduction in their costs to the point where they will become commercially competitive with conventional, diesel buses.

Microhydro

CC 2385 Regional China, executive summary, line 66

4. The proposed project results from an initial request by 10 countries in West and Central Africa indicating the need to establish a regional umbrella for the cross-fertilization of micro-hydro experiences in ways that help to build their institutional and operational capacities through “learning-by-doing.”

CC 2433 Indonesia, executive summary, line 59

[Integrated Microhydro Development and Application] will address the barriers to widespread application of microhydro technology, which exists despite the various government and private sector’s programs/activities in the past.

CC 2489 Honduras, executive summary, line 76

Microhydro Power Pilot Subprojects. It is planned to finance up to 8 Microhydro Power Plants (MHP) of capacity between 50-100 kW [kilowatts] each during the 5-year Project duration costing a total of about \$1.8 million and resulting in over 1,500 new connections to households and productive uses. Pilot communities will be selected that could be organized to operate and maintain the power plants and the identified productive uses. Best practice for social organization and financial intermediation will be piloted (GEF will contribute only with TA [technical assistance] and training).

CC 2537 Armenia, executive summary, line 63

According to different estimates over 250MW of capacity could be added through small hydro power projects (SHPPs) that are competitive with other forms of new generation.

CC 2607 Peru, executive summary, line 66

Renewable energy revolving financing facility to provide bridge-financing during the early construction and initial operation phases, primarily for small hydro.

Natural Gas**CC 2624 China, executive summary, line 56**

Utilities as EE Marketing Partners. The Project design is based on a key finding from EE [energy efficiency] experience in other countries and market assessments in China: that utilities can be effective agents and aggregators for marketing and delivering EE equipment and projects. By working with utilities as the marketing agent, the Project will reach, educate, and deliver EE services to a large set of energy users systematically. Gas utilities are expected to be the first partners. For a gas utility, the Project's activities will serve their core objective of building gas loads. The Project design is readily applicable to electric utilities and can be an important means to meet China's energy conservation goals and address power shortages.

Photovoltaics or Solar**CC 1894 South Africa, executive summary, line 54**

One million tons of CO₂ [carbon dioxide] emissions will be avoided directly and an additional five million tons indirectly avoided under the project from commercial solar water heating (CSWH).

CC 1894 South Africa, executive summary, line 83

Solar water heating: A nascent market has emerged in large-scale solar water heaters suitable for commercial establishments such as hotels, hospitals, hostels and rural fish farms; no official, bilateral or international funds are involved in these transactions. The main barriers to scale-up are: (i) lack of recognized industry best practices, standards and codes; (ii) potential customers' lack of familiarity with the technology; and (iii) potential customers' unease at doing business with suppliers and vendors that are often viewed as lacking adequate stature and backing, given their small scale and recently established status.

CC 1894 South Africa, executive summary, line 113

This project will not support any renewable energy resources other than commercial solar water heating, although they are expected to contribute significantly towards the total target of 10,000 GWh. There are two reasons for singling out commercial solar water heating. *First,* this resource is near-commercial, and does not require investment subsidies. As such, it is suitable for GEF support aimed at reducing the barriers facing this resource. *Second,* most of the other resources are not near-commercial and require significantly larger subsidies to make them viable. However, they are suitable for sale of carbon emission reductions, as shown by the ongoing discussions in South Africa between interested buyers and sellers.

CC 2489 Honduras, executive summary, line 78

Solar Photovoltaic Market Development Program. The solar PV program will target a total installation of about 245 kW over the 5-year duration of the Project. The aim is to establish a sustainable local PV industry structure and fill a

gap in rural electrification plans. The potential rural market for PV systems in Honduras includes households, commercial users (retail stores, rural restaurants, microenterprises, etc) and institutional users (schools, clinics, community centers, etc) in dispersed offgrid areas. To catalyze and demonstrate the market for productive and institutional applications, the project is allocating investment funds for up to 100 installations averaging 300 watts each. The business model to be employed, the “dealer model,” will accredit qualified PV companies and will allow them to sell anywhere in the country where there is demand. However, incentives will be developed to attract participants to the priority *mancomunidades*.

CC 2660 Burkina Faso, executive summary, line 99

The development objective of the project is to improve people’s livelihoods and reduce dependency on imported fossil fuel through the utilization of PV [photovoltaics] to provide potable drinking water in the rural communities. The project will address the institutional, financial and market instruments necessary to demonstrate the viability of using the private sector to participate in the process of poverty reduction in the rural areas through the provision of potable water from a clean, modern, and at the same time, reliable source of energy.

Refining

CC 1039 Brazil, project approval document, line 613

The Project team is acutely aware of Cosan’s over-riding objective, and that is to *not* have the Project negatively impact the operation or profitability of its sugar cane refining operation. However, Cosan has clearly stated that it has an interest in involving itself in the *business* of the generation of electric power for export to the grid. As stated above (section 3.2.3), the Project team may seek to locate the EFCC plant in other locations or with other sugar companies in Brazil if Cosan were to decide not to pursue the Project (as host of the plant). Initial conversations with the Brazilian sugar industry have revealed a significant amount of interest for EFCC technology, particularly in the State of Sao Paulo.

BD 1505 Namibia, project approval document, line 2,689

Activities taking place along the coast that *may impact the coastal and marine environment* and, consequently, the coastal population, include growing settlements, mining, fish processing, salt refining and other industries, port authorities in Walvis Bay and Lüderitz, oil exploration activities in offshore waters, fishing and aquaculture, tourism and agriculture activities upstream from important river mouths. Figure 1 below describes the impacts attributable to human activities and links these impacts to environmental threats and their ultimate consequences. It shows how human activities can lead to impacts that in turn impact on human activities in a potentially destructive cycle.

BD 2638 Turkmenistan, project approval document, line 148

The exploration, extraction, transport, and refining of oil and gas in areas around KhR [Khazar Nature Reserve] poses a imminent threat to habitat health within the reserve, as this activity will continue to grow in the coastal zone and currently, there is no proactive comprehensive effort to manage or limit its potential affect. Three oil processing and transport enterprises around Khazar Nature Reserve and Turkmenbashi Bay (Turkmenbashi Oil Refinery, the oil terminal in Ufra and the loading terminal at Turkmenbashi port) pose a potential threat to marine habitats within KhR, only 2-3 kilometers away. Oil terminals are also located further south along the Caspian Sea Coast at Aladja and in Okarem, close to Ogurchinskiy Island and the Essenguly section of KhR. Transport routes run through Turkmenbashi Bay just a few hundred meters from the Reserve border. Transportation routes from the Aladja and Okarem terminals pass the Island of Ogurchinskiy and the Essenguly section of KhR.

BD 2638 Turkmenistan, project approval document, line 328

Turkmenbashi Bay is the site of the largest refinery on the Turkmen coast. Located in the town of Turkmenbashi, the refinery has recently embarked upon an environmental clean-up and environmental impact-reduction program as well as establishing an ongoing monitoring effort. In the past, oil and gas development in Turkmenistan, as in much of the former Soviet Union, proceeded with little regard for the environment. This is changing - the Turkmenbashi refinery is spending over \$1 million on several environmental projects now underway. The refinery is building a purification plant to treat all the liquid waste from the refining process so that the only effluent is pure drinking water. It is also re-constructing the sewage system for the refinery, reconstructing the oil terminal at Ufra and implementing a ground water cleaning project that will draw off the layer of gasoline that sits on top of ground water.

Wind

CC 1146 Iran, executive summary, line 50

Notwithstanding the above, there are still important niches and justifications to be found for promoting different sources of renewable energy in Iran such as wind, solar, geothermal and biomass. In the area of wind energy there is a conservatively estimated potential of 6500 MW and early research and experience have shown potential economic feasibility, manufacturing and employment opportunities if developed on a significant commercial scale, potential benefits for grid integrity and stability (e.g. when mixed with hydro generation in the regional and central grids), substantial CO₂ reduction potential (when compared to the business as usual alternative).

CC 2489 Honduras, executive summary, line 77

Other Potential RET Pilot Projects. The Project will finance the demonstration of at least one stand-alone windpower system or a wind diesel/hybrid installation of about 100 kW, to determine its feasibility in remote areas with good wind regimes. A key requirement for the site of the demonstration would be the potential to use much of the scarce power for a productive application that benefits the community as a whole.

CC 2537 Armenia, executive summary, line 63

Commercially viable grid-connected wind power projects (WPP) with total capacity of 195MW and annual generation of 0.55 GWh have been identified based on site-specific assessments carried out in some parts of the country.

Catalytic Actors: Private Investors/Manufacturers

CC 1039 Brazil, executive summary

Private-sector support for the proposed Project from within Brazil most importantly comes from the potential Project host, the Cosan Group. The Cosan Directors assessed the proposed cogeneration system and made a determination that the company should sponsor the Project subject to participation by IFC using funds from the GEF and subject to the Project team preparing evidence of the technical and economic feasibility of the undertaking. Cosan has expressed its support for the Project by contributing substantial amounts of in-kind effort as the Project team assembled information from Cosan on its operations, its facilities, and the site(s) that are most appropriate for the EFCC facility.

Finally, the bagasse fired EFCC concept was described in detail to a number of other Brazilian entities. The response from these entities was positive. These contacts included Petrobras's Energy Conservation and Rational Use Center (CONPET), Banco Nacional de Desenvolvimento Econômico e Social (BNDES), Copersucar, the Directors General or Presidents of more than 10 sugar mills, and two coal industry association presidents.

CC 1039 Brazil, executive summary

After carefully assessing various locations within Brazil, the current proposed location for the Project is the Costa Pinto sugar mill in Piracicaba, Sao Paulo State, Brazil. The Costa Pinto mill is owned and operated by the Cosan Group ("Cosan"), a private Brazilian company, which is Brazil's largest producer of sugar. If discussions with this host cannot be successfully concluded, the Project team retains the option of pursuing other locations for the Project.

CC 1146 Iran, executive summary

Demonstration of commercial opportunities of wind energy power generation for the private sector.

CC 1894 South Africa, executive summary

This project is expected to trigger significant private sector investments in renewable energy power generation; these investments will be financed outside this project by a combination of private equity and debt, with debt financing facilitated by an output-based revenue stream provided by external 'carbon funds' such as the PCF [Prototype *Carbon Fund*].

CC 1894 South Africa, executive summary

The main assumption is that the Government will maintain its commitment to the White Paper and its target. A secondary assumption is that the CSWH companies will be interested in participating in a "participating company pro-

gram,” and that such participation, accompanied by project TA and capacity building to address standards and market awareness barriers, will help them increase their credibility and sales.

CC 1899 Regional, executive summary

Public institutions, engineers and technicians and bankers will be prime target. Involving bankers will traduce in the effective use of the already committed \$ 5.5 million to this project. Specifically for the SMEs [small and medium enterprises], which are known not to adapt as easily as bigger firms, the GTZ [Deutsche Gesellschaft für Technische Zusammenarbeit] funded experience on clean production will be complemented in El Salvador and replicated, in partnership with GTZ.

CC 2257 China, executive summary

The Phase I project’s implementation contract was signed during November and December 2002, and the project officially began operation on 27 March 2003 after two months of preparation. In late 2003, the China International Center for Economic and Technical Exchanges (CICETE), entrusted by the project to lead the procurement activities, launched the international procurement process for the project. Bids were evaluated by a committee in March 2004, and DaimlerChrysler was announced as winner. In May 2004, intense negotiations were conducted with DaimlerChrysler with a supply contract for FCBs signed on 26 May 2004. Three Citaro buses are to be delivered to Beijing in September 2005. These three Citaro FCBs are similar, in terms of performance and service, to those being demonstrated in ten European cities.

In addition, in May 2004, a memorandum was signed with BP for the construction of a hydrogen filling station in Beijing. Beijing SinoHytec Limited, BP, and Beijing Tongfang Co. Ltd signed agreement on cooperative construction of hydrogen filling station in Beijing in May 2005. For the UNDP-GEF project, the Fueling Station will provide compressed hydrogen. Initially, hydrogen will be generated off-site by means of water electrolysis and transported with tube trailers. Later, natural gas reforming will be established on-site. Eventually, more hydrogen will be supplied from on-site renewable energy (solar, wind). The quality and quantity of hydrogen supplied by this station will fully meet the FCB demonstration requirements in Beijing.

CC 2385 Regional China, executive summary

Information for investors - There are no specific procedures to guide potential investors interested in the development of micro-hydropower systems. In addition, there are no clear texts that provide information regarding procedures in place related to micro-hydropower systems.

CC 2433 Indonesia, executive summary

The main outcomes of the project, corresponding to the proposed project components are: (a) Enhanced interest of the private sector in the microhydro power business;

CC 2537 Armenia, executive summary

B. Financing of investments (\$21.4 million, of which \$5 million from IDA loan, \$7 million from the EBRD, \$3 million from Cafesjian Foundation, \$6.4 million from project developers):

Private investors will be able to access financing for the development of renewable energy projects. Based on comparative analysis of economic and financial viability of different types of renewable projects, it is expected that the financing will be mainly targeted at SHPPs on natural (run-of the river) and artificial (drinking water, irrigation pipes and canals) water flows and WPPs. The subloans are expected to be in the range of \$100,000 to \$2 million with an average project size of \$500,000. The demand for the financing is expected to be significant since different studies confirm that there is significant potential for SHPPs and WPPs that would be competitive with other forms of new generation and that under current conditions could add over 300 MW of capacity. Further, there are already 35 SHPPs with roughly 90 MWs of total capacity that have obtained all or most of the pertinent water permits, land rights and licenses and are ready for implementation if long-term financing is available. In addition to new SHPPs, there are currently 30 SHPPs with about 45 MW of total capacity operated by over a dozen of local private companies, which is generally in need of rehabilitation and has the potential to increase the electricity output. USAID [U.S. Agency for International Development] sponsored round-table discussions and conference on renewable energy with participation of potential and existing project developers have also revealed significant interest in and demand for

this Project. The demand for financing under this Project is also expected to come mainly from local private companies since the renewable projects in Armenia are on average too small in size to attract international investors.

CC 2607 Peru, executive summary

Electricity distribution companies invest in sustainable rural electrification projects.

CC 2624 China, executive summary

The utilities will work in partnership with a Network of suppliers of EE products and services, with financial institutions (FIs) who will make loans for the EE investments, and with a guarantee facility which will provide partial credit guarantees to help secure these loans.

BD 2105 Croatia, executive summary

The project helps to integrate biodiversity aspects into the tourism, banking, fisheries and agriculture sectoral plans, policies, legislation and regulations. The project will stimulate and further sustain the growth of income generated from biodiversity-friendly businesses. Starting in 2007, this will result in at least a 60% growth (by revenue) of biodiversity-friendly investments in tourism, fisheries and agriculture sectors by project end.

BD 2105 Croatia, executive summary

Stakeholders A vast number of stakeholders are involved in the tourism, agriculture and fishing sectors on the Dalmatian coast, including large and small private sector operators, banks, government agencies, associations and NGOs. All these stakeholders are critical to mainstreaming biodiversity and so are critical to the project success. The project preparatory phase has built effective partnerships with many of these stakeholders, and they are now committed to supporting the project objectives, mostly by co-financing the project activities. Many stakeholders have agreed to modify their planned activities in order to improve the impact on biodiversity.

BD 2105 Croatia, executive summary

The first is to improve the investment climate for biodiversity-friendly, profitable enterprises. This will lead to a strong and increasing growth in private sector investments into biodiversity-friendly products. This will be achieved through the following: (i) increasing the availability of affordable capital; (ii) developing market premiums for biodiversity products using market-based incentives; (iii) increasing consumer demand for biodiversity-friendly services and products; (iv) improving the approval processes for biodiversity-friendly investment; and (v) increasing the demand for capital and providing technical support for new activities. Together, these actions will increase both the demand for and the supply of effective loans to such investments. The focus is on the tourism sector, but also involves the agriculture and fisheries/mariculture sectors, notably shell-fish farming.

Catalytic Goals: Create a Market

CC 1039 Brazil, executive summary

The Project's global environmental objective is to contribute to improving the economic attractiveness of EFCC technology globally and of reducing CO2 emissions.

CC 1039 Brazil, executive summary

If the Project were successful, a large market for this technology could potentially open up in countries such as Brazil, Peru, India, China and other sugarcane producing countries.

CC 1894 South Africa, executive summary, line 351

The market uptake of renewable energy technologies

CC 1894 South Africa, executive summary, line 375

These activities are expected to trigger significant private sector investments in renewable energy power generation; these investments will be financed outside this project by a combination of private equity and debt, with debt financing facilitated by an output-based revenue stream provided by external carbon funds. Preliminary analysis indicates

the investments would utilize resources such as landfill-gas-to-electricity; bagasse cogeneration in the sugar industry; waste-based generation in the paper industry; small hydro; and possibly wind.

CC 1894 South Africa, executive summary, line 386

These activities are expected to significantly accelerate the commercial solar water heating market. It is estimated that without this project an average of about 10-12 commercial systems will be sold per year for the next four or five years; with the project, it is estimated that about 45-50 systems will be sold per year.

CC 1899 Regional, executive summary, line 331

Objective: To trigger a regional energy efficiency market to reduce the end-use of electricity in the commercial and industrial sectors

CC 2107 Belarus, executive summary, line 60

In short, this project is envisioned as a market development project that will serve as a bridge between the current situation of low awareness, lack of capital, low share of and capacity to utilize loan funds to an eventual situation where the government and other investors can introduce additional means of developing the market. These measures will complement ongoing government efforts to address barriers in the overall energy market, such as the planned program of price liberalization to reduce subsidies and cross subsidies in energy. In addition, the proposed project has the potential to make a significant contribution to the reduction of GHG [greenhouse gas] emissions in Belarus, because it will decrease consumption of carbon-intensive fossil fuels. Direct savings as a result of this project are estimated at approximately 0.35 million tons of CO₂ reduction over a 15-year period. Lack of GEF support may hinder to a considerable extent the implementation of measures on energy efficiency development in the state sector, specifically economic incentives and market mechanisms of energy conservation funding in this sector.

CC 2257 China, executive summary, line 258

Objective of the project: To demonstrate the operational viability of FCBs and their refueling infrastructure under Chinese conditions

CC 2537 Armenia, executive summary, line 80

The project development objective is to increase the privately owned and operated power generation utilizing renewable energy.

CC 2607 Peru, executive summary, line 337

Electricity distribution companies invest in sustainable rural electrification projects.

CC 2624 China, executive summary

b) KEY INDICATORS, ASSUMPTIONS, AND RISKS (FROM LOGFRAME)

The success of the project must be judged on the market development of commercial lending for EE projects working through utilities as deal flow generators. The most important indicators of success are:

- Number and amount of EE deals financed through the Project
- Number and size of sales for participating EE equipment and service providers
- Number of EE Suppliers participating in the Network
- Energy saved and GHG emissions avoided due to EE projects directly supported by the project
- Number of utilities participating in the Project
- Increase leverage in EE project financing for participating FIs
- Percentage of EE transactions that have satisfactory repayment, default and draw-down rates
- Number of EE Suppliers, utilities, FI's, end-users and affiliated Project partners that receive TA or training
- Scope and breadth of sectoral EE project lending: commercial, industrial, and multi-family residential
- Scope of geographic reach, from a few isolated regions to multi-regional to national
- Number of FI's, utilities, EE Suppliers and end-users not affiliated with Project replicating Project's activities

CC 2624 China, executive summary, line 349

Accelerate the development of the industrial, commercial, and multi-family residential EE market. Catalyze a market for EE finance products.

BD 2105 Croatia, executive summary, line 47

The project helps to integrate biodiversity aspects into the tourism, banking, fisheries and agriculture sectoral plans, policies, legislation and regulations. The project will stimulate and further sustain the growth of income generated from biodiversity-friendly businesses. Starting in 2007, this will result in at least a 60% growth (by revenue) of biodiversity-friendly investments in tourism, fisheries and agriculture sectors by project end.

BD 2105 Croatia, executive summary, line 196

The first is to improve the investment climate for biodiversity-friendly, profitable enterprises. This will lead to a strong an increasing growth in private sector investments into biodiversity-friendly products. This will be achieved through the following: (i) increasing the availability of affordable capital; (ii) developing market premiums for biodiversity products using market-based incentives; (iii) increasing consumer demand for biodiversity-friendly services and products; (iv) improving the approval processes for biodiversity-friendly investment; and (v) increasing the demand for capital and providing technical support for new activities. Together, these actions will increase both the demand for and the supply of effective loans to such investments. The focus is on the tourism sector, but also involves the agriculture and fisheries/mariculture sectors, notably shell-fish farming.

BD 2371 Regional, executive summary, line 149

Objective: Demand and sales of biodiversity-friendly coffee increases from niche to mainstream products allowing a significant growth in farms adopting biodiversity-friendly, sustainable productive practices and showing on-farm BD [biodiversity] benefits

Catalytic Goals: Lower Risk to Investors**CC 1146 Iran, executive summary, line 78**

Reduced technical and operational risks for commercial wind energy developers through a documented implementation of a government owned 28.4MW wind park and wide dissemination of the results.

CC 1146 Iran, executive summary, line 314

By the end of the project technical and operational risks reduced for commercial wind energy developers through a documentation of a 28.4MW wind park and wide dissemination

CC 1894 South Africa, executive summary, line 375

These activities are expected to trigger significant private sector investments in renewable energy power generation; these investments will be financed outside this project by a combination of private equity and debt, with debt financing facilitated by an output-based revenue stream provided by external carbon funds. Preliminary analysis indicates the investments would utilize resources such as landfill-gas-to-electricity; bagasse cogeneration in the sugar industry; waste-based generation in the paper industry; small hydro; and possibly wind.

CC 2537 Armenia, executive summary , line 80

The project development objective is to increase the privately owned and operated power generation utilizing renewable energy.

CC 2607 Peru, executive summary, line 337

Electricity distribution companies invest in sustainable rural electrification projects.

BD 2105 Croatia, executive summary, line 175

An improved investment climate across the project area for biodiversity-friendly enterprises.

Plans of Action: Build/Finance a Model**CC 1039 Brazil, executive summary, line 69**

To attain these outcomes, the Project seeks to develop, design, finance, build and operate a “first-of-its-kind” 80 MW two-train bagasse fired EFCC cogeneration facility supplemented by a 250 tonne per hour conventional steam

generator (the “Project”).

CC 1146 Iran, executive summary, line 70

Demonstration of commercial opportunities of wind energy power generation for the private sector - implementation of demonstration projects including a 28 MW wind farm under public ownership with information available to policy and commercial development through process and performance monitoring and evaluation, and a 20 MW commercial wind farm with long-term PPA and production based tariff bonus

CC 1146 Iran, executive summary, line 314

By the end of the project a 20 MW wind farm will be operating on a fully commercial basis in Iran.

CC 1146 Iran, executive summary, line 62

These activities are closely linked to the establishment and operation by SUNA [Renewable Energy Organization of *Iran*] of a 28.4 MW wind farm in the Binalood area. Early lessons learned from this project and the associated activities would then enable the preparations for the estimated 20 MW commercial wind project to be competitively selected and put into effective operation under the envisioned conditions for market development support, including the tariff support mechanism. The project will address the principal barriers to the implementation of commercial wind energy through a process of barrier removal involving information and awareness building, activities focused on sound policy development, tackling of economic and financial barriers, and capacity building to overcome human resource barriers. The project will dedicate specific attention to identifying appropriate ways to optimise the production based incentive scheme and/or any other incentive scheme that is shown to be competitive, as well as the optimal way to secure continued funding for these mechanisms. These activities will be implemented in such a way as to ensure that benefits continue after the close of the project. The project adopts a comprehensive and systematic approach to barrier removal focused fully on commercial development of wind power in Iran. This is fully in line with the Government’s policy to restructure and privatise electricity generation.

CC 2257 China, executive summary, line 69

The objective of this project is to demonstrate the operational viability of FCBs and their refueling infrastructure under Chinese conditions.

CC 2257 China, executive summary, line 259

Outcome A: Six to nine FCBs and two hydrogen refueling stations operational in Beijing and Shanghai (including 3 FCBs procured and 1 st

CC 2433 Indonesia, executive summary, line 69

Component 4: Microhydro Application Program - This component will showcase the “business angle” of microhydro technology applications, and will involve the implementation of specific activities demonstrating the conceptualization, design and development, implementation, financing, sustainable commercial operation, repair and maintenance of microhydro facilities both for power and productive use applications.

CC 2537 Armenia, executive summary, lines 95–97

B. Financing of investments (\$21.4 million, of which \$5 million from IDA [International Development Association] loan, \$7 million from the EBRD, \$3 million from Cafesjian Foundation, \$6.4 million from project developers):

Private investors will be able to access financing for the development of renewable energy projects. Based on comparative analysis of economic and financial viability of different types of renewable projects, it is expected that the financing will be mainly targeted at SHPPs on natural (run-of the river) and artificial (drinking water, irrigation pipes and canals) water flows and WPPs. The subloans are expected to be in the range of \$100,000 to \$2 million with an average project size of \$500,000. The demand for the financing is expected to be significant since different studies confirm that there is significant potential for SHPPs and WPPs that would be competitive with other forms of new generation and that under current conditions could add over 300 MW of capacity. Further, there are already 35 SHPPs with roughly 90 MWs of total capacity that have obtained all or most of the pertinent water permits, land rights and licenses and are ready for implementation if long-term financing is available. In addition to new SHPPs, there are currently 30 SHPPs with about 45 MW of total capacity operated by over a dozen of local private compa-

nies, which is generally in need of rehabilitation and has the potential to increase the electricity output. USAID sponsored round-table discussions and conference on renewable energy with participation of potential and existing project developers have also revealed significant interest in and demand for this Project. The demand for financing under this Project is also expected to come mainly from local private companies since the renewable projects in Armenia are on average too small in size to attract international investors.

CC 2607 Peru, executive summary, line 65

Pilot program for the promotion of productive uses of electricity in areas where renewable energy is used for supply

CC 2607 Peru, executive summary, line 66

Renewable energy revolving financing facility to provide bridge-financing during the early construction and initial operation phases, primarily for small hydro.

CC 2607, project approval document, line 196

a) investment in rural electrification subprojects by private and state-owned enterprises, supported by central government subsidies, to provide new electricity connections for rural households, businesses and public facilities, using both conventional grid electricity or renewable energy systems that would serve dispersed or remote populations;

CC 2660 Burkina Faso, executive summary, line 104

Component 3: To assist the private sector in providing better quality of service and in developing models for providing PV-based electricity services to the rural areas;

BD 1156 India, executive summary, line 305

Demonstration of in situ and ex situ techniques and approaches to the conservation and sustainable management of medicinal plant diversity (especially GSMP) in state forests including the establishment of 5 MPCA/FGB complexes in each project state.

BD 1156 India, executive summary, line 329

4. Demonstration of in situ and ex situ conservation and sustainable management of MAP diversity in productive forestlands in districts other than those covered by the project in the three states through exchange visits

BD 1299 Brazil, executive summary, line 164

Implementation of demonstration activities providing inputs for the development of Action Programs for GIBRAH [Gestão Integrada da Biodiversidade Aquática e Recursos Hídricos];

BD 2105 Croatia, executive summary, line 174

Biodiversity-friendly development is demonstrated in four globally important small productive landscapes;

BD 2491 Botswana, executive summary, line 70

Project design is founded on the recognition that command-and-control approaches will be inadequate to ensure effective and sustainable mainstreaming of biodiversity management objectives in these sectors. Accordingly, a major emphasis is placed on facilitating voluntary measures that can be applied by each sector. The Project will remove the barriers through a two-tiered strategy: i) that builds capacity within the regulatory authorities and service providers to assimilate and supply biodiversity management objectives in decision making; and ii) that demonstrates how best to incorporate biodiversity management into production practices.

Plans of Action

CC 1894 South Africa, executive summary, line 369

Absence of readily-available reliable basic information about renewable energy resources.

CC 1894 South Africa, executive summary, line 370

Potential developers' lack of familiarity with the details of the Government's approach for promoting renewable

energy, and the nature and extent of support available for it.

CC 1894 South Africa, executive summary, line 111

The project will provide TA and capacity building to professional, technical and business groups, key market segments and companies engaged in selling CSWH systems and services and implementation support. This will include assistance in developing standards and codes and the establishment of a “participating CSWH company program.” The fact that the companies are participating in a program sponsored by an established international agency, which will supervise the program and suspend them if needed, will significantly improve the companies’ status, and make them more credible to their potential customers and lenders. The program will assist the companies in a variety of ways on an as-needed basis, including getting certifications that their equipment meets standards, independent installation and performance verifications to increase customer confidence, equipment performance guarantees in case this should be needed initially, and performance grants for installed systems that are deemed to be demonstrative or path-breaking. In return, the participating companies will agree to meet the program’s code of behavior and risk suspension if they fail to meet the conduct code.

CC 1899 Regional, executive summary lines 95–98

Output 1: Public institutions including energy agencies and ministries, normalization institutes, customs offices, and laboratories are strengthened to apply new policy instruments. An institutional diagnosis and clear recommendations on staffing made to governments. Capacity building will be carried out for public officers. International experiences, including nearby Mexico, will be most assessed and adapted to the CA situation.

Output 2: In partnership with CCIs, widely disseminate new legal and regulatory instruments. Also based on investment opportunities identified during project preparation, identify suitable engineers and technicians within major firms and provide training in order to trigger an internal awareness of the opportunities for EE at consumer level and influence investment. Support training of engineering firms to reach high quality EE audits and inclusion into investment dossiers. Train lending officers of partner banks to provide them with the necessary tools to take into account EE financial benefits when appraising projects.

Output 3: In partnership with GTZ provide targeted support to SMEs and in particular through joined training of auditors, identification of sources and access conditions for EE investment, channeling bankable projects to partner banks and regional and national funds and replication of the El Salvador experience in the other 3 countries.

CC 2107 Belarus, executive summary, line 76

The project will also implement an investment program developed in the field of state sector energy efficiency. The Energy Center will develop business plans for the 4 investment projects in the initial program (see annex E for details). It will provide support to the project partners on structuring financing and on implementation, ranging from consulting on tendering to equipment installation and operations. In addition, the Energy Center will monitor fuel savings and greenhouse gas emission reductions from the projects. The initial investment portfolio will thus become a source of information on effective practices and potential fuel-saving and climate benefits of various types of energy projects. Projects selected have a high potential for replication (see annex G for selection criteria), and their implementation will inform the work of the Energy Center with subsequent partners.

CC 2107 Belarus, executive summary, line 309

Activity 1.1.3 Provide on-going consulting services to the project partners (local authorities) in budgeting and energy planning

CC 2107 Belarus, executive summary, line 310

Activity 1.2.1 Provide assistance and consulting services to project partners in setting-up special settlement accounts

Activity 1.2.2 Support target municipalities to measure energy savings, and financial revenues

Activity 1.2.3 Support target municipalities to report on financial savings to ministry of finance Activity 1.2.4 Develop a guide for measuring energy and financial saving

CC 2257 China, executive summary, line 272

Output 5 Enhanced scientific, technical, and industrial capacity in China relating FCB commercialization

CC 2385 Regional China, executive summary, line 173

Output 3.4 - Targeted Technical Assistance to Rural Electrification Agencies: Rural Electrification Agencies, National Directorates of Energies and/or Electricity sector Regulatory Agencies executing this Project will need to upgrade their RE/micro-hydro project supervision and monitoring through a selection of targeted training activities.

CC 2433 Indonesia, executive summary, line 67

Component 3: Microhydro Technology Support Program - This component will involve activities that will build capacity and assist local governments and communities, as well as the local microhydro industry in the technical design, sustainable operation, repair and maintenance of microhydro facilities.

CC 2489 Honduras, executive summary, line 79

Local capacity building and policy development TA. This component will finance consulting services, training, goods and other TA to enhance the capacity of implementing agencies and the key stakeholders. The GEF financing will ensure that awareness and capacity are built on the use of renewable technologies in rural electrification; that allocation and setting of tariffs and subsidies for offgrid service are rationalized, and that key sectoral institutions (particularly FOSODE), as well as local governments, local financing institutions and private sector participants are sufficiently strengthened.

CC 2537 Armenia, executive summary , line 85

During project implementation, the R2E2 Fund will provide technical assistance (TA) to remove barriers for the development of renewable energy and debt financing, as well as technical, legal, managerial and business support to a selected number of projects. The Project will contribute to development of about 80MW of additional renewable energy generating capacity during the first 5 years through the following two components.

CC 2537 Armenia, project approval document, line 255

GEF will provide a grant of \$3 million in co-financing to cover technical assistance (TA) components of the project.

CC 2607 Peru, executive summary, lines 63–64

The GEF assisted components of this World Bank-GEF Project that would contribute to the above objective are:

Technical assistance for: (a) development of the institutional framework and regulations for renewable energy-based provision of electricity service, on and off the grid; (b) capacity building for bottom up identification and development of renewable energy subprojects; and (c) renewable energy promotion activities, including development of policies, and investigation of resources for projects.

CC 2607, project approval document, line 196

Technical assistance to catalyze private sector participation and create capacity for a demand driven approach for rural electrification (projects proposed by service providers in coordination with local communities and governments), as well as particular promotion of renewable energy;

CC 2624 China, executive summary, line 50

The Project will organize and provide marketing, development and equipment financing services to energy users in the commercial, industrial, and multi-family residential sectors, to implement energy efficiency (EE) projects.

BD 1064 Gabon, executive summary, line 80

The primary focus of this component will be building capacity through training and technical assistance.

BD 2120 Venezuela, executive summary, lines 110–111

In order to ensure that local planning frameworks (including land use management plans and local development plans) include issues which transcend municipal boundaries, *mechanisms for participatory decision-making* will be supported for land use planning, zoning and management in accordance with BD conservation principles with broad representation from the public sector, civil society organizations and local communities (Output 2.1). A *Capacity Building Programme* will be developed for Municipal Offices to support planning and management of the produc-

tive landscape in accordance with BD principles (Output 2.2). *Technical guidelines* will be developed which will orientate the incorporation of BD principles into planning tools and land management systems (Output 2.3), including the application of monitoring tools to determine the effectiveness of planning measures for conservation goals. *Economic incentives* and *financial mechanisms* will be developed building on the existing programming baseline, which will allow and motivate producers in pilot municipalities to apply BD-friendly productive systems (Output 2.4). This will include the provision of alternative sources of credit and guarantee funds, representing a significant and direct contribution to the resources available to local communities for the realization of BD-friendly practices.

Geographic Space: Industry/Technology Defined

CC 1039 Brazil, executive summary, line 174

If the Project were successful, a large market for this technology could potentially open up in countries such as Brazil, Peru, India, China and other sugarcane producing countries.

CC 1894 South Africa, executive summary, line 103

For renewable energy power generation, the project will assist South Africa in the creation and/or strengthening of the organizations and institutions that would help the Government meet its renewable energy target. The capacity areas covered would be the policy setting, promotion, regulation, service provision, and monitoring and evaluation of renewable energy power generation.

CC 2257 China, executive summary, line 54

The widespread use of FCBs in China has the potential to reduce both urban air pollution and GHG emissions. Given the high priority that China is giving to the development of its public bus fleets, the demand for medium to large-size (7 to 18 m) buses was estimated to grow at an average rate of 5% per year between 2000 and 2030, which would result in a Chinese bus population of more than 720,000 by 2030. An expert Chinese team, drawing on both the scientific and engineering knowledge base in China and internationally regarding FCBs, estimated that based on the expected cost of mass-produced FCBs in China FCBs will become cost-competitive with diesel buses on a life-cycle basis.

CC 2433 Indonesia, executive summary, line 57

The overall goal of the proposed IMIDAP [Integrated Micro-hydro Development and Application Program] Project is the reduction of GHG emissions from fossil-based power in Indonesia from interventions carried out under the IMIDAP and from new microhydro projects induced by this GEF-supported project.

CC 2624 China, executive summary, line 52

Need for EE Investment. China is facing severe energy resource shortages and rapidly growing energy demand. Expanded investment in energy efficiency (EE) projects and equipment is a high Government priority for environmental, macro-economic and enterprise competitiveness reasons. As confirmed by IFC's meetings with the GEF Focal Point at the Ministry of Finance, the Government seeks to promote private sector, market-based methods to deliver and finance EE projects; partnerships with private sector energy utilities can provide a platform to do so on an accelerated, scalable basis.

CC 2660 Burkina Faso, executive summary, line 118

.4. The project's overall key success indicators are: (1) # Solar-PV based systems deployed for dedicated water pumping in the rural areas on purely commercial terms; 5% penetration rate by year 3 of the project and 10% private sector penetration by year 4 of the project; (2) a favorable policy/institutional framework will be in place, with significantly reduced equipment prices because of the removal of import duty and taxes; (3) a doubling of the number of people using PV technology; (4) the number of businesses dealing with PV equipment increased by 30% by the end of the project; (5) level of end-user satisfaction with PV installation and after sales service increased by 50% by the end of the project; (6) 50% of all major PV [photovoltaics] dealers offer at least one financing option to rural consumers.

BD 2105 Croatia, executive summary, line 168

Finally, the Protected Areas in the project area will be able to increase revenue from tourism, agriculture and fisher-

ies, and measures to increase the coverage of marine protected areas will be underway. The EU [European Union] accession process will have experiences of mainstreamed biodiversity conservation, at least for the project area. Key government and county departments and private sector stakeholders in the project area will have the capacity to manage the accession process in a biodiversity-friendly manner. The links between integrated planning and development will have been strengthened, and development planning will systematically account for biodiversity conservation. Increasingly, investments will be compliant with development and spatial plans based on concern for BD conservation and sustainable use.

BD 2491 Botswana, executive summary, lines 59–61

Tourism constitutes the largest economic activity in Ngamiland with an annual turnover in excess of \$200 million. There are 4 basic models of tourism operation: i) multiple use (hunting is permitted) or ii) photographic use by commercial lessee, and iii) multiple or iv) photographic use by local communities. In areas zoned for commercial use, leaseholders must submit development proposals as part of the tendering process, and are granted exclusive rights to commercial tourism within a CHA [controlled hunting area] for a 5-year lease renewable for 3 terms. In areas zoned for community use the incumbent community must register an appropriate authority (generally a trust) for management of resources and finances. Tourism operations in community CHAs are often subleased to a commercial operator, with rentals accruing to the trust. In community multiple use CHAs, benefits from hunting are realised either through subsistence off-take or selling “trophy” animals on their quota to a commercial safari hunting operation. The country has adopted a low volume-high financial turnover model for tourism, focused on the high-end market. However, the carrying capacity for visitors has yet to be determined. No monitoring system exists to measure environmental change in concessions over time. Potential impacts on biodiversity include disturbance of wildlife, increased scope for invasion by alien species (via road, river and air transport links), changes in the ecology of riparian woodlands (clearing around camps) and poor waste management.

G.2 Quotations for Type 2 Projects: Local Practices Changes

PP: Livelihood Practices

BD 1028 Regional, executive summary, line 134

The immediate objective is that conservation management objectives and actions for MSBs [migratory soaring birds] are mainstreamed effectively into the hunting, energy, agriculture, waste management and tourism sectors along the Rift Valley/Red Sea flyway, making this a safer route for soaring birds. The initial phase of the project will have three areas of focus - development of the Flyway as a concept to increase awareness and promote ownership of MSBs; building capacity of key stakeholders to effect double mainstreaming; and the actual delivery of double mainstreaming to incorporate MSB issues into targeted sectoral programmes.

BD 1064 Gabon, executive summary, line 117

Component 4: Wildlife Management Outside National Parks (Total: \$2.08 million - GEF: \$1.83 million)

This component, which targets the buffer zones of the five national parks, is designed to mainstream biodiversity in production landscapes (logging concessions, community forests). Key activities of this component will include training, equipping and deploying mobile units operating out of Tchibanga, Iboundji and Lekoni; and extensive consultation with private sector operators (logging, oil), local communities and politico-administrative authorities on implementation of collaborative mechanisms for wildlife management.

The outputs for Component 4 will be:

Increased capacity of the wildlife authority to enforce its regulations in logging concessions;

Provisions in forest management plans that deal with wildlife protection; and

Enhanced involvement of local communities in wildlife management activities through collaborative management agreements.

BD 1156 India, executive summary, line 154

Instead, SFD forests are often a de facto open-access resource and both destructive harvesting practices and over-harvesting are leading to the unsustainable exploitation of medicinal plants in India. Some 70% of medicinal plant harvesting is estimated to be conducted in ways that disrupt the reproductive cycle and rates of natural regeneration of the plants thereby threatening the viability of local populations. For example, whole plants are uprooted before having set seed, or harvesting takes place during an inappropriate growth stage, or excessive quantities of fruit and seed are removed. The main reason for the overexploitation of medicinal plants is that the prevailing incentive structure governing the harvesting of medicinal plants does not favour sustainable harvesting.

BD 1197 India, executive summary, line 80

GEF funding will be used to help control some of the factors that are at the origin of anthropogenic pressure on the PAs.

BD 2099 Regional, executive summary, line 63

While local agricultural and forest management techniques are partially responsible for the loss of forest cover, the greatest problem is seen along the western agricultural frontier, where recent arrivals are clearing land for farming and cattle ranching at alarming rates. Among the indigenous communities, poverty and a lack of economic options contribute to suboptimal land use practices.

BD 2104 Belarus, executive summary, line 56

Today, these remaining natural areas remain vulnerable with most of the threats emanating from land use practices in surrounding areas and inadequate management of the protected areas (see section IV, Part V of the UNDP Project Document for detailed threats analysis).

BD 2120 Venezuela, executive summary, line 65

Most characteristic, between 400 and 2000 m, is small-holder coffee production carried out on farms, typically 3-5 ha in extent, with tree shade and low levels of investment and artificial inputs with resulting production principally aimed at the domestic market. Shade coffee farms in the Merida Cordillera normally contain a range of other land uses and associated products such as staple grains and root-crops, dairy products, bananas, and timber, aimed at satisfying farmers' subsistence, income and security needs. As such, these farming systems, while predominantly geared to coffee production, are sustainable productive units supporting a diversity of products compatible with shade coffee and the biodiversity gains derived from such productive practices.

BD 2371 Regional, executive summary, line 120

The certification system is in great demand from farmers, due to the many sustainability benefits, and due to possible market access or even premium prices. RAC helps farmers to realize however that sustainability in coffee is about much more than a possible premium on the coffee market. The certification system is growing, from just over 6,000 hectares certified three years ago to over 93,000 hectares today. Certified hectares increased by 57,000 in the last year alone. New partnerships with mainstream and key niche players have also been growing, such as partnerships with Kraft, Procter and Gamble, Caribou Coffee, Gloria Jean's, UCC [Ueshima Coffee Co.] in Japan, and others. All of these companies are increasingly interested in the concept of sustainability and view RAC as a key tool achieving it.

BD 1299 Brazil, executive summary, line 192

The traditional land/water use systems, adopted in the region some 2,000 years ago, utilizing the practice of rotating slash-and-burn and subsistence fishing, are considered environmentally sustainable when the population density is very low, as in the case of vast indigenous areas and other hard to reach areas, which allows the natural ecosystem to fully recover in the interval between the use of its resources.

BD 2099 Regional, executive summary, line 339

Component D focuses on agricultural subsistence activities, while the potential use and commercialization of non-timber forest products could bring economic benefits to local people (medicinal plants, handicrafts, fibers etc.).

BD 2120 Venezuela, executive summary, line 65

Shade coffee farms in the Merida Cordillera normally contain a range of other land uses and associated products such as staple grains and root-crops, dairy products, bananas, and timber, aimed at satisfying farmers' subsistence, income and security needs.

BD 2491 Botswana, executive summary, line 56

While poverty rates are high in the area, there is a “subsistence affluence,” with goods and services supplied by the wetlands contributing up to \$ 1,200 per household in imputed income (Murray 2005).

BD 2491 Botswana, executive summary, line 59

In community multiple use CHAs, benefits from hunting are realised either through subsistence off-take or selling “trophy” animals on their quota to a commercial safari hunting operation.

IW 1462 Regional, executive summary, line 76

According to other estimates, the total catch including subsistence, artisanal and industrial landings, and takings by distant water fishing nations in international waters, approaches 4 million metric tones per year (Van der Elst, 2004).

IW 1462 Regional, executive summary, line 150

By helping to assure the sustainability of subsistence and artisanal fisheries critical to the livelihoods of poor coastal communities, the project will contribute directly to poverty prevention objectives.

Catalytic Actors: Local Champion

CC 2660 Burkina Faso, executive summary

The development objective of the project is to improve people's livelihoods and reduce dependency on imported fossil fuel through the utilization of PV to provide potable drinking water in the rural communities. The project will address the institutional, financial and market instruments necessary to demonstrate the viability of using the private sector to participate in the process of poverty reduction in the rural areas through the provision of potable water from a clean, modern, and at the same time, reliable source of energy.

BD 1028 Regional, executive summary

The immediate objective is that conservation management objectives and actions for MSBs are mainstreamed effectively into the hunting, energy, agriculture, waste management and tourism sectors along the Rift Valley/Red Sea flyway, making this a safer route for soaring birds. The initial phase of the project will have three areas of focus - development of the Flyway as a concept to increase awareness and promote ownership of MSBs; building capacity of key stakeholders to effect double mainstreaming; and the actual delivery of double mainstreaming to incorporate MSB issues into targeted sectoral programmes.

BD 1064 Gabon, executive summary

Effective stakeholder participation in PA [protected area] management (local populations, private sector); and

BD 1156 India, executive summary, line 301

The second major project strategy to achieve this outcome will involve working with existing community institutions wherever these already exist in community-owned or managed forests at each demonstration site to develop forest management norms and practices that favour the sustainable use and conservation of MAPS. These institutions include the Van Panchayats of Uttaranchal as well as various Village Forest Committees, Forest Protection Committees, Ecodevelopment Committees and Women's Self-Help Groups in all the project states.

BD 1156 India, executive summary, line 353

Local communities will continue to be supportive of the conservation and sustainable use of medicinal plants.

BD 1156 India, executive summary, line 172

Partnerships with local community groups and NGOs have been established at many sites in these states for the conservation and sustainable use of medicinal plants.

BD 1299 Brazil, executive summary, line 66

(ii) implementation of initial pilot/demonstration activities in these subbasins, providing inputs for the development of Action Programs (PAGs) for GIBRAH (demand-driven proposals from local NGOs, community groups and municipal governments for economic activities - e.g. investments in organic and/or indigenous products, handicrafts, ornamental fish, ecotourism-, that generate income while at the same time protects aquatic biodiversity, and hence promoting the transition to more sustainable livelihoods);

BD 1299 Brazil, executive summary, line 66

(viii) support to community organizations and the formation of partnerships with organizations dealing with the use of aquatic biodiversity and water resources in the project area; (ix) strengthening or creation of fora (e.g. local committees, state councils) for decision making on GIBRAH issues at local and state/subbasin levels;

BD 1299 Brazil, executive summary, line 170

Support to community organizations and to the formation of partnerships with organizations dealing with the use of aquatic biodiversity and water resources in the project area;

BD 1299 Brazil, executive summary, line 171

Strengthening of existing and/or creation of new fora (e.g. local committees, state councils) that facilitate social actors participation and provide future continuity to GIBRAH;

BD 1535 Azerbaijan, executive summary, line 99

150 environmentally friendly, financially sound small/medium enterprises identified and initiated and publicized (all or most receiving small grants from the project as part of their overall financing package);

BD 2104 Belarus, executive summary, line 68

The project's emphasis on engaging local land users in conservation planning is particularly noteworthy given against the historical backdrop of Soviet-era policies that completely excluded locals from land use decisions. Finally, the project will develop and implement a viable replication strategy.

BD 2104 Belarus, executive summary, line 251

Outcome 1: Reserves are being managed effectively, with the active participation of local stakeholders in design and implementation aspects

BD 2120 Venezuela, executive summary, line 71

Prices received by farmers for coffee compared to alternative productive activities. Farmers generally depend on market intermediaries and have limited access further down the market chain to processors, wholesalers and consumers, typically receiving around 50% of the end price paid by consumers. In addition, although demand for coffee is strong both nationally and internationally, farmers' levels of insertion into premium markets are weak due to sub-optimal levels of organization, which restrict producers' ability to collectively access relevant information, negotiate favourable prices, lobby for technical, financial and other support, and guarantee the continuity and quality of supply expected by purchasers. Furthermore, producers' ability to obtain the support needed for insertion into premium markets is also constrained by the absence of formal land titling, which for many constitutes a fundamental requisite for accessing assistance programmes.

BD 2371 Regional, executive summary, line 120

The certification system is in great demand from farmers, due to the many sustainability benefits, and due to possible market access or even premium prices. RAC helps farmers to realize however that sustainability in coffee is about much more than a possible premium on the coffee market. The certification system is growing, from just over 6,000 hectares certified three years ago to over 93,000 hectares today. Certified hectares increased by 57,000 in the last year alone. New partnerships with mainstream and key niche players have also been growing, such as partnerships with Kraft, Procter and Gamble, Caribou Coffee, Gloria Jean's, UCC in Japan, and others. All of these companies are increasingly interested in the concept of sustainability and view RAC as a key tool achieving it.

BD 2491 Botswana, executive summary, line 70

All pose potential threats to biodiversity, but also provide good opportunities for the successful integration of biodiversity objectives into production systems.

Catalytic Goals: Awareness Raising

CC 1146 Iran, executive summary, line 62

The project will address the principal barriers to the implementation of commercial wind energy through a process of barrier removal involving information and awareness building, activities focused on sound policy development, tackling of economic and financial barriers, and capacity building to overcome human resource barriers.

CC 2257 China, executive summary, line 82

Outcome C - Awareness promoted among stakeholders and creation of an enabling environment for FCB expansion and the Phase III (expanded demonstration) Project in China.

CC 2257 China, executive summary, lines 99–100

Output 6: Increased awareness among policy makers, investors, the general public and the news media at the national and municipal levels for the development of sustainable public transport modalities, including FCBs

Activities -A national seminar will be held focusing on public transport sector decision makers, other policy makers, media, investors and other key actors to raise their awareness and support for commercialization of FCBs. Using information media, the results of the demonstration project and plans for future projects will be publicized to help gain widespread public support for the expansion of FCB programs in China and other countries.

CC 2257 China, executive summary, lines 101–103

Output 7: Preparation for Phase III (expanded demonstration) of the overall program

Activities - Information exchange workshops will be undertaken targeting key potential Phase III/IV stakeholders. Technical, institutional, and financing feasibility studies for candidate Phase III cities will be carried out. A conceptual design for a hydrogen-powered FCB, which will meet Chinese operational conditions and is suitable for commercial manufacturing in China, will be developed. Chinese standards for hydrogen FCBs will be formulated and an initial set of operating and maintenance guidelines will be prepared. Fuel supply assessments and protocols for large-scale utilization of hydrogen FCBs will be developed, Hydrogen fuel standards and refueling protocols will be developed for electrolysis and reformer based hydrogen supply systems.

Taking into consideration the experience with the Phase II demonstration and the experiences of other demonstrations abroad, a strategy for Phase III and for achieving commercial production of FCBs in China and widespread commercial introduction of FCBs and associated fuel supply systems in the major urban areas of China will be prepared.

CC 2257 China, executive summary, line 273

Output 6 Increased awareness among policy makers, investors, the general public and the news media at the national and municipal levels for development of sustainable public transport modalities, including FCBs

CC 2660 Burkina Faso, executive summary, line 103

Component 2: To increase awareness among the various stakeholders on the potential role of PV in meeting the basic electricity needs of rural communities located away from the grid;

BD 1028 Regional, executive summary, line 135

Outcome 1: Raised awareness of the flyway and altered social and cultural behaviours among target groups that threaten MSBs in the key sectors, decision-makers and the general public.

BD 1028 Regional, executive summary, line 139

Outcome 1: Raised awareness of the flyway and altered social and cultural behaviours among target groups that threaten MSBs in the key sectors, decision-makers and the general public (Total \$2,468,773: GEF \$2,057,500; Co-financing \$411,273)

Plans of Action: Conduct Research

CC 1146 Iran, executive summary, line 66

Commercial wind energy resource data for the five areas with greatest potential widely available to commercial developers - measurements in 5 key regions, ongoing monitoring and updating of dataset, and publishing of wind atlas

CC 2107 Belarus, executive summary, line 76

The project will specifically assist the Committee on Energy Efficiency in promoting further increase in the portion of state funding available as loans for energy efficiency, by assisting in carrying out of a feasibility study, development of related governmental regulation.

CC 2257 China, executive summary, line 90

Through a consultative process, a protocol will be developed for quarterly reporting on the technical operations of the bus fleet. Operational data will be collected, analyzed, and evaluated. Detailed lifecycle emissions and resource-use efficiency analyses will also be carried out and compared to similar lifecycle analyses for other bus technologies.

CC 2257 China, executive summary lines 94–95

Output 4: Policy and regulation preparations for FCB commercialization in China

Activities - A policy and planning study will be prepared to evaluate options for improving/optimizing bus-company management, technologies, infrastructure, and operations in Beijing and in Shanghai. The purpose of the study is to help provide a basis for strengthening the capacity of the bus companies, which will help insure sustainable, wide-scale introduction of FCBs over the long-term.

CC 2385 Regional China, executive summary, line 135

Output 1.1 - A comprehensive report on the existing legal and regulatory framework in different countries affecting the development of the small hydro power resources in rural communities and on the barriers faced by private project developers / local communities, with concrete recommendations for needed changes.

CC 2385 Regional China, executive summary, line 151

Output 2.1 - National Micro-hydro-Atlas for each country. A comprehensive assessment and mapping of the available small hydro power resources in each participating country will be undertaken by the regional/subregional coordination Offices, in collaboration with UNEP's SWERA [Solar and Wind Energy Resource Assessment] strategic partnership.

CC 2433 Indonesia, executive summary, line 77

Studies will be conducted on the establishment and adoption of favorable energy pricing structures to improve on existing pricing policies such as the PSK TERSEBAR for on-grid generation.

CC 2660 Burkina Faso, executive summary, line 107

Component 6: To upgrade and significantly expand the national inventory of hydrological structures

BD 2099 Regional, executive summary, lines 97–99

Outcomes: The result of this component is expected to be a stronger monitoring and information management capacity of the National Environmental Information Systems, which will benefit the management needs of the CTBR [Corazon Transboundary Biosphere Reserve].

Activities: Include the harmonization of monitoring indicators and methods; training of local residents in monitoring; provision of necessary monitoring equipment; installation of meteorological stations; implementation of moni-

toring programs; strengthening of coordination mechanisms among existing information management systems; training of key personnel; coordination of efforts to establish local National Environmental Information System nodes; support for a permanent water quality monitoring program; work with the Regional Biodiversity Institute; provision of small grants to support scientific research; interaction with the international scientific community; and disseminate information generated through research.

BD 2099 Regional, executive summary, line 99

provision of small grants to support scientific research; interaction with the international scientific community; and disseminate information generated through research.

BD 2140 Regional, executive summary, line 481

3.3. Conduct surveys at national level to document presence and impact of IAS.

Plans of Action: Instill New Practice

BD 1156 India, executive summary, line 187

After considering various alternatives, the present project has decided to focus on mainstreaming the sustainable use and *in situ* conservation of medicinal plants into the productive forest sector. Specifically, this project seeks to promote the conservation and sustainable use of MAPS in three Indian states with special emphasis on Globally Significant Medicinal Plants (GSMPs), species which are threatened, rare and/or endemic to India.

BD 1156 India, executive summary, line 189

There is a general consensus that for most harvested MAPS, an approach that focuses on *in situ* conservation and sustainable harvesting is the only viable option in the short-term for a number of reasons. *In situ* conservation of MAPS is undoubtedly the most cost-effective way of conserving their inter- and intra-specific genetic diversity. Cultivation can and should be considered for as many species as possible, particularly threatened ones.

BD 1197 India, executive summary, line 80

help find income generating activities that are more biodiversity friendly than typical industrial cotton production methods or extensive low input agriculture.

BD 1535 Azerbaijan, executive summary, line 280

Component 2: Community-level investment in sustainable agriculture and natural resource management. Traditional economic activities (particularly livestock husbandry) shifted towards more modern, value-added approaches that place less demand on natural resources

BD 1535 Azerbaijan, executive summary, line 281

Component 3: Rural Enterprise Development. Opportunities for development of environmentally friendly local small/medium enterprises demonstrated (with particular emphasis on tourism

BD 1535 Azerbaijan, executive summary, line 276

Adoption of improved livestock husbandry methods by at least 20% of residents of target villages

BD 1535 Azerbaijan, executive summary, line 82

At the same time, the project aims to promote the development of more sustainable livelihoods and economic activities in the project areas. In the short term the focus is on reducing pressure on natural resources and mitigating potential negative socio-economic impacts of increased restrictions on forest and pasture use, by helping assisting local communities to develop alternatives and to improve the productivity and sustainability of their traditional economic activities. The longer term objective is to promote a diversification of local economies, making them less dependent on mass consumption of natural resources.

BD 1535 Azerbaijan, executive summary, line 98

Adoption of more modern, productive and sustainable livestock husbandry practices by at least 20% of households in (55) participating villages;

BD 2099 Regional, executive summary, lines 88–90

D) *Community-Based Natural Resource Management (NRM)*: This component focuses on local communities in their own management of natural resources to mainstream biodiversity conservation into everyday productive activities. This component will be closely linked and jointly implemented with major financing from IDA projects with similar goals. Indigenous groups (Tawahka, Sumu/Mayangna, Pech, Garifuna, and Miskito) will be one of the primary beneficiaries of this component. Subcomponents include strengthening local organizations, especially indigenous organizations; promotion of sustainable production systems for goods and services, and commercialization of the goods; and strengthening of formal and informal environmental education.

Outcomes: The outcome expected under this component is a better sustainable management of natural resources by local populations, facilitated by stronger community organizations.

BD 2104 Belarus, executive summary, line 73

Sustainable agricultural practices will be institutionalized through mainstreaming of biodiversity into the national program of land-use planning currently commencing in Belarus. The project will contribute to the elaboration of comprehensive sustainability-minded land-use plans for the administrative districts hosting the project sites. The land-use planning process will be supported by the elaboration and adoption of a methodological guidebook for the development of land-use plans, which build on the principles of biodiversity conservation. All administrative districts in Belarus are expected to undergo a comprehensive land-use planning exercise in the near future; thus utilization of the methods developed by the project would enable integration of the principles of sustainable agriculture and land-use across the whole country.

BD 2120 Venezuela, executive summary, lines 124–27

- 4 Numbers of families carrying out BD-friendly productive practices in the pilot area.
- 5 Numbers of families in the pilot area with increased incomes and productive diversity as a result of the application of BD-friendly productive systems within farming units.
- 6 Numbers of consolidated producer organizations working with the products of BD-friendly productive systems.
- 7 Level of insertion (in terms of value received by producers) into markets for products of BD-friendly productive systems.

BD 2371 Regional, executive summary, line 135

This project will support the promotion of biodiversity-friendly coffee in international coffee markets, and will generate biodiversity benefits by transforming productive practices on certified farms in biodiversity-rich coffee landscapes wherever RAC coffee is produced. The project will work closely with coffee producers in these countries to promote certification of coffee farms in particularly biodiversity-rich coffee landscapes as a strategy to maximize biodiversity conservation benefits in the coffee landscape, and to respond to a growing market demand on coffee markets. It will work with coffee companies throughout the supply chain, which already source certified coffee, to deepen their commitment to sustainability in coffee production and help them promote RAC coffee in the market place; and it will help increase the number of coffee companies which actively engage in the certification system by incorporating certified coffee in their coffee brands. It will work with governments, trade agencies and coffee organizations in producer and consumer countries to promote biodiversity-friendly coffee production, trade, and sales, through improvement of policy and regulation to create incentives for sustainable production, or by removal of policy and incentive barriers. Finally, it will collaborate with other development and conservation NGOs, and other institutions which possess relevant knowledge, to improve certification practices and increase learning of how to achieve maximum biodiversity impact in coffee landscapes.

Plans of Action: Hold trainings

CC 1146 Iran, executive summary, line 327

Mid-term target: ~30 engineers and business professionals in Tavinir and government organisations will have participated in training courses per year.

CC 2107 Belarus, executive summary, line 76

Specific training will be provided to project partners in developing business plans, negotiations skills, basics of financial economics, loan applications.

CC 2107 Belarus, executive summary, line 309

Activity 1.1.2 Conduct training for national experts (including staff of regional energy efficiency departments) and budget organization staff in the application of energy norms

CC 2107 Belarus, executive summary, line 310

Train regional energy efficiency departments to disseminate best practices in calculating and reporting

CC 2257 China, executive summary, lines 92–93

Output 3: A core of bus company employees trained in the operation, maintenance and management of FCBs and hydrogen refueling stations.

Activities - Working together with the suppliers, on-the-job training seminars for drivers, maintenance and fueling station staff will be held to ensure that operating and maintenance personnel have the capacity to execute the immediate project and are prepared for a larger follow-on project. An examination and certification program for FCB operators and mechanics will be developed.

CC 2257 China, executive summary, line 270

Output 3 A core of bus company employees trained in the operation, maintenance and management of the FCBs and hydrogen refueling stations

CC 2385 Regional China, executive summary, line 155

Output 2.3 - Targeted Micro-hydro technical training for all stakeholders including training in alternative Micro-hydro technology, Micro-hydro Plant Management, Finance/micro-hydro ownership structuring and revenue cycle management. On the basis of the targeted market surveys and stakeholder consultations, elaboration of the most feasible ownership, management and financing models for small hydro power plant construction and operation.

CC 2433 Indonesia, executive summary, line 81

Stakeholders will be enabled through training courses, workshops and information exchange on microhydro projects and livelihood/productivity projects financing focusing on microhydro. Because of the big geographical coverage of Indonesia, institutional support for the effective integration and implementation of microhydro projects at the national and locals will be carried out. There are barriers related to harmonization of policies and programs among agencies that are involved in microhydro-related activities, e.g. water rights, protected areas, competing uses of water for other application, etc. The communication flow and decision making process should be facilitated by the necessary barrier removal and integration of varied approaches.

CC 2624 China, executive summary, line 89

4) In order to recruit additional utility partners (both gas and electric), the Project will conduct a **utility outreach program**. The outreach program will share the Project's tools and methods with a wide utility audience. It will also work more closely with motivated utilities who meet certain criteria (including willingness to co-finance the Project, and commit significant marketing resources to the effort), to train them in setting up a utility-based EE hub. The Project expects to establish partnerships with up to four utilities.

BD 1156 India, executive summary, line 328

Training module and other materials developed for SFD personnel in the project states adapted for use in the replication states including translation into local languages where needed.

BD 1299 Brazil, executive summary, line 172

Training of local stakeholders (fishermen, rural producers, local politicians and local government staff, local NGOs, etc.);

BD 1505 Namibia, executive summary, line 87

2.1 *Training for ICZM [integrated coastal zone management]*: Based on the results from subcomponent 1.1 and 1.2 and the available training needs assessment for regional, local and national government, this subcomponent will provide cost-effective training to identified stakeholder groups on integrated coastal zone planning and management, strategic environmental assessment, GIS [geographic information system] and mapping, MandE, participatory approaches, communication and negotiation skills and other identifies capacity measures. This subcomponent will also provide targeted support to MET's [Ministry of Environment and Tourism's] efforts to mainstream and decentralize its mandate for biodiversity conservation, by strengthening specifically local and regional delivery mechanisms.

G.3 Quotations for Type 3 Projects: Policy Advocacy and Institutional Improvement

PP: Policy Diffusion

CC 1146 Iran, executive summary, line 68

Enhanced policy framework (national strategy) on wind energy including effective market stimulation measures - review current legal and regulatory frameworks, strengthening of policy approaches based on best practice Established Market Facilitation Organisation - a public-private entity supporting the commercial growth of wind energy, providing institutional support necessary for entry of commercial players into the Iranian wind energy market

CC 1146 Iran, executive summary, line 60

The main policy tool to support involvement of the commercial sector will be a production based tariff support mechanism. While legislation guaranteeing high feed-in tariffs for renewable energy generation (over 5.2 US cents, well above the base tariff) were introduced some years ago (described in Budget Law 2002, article 62), inadequate attention has been given to the practical implementation of this policy. This has resulted in the non-functioning of the law, since funds or mechanisms were not allocated to cover the difference between the base and renewable energy tariffs - ie. the law was enacted without any attention given to how it would be supported. Two primary needs exist to rectify this problem: 1) determination of the most economic level of the tariff support sufficient to interest private investors, and 2) identification and commitment of resources to fund the mechanism - and these two needs will be tackled direct by this project. The existing law however is an excellent basis and illustrates the government's overall intentions. The project strategy, through its focus on activities in the areas of information, capacity building and strengthening of the enabling institutional framework has the overarching aim of tackling these two issues.

PP: Bureaucracy

BD 1505 Namibia, executive summary, line 70

1.1 *Review of Existing Laws and Support for Appropriate Legislation*: This sub component will

support a review of and appropriate amendments to existing legislation from which respective ordinances derive mandates to set regulations for coastal zone management, and enhance their harmonization consistent with principles of ICZM. Importantly, this subcomponent will provide the MET with targeted support and technical assistance in establishing the scope and process of measures related to National

Catalytic Goals: Re-Engineer Bureaucracy

CC 1899 Regional, executive summary, line 93

Outcome 2 focuses on strengthening institutions and developing capacities both in public and private spheres to secure actual EE implementation.

CC 2107 Belarus, executive summary , line 311

Output 1.3 Budget organizations issue incentives to staff responsible for increasing their investments in energy efficiency Activity 1.3.1 Review options for staff incentives Activity 1.3.2 Develop a proposal to introduce staff incen-

tives and discuss this with target municipalities Activity 1.3.3 Develop an implementation plan for introduction of staff incentives, including setting aside of budget resources, identification of responsible staff, bonus criteria Activity 1.3.4 Run an information campaign to inform staff of this opportunity for staff incentives Activity 1.3.5

CC 2107 Belarus, executive summary, line 318

Output 3.1 Create an Energy Center to provide on-going support to state organizations for realizing more energy efficiency investments Activity 3.1.1 Carry out an initial information campaign to introduce the Energy Center Activity 3.1.2 Create a source of reliable, current and complete information on modern energy efficient equipment, methodological (technical) approaches and opportunities to increase energy efficiency Activity 3.1.3 Refine and adjust the Energy Center business plan to ensure a smooth transition to financial self-sufficiency after project closure

BD 2099 Regional, executive summary, lines 281–82

Intermediate Results One per Component Results Indicators for Each Component Use of Results Monitoring

Component A: CTBR consolidated, with binational institutional mechanisms that guarantee adequate coordination.

Component A: - % of the management activities (as measured by \$ cost) in the four PAs of the CTBR that is coordinated through joint POA exercises or other coordination mechanisms increases from an estimated baseline of about 10% to 75% at end of project.

Component A: A failure to meet targets of inter-institutional coordination and binational coordination could indicate systemic coordination issues that would need strengthened attention under the project and strengthened commitments from governments and local actors.

Plans of Action: Streamline Existing Bureaucracies and Institutions

CC 2385 Regional China, executive summary, lines 137–41

Output 1.2 - Alignment of micro-hydro project strategy with national rural electrification/master plans, including identification and scheduling of micro-hydro-based mini-grids deployment in consultation with all relevant stakeholders.

Output 1.3 - National electricity codes harmonized, electricity laws have national decentralization frameworks, natural resources/environmental management requirements, preparation and issuance of application decrees with respect to micro-hydro-based off-grid IPPs [independent power providers], concession regimes, licensing, rules of seizure etc; land and water use rights.

Output 1.4 - A national Micro-hydro Clearing House established in each country. Streamlining and enactment of transparent procedures to receive the required licenses and other documentation for the construction and operation of small hydro power plants and related mini networks. A one-stop clearing-house/support center with the capacity to provide technical and other backstopping for different public awareness raising and community mobilization activities, project evaluation and financial engineering, contract negotiations, procurement as well as technical supervision and overall management support for owners/operators of the small hydro power plants.

BD 1064 Gabon, executive summary, line 80

Because ANPN's [Agence Nationale des Parcs Nationaux's] role will be to provide support to the field, a relatively lean central structure at the national level will delegate maximum possible responsibility to individual national parks.

BD 2099 Regional, executive summary, lines 69–71

A) *Consolidation of the Corazón Transboundary Biosphere Reserve*: Different activities involved in the consolidation of the binational administration of the entire area. Subcomponents include the consolidation of the process of nomination and recognition of the CBTR by UNESCO [United Nations Educational, Scientific, and Cultural Organization] and the implementation of a strategy for establishing administrative mechanisms and coordinating the CBTR's binational management mechanisms

Outcomes: At the end of the project the CTBR is expected to have been consolidated, with binational institutional mechanisms that guarantee the adequate coordination of policies, strategies, and activities in the Reserve area.

Plans of Action: Convene Decision Makers

CC 2385 Regional China, executive summary, line 145

Output 1.6 - Planning and execution of seminars, ongoing consultations, workshops and other activities to facilitate the required policy dialogue.

CC 2385 Regional China, executive summary, line 178

Outcome 4 - regional cooperation, through policy dialogue, the monitoring and testing of various Micro-hydro electricity service delivery models building on the synergies and differences inherent to varying country circumstances and sharing of information, lessons learned and best practices has been fostered and is effective. (GEF: \$ 1.92 million; co-financing: \$ 1.50 million).

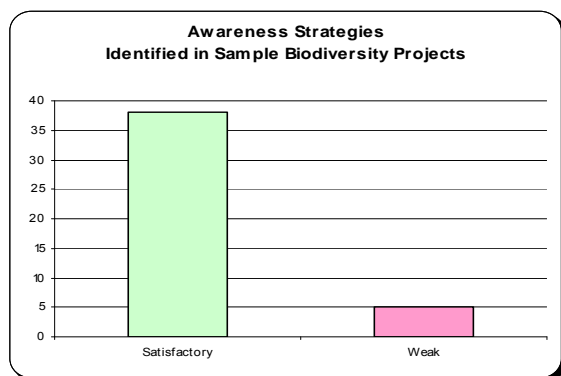
BD 2140 Regional, executive summary, line 487

Facilitate participation of national delegates in relevant international bodies e.g. the Interim Commission on Phytosanitary Measures, CBD [U.N. Convention on Biological Diversity], NEPAD [New Partnership for Africa’s Development], AMCEN [African Ministerial Conference on Environment.], etc.

G.4 Biodiversity Quotations by Strategy

Awareness

Figure G.1: Awareness Strategies Identified in Sample Biodiversity Projects



116, Indonesia; lines 313–18; Code: Objective

Public Awareness (PA) - designed to educate the public on the nature of coral reef threats, foster public stewardship towards Indonesia’s reefs, and change destructive behavior. This component included the provision of services, workshops, publications, awareness materials, surveys and awards in support of: (i) a national multi-media awareness campaign, (ii) regional campaigns in COREMAP [Coral Reef Rehabilitation and Management Project] I pilot sites, and (iii) public relations and dissemination of guidelines.

117, Nicaragua; Code: Objective

Public Communication and Education (US [United States]\$1.16 million, 6.7% of total project cost): The objectives of this component were to (a) raise the level of public discussion on the ABC and related issues of biodiversity in the context of sustainable development, (b) create broad public support for the ABC, (c) create social and political incentives for the participation of key stakeholders, (d) generate international recognition for the Nicaraguan effort to

foster environmentally friendly international investments on the Atlantic Coast, (e) contribute to the long-term sustainability of the GEF-financed project, and (f) secure donor support for conservation and rural development programs on the Atlantic Coast.

932, Russia; Code: Satisfactory

Furthermore, raising awareness at the level of the local administration and sensitising the policy makers has been more difficult and has taken much time and effort. Slowly the senior regional administration has come to support the project's objectives, but there is a constant challenge created by changes in the administration that tends to create continuous complications for the project. During the project development phase a lot of effort went into sensitising the local administration and support was high in the early days of the project. The one positive effect resulting from changes in the administration is that the policy people who have been made more aware and sensitive to the needs of the project tend to move on and up to more senior posts in Moscow.

592, Belize; Code: Satisfactory

The project has been largely successful in developing awareness and a culture for coastal and marine resource management and conservation amongst particularly youth, government agencies, local communities, developers, key interest groups such as tourist operators and fishers, and the public at large.

116, Indonesia; lines 1049–59; Code: Weak

However, in terms of replication in other countries, COREMAP I did not include a budget dedicated to international awareness-raising and publication of results (although COREMAP II does).

592, Belize; Code: Weak

One of the key deficiencies has been the lack of focus of awareness programs on government officials. This is a priority area for addressing post-project within the long-term implementation of ICZM [integrated coastal zone management]. Deficiencies noted by the target groups include insufficient promotion of CZMAI [Coastal Zone Management Authority and Institute] and its role in managing Belize's coastal zone. The CZMAI, when its capacity is restored, should consider redirecting its general public awareness efforts more toward a public and community relations approach with a Strategic Plan and Distribution Strategy that in some ways tactically resembles a political marketing campaign.

250, Mongolia; Code: Lesson

Mobile public campaign for remote sparsely populated areas In the Mongolian countryside, the scattering of herders' settlements over vast areas represents a challenge to organize efficient outreach activities and deliver attractive information to local people. Therefore, the project developed a mobile public campaign to reach communities established in remote areas, the Gazelle car being an efficient method to reach people living sparsely over large areas where gathering them is a difficult task.

220, Comoros; Code: Lesson

One of the shortcomings of this project in terms of the impact of awareness-raising activities is the lack of awareness-raising of the authorities. It would have been relevant within such a project to elaborate a general awareness-raising strategy identifying target audiences and applying appropriate approaches for each group. Yet such activities targeting the authorities were initiated only very recently in the very specific context of the search for cofinancing for the trust fund. Such an initiative needs to be pursued and developed in order to elicit the involvement and seek the support required to capitalize the endowment fund but also to obtain enlightened help from the authorities for all of the efforts aimed at biodiversity conservation and environmental conservation in general.

541, East Africa; Code: Result

It has raised the national, and in some cases regional, profile of selected forest areas, particularly Chome forest reserve in Tanzania and Sango Bay/Minziro on the Uganda/Tanzania border. In the case of Sango Bay this has led to various government departments, District council and the surrounding communities actively supporting maintenance of forest reserves in the face of land claims from a large investor, which would probably not have happened without the project and its activities. However, this heightened awareness doesn't seem to have worked in the case of Chome

FR where demand for camphor (*Ocotea*) timber from the Middle East has led to greatly increased rates of illegal logging.

116, Indonesia; Code: Result

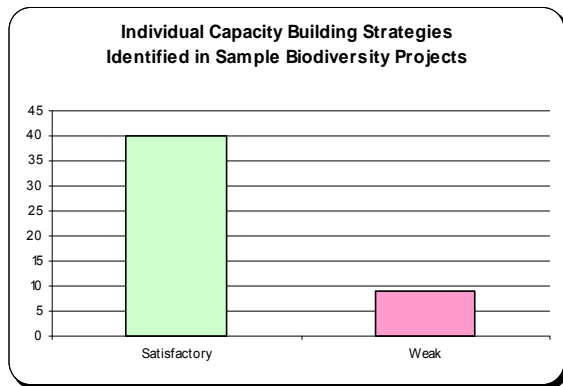
At the beginning of the campaign, only 25 percent of people surveyed reported having attended a community meeting on marine resource management; that percentage had increased to 45 percent at the campaign’s end. There were also indications of positive impact on behavior: 39 percent of fishermen with low to medium exposure to CORE-MAP reported using reef-friendly fishing gear as compared to 46 percent with high exposure. Finally, in 2002 this component was presented with the Gold Quill Award for effective communication by the International Association of Business Communicators.

592, Belize; Code: Result

The public information and education component of this project has been productive and widely acclaimed by target groups such as fishers, local communities and tourism stakeholders and cited as one of the most important techniques to bring about long-term environmental awareness and action. The general level of knowledge and experience related to biodiversity conservation in the ICZM context has increased dramatically within the project area at all levels. Through this medium, user groups are better prepared to make informed decisions on the use of coastal resources to ensure the sustainability of their livelihoods.

Individual Capacity Building

Figure G.2: Individual Capacity Building Strategies Identified in Sample Biodiversity Projects



220, Comoros; Code: Objective

A key result of empowering local communities and organizations with participatory management and communication skills will be their ability to negotiate collaborative management agreements for the sustainable use of local natural resources.

By the end of the project, the Directorate General of the Environment will be capable of coordinating and directing activities designed to conserve biodiversity, providing technical advice to local resource users to manage protected areas and species, and motivating others to carry out conservation measures.

541, East Africa; Code: Satisfactory

A cadre of committed conservationists was built, building on the team developed under the previous project. All are remaining in the East African region - one has moved to the WWF [World Wide Fund for Nature] Ecoregions Programme, while others will be absorbed into Forestry Departments/Authorities or the National Environmental Authorities.

A number of people involved at District level (e.g. Council Executives, council employees or District Forest Officers) have been given significant hands-on experience in participatory planning and joint forest management, both

formally through specially-designed training courses, and through implementing these activities.

592, Belize; Code: Satisfactory

The CZM Institute was a multi-disciplinary technical institution that assembled, trained and built the capacity of its professional staff (more than 26 technical experts) to form a competent, committed and respected resource that was viewed by colleagues and the public as a valuable, non-partisan resource dedicated to the sustainable management of coastal resources. Through significant ongoing investments in the technical capacity of the Institute's staff throughout the project, there were in place highly trained personnel in specific areas of expertise relevant to needs in the Belize coastal zone; unfortunately, most of the staff is now elsewhere. There was also a publicly-perceived disparity in salaries and benefits paid to project staff in relation to equivalent positions within government, with some people expressing the view that the Institute is a "Rolls Royce" model that was too richly endowed; this created tensions within some ministries that lost staff to CZMAI.

Nevertheless, the establishment of baseline data and monitoring programs, in particular coral reefs, endangered and indicator species (e.g., manatees) and coastal water quality, ensured that these programs provided data on the long-term status and threats to the Belize coastal zone. The establishment of the Institute has had a national impact and has also been recognized regionally and internationally.

83, China; Code: Satisfactory

Through training and equipment upgrading at the nine participating nature reserves, field patrol staff and monitors recruited from local communities were trained in patrolling, basic scientific data collection and reporting. Their work now forms the backbone of the reserves' ecological monitoring and management programs. The project emphasis on training of trainers has significantly increased SFA's capacity to promulgate lessons learned under the project, to the benefit of other reserves within its national system. Based on methods and tools developed under the NRMP, a systematic national training program has been incorporated into the (project sponsored) National Forestry Sector Reserve System Plan (NFSRSP). It addresses future development of the 171 SFA-administered A-level national nature reserves and nearly 1500 other nature reserves established in the forestry sector.

351, Ethiopia; Code: Weak

On the whole, there is need for clarity on how the high calibre of trained personnel will be strategically deployed and made the best use of in the furtherance of the project's goals.

400, Middle East; lines 3278–83; Code: Weak

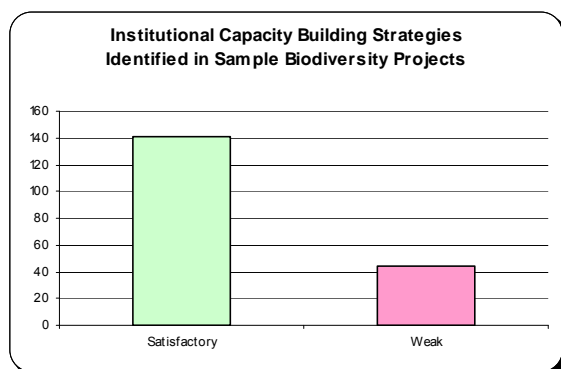
Benefits of investments in scholarships are not always clear or direct. In some countries, scholarships were granted with the aim of creating expertise in the agrobiodiversity field for later incorporation into the national research institutes. However, some countries (e.g., Lebanon) did not foresee any use for such highly trained personnel once their studies have been completed.

250, Mongolia; Code: Result

Biology teachers: Through the capacity development (didactic material, posters) provided to biology teachers in the eastern *aimags* in collaboration with EMPAA, the project contributed to the emergence of a new advocacy group for the defense of environment. As a group they sent an official letter to the Dornod Governor, copy to EMPAA/MNE, to express their concern about the construction of a bridge in the Numrug Strictly Protected Area.

Institutional Capacity Building

Figure G.3: Institutional Capacity Building Strategies Identified in Sample Biodiversity Projects



Monitoring and Enforcement

116, Indonesia; lines 319–22; Code: Objective

Monitoring Control and Surveillance (MCS) - designed to curb destructive practices on coral reefs. This component included the provision of technical assistance, surveillance equipment, studies, surveillance operations, workshops and incremental staff costs in support of (i) a national surveillance and enforcement unit, (ii) surveillance and enforcement operations at target project sites, and (iii) surveillance training.

250, Mongolia; Code: Satisfactory

Volunteer rangers enrolled in the anti-poaching units run by the local offices of the SSSA. Training and equipment provided by the project enables them to help out to local environmental inspectors and local governments for the monitoring of natural resources and for patrolling activities, thus contributing to improve to enforce laws in the Eastern *aimags*. Over 20 volunteer patrolling teams have been established and have benefited some funds for their operations.

101, Uganda; Code: Weak

Enforcement. Enforcement efforts have continued apace—with some successes—but poaching of animals and forest products (e.g., trees for poles) persists in some PAs [protected areas]; encroachment by grazing animals and community retaliations associated with problem animals also persist. Some capacity is now in place to deal with such problems - staff have been trained, relationships are being developed with neighboring communities, and communities are themselves becoming involved with enforcement - but infrastructure and equipment constraints remain the greatest barrier to more effective enforcement. While basic equipment is available, many PAs still suffer from transportation constraints, limited road access, inadequate communications, and inadequate housing or outposts that would permit an ongoing presence in those areas requiring enforcement.

83, China; Code: Result

Through training and equipment upgrading at the nine participating nature reserves, field patrol staff and monitors recruited from local communities were trained in patrolling, basic scientific data collection and reporting. Their work now forms the backbone of the reserves' ecological monitoring and management programs. The project emphasis on training of trainers has significantly increased SFA's capacity to promulgate lessons learned under the project, to the benefit of other reserves within its national system.

Financial

101, Uganda; Code: Objective

Strengthen capacity of Uganda Wildlife Authority (UWA): The aim was to establish UWA as an effective and efficient organization that is able to ensure the conservation of a representative portion of Uganda's biodiversity heritage. The project provided the basis for growth of sustainable nature-based tourism, while generating revenues to cover an increasing proportion of its recurrent and capital costs. Within this component, support was provided primarily to: (i) a transition management team and structure at UWA central HQ to improve accountability over operations, while also reconciling past liabilities; and (ii) operations at the protected areas to protect the integrity of the resource base. Support was carefully coordinated with other donors to ensure that all protected areas were covered without duplication.

126, Brazil; Code: Objectives

Specific objectives of the FUNBIO [Brazilian Biodiversity Fund] project included (i) creation of adequate institutional capacity for the Fund; (ii) assuring the financial effectiveness of the mechanism; (iii) establishing an adequate legal framework for the operation of the Fund; and (iv) demonstrating the trust fund as a mechanism for biodiversity conservation in Brazil through the achievement of six identified benchmarks.

116, Indonesia; Code: Satisfactory

Besides the main capital plus interest which has been determined prior to borrowing the seed fund, each Pokmas is obliged to contribute to coral reef conservation fund, known as "Dana SeKarang!" or the "SeKarang! Fund." It is a small portion of the financial benefits, put aside as "user fee" to raise community understanding that: (i) in return for receiving valuable products from coral reef/ marine resources they must protect/ maintain the sustainability of the resources, by contributing to SeKarang! conservation fund, even if it is only 0.05% percent of the benefit; and (ii) the fund would be used to support coral reef surveillance and conservation activities. To date, the communities already collected at least Rp 300,000 to Rp 1,500,000 to the SeKarang Funds in each island.

134, South Africa; Code: Satisfactory

(ii) Table Mountain Fund (TMF)...In at least 80% of cases, TMF funding has served as seed funding, leveraging resources from other sources and building partnerships. Based on a recent in-house evaluation, these projects have been deemed to be sustainable with investments from communities, private and public sources. Key performance indicators (KPI) for knowledge management (applied research) and invasive alien species eradication have been met. The KPI for environmental education was revised in alignment with the CAPE Strategy. TMF provides a sustainable (albeit limited) source of funding to support biodiversity conservation within the CFR, and intends raising further funding to enhance this function in the future.

126, Brazil; Code: Satisfactory

The strategic objective to develop an institution that could provide stable, long-term financing to biodiversity and sustainable use activities was achieved. FUNBIO as an institution has developed many talents and strategic abilities, including extensive skills in investment portfolio management, participatory methods for identifying and supporting projects, administrative systems, and advances in program monitoring in accordance with objectives. Many organizations now look to FUNBIO as among the most qualified, innovative, and serious Brazilian intermediary organization. Having access to this flexible funding, and FUNBIO's excellent technical support capacity, has increased the institutional success of its grantees and partners as well.

932, Russia; Code: Weak

No absorption of staff salaries (at any percentage) by Kamchatka Oblast Administration or by the Natural Resources Committee. The potential for user fees has been assessed and a strategy defined, but a mechanism has not been formally established and the collection of user fees has not been implemented. The Kamchatka Protected Areas Conservation Fund is still being negotiated and is not yet operational, nor has any co-funding been secured as yet.

592, Belize; Code: Weak

It is clear, 8 months after the end of the project that the project's most lethal short-coming was the inability to develop sustainable finance to maintain and expand on the achievements obtained during project implementation. The issue of financial sustainability is inherent in the CZM Act, explicit in this UNDP/GEF/EU [European Union] project's objectives, and has been the subject of several studies, consultations and internal discussions between 2000 and 2004. This work provides a wealth of information and ideas on how to operationalize a financing system for

ICZM [integrated coastal zone management] and its MPA network. However, the design of the UNDP/GEF Project contained a major flaw in that it greatly underestimated the resources needed to achieve sustainable finance. It focused on identifying a mechanism for sustainable finance rather than including a provision for full-time, specialized personnel to pursue the many ideas and recommendations, and implement those that proved most feasible.

250, Mongolia; Code: Result

Besides these funds set up with the project support, some communities having understood the advantages of solidarity efforts to build up and have a sum of money at the disposal of those who need it, have established their own local community funds to support the improvement of their people's livelihoods. The Dashbalbar BZ council has established its own environmental protection fund, showing the strong ownership of this community over its natural resources.

Legislation and Policies

223, Yemen; Code: Satisfactory

Legal status of the CZP [conservation zoning plan] demonstrated through effective resistance to road development through key protected area.

250, Mongolia; Code: Satisfactory

The project also counted on the formal recognition of the communal property rights of specifically defined local communities to provide the necessary incentive to the local residents to enact and respect regulations on biodiversity conservation. In November 2005, the Parliament adopted a series of amendments to the Environmental Protection Law. One of the key changes is that local people, as community groups, are given the right to use and possess natural resources in specific areas, make benefits from their use, at the same time the obligation to protect these resources from fire, illegal logging, and illegal hunting is transferred to them.

117, Nicaragua; Code: Weak

One condition for effectiveness was the submission to the National Assembly of a draft law related to the demarcation and titling of indigenous lands in the Atlantic Coast. The government took more than one year to comply with this condition.

Additional delays occurred when the government did not meet two disbursement conditions. The first was the creation of the National Environmental Fund (NEF); the second was the approval of the Indigenous Peoples Land Demarcation Law. Noncompliance with these conditions delayed disbursements for certain activities by two years.

The NEF [National Environmental Fund] was created in October 2001 at the end of the outgoing Alemán administration. The incoming Bolaños administration did not provide the political support to advance this initiative. In July 2003, the World Bank agreed to an amendment in which the NEF conditionality for disbursing US\$1 million for subprojects was removed. This released the funds for the subprojects, albeit late, given that the newly extended closing date was 15 months away. The project eventually was extended and the subprojects were successfully, although hurriedly, implemented.

220, Comoros; Code: Result

The actual impact of this result is seen in particular at the level of the village communities which, although they do not know the legal texts, are aware of the prohibitions concerning them. Regulations are effectively enforced, in that the violators are denounced by the ecoguards and the public at large, but sanctions are not always applied. Sanctions imposed at State level (gendarmerie) are practically without effect as compared to those applied by the communities prior to PMM [Mohéli Marine Park] creation, which sanctions are still applied in some villages. Such is the case in the village of Nioumachoi where offenders are required to perform community work within the village, of a value equivalent to the penalty provided by the legal texts.

Strategic Plan

592, Belize; Code: Satisfactory

The adoption of the CZM Act has given the CZMAI important statutory standing within the Government structure and the authorization and mandate to develop a comprehensive coastal zone management plan. The first step was the production of a national ICZM strategy that was developed through a broad consultative effort and endorsed by the Government in 2003. This evaluation team concurs with the conclusions of the mid-term evaluation that the strategy is a comprehensive, understandable and practical product and that the planning process to produce the strategy was laudable. The CZMAI has used the strategy as a guide for implementing its activities and in developing its strategic plan for the future. Of positive note, other government and NGO partners often refer to the Strategy in developing programs and initiatives for coastal and marine resource management. The project has collaborated with other agencies in influencing the creation of additional policies and laws, such as the Fish Spawning Aggregation regulations, the draft Aquaculture policy and the Land Use Plan.

592, Belize; Code: Satisfactory

The development guidelines for Caye Caulker have been completed and are integrated with the management plan for the Caye Caulker Forest and Marine Reserve, to take into consideration the importance of conserving the coastal resources in the nearby MPA. The Caye Caulker Village Council frequently refers to the development plan in reviewing lot applications.

55, West Africa; Code: Weak

All 17 villages involved at Diéfoula prepared and implemented participatory Village Development Plans. However, only a quarter of the 65 villages involved at Warigué and Monts Tingui completed a Village Development Plan, and none of these plans was formally adopted although some-micro-projects were implemented.

83, China; Code: Lesson

The original project design had three minor shortcomings. (1) The nature reserve level activities were implemented in a strictly sequential order: first staff training; then data gathering and organization; then nature reserve planning; and finally management action. This sequential process was highly systematic, but it meant that approved nature reserve management plans were not produced and management actions not launched until the project's third trimester. A more flexible design and implementation plan would have allowed selective, high priority management actions to address known conservation issues to be taken before the full nature reserve planning process was complete, which would have both accelerated conservation action and allowed the NRs [nature reserves] to benefit more from international technical assistance in planning and monitoring these initial interventions.

592, Belize; Code: Result

The Caye development plans continue to be consulted by the various decision-making agencies and institutions. Their use has been made mandatory by the Department of Environment when considering development along the coast and on the cayes. This mainstreaming of the plans into coastal planning is a positive sign of continuity and sustainability of the initiative started under this project.

Decentralization**101, Uganda; Code: Satisfactory**

Decentralized Decision-making. Perhaps the most noticeable and dramatic turnarounds have occurred at the field level. A notable organizational innovation has been the adoption of a "zonal structure" in which PAs close to each other are managed as a single conservation area. This structure improves administrative efficiency and enhances decentralized decision-making without compromising the policy-making role of the central offices or the on-the-ground effectiveness of individual PA management. There has been a significant enhancement in field-based decision making regarding budget allocations, staffing decisions, operational decisions, and general park management. Community collaboration initiatives and tourism related activities are also seeing improvements; whereas in the past many operational decisions required prior or ad hoc approval by HQ [headquarters], field staff now have the capacity and authority to make such decisions locally. This shift in responsibility is largely attributable to the planning process; 6 new PA General Management Plans were completed under the project by the end of FY 2001, and by project closure all PAs were disbursing funds and conducting activities according to annual operating plans (AOPs). The AOP and other planning processes have involved significant input from local staff and stakeholders.

Partnerships and Networks

134, South Africa; Code: Satisfactory

The CAPE Strategy is acknowledged globally as one of the most advanced and innovative bioregional conservation initiatives. The strategy combined intensive multi-disciplinary stakeholder involvement with an explicit, systematic quantitative conservation planning procedure. It established clear targets for conserving a representative sample of biodiversity patterns and ecological processes at landscape scale. Strong emphasis was placed on building partnerships between executing agencies, non-governmental organizations, research institutes and the private sector from the outset, in order to create commitment to implementation and ensure long-term social sustainability to match the efforts towards ecological sustainability. C.A.P.E was able to gain the support of key stakeholders, to create commitment to implementation by executing agencies, and build a sound base for implementation. Its success, attributed in large part to strong government commitment and stakeholder support, provides a strong assurance that further conservation measures intended to realise the CAPE vision have a high probability of success, both in terms of mitigating threats and ensuring sustainability.

126, Brazil; lines 450–58; Code: Satisfactory

Public and private sector actors who have been engaged as partners and supporters of conservation projects include the National Steel Company, the Terra Institute, Klabin Parana forest products, Minas Gerais Power Company, and the Brazilian Tourism Institute among others. Organizations implementing funded projects also represent a diverse cross-section of Brazilian society. 57% of recipients are NGOs, 25% community associations and cooperatives, 14% businesses, and 4% governmental organizations. FUNBIO has been especially effective in promoting public-private partnerships through its matching grant (partnership) program. Representatives of NGO, academic, business, and government sectors have participated in technical committees and governing bodies, as well as project implementing organizations and consortia.

400, Middle East; Code: Weak

Regional networks established for project are informal, there is no agreement, institutional set-up or funding for them beyond the project. Thematic working groups were effective at sorting out concepts and general approaches; however, these were voluntary. There were no follow-up mechanisms to ensure standardization of implementation approaches and methodologies in countries (weakness of project design).

250, Mongolia; Code: Lesson

Establishment of a network of partners. The multi-level partnership strategy adopted by the project to ensure the sustainability of its outcomes proved to be appropriate. It was especially successful at establishing a network of partners at all levels from local herders and communities, buffer zone councils, local governments, to *aimag* administrations, and developing their capacities and sense of ownership over biodiversity and the environment at large. The project was designed to develop the capacities of relevant stakeholders through various training activities and participatory processes and support them in carrying out the activities as their capacities would expand.

541, East Africa; Code: Result

For the first time in the history of East African forestry, directors of planning, treasury and forestry were brought together under project auspices for discussions to ensure that forest biodiversity issues received high level attention and were subsequently mainstreamed into overall and sectoral development plans.

400, Middle East; lines 1674–81; Code: Result

Even with the project ending, many people—including senior decision-makers in Jordan, the Palestine Authority, Lebanon, and Syria—are committed to continuing the policy work needed to enact agrobiodiversity policies and legislation. They recognize the value of regional networks, and some national governments (e.g., Jordan) are discussing the establishment of regional networks for agrobiodiversity. ICARDA [International Center for Agricultural Research in the Dry Areas] has integrated agrobiodiversity into one of its six program areas and is considering publication of regional project reports.

Equipment/Infrastructure

83, China; Code: Satisfactory

Field-level protection systems and investments. Substantial upgrade investments were made in facilities and basic equipment (buildings, computers, vehicles, radios, uniforms, boundary markers, etc.) and in field staff training at the nine participating nature reserves. As a result, the boundaries of the nine reserves are now all clearly marked; sufficient patrol stations and guard posts have been constructed; all field staff have good uniforms and communication equipment; and regular field patrols are conducted that are monitoring and reporting the prevalence of target species, environmental conditions, and threats to species and habitats. Headquarters staff working conditions, and consequently staff motivation and technical performance, have been significantly improved. Laboratory and educational facilities have been upgraded and educational outreach to adjacent communities has been instituted, e.g. by constructing an excellent exhibition center at the Foping Nature Reserve.

932, Russia; Code: Weak

One significant constraint to management of the parks is the lack of personnel. The Project has supplied equipment and built infrastructure to support the parks but there are insufficient staff to man the guard posts and to undertake patrols. This reflects the current failure in commitment from government administration.

55, West Africa; Code: Weak

A final sustainability concern, relates to the maintenance of infrastructure investments. Since management of the wildlife zones is not currently generating significant revenue and given that no agreement was reached prior to project completion to ensure maintenance of infrastructure by the relevant government institutions, communities now bear the burden of maintaining project built infrastructure without a clear means to meet these costs.

932, Russia; Code: Result

The provision of equipment through the project has, according to the Director of Nature Parks, made a big difference to management and inspection. The provision of snow mobiles has been a particular breakthrough in allowing Inspectors to patrol the Parks and to intercept poachers. Much of the poaching is undertaken by the new rich classes and they usually have excellent equipment. This equipment procurement for the parks has allowed more control over poachers (although the issue of the lack of powers of arrest among Inspectors is still a constraint). The construction of check-points and control towers for the Inspectors has also made a difference (although there are still insufficient Inspectors, and they have inadequate powers).

Research Studies

250, Mongolia; Code: Satisfactory

One of the major outcomes of this project results from the study on the impact of hunting on wildlife populations in the Eastern *aimags*. As the results of this study were pointing to the lack of enforcement of the Law on Hunting, a project was developed based on a close collaboration of the SSSA and the ESBP [Eastern Steppes Biodiversity Project] to propose amendments to the Law on Hunting and implement a tagging system to prove that products were hunted legally. The hunting study findings have been used to develop policies and legislation and the new tagging system has been successfully implemented since 2003. According to the amendment to the Law on Hunting adopted by the Mongolian Parliament, everyone who possesses a wildlife product is required to have an official certificate of origin to prove that it has been hunted legally. It enables the law enforcement personnel to inspect traders at major road checkpoints, markets, and border ports, and to confiscate products of illegally hunted wildlife.

250, Mongolia; Code: Satisfactory

Findings of the research project were widely distributed to local and central government official, and to local people, and various handouts introducing simple mechanical techniques were produced for practitioners. This concept is now well integrated in sustainable grassland management practice and has been replicated in other *aimags* in the country through a small community-based project funded by the GEF SGP and through the UNDP/Netherlands supported Sustainable Grasslands Management Project which is operating in 34 *soums* in 3 *aimags*.

250, Mongolia; Code: Weak

Although the above-mentioned studies were successfully designed and achieved, other projects did not sufficiently target the improvement of BZ management plans. The relevance of the study on Daurian pikas is not clear. The study on Mongolian gazelles, conducted in collaboration with WCS [Wildlife Conservation Society], although by far the most expensive study, provided very little relevant information to improve the management of this species and assess the adequacy of the PAs to protect it. It appears that the research insufficiently integrated ecological variables with gazelle movement to gain a good understanding of their movements. The necessity to improve research planning according to the specific needs of management purposes was discussed under the analysis of the attainment of the first objective.

Developed Database

250, Mongolia; Code: Satisfactory

The project supported the three eastern *aimag* governments, including their environmental protection agencies (EPAs), SSSAs, land agencies, and the EMPAA with the establishment of their environmental databases and provided training on the use of the GIS software. This new GIS capacity makes possible the integration of biodiversity concerns in local development plans in the eastern region, enables decision makers and land use planners to make scientifically sound management decisions for environmental planning and the environmental database sets a baseline to monitor further evolution of the eastern ecosystems and resources.

400, Middle East; Code: Weak

The knowledge generated through this project is critical for understanding and solving agrobiodiversity problems in the region. However, the benefit of numerous unpublished or draft reports and databases will be lost unless the documents are consolidated, important data preserved and lessons captured and made available regionwide.

83, China; Code: Weak

However, the MIS has not been extended to other SFA Nature Reserves and Provincial Bureau, as was originally hoped. Project funds were used to familiarize a few staff from other nature reserves with the system, but there is no firm plan or funding strategy to extend it to a significant number of other reserves or to expand and develop it at the reserves that are currently using it.

Created Institution

250, Mongolia; Code: Satisfactory

Buffer Zone Councils have been important partners to reach the project outcome related to the development of sustainable alternative livelihoods and biodiversity conservation in the PA buffer zones. Buffer Zone Councils are participatory management committees elected for each BZ [buffer zone], whose responsibility is to elaborate, monitor and execute the management plans of the PA buffer zones. These structures include representatives of local herders, local governments, and PA administration. The project has supported their establishment, contributed to develop their capacity for participatory planning, implementation of the buffer zone management plans, and monitoring of resource use.

592, Belize; Code: Weak

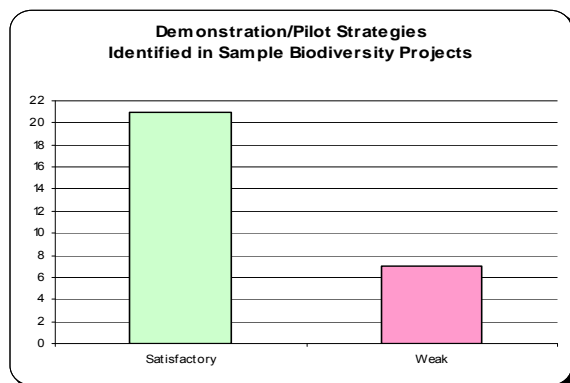
Unfortunately, this significant capacity to guide the delivery of ICZM [integrated coastal zone management] in Belize (Authority, Institute, Advisory Council) was all but lost at the close of the project when UNDP/GEF resources were expended, most of the staff left as of April 30, 2004 and the CEO [chief executive officer] of the Authority and the Director of the Institute resigned their positions. Only a skeleton staff remains in place at this time, largely in a care-taking mode. The core staff retained with the Institute was given a new one-year contract; this was seen as a sign of good faith from the Ministry of Fisheries to the staff of the Institute. An acting Director of the Institute has been attempting to keep the institution functioning since mid-2004, albeit at a minimal level. Further, the re-organization of government Ministries and concomitant roles and responsibilities, and the scramble for sustainable financing, particularly in the latter months of the project, has made it challenging for the key parties to maintain a focus on long-term goals.

351, Ethiopia; Code: Weak

It seems that there were consultations with the Regional Agricultural Co-operatives Bureaus in most of the sites during the establishment phase of the CCAs [community conservation associations] but the relationships were not adequately built upon. The CCAs are therefore not legalized and this places their sustainability on slippery grounds unless the matter is resolved immediately. Institutional linkages with other regionally based organizations, which would have served a crucial role in the sustainability of the CCAs are also weak. In addition, they are largely male dominated though women are more practically involved in seed selection, storage and related issues as is the common practice.

Demonstration/Pilot

Figure G.4: Demonstration/Pilot Strategies Identified in Sample Biodiversity Projects



83, China; Code: Satisfactory

Reserve management and administration. Nature Reserve Management Plans were prepared and implemented by the nine participating nature reserves, by two provincial nature reserve bureaus, and by the State Forestry Administration (the Forestry Sector Nature Reserve System Plan). For the first time in the SFA nature reserve system, these plans were based on an “objectives oriented” approach to nature reserve management planning. This involves the keystone concepts of short to medium-term priority setting, baseline scientific data collection and systematic data analysis, ongoing monitoring of environmental and socioeconomic factors, and iterative updating of plans, action priorities and goals. The ongoing site-based biodiversity and ecosystem monitoring activities on which management plan updates are based cover, a) the status of target species and habitats; b) environmental conditions and services (cf. watershed protection, carbon sequestration); c) the extent and nature of threats to biodiversity (cf. wildfires, poaching, agricultural encroachment, spread of alien invasive species); and d) integration of nature reserve management goals with local development plans.

192, Bhutan; Code: Weak

Objective 3: To maintain existing forest cover and rehabilitate degraded forest cover by addressing root causes of forest loss: lack of fuelwood and alternative energy sources.

Activity 3.1: Develop pilot cooking and heating stove demonstrations for fuel efficient technologies—in the alpine zone where wood is scarce.

Result: The demonstration stoves were introduced and tried in several homes and communities under Khatoe geogs.

Activity 3.2: Demonstrate pilot water heaters in pilot areas within the park.

Result: Four solar water heaters have been planned for installation in various institutions within the park. However, it has not been done so far due to transportation constraints.

Conclusion/Explanation: Since it has just been installed, more time is required to exactly determine the results/success of solar as one viable alternative.

Activity 3.3: Install one micro-hydro system in Laya and give basic appliance demonstrations/Installation of PICO [Pletric turbine/sets] at Goen Shari Community School for demonstration.

Result: Technical feasibility studies later proved that the distribution of houses was too large to support the distribution systems. A substitute proposal for solar lighting systems was introduced but it is not as extensive as the original proposal.

Conclusion/Explanation: 103 solar PVs [photovoltaics] have been distributed and installed within the park area.

400, Middle East; lines 2738–48; Code: Lesson

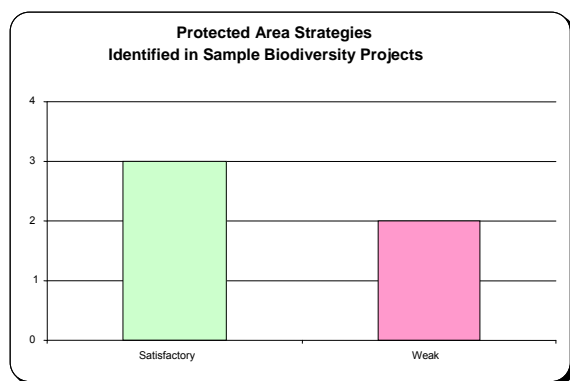
In some cases, there is no need to pilot the same demonstration projects in every country (one or two would suffice with successful approaches being broadened to all countries); in other cases, the context differs from one country to another and the spread of successful approaches is not possible without changes to account for the different legal, institutional, cultural and socio-economic conditions. On the other hand, each country in the region has its own strengths (e.g., Lebanon excels at the community development work, while the scientific research is strong in Syrian potency). Designing pilot projects that build on national strengths and then broadening them into regional approaches could foster region-wide cooperation.

400, Middle East; lines 3183–89; Code: Lesson

Demonstrations should work at the pace and with the tools and skills expected of locals. The demonstrations should clearly illustrate what locals can accomplish with the tools and resources at their disposal (that is, demonstrations should not be speeded up with bulldozers if farmers are expected to achieve their own results with hand tools at a future time).

Protected Area

Figure G.5: Protected Area Strategies Identified in Sample Biodiversity Projects



592, Belize; lines 532:532; Code: Satisfactory

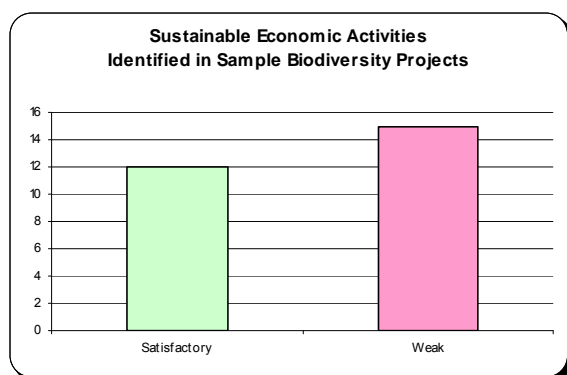
A major component of the Project was directed toward measures to improve the effectiveness of the management of the Belizean system of MPAs. This project allowed many MPAs to move from “paper parks” into functioning protected areas. Previous to the project, only 2.3% of MPAs were operational. The project has caused this to increase to 51.5% of MPAs being operational (July, 2004). This includes 7 new MPAs established under the project. These 7 MPAs have been operational since 2002, having received all basic infrastructure and equipment. All 5 management plans have been revised and the MPAs are currently utilizing these plans to guide the daily management of the reserves. MPA staff has received the necessary training including patrolling and enforcement, boat maintenance, monitoring and assessing management effectiveness. The MPAs have received basic infrastructure, boats and monitoring equipment, with 24-hour staff appointments. Reserve biologists, rangers and support staff are in place, boats and equipment have been procured, and reserve buildings and facilities have been constructed. With the human and physical infrastructure largely in place, the focus now is to make it operational in an efficient and effective manner and to maintain that which has been achieved.

932, Russia; lines 524:524; Code: Weak

One significant constraint to management of the parks is the lack of personnel. The Project has supplied equipment and built infrastructure to support the parks but there are insufficient staff to man the guard posts and to undertake patrols. This reflects the current failure in commitment from government administration. The Project had defined the number of personnel needed for PAs and had also defined sources for financing (both available and potential). The government had agreed to fund certain positions but this has never happened. At the regional level this is a direct decision on the part of the regional administration not to fulfil its formally agreed commitments to the project. At the federal level there is a freeze on growth of parks personnel which can only be resolved after government re-structuring has been completed. This re-structuring process is underway at the present moment (March-April 2004) and is expected to be complete within the next few months.

220, Comoros; lines 968:968; Code: Result

The efforts accomplished during project implementation launched this PA creation process by establishing the PMM and undertaking training and awareness-raising activities targeting the village communities, with a view to creating other PAs, including the PA for the protection of the coelacanth. The APG [Association pour la Preservation du Gombessa] association was the beneficiary of training provided by the project in the areas of organizational development, microproject elaboration and management, and marine ecology. Each training session was attended by a total of 32 people. This training appears to have been well integrated as young members of the association were able to submit projects and obtain funding when other donors offered their support in the area. The experience of the establishment of a PA will be formalized and recorded in a document which can be adapted to various ecosystems, providing guidance for the creation of future PAs in all of the islands.

Sustainable Economic Activity**Figure G.6: Sustainable Economic Activities Identified in Sample Projects****83, China; lines 228–39; Code: Objective**

The Enterprise Restructuring Component (34 percent of total costs) had two objectives: (1) reduce biodiversity/forestry conflicts in an area adjacent to the Qinling Reserve Group by scaling-back commercial logging in the area; and (2) test alternative mechanisms for relocating workers displaced by forest enterprise down-sizing or closure.

It targeted two state-owned forest farms under the Changqing Forestry Bureau that were aggressively harvesting timber close to the Qinling reserve boundaries, which had significantly reduced the area's forest cover and degraded a small, but important, Giant Panda corridor. The component supported a significant reduction in tree harvesting, transfer of most of the Forest Bureau's workers to more environmentally sustainable employment, and more effective conservation of the area. It was also hoped that this pilot forest enterprise restructuring program --the first of its kind in China --would establish a successful model for sustainable forest management and forest enterprise restructuring that could be disseminated to other forests near protected areas in China.

117, Nicaragua; lines 550–59; Code: Satisfactory

Third, based on the Community Development Plans, 22 conservation and sustainable natural resource management subprojects were formulated and implemented. Nine of these subprojects were in the RAAS [Región Autónoma del Atlántico Sur], in which 40 communities benefited from project support; and 13 were in the RAAN [Región Autónoma del Atlántico Norte], in which 24 communities benefited. These subprojects were focused on strengthening production systems (such as agroforestry, community tourism, artisanal fishing, and biodiversity conservation) and municipal environmental health management. As a result of these efforts, families located in protected areas, buffer zones, and interconnecting corridors were able to improve their standard of living. This improvement was accomplished by implementing biodiversity-friendly sustainable production practices. In addition, productive capacities were strengthened through training, which introduced environmentally friendly agricultural production technologies.

54, Uganda; lines 301:301; Code: Weak

This component aimed at providing small grants to community groups in the areas surrounding the parks for income-generating projects to replace revenues lost when access to forest resources in the parks were restricted and projects consistent with biodiversity conservation. The first round of grants in 1996 followed the selection criteria defined in the Trust Administration Manual and was characterized by: i) a tremendous number of applications (4,700 applications for 50 grants); ii) a focus on social infrastructure (schools, clinics) rather than income generating activities or projects with a clear conservation goal; and iii) a lack of matching funds from the community.

55, West Africa; lines 789:798; Code: Weak

The game ranching model might not work. Even during implementation, local communities in both countries reportedly have expressed skepticism regarding expected the project benefits. Income generation expected at appraisal did not materialize from the limited pilots conducted. Full feasibility studies and business planning exercises to assess the true income generating potential of ecotourism and safari hunting as well as for other potential activities such as shea nut exploitation, were not conducted during project implementation. Overall, the economic returns from wildlife management at Project completion did not provide an ongoing incentive structure to support future conservation efforts, nor to independently sustain the socio-economic infrastructures established by the Project.

54, Uganda; lines 446:446; Code: Result

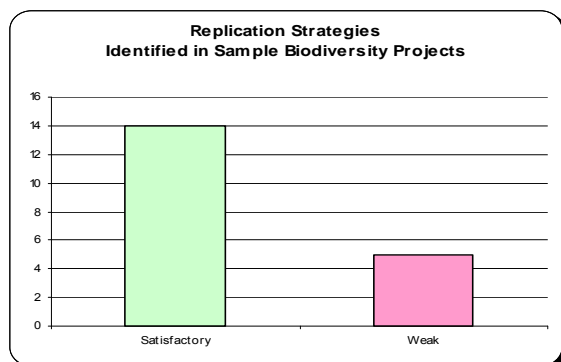
By meeting some of the local community's needs, the project has positively changed the behavior and attitude of local community, which has contributed towards decreasing the risk of illegal activities being carried out in the parks.

250, Mongolia; lines 781:781; Code: Result

Another great achievement of the project was to *link community-based conservation to improved livelihood* with well defined community groups who got involved on a voluntary basis in natural resource protection as they learned about the wildlife in their environment and developed a *sense of ownership* to it. This was accomplished through developing incentives such as alternative income generating activities to improve local people's livelihood, increasing all stakeholders' awareness on the importance of conserving biodiversity, their knowledge on biodiversity resources and their awareness of the beauty or their environment beyond its economical value. Examples of this include local people participation in the conservation and monitoring of marmots through contracts formalizing individual responsibilities, in the protection of cranes, of gazelles, and in spring protection through fencing and plantations.

Replication

Figure G.7: Replication Strategies Identified in Sample Biodiversity Projects



192, Bhutan; lines 501:501; Code: Satisfactory

There have not been large scale concrete results produced and available for replication, but similar replica of JDNP management system have been used in the establishment of Jigme Singye National Park and Sakten Wild Life Sanctuary. Lessons learned from the implementation of JDNP and now available in the form of mid-term evaluation and terminal evaluation report will be useful for future direction of JDNP and other relevant conservation projects. For instances, JDNPs delegation of more specialized environmental campaign to RSPN [Royal Society for the Protection of Nature] is a good example, which can be replicated in framing other park managements. The ICDP [integrated conservation and development program] Warden, Bomdeling, was trained at JDNP headquarter over a period of one month. Further, GIS infrastructures including staff capacity developed at the GIS unit of NEC [National Environment Commission], Thimphu covers all other parks in the nation.

142, Global; lines 161–71; Code: Satisfactory

PLEC [People, Land Management, and Environmental Change] has conserved biodiversity in agricultural landscapes through the replication of good agricultural techniques based on expert farmers' experimentation and demonstration at 21 "demonstration sites" around the world...PLEC not only demonstrates the valuable results of cross-scale collaboration but also provides a replicable method for mobilizing other agricultural scientists and policymakers to support ecological resilience through cross-scale collaboration appropriate to local circumstances within weak or strong states. PLEC demonstrates a successful alternative to the standard "blueprint" project "top-down" implementation approach, by offering a flexible project design that does allow locally adapted solutions to emerge. At local on-the-ground levels, PLEC has successfully created sustainable local processes appropriate to each site... The most important achievement of PLEC is its creation of a smart process that is replicable and can proceed alone after initial investments to empower people who support agrobiodiversity—social and biological, local and individual, at the landscape level. PLEC shows the way to identify master/expert farmers—people who are generally not political leaders and who are not likely to trust agricultural extension agents but rather their own skills.

116, Indonesia; lines 1049–59; Code: Weak

However, in terms of replication in other countries, COREMAP I did not include a budget dedicated to international awareness-raising and publication of results (although COREMAP II does).

116, Indonesia; lines 1049–59; Code: Lesson

However, in terms of replication in other countries, COREMAP I did not include a budget dedicated to international awareness-raising and publication of results (although COREMAP II does). Despite this, the lessons learned from COREMAP I and many of the results have been featured in the recent Bank publication "Saving Fish and Fishers: Towards Sustainable and Equitable Governance of the Global Fishing Sector" published in 2004. This paper estab-

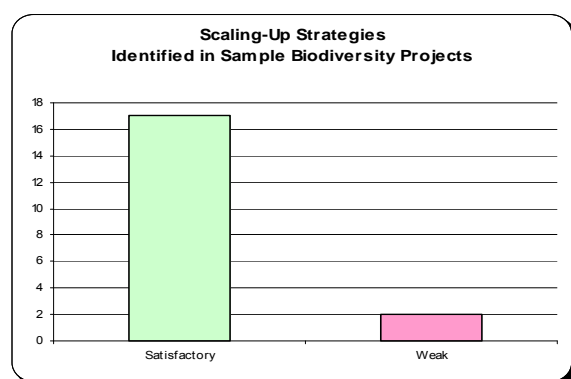
lished the Bank’s recommended approach to support for fisheries-related projects, as guidance to both Bank staff and borrowing countries. In several cases in Africa, new Bank-supported fisheries management projects have adopted some of the approaches and lessons learned from COREMAP I, particularly the recently-approved Integrated Marine and Coastal Resources Management Project (GIRMaC) in Senegal which focuses on comanagement of small-scale fisheries. Many of the evaluations of COREMAP I were reviewed and their results incorporated into the design of the GIRMaC. Lastly, LIPI [Lembaga Ilmu Pengetahuan Indonesia] also published an internationally received book on the lessons learned from COREMAP I.

83, China; lines 319–20; Code: Lesson

The original design did not require the development of a financing strategy for replicating project outcomes and experience in other provinces and nature reserves. The resulting scarcity of replication resources has limited replication activities nationally, at the provincial level, and other NR sites.

Scale-up

Figure G.8: Scale-Up Strategies Identified in Sample Biodiversity Projects



250, Mongolia; lines 447:447; Code: Satisfactory

A methodology to monitor pasture condition was developed by the project and approved by the Institute of Hydro-meteorology and Environmental Monitoring in 2001. It is now incorporated into the National Manual for Rangeland Health Monitoring and recognized for use on nationwide scale.

55, West Africa; lines 816–18; Code: Satisfactory

Core project activities have been actively taken over by two new national projects; the Partnership for Natural Ecosystem Management Project (PAGEN) and the follow-on project for the community-based land management project (PNGT [Programme National de Gestion des Terroirs]). These two substantial GEF and IDA-supported national operations provide the financial and institutional basis for the continuation of the work in the Comoé-Léraba reserve and surrounding villages. The design of PAGEN draws heavily on the experience of GEPRENAF [Burkina GEF pilot project: Pilot Community-Based Natural Resources and Wildlife Management Project].

While the transition process is through PAGEN and PNGT, there is also increasing internalization of the principles and the practices that have been developed and tested by GEPRENAF into mainstream wildlife management activities in Burkina.

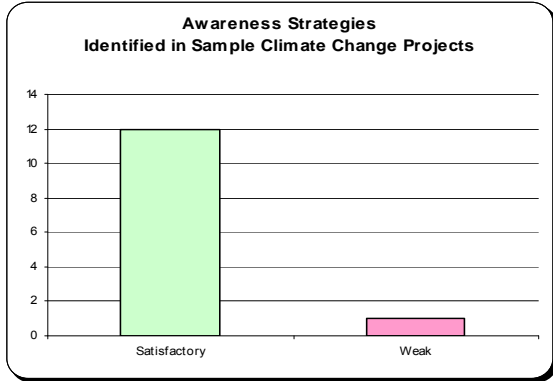
223, Yemen; lines 619:619; Code: Weak

Mode for “ramping up” from pilot PAs to PAs across island not clear; financial/technical resource needs very high.

G-5 Climate Change Quotations by Strategy

Awareness

Figure G.9: Awareness Strategies Identified in Sample Climate Change Projects



302, Bulgaria; Code: Satisfactory

Project information dissemination activities as well as own information activities of project stakeholders including regional media helped to widely disseminate the information on project and its results among wider audience, including relevant decision makers at municipal and utility level, as well to general public—apartment owners and tenants as energy consumers.

104, Sri Lanka; Code: Satisfactory

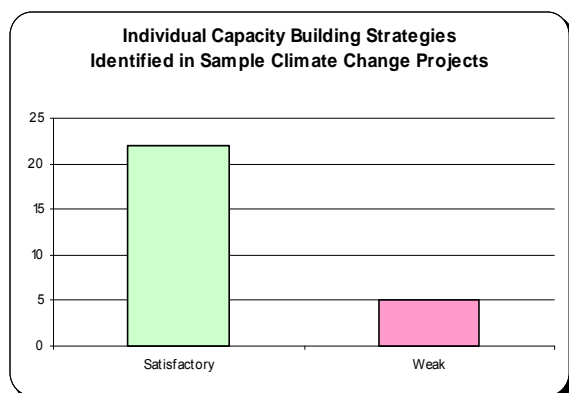
While building the institutional capacity of the Government was not a key objective under the Project, the ESD project did help in creating a greater awareness for renewable energy projects within the National and Provincial governments. In particular, the Central Environmental Authority (CEA), Ministry of Finance, and Ministry of Irrigation and Power have better understanding of small private power projects in general and renewable energy projects. Provincial level governments and financial institutions have been exposed to off-grid renewable energy projects. The Uva Provincial Government expressed an interest in becoming a part of the ESD project by promoting the adoption of solar systems in remote unconnected areas of the province. The Uva province has one of the lowest rates of electricity access in Sri Lanka. The Administrative Unit (AU) helped Uva Provincial Government to design and implement a solar grant program under which 6000 households have benefited through installation of SHS [solar home system]. Two other Provincial Governments-Sabaragamuwa and North-East province- have initiated similar programs.

376, Côte d’Ivoire & Senegal; Code: Weak

The third output is related to the dissemination of the project results in the region. Other African countries were to be associated to the project on bilateral complementary financial schemes. This output was only partially carried out because of the lacking funds.

Individual Capacity Building

Figure G.10: Individual Capacity Building Strategies Identified in Sample Climate Change Projects



370, India; Code: Satisfactory

The project has enabled the participation of a large number of officials of national and state level organizations in fellowship training and study tours abroad. Many of these officials continue to be engaged in promotion of the bio-methanation technologies, according to the PMC officers interviewed by the evaluation team. This “train-the-trainers” activity has thus resulted in a multiplier effect. In addition to the overseas programmes, large number of conferences / workshops / business meets and in-service training programmes were organized in the initial period that created large scale awareness among the concerned industries.

97, China; Code: Satisfactory

(a) establishment of a systematic training curriculum and certification procedure for boiler operators;

123, Latvia; lines 275–80; Code: Satisfactory

Technical and Managerial assistance through twining arrangements to enable the staff of the landfill to efficiently operate the waste processing system and to achieve maximum revenues from generated landfill gas and the separated by-products: Twining arrangement was financed by SIDA [Swedish International Development Cooperation Agency], and the partners of Getlini Eko were Nordvästra Skånes Renhållnings AB(NSR) and Sweco. During the Project the twining partners helped Getlini Eko in these particular areas. The original arrangement was extended until June 2004 to allow for additional work in solving the problems of nonfunctional gas wells in the old landfill.

370, India; Code: Satisfactory

- Fellowship training programme: As part of this Project, a total of 71 Indian fellows working in the field of waste to energy in different organisations were deputed, in twelve Fellowship training programmes, in The Netherlands, USA [United States of America], UK [United Kingdom], Sweden, Austria, Denmark and Germany.
- Study tours: Fifteen study tours have also been organized for a total of 43 representatives of various Technology Institutions and Government organisations to visit biomethanation installations, research and development and training institutions, manufacturers and consultancy organisations in various countries, viz. Australia, Austria, Canada, Cuba, Denmark, Germany, France, Italy, New Zealand, Mexico, The Netherlands, Sweden, Switzerland, UK and USA.

104, Sri Lanka; lines 701–707; Code: Satisfactory

Village cooperatives implementing village hydro projects also received substantial training which helped to build their capacity in this area. In particular, Intermediate Technology Development Group (ITDG) and Sri Lanka Business Development Center (SLBDC) trained about 30 NGOs in social mobilization and village hydro development.

The project has also significantly increased the capacity of renewable energy and energy efficiency consultants. The Energy Forum has been successful in seeking grassroots feedback and mobilizing communities to represent and advocate their views. This feedback has been valuable in identifying and correcting deficiencies in the program.

76, India; lines 319–20; Code: Satisfactory

Entrepreneurial, technician and business development training services sponsored by IREDA has catalyzed new business formation and enhanced the capacity of renewable energy businesses.

118, Senegal; lines 360–66; Code: Satisfactory

(iv) the elaboration of capacity building programs and field extension guides for the participating regional Forest Services offices and staff, community groups and NGOs; (v) the provision of institutional development and capacity building support to the different governmental agencies, community associations and NGOs that were going to participate in the implementation of the investment components of the project, with special emphasis in the training and “recycling” of the Forest Service staff who would participate in the implementation of the Sustainable Woodfuels Supply Management component.

118, Senegal; lines 384–87; Code: Satisfactory

(iii) provision of technical support and extension services to the participating rural communities and NGOs for the implementation of the participatory management modules and for the exploitation/production and marketing of woodfuels and other potential wood and multiple non-wood products.

386, India; lines 1410:1410; Code: Weak

Discussions by our team however revealed that most officials and personnel trained under the activity block did not remain to work in this sector long enough, and were often transferred to other departments not directly concerned with Small Hydro Development. This meant that a “Core” team of well trained officials at the National, State, and local levels could only be partially established. Yet another weakness in this activity block has been the non involvement of local persons and panchayats in training for management of and maintenance of these projects. The most effective way of training persons at the local level would be to support developers to take up hands on training at the sub-projects level as done by Sai Engineering on a voluntary basis.

376, Côte d’Ivoire & Senegal; lines 274:274; Code: Weak

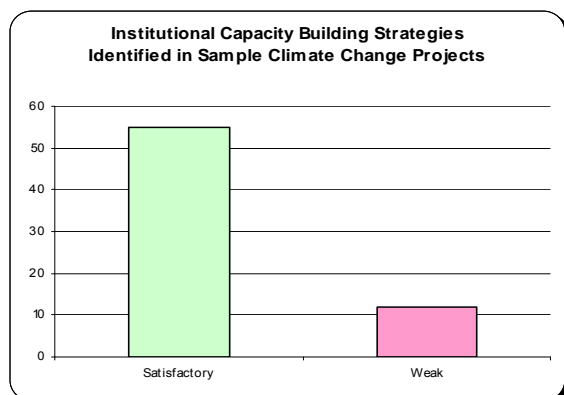
A training program allowed the training of some twenty engineers, coming from audit offices, in energy audit technique with satisfactory results. But the training of trainers and instructors, which was intended to support the energy exploiting committees, did not take place.

76, India; lines 597–600; Code: Result

Local and international training offered through the technical assistance component has significantly influenced the growth of consultancy industry on wind power and solar PV [photovoltaics]. Establishment by IREDA of knowledge and information networks among technical consultant firms in the various regions has led to increased awareness of business opportunities in renewable energy.

Institutional Capacity Building

Figure G.11: Institutional Capacity Building Strategies Identified in Sample Climate Change Projects



Monitoring and Enforcement

376, Côte d'Ivoire & Senegal; lines 283:283; Code: Weak

However, a number of weaknesses has to be noticed. For instance, the project could not offer a training to all the influential targets, particularly the architects and the concerned administration officers. None of the two countries tried even partially to conform to these codes in the public building projects either new or renovated. Finally, the definitive enforcement of the codes (or guides) will occur only if the administrations and the actors of the two states really mobilize. The present report has formulated recommendations on that aspect.

Financial

118, Senegal; lines 427–43; Code: Satisfactory

PROGEDE [Senegal Sustainable and Participatory Energy Management Project] sought to: (i) fund training to new stove producers to increase in-country stove production capacity; (ii) fund consumer awareness and marketing support to help stove dissemination; and most importantly, (iii) set-up a sustainable financial intermediation system which would enable certified new stove producer to set-up production facilities and operate until they would capitalized themselves and would qualify for regular commercial banking loans. These three objectives were fully met, with the additional merit that the participating financial institution (PAMECAS) agreed to provide a 1:1 matching fund against the IDA resources, which was not originally envisaged at Appraisal.

127, Czech Rep; lines 414–21; Code: Satisfactory

In addition to GEF funds, the State Environmental Fund (SEF) in the Czech Republic provided funds for expansion of district heating system and its reconstruction. Moreover, the City of Kyjov granted additional money from its own budget to carry out complementary activities of this component not covered by the SEF and GEF Grants.

Nevertheless total heat demand has been significantly lower than estimated at appraisal. Bank supervision missions have repeatedly suggested to make special efforts to increase the heat load of the Project through aggressive promotion of the district heat system, to compensate for the reduced heat demand resulting from energy efficiency measures of customers.

940, Malaysia; lines 1147–53; Code: Satisfactory

The BioGen Project has established on April 1, 2005 the first financing scheme for RE projects, including biomass projects. At present, the REBF [Renewable Energy Business Fund] uses funds available from the UNDP/GEF to support biogas from palm oil biomass, which is provided at 4% p. a. under a MOA [memorandum of agreement]

with BPMB [Bank Pembangunan Malaysia Berhad]. The REBF will pave the way for other funding mechanisms that will be administered through the facility and encourage more funds to augment the current level of funding, such as the JBIC [Japan Bank for International Cooperation]. Alternative financing means are also being explored by the BioGen Project, such as CDM [Clean Development Mechanism] credits.

76, India; lines 271–84; Code: Satisfactory

(a) Promote commercialization of renewable resources technologies by strengthening IREDA's capacity to promote and finance entrepreneurial investments in alternate energy. Highly satisfactory. The project has led to substantial capacity enhancement of IREDA in undertaking its dual mandate of technology promotions and financing on several fronts. IREDA is now a mature financing institution specializing in lending for renewable energy and energy efficiency. Its staff has grown from about 20 in 1993 to 134 today, to support a growing and diverse portfolio. Its employee productivity has improved four-fold from Rs. [rupees] 18 million in loans sanctioned per employee in 1992-93, to Rs. 80 million per employee today. It has committed financing for nearly 1,500 projects developed by the private sector and NGOs accounting for 1,720 MW [megawatts]. By FY 2002, IREDA's annual loan disbursement level reached \$134 million compared to less than \$4 million posted in 1993. To increase its outreach and client support, IREDA established a cadre of business development associates in selected business centers of the country and is now piloting five regional representative offices. IREDA has now attracted other international support including that from the Government of Netherlands, ADB [Asian Development Bank], KfW [Kreditanstalt für Wiederaufbau or Reconstruction Credit Institute], World Bank, and GEF in excess of \$350 million.

934, Ukraine; lines 628–32; Code: Weak

Credit lines: The evaluation team is aware that this type of activity is difficult to launch and that ESCO[energy service company] managers do not feel comfortable dealing with such an issue. ESCO-Rivne needs a commercial credit line to implement the EE [energy efficiency] measures. The current line of credit approved by a local commercial bank is not sufficient (about 200,000 \$) to feed the ESCO's financial mechanism. The ESCO has an asset and the shareholders should be able to back a much more significant credit line.

386, India; lines 490:490; Code: Weak

The third success criteria which required participation of the local people in the management including collection of revenue and expenditure in maintaining the Small Hydro Programme. This has not visibly happened and the project has failed in this respect.

370, India; lines 1602–08; Code: Result

Prior to the Project, biomethanation projects were not being financed through conventional financing mechanisms. This was primarily due to high capital costs, technology uncertainties and risks. The project has helped in removing the uncertainties by demonstrating a range of biomethanation technologies. However, the above-mentioned financial support mechanisms will need some more time before establishing and it is suggested that the experience of the technology demonstration under the UNDP-GEF projects should be disseminated more and among a wider section stakeholders, especially including banks and financial institutions.

Legislation and Policies

104, Sri Lanka; lines 1055–66; Code: Satisfactory

During the initial consultations conducted by the World Bank with the Government of Sri Lanka concerning the ESD project, the GOSL [Government of Sri Lanka] agreed to rationalize import duties on photovoltaic modules, removing one of the major barriers to widespread utilization of this technology. Similarly, the establishment of the small power purchase framework by the CEB [Ceylon Electricity Board] was a key factor in facilitating the implementation of small hydro projects. Towards the end of the project, the government also introduced its new Rural Electrification Policy, which aims to promote sustainable market-based provision of rural services. It is also currently in the process of finalizing electricity reform legislation, which is expected to reinforce incentives and institutional structures for the continued development of small renewable energy projects.

540, Thailand; lines 415–18; Code: Weak

There was no policy driver for ensuring a transition to new chillers, from either the ODS [ozone-depleting sub-

stance] or energy efficiency perspective. There was no legislation and/or regulations requiring that chillers be replaced by the non-CFC[chlorofluorocarbon] chillers. Although, DIW [Thai Department of Industrial Works] was able to work with the Excise Department to raise the excise tax on CFC refrigerant, the impacts have been very limited.

Strategic Plan

386, India; lines 480:480; Code: Satisfactory

The national strategy and Master Plan developed under the project formed the basis of the national strategy to achieve the target for capacity addition of 130 MW during the Ninth Plan. Actually an aggregate capacity of 269 MW was achieved during the period 1997-2001. The objective can thus be said to have been achieved successfully.

104, Sri Lanka; lines 747–50; Code: Weak

Clear demarcation of grid and off-grid areas. Accurate demarcation of grid and off-grid areas required for solar market assessment was not possible due to the lack of reliable RE master plans.

377, Sudan; lines 387–88; Code: Weak

This objective calls for the development and implementation of drought contingency measures with the intent to assist villages to both mitigate the adverse effects of drought and enhance the socioeconomic profile of households. The various activities regarding committee formation, training, and developing a drought contingency plan, as indicated in the project document, were carried out. However, unlike other objectives there is insufficient evidence that a shift in villager perception had taken place. Staple storage in the three silos was far below capacity. The early warning system called for in the contingency plan appears to have been followed on an ad hoc basis by the time of the evaluation mission. For these reasons, the evaluation team considers that this objective regarding drought preparedness was not fully achieved.

377, Sudan; lines 274:274; Code: Result

While at first the project needed to provide remuneration in order to enlist the support of these individuals, it is noteworthy that by the time of the evaluation mission, most of them (14 out the 18) were still carrying out their tasks, but on a voluntary basis. This suggests that project ideas have been accepted into local patterns of voluntary labor and organization. The efforts made by the project to institutionalize the planning process at the community level have the potential to have a lasting impact to empower local communities.

Partnerships and Networks

302, Bulgaria; lines 269:269; Code: Satisfactory

EcoEnergy was designed to serve as an informal network of municipal energy managers in cities that are interested to share experience gained in demonstration projects in Gabrovo. The network members participated in numerous activities and trainings, including development of energy consumption database in their facilities and energy monitoring, training in energy planning and finance including Energy Performance Contracting, etc. Municipal energy experts as well as city mayors are actively involved in the network activities. Although the project did not provide grants or subsidies for project implementation to the EcoEnergy network member municipalities (except for demonstration projects), it has attracted more than expected interest and participation of Bulgarian municipalities. Municipalities were interested to gain experience and to implement their energy efficiency projects on their own if their financial situation would allow. In several member-municipalities (typically larger and richer ones) additional energy efficiency projects- typically street-lighting retrofits - have been developed and implemented by the end of the project period using for the first time in Bulgaria innovative forms of financing (for example in municipal bonds in Varna used for street lighting retrofit).

118, Senegal; lines 604–08; Code: Satisfactory

Charcoal Traders, within the PROGEDE management zone (378,000 ha+) there are now legal charcoal supply contracts between village producer groups and several charcoal traders. Within the PROGEDE zone, charcoal traders have gone from being “enemies” of the rural communities to becoming actual commercial partners. It is important to note that this improvement relates only to the project zone and, thus, further work in the rest of the country is still needed.

Equipment/Infrastructure

386, India; lines 1406:1406; Code: Weak

It was observed that the only National Technical Institution that was developed and strengthened under the project was the AHEC [Alternate Hydro Energy Centre] at Roorkee. The other two in Itanagar and Guwahati who were initially involved in the conduct of some training programmes seem to have lost interest, and as a consequence were not able to build their capabilities and infrastructure, both in terms of manpower and equipment, as visualized. This was a major setback in this important actively block and has led to the reduction of the impact in the North Eastern participating states in particular, which are otherwise endowed with a very substantial small hydro potential. Even in the case of the AHEC it was observed that the extent of testing facilities and applied research could not be developed to the extent desired.

104, Sri Lanka; lines 1170–82; Code: Lesson

Local or community participation in, and cash contribution for, the implementation and monitoring of off-grid projects is a crucial element to project success as it ensures ownership on part of the communities involved, promotes improvement of local capabilities, strengthening of community relations, and also aids in cost recovery. In Sri Lankan society, there is the unique concept called “shramadana” which basically means voluntary work in exchange for payment. Under the village hydro component of the ESD project, which involved construction of civil works and erection of distribution lines in the villages, families contributed their time to assist in these tasks. Although the amounts of time expended were assigned equivalent cash amounts and deducted from their actual required payments, their assistance was also brought on by a sense of project ownership and desire to ensure successful implementation. This is proven by other contributions of the villagers e.g. poles, sand, etc for which they asked for nothing in return. In a survey conducted for village hydro customers in the districts of Ratnapura and Kegalle in June and July 2002, 43 percent of the households interviewed contributed between 20 to 39 days to the project, and 33 percent contributed more than 60 days of shramadana.

Research Studies

370, India; lines 605–15; Code: Satisfactory

The following reports and activities were undertaken by Montgomery Watson Harza (MWM) during 2001 to 2005 as a part of the preparation of NMP [national master plan]:

1. Structured database on industrial and municipal waste (accessible through the website www.indiawteplan.com)
2. Assessment of current R&D in waste-to-energy (WTE)
3. Identification and evaluation of WTE technology options
4. Development and prioritization of projects
5. Identification of technology transfer mechanisms
6. Developing investment and funding strategies
7. Study of government infrastructure and suggested changes

940, Malaysia; lines 1117–21; Code: Satisfactory

The BioGen Project provided the template of the power purchase agreement through Component 2 on the pricing study on RE [renewable energy] tariff. Through the recommendations, the relevant issues were addressed and were used in the current amendments. The study also brought about the submission by the PTM [Pusat Tenaga Malaysia]/BioGen Project to the MEWC [Ministry of Energy, Water and Communications] of the proposal for an RE tariff uplift that is being justified to make biomass projects viable.

Developed Database

540, Thailand; lines 687–91; Code: Satisfactory

The project has facilitated learning by requiring that data logger be installed with every new non-CFC chiller to keep track of the energy consumption data which have been used to provide clear evidence of energy saving from the

CFC chiller replacement. With about two year worth of daily data, significant energy savings have been consistently proven. This has erased any doubts people had about the new chiller performance.

97, China; lines 319–22; Code: Satisfactory

The project also supported a major sector effort to popularize and standardize calculation methods for industrial boiler design. The technical manual and companion computer software and database developed under this project made it possible for scientific and accurate engineering calculations to be implemented at any boiler factory, reversing the situation where only a few major manufacturers had this capacity.

302, Bulgaria; lines 295:295; Code: Satisfactory

Worth mentioning for their significant contribution to the success of the project are the targeted efforts for procurement of the necessary database through the creation of the Information System on energy consumption of municipal sites in EcoEnergy member-municipalities. The system contains data about energy and fuel consumption by municipal activities in material expression by sectors, target groups and individual sites. This information has been collected since 1998 and is processed by means of specially developed software of the database, which has been made available to all municipal energy efficiency offices. Currently, this system contains data about several thousand municipal sites and offers an excellent opportunity for comparative analyses and above all for local energy planning and management. The information from all municipalities, covered by the system, is collected and aggregated by EnEffect and is accessible through Internet to everybody, who is interested in or needs a useful tool of this kind.

292, Russia; lines 605:605; Code: Weak

The buildings and flats parameters database is developed (98 buildings). Due to lack of agreement in the City Administration the billing system was not used in reality, and data is based on simulations.

Standards

97, China; lines 313–20; Code: Satisfactory

In addition to the specific technology transfers, the technical assistance activities of the project broadened the impact through assistance in revision and formulation of national and sector standards for boiler and boiler house designs and environmental controls, and by strengthening professional requirements for boiler operators. This further resulted in indirect energy efficiency improvements, by enhancing quality requirements across the industry, and helping to lay a foundation for improved boiler operation. Under GEF support, one national and four sector standards were formulated and promulgated, and two national and two sector standards were revised. The project also supported a major sector effort to popularize and standardize calculation methods for industrial boiler design.

104, Sri Lanka; lines 1068–76; Code: Satisfactory

The project supported the preparation of a standardized small power purchase agreement (SPPA) and a standardized, formula-based way of determining the least cost tariff. The SPPA is a standardized legally binding arrangement between the small power project developer and the national utility. The SPPA replaces the cumbersome process of negotiating every small power project on an individual basis. In many cases the negotiation process required substantial input from specialists and lawyers often increasing the bureaucracy and overhead to a level at which the project became unviable. The overall cost of preparing this set of regulations was less than US\$200,000. Within a time span of 5 years it facilitated more than 30 MW in private power projects.

Created Institution

370, India; lines 1467–79; Code: Satisfactory

The project has initiated a supportive policy environment for waste-to-energy. The Ministry of Non-Conventional Energy Sources (MNES) launched a National Programme on Energy Recovery from Urban, Municipal and Industrial Wastes during the year 1995. This programme aims at promotion, development, demonstration, dissemination and adoption of environment friendly conversion technologies for both liquid and solid wastes, thereby reducing the quantity of wastes and the emission of greenhouse gases in the environment, besides producing renewable energy. The programme offers an attractive package of financial incentives to the industries, urban local bodies and project promoters to encourage their active participation. The project also supported preparation of a National Master Plan for Waste-to-Energy, under which the potential of waste to energy projects in various industries and from city waste

was estimated for a period up to 2017. This involved study of waste generation in over 300 cities and 9 major industry sectors that generate biodegradable waste. The NMP also facilitated policy formulation, institutional networking and outreach.

302, Bulgaria; lines 260:260; Code: Satisfactory

In 39 municipalities municipal energy efficiency offices have been established equipped with computers with access to Internet, and local energy managers have been trained in municipal energy planning and energy efficiency project development and finance. Specific software has been developed and utilized in municipalities for monitoring of energy consumption in their individual facilities, and nation-wide benchmarking has been introduced.

302, Bulgaria; lines 293:293; Code: Satisfactory

In the framework of EcoEnergy a series of conferences, seminars and workshops were organised, in which a total of more than 1000 people had participated directly...The annual conferences, which are usually attended by visitors from abroad, serve as excellent forums for in-depth debates on key issues, such as: the reform in the power sector, policies and measures for mitigation of GHG [greenhouse gas] emissions, major barriers to implementation of energy efficiency projects in Bulgarian municipalities, access to information and public participation in decision-making on climate change issues. On the basis of these debates EcoEnergy, in coordination with the National Association of Municipalities in the Republic of Bulgaria, formulates a wide range of specific proposals for upgrading of the regulatory framework, some of which have already been taken into account in the new laws on energy and energy efficiency, passed in the beginning of 2004. At the 2003 Annual Conference, a decision was made to register EcoEnergy formally as a non-profit legal entity and as of this year this is already a fact.

940, Malaysia; lines 1163–67; Code: Satisfactory

The Biomass One-Stop Centre has been established through the BioGen Project under the auspices of the PTM. It has started to provide services, including consultancy for biomass energy utilization projects, technical advisory, financing facilitation and project identification. The Center has also assisted in the feasibility studies for the treatment of municipal solid wastes.

104, Sri Lanka; lines 1078–90; Code: Satisfactory

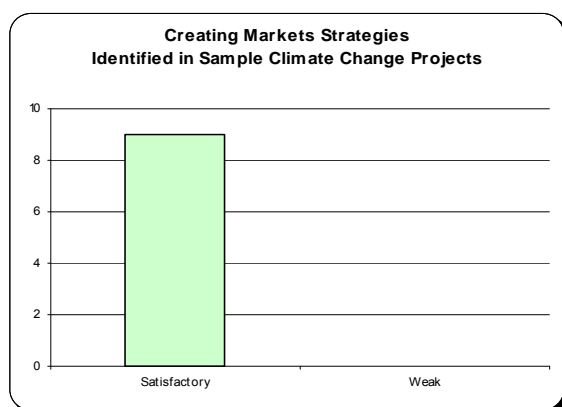
Business associations improve impact, and allow for constituency building for business environment improvement. In total, five associations were established: Small power producers association, Solar industry association, Village hydro association, Village hydro consumers association and Biomass association. The business associations have been effective in several ways; They took lead role in discussing the Standardized Small Power Purchase Agreements and Tariffs with the national utility and Ministry when uncertainties arose over transparency in calculation and selection of input data; They took lead in requesting CEB rural electrification expansion plans, engaging Provincial Government's in off-grid electrification concepts, and further harmonizing the Government's policies. They have also been involved in further improvement of the industry by requiring quality standards of members, addressing technical and financing issues and resolving quality in service delivery issues. In this organized fashion, these private electricity providers have become a constituency for private participation in the power sector.

376, Côte d'Ivoire & Senegal; lines 276:276; Code: Weak

On the other hand, activity 123 (Establishment and operational support to CCEEs [*comités consultatifs d'exploitation énergétique* or energy operating committees]) was not appropriately worked out. In Côte d'Ivoire, it started with the installation of 25 EECC [energy exploitation consultative committees], but it is not quite sure that they are real committees. They are more probably energy responsible individuals of the buildings. Of course, such a conception of the committees, even if it represents a progress, has not the weight of real committees where the responsibilities are shared and the motivations defined. Among these EECC, 15 federated in the form of a network since February 2000. This network includes now 35 members. They complained about the lack of support from the project and they were very dubious about the process perpetuation after the end of the project. In Senegal, this activity was not carried out at all.

Create Markets

Figure G.12: Creating Markets Strategies Identified in Sample Climate Change Projects



97, China; lines 291–311; Code: Satisfactory

The outcome of the project is rated satisfactory. The impact of the project on the Chinese industrial boiler sector has been broad and is considered substantial. The technology transfer supported by the GEF was by far the largest national investment in combustion efficiency improvements in the Chinese industrial boiler sector over the project period. All nine beneficiary boiler manufacturers successfully completed the transfer of international technology planned at project appraisal, and built prototypes (verification models) which met the predetermined and ambitious energy efficiency and environmental performance criteria. Eight went on to commercial production of GEF-supported boiler models and have achieved initial sales success. The GEF-financed technology transfers resulted in practical improvements in coal-fired industrial boiler designs which typically yield increases in fuel efficiency of some 5 percentage points—a large improvement for this industry.

97, China; lines 406–412; Code: Satisfactory

Designed to meet the emerging demand for relatively large industrial boilers in district heating and manufacturing, this component tried to cover three important market segments of the large-sized industrial boilers, including a large-capacity hot water boiler design for district heating, a co-generation steam boiler design suitable for coal of variable quality as well as for biomass, and a CFBC [circulating fluidized bed combustion] boiler design that was new in China. All three technology transfers were successfully completed, met predetermined energy-efficiency and environmental performance criteria, and turned into marketable products.

104, Sri Lanka; lines 372–398; Code: Satisfactory

(a) Mini-Hydro Development: This industry was virtually non-existent at the beginning of the project and only about 1 MW of privately owned mini-hydro capacity was available in 1997. As part of the ESD project, 31 MW were installed through 15 sub-projects as against a target of implementing 21 MW of grid-connected mini-hydro projects. About six serious private-sector mini-hydro developers now in operation are planning more sub-projects. The costs of development have also come down, enabling additional project development. As against appraisal estimates of US\$ 1030/kW [kilowatt] of installed capacity, average costs of US\$ 963.5/kW were achieved.

(b) Solar Home Systems: The Solar industry was at a nascent stage when the project became effective, with 2-3 small operations (Solar Power and Light, Sarvodaya, RESCO [Renewable Energy Service Company]) selling roughly 20-30 systems/month in 1998. The ESD project has catalyzed the market for SHS and the average annual sales industry sales were about 850 systems/month in 2002, achieved by 4 companies (Shell Solar, Access Solar, SELCO and Alpha Thermal). Cumulatively, compared to a revised target of 15,000 SHS installations, 20,953 systems were installed under the ESD project. The initial target was 30,000, but that was revised at mid-term due to the slow market development in the initial stages of the Project. The actual average costs are comparable to the appraisal esti-

mates of about US\$ 11/Wp [watt peak] (total installed system costs). However, market prices have declined slightly to about US\$ 10 /Wp today.

(c) Village Hydro Systems: The ESD Project has supported the installation of 350 kW of village hydro systems serving 1,732 beneficiary households. This result exceeded the original ESD target of developing 250 kW in capacity, but was lower than the 2,000 rural households anticipated at appraisal. Although the capacity target was exceeded, lower number of households benefited due to possible underestimate of household demand. The appraisal estimate was 100 W per household but in practice the demand is found to be to about 200 W/household. As against a targeted output of implementing 20 systems, a total of 35 systems were implemented during the course of the project. A further 49 projects are at various stages of completion and have been transferred to the follow-on Renewable Energy for Rural Economic Development Project (RERED). These projects were approved given the importance of maintaining the momentum of village hydro market take off. The completed project costs show an average capital cost of \$2,060/kW. This is comparable to the economic capital cost estimated at appraisal of \$2,023/kW.

76, India; lines 285–301; Code: Satisfactory

Commercialization has been fully achieved in the small hydro sector with installed capacity rising to over 1,423 MW over the past 10 years with the vast majority of new installations being owned and operated by private sector companies for sale of power to the grid, captive generation or third party sale. India is now the tenth largest user of small hydro power. Similarly, commercialization has advanced rapidly in the wind power sector with over 90 per cent of the installed capacity of 1,507 MW implemented by the private sector, compared to 40 MW of state-owned facilities in 1992. IREDA's strong catalytic influence is evident as other financiers began to support wind farm investments after observing IREDA's experiences. India is now the fifth largest wind power generating nation. Finally, commercial market development has advanced in solar photovoltaic, as evidenced by: (i) the large private sector-led manufacturing base; (ii) a competitive market place where product costs are now among the lowest in the world; (iii) established retail sales and service networks; and (iv) emerging participation of financial intermediaries.

76, India; lines 303–13; Code: Satisfactory

(b) Create marketing and financing mechanisms for the sale and delivery of alternate energy systems based on cost-recovery principles. Satisfactory. IREDA's role in financing renewable energy investments has helped reduce their perceived risks, thus encouraging other lenders to support the sector. Now renewable energy project financing is available from a larger number of national and local banks, non-bank financial institutions, cooperatives, foundations/trusts as well as government-owned financial institutions, including ICICI [Industrial Credit and Investment Corporation of India], IDBI [Industrial Development Bank of India], IDFC [Infrastructure Development and Finance Company], IFCI [Industrial Finance Corporation of India], HUDCO [Housing and Urban Development Corporation], PFC [Power Finance Corporation], Sundaram Finance, Tata Finance, Syndicate Bank, and State Bank of Hyderabad, compared to nil in 1993. IREDA has financed about 80 percent of private sector small hydro projects, 30 percent of wind projects and the major part of solar PV schemes outside of the more commercial PV applications in state-run sectors of telecommunications, railway, oil and gas, and defense. Successful marketing and service delivery business models that IREDA has helped launch and nurture include renewable energy service companies; retail companies selling renewable energy products and services to consumers; private power developers selling to captive consumers, third parties and to SEBs [state electricity boards]; consumer financing offered through rural banks, saving and trading cooperatives, etc. The project has helped identify innovative approaches to addressing rural credit risks faced by photovoltaic energy entrepreneurs thus opening avenues for PV and other energy supply to penetrate the rural market. Participation of cooperatives or micro/rural financing entities has been a key to making the systems accessible to rural/poor consumers.

540, Thailand; lines 349:349; Code: Results

a) Although it is difficult to assess the contribution the project had towards the countries overarching goal of replacing the majority of CFC-based chillers by about 2010, the project clearly help demonstrate as the benefits of doing so. One could notice that the size of the CFC chiller replacement market in Thailand has been expanding from virtually non-existence before the project to approximately 100 units per year (amounting for 25% of the total new chiller installations) in 2005. Until 2010, this rate of CFC chiller replacement would cover up to two-third of the remaining 700-800 CFC chillers currently in operation in the country.

540, Thailand; lines 504–08; Code: Result

It has been demonstrated that the non-CFC chiller replacement market which was virtually nonexistent before the project has been created by replacing 17 CFC chillers. This market now is flourishing as the private enterprises have been replacing their old CFC chillers with the new non-CFC and energy efficient chillers without any subsidies from the government. As reported by one supplier, annually, more than 50 non-CFC chillers are being installed by private fund replacing the old CFC chillers.

104, Sri Lanka; lines 632–39; Code: Result

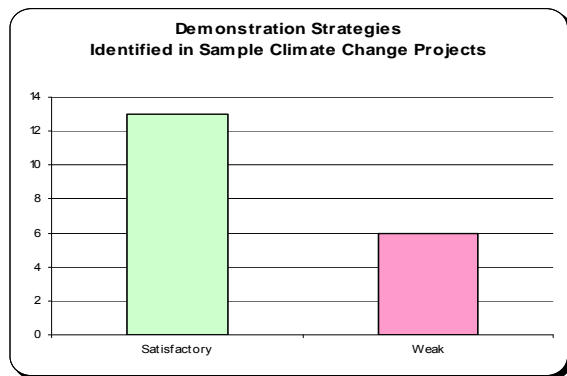
Solar companies such as Shell, Access, and Selco, have entered the market and helped trigger the take-off in sales and general improvement in after-sales service. They have brought international standards into play and much of their professional management is provided by Sri Lankan staff. Components such as light bulbs are now manufactured locally and supply and service chains established. A total of about 80 service and distribution centers are now in place in Sri Lanka and a total of around 500 technicians have been trained and employed. The Solar industry provides direct and indirect employment to about 1500 people. An active Solar Industry Association (SIA) has come into being and is leading advocacy on industry concerns and renewable energy issues.

76, India; lines 327–34; Code: Result

These encouraged the private sector to invest in renewable energy infrastructure and service delivery systems, expand modern energy services to under-served rural communities, and support local and global environmental improvement. Over 3,400 MW of wind, small hydro, biomass, solar photovoltaic and other renewable energy power systems were in operation by December 2001, compared to about 100 MW in 1992, with the vast majority of these investments developed by the private sector/NGOs. IREDA has played a direct and catalytic role in successfully commercializing renewable energy by financing about half of these capacity additions with loans to private sector or NGOs.

Demonstration

Figure G.13 Demonstration Strategies Identified in Sample Climate Change Projects



540, Thailand; lines 191–96; Code: Objective

The project was also consistent with Global Environment Facility (GEF) operational program (OP) #5 which aims to remove barriers to energy efficiency and energy conservation efforts. The project was designed as a Learning and Innovation Loan (LIL), and an overall evaluation on the project was to be made three years after project effectiveness; the Government would apply the lessons learned to implement a larger program targeting replacement of an additional 420 CFC chillers. Together, these 444 chillers would account for about 30 % of the total number of Chillers operating in Thailand.

292, Russia; lines 380:380; Code: Objective

Study and demonstration of the technical, economic and environmental expediency and consequences of the

autonomous heat sources installation in three residential buildings.

127, Czech Rep; lines 258–69; Code: Objective

This objective was to be achieved by means of increasing the efficiency and reliability of heat supply to the city of Kyjov (Kyjov), and of the heat and power supply to the Vetropack Moravia Glas s.a. (VMG) Factory, through introduction of gas-fired combined-cycle heat and power (CHP) production and through intensified use of waste process heat generated at VMG. Associated project objectives were to (a) demonstrate gas-fired combined-cycle cogeneration in the Czech Republic where this technology was not yet widely used; (b) stimulate technological and institutional changes that would promote energy efficiency through developing CHP systems for joint industrial and municipal purposes; (c) achieve local environmental benefits by reducing the proportion of pollution-intensive fuels (such as lignite) in the fuel mix used for heat and power supply; and (d) demonstrate the possibility of cooperative efforts between the Czech Ministry of Environment (MOE) and the private sector in enhancing the environmental benefits from such a project.

386, India; lines 116:116; Code: Objective

To develop a package of commercially viable and environmentally sound technologies, on the basis of installation and commissioning of twenty demonstration units at various selected places, for generation and use of small hydel power and to develop appropriate models for ownership, management and maintenance of the small hydel projects through people centered and participatory approach.

292, Russia; lines 605:605; Code: Satisfactory

The legislative and institutional model of the heat and hot water consumption-based metering and billing prototype was created. The model incorporates legislative requirements, institutional scheme, calculation target groups and payment mechanism, energy metering schemes on the building level and proportional distribution of bills per tenant on the basis of the heat distribution models, as well as rules for accounting-calculation procedures on the flat level.

302, Bulgaria; 275:275; Code: Satisfactory

The GEF/UNDP project has been designed as a catalyst of energy efficiency activities in Bulgaria. The project itself provided a major impulse in initiating energy efficiency activities and developing necessary expertise in Bulgaria. There have been developed and implemented 40 energy efficiency projects in participating municipalities and training in energy planning, project development and financing have been performed. Several of the EcoEnergy member municipalities have decided to go further than originally planned and have implemented additional energy efficiency projects. An example is the demonstration zone in Gabrovo, where the municipality has decided to implement additional energy efficiency retrofit project in its town hall building.

302, Bulgaria; lines 330–33; Code: Satisfactory

The demonstration zone in Gabrovo plays a key role in the project, performing the function of a national test laboratory on mitigation of GHG emissions through energy efficiency measures, in which, thanks to the target-oriented and coordinated efforts, the following has been achieved:

- Different approaches and practices in programming, design, institutional and human capacity building, as well as in implementation of concrete decisions on energy efficiency improvement in municipal sites have been tested, upgraded and successfully applied;
- Knowledge and experience have been accumulated along the entire chain of activities, related to the implementation of concrete energy efficiency measures;

A concrete range of recommendations and requirements concerning the national policy and regulatory framework on environmental protection and efficient energy use has been systemised.

934, Ukraine; lines 1063–68; Code: Satisfactory

Energy Performance Contract (highly satisfactory⁷, HS): Model energy performance contracts (EPC) have already been developed and mechanisms have been tested through pilot measures. Four different types of EPCs have been developed in order to manage different EE projects or activities (i) Agreement on Energy Saving Services, (ii) Agreement on Energy Management, (iii) Agreement on Energy Effective Contracts, (iv) Agreement on Community

Credit. The evaluator is HS with these model EPCs.

123, Latvia; lines 215–18; Code: Satisfactory

The Project has achieved all its stated objectives. The Project has resulted in a state-of-the-art municipal solid waste management facility, and has already demonstrated how an obsolete and environmentally problematic site can be converted into an environmentally sound facility providing services at an affordable cost for inhabitants of Riga.

377, Sudan; lines 331–35; Code: Satisfactory

3.7 Trials with fodder conservation technologies conducted, and successful results demonstrated to local people.

- Trials of various fodder conservation techniques centered on several activities. These included hay -making during the rainy season (during which there was an adequate supply of forage available), silage-making to preserve forage green with high nutritive value, and treatment of crop residues and by products. The quality of forage after treatment were analyzed with the assistance of the Agricultural Research Corporation in El Obeid. Results were disseminated during training seminars led by project staff to selected individuals, who in turn spread the message to the rest of the community. There appeared to be reasonably good arrangements and overall coordination between project staff and the testing facility in El Obeid.

- Several fodder technologies deserve particular mention because of their successful integration in local village economies. First, the production of Guar, leguminous-rich protein forage, to assist in sheep fattening and milking herds was introduced with surprising success as a fodder conservation technology. Its introduction was not anticipated in the original project design but project staff aggressively explored its potential since the Sudanese Guar Company had agreed to provide villagers with guar seeds. A total of 19,032 kantars of Guar valued at nearly 4 million Sudanese pounds were produced during the second quarter of 2000.

- Second, several villages during 1999 were able to produce a total of 1,800 molasses cubes as a result of project training activities. The cost of the inputs was paid through the revolving fund of the respective villages. The molasses cubes were then sold to herders at a minimal price increase. During the last year of the project, a total of 2,400 molasses/urea cubes were produced.

- Third, the collection of mesquite pods for fattening sheep and milking herds was also practiced with some success together with the use of kitchen wastes for poultry production. Major obstacles to continued success were the weak purchases of dry hay, which is funded by the revolving fund, when there is plenty of forage available in the natural ranges. However, this need not be considered a liability since harvested bales were intended to be used when natural forage supplies are scarce (i.e., as in drought years). The challenge for the project staff concerned storage of the dry hay since it might present a fire hazard if kept in an open area.

377, Sudan; lines 336–38; Code: Satisfactory

3.8 Alternative energy trials and extension.

- This outputs focused on the introduction of improved cookstoves among the project villages. Prior to this intervention, women typically used either a square metal cookstove or a 3-stone open stove. A training program was conducted on the production of the improved clay stoves that included fabrication demonstrations and instruction on proper use. There is a very high adoption rate among women. At several villages, group interviews among village women confirmed that virtually all households were using them. The range at which firewood consumption was reduced relative to the inefficient metal stoves varied between 33% and 50%.

- The carbon-monitoring program attempted to verify the direct sequestration levels attained by this output by calculating the equivalent amount of firewood that is not combusted due to improved cookstove efficiency. Based on household penetration (97%), efficiency improvement (i.e., 50%), and the average daily consumption (i.e., 16.2 kg [kilograms]), the total amount of carbon left unharvested and therefore uncombusted was equal to 1,468 tC [tons of carbon]. When averaged over the entire land area controlled by the 5 Village Councils, the average “carbon savings density” from the dissemination and use of improved cookstoves is estimated as 0.06 tC/ha.

292, Russia; lines 710:710; Code: Weak

The project was unable to implement the proposed billing system in reality. This was caused by opposition to perceptions that the change in billing systems would adversely effect poorer sectors of the population (who have the

worst quality housing). These negative impacts to some part of the citizens of the city could not receive approval of the Duma representatives. Clearly there is a need to develop more comprehensive policy which would mean subsidies to poorer households, or (better), some mechanism to implement thermal upgrading in social housing, possibly using some earmarked revenues from the heating tariff to a fund for this purpose.

386, India; lines 1382:1382; Code: Weak

The testing of these devices, and the demonstration and public dissemination of these appliances was undertaken by Consulting Engineering Services who in turn involved local NGOs in the areas for advocacy purposes. However the feedback from local users was reported to be far from encouraging. Our team's discussions with representatives of M/s. Tide Technocrats as well as other concerned officials indicated that while water heating devices were well received by the local population the cost of these appliances was considered unaffordable by the local population. It was also revealed that devices such as space heaters and cookers did not evince much interest among local users. Discussions also indicated that the delayed funding and reimbursement of the NGOs for the advocacy services rendered, led to their progressive withdrawal and nonparticipation, and as a result of this no firm orders for these devices materialized. With this lack of firm orders the manufacturers of these devices could not sustain their efforts and soon lost interest and motivation for the further production and supply of these devices.

540, Thailand; lines 690–91; Code: Result

This has erased any doubts people had about the new chiller performance.

292, Russia; lines 634:634; Code: Result

Installation and launch of the demonstration autonomous boilers in 3 buildings took place under objective 2. Installation and launch of demonstration autonomous boilers in three buildings, establishment of a private company and transfer of boilers into its confiding management, ensures strong ownership of knowledge gained from experience of use of technical, economic and institutional expediency for capital investments into autonomous heating sources in residential and public buildings.

292, Russia; lines 840:840; Code: Result

Creation of the billing model and its wide discussion made citizens, authorities and municipal bodies more knowledgeable of energy and saving options. The Project in the city Vladimir demonstrated the chain of consequent activities (in technical, economic, legal, institutional and political spheres), that are required for the creation of economic incentives, and what is the key prerequisite for activities aimed at investments into energy efficiency and for gradual reduction of existing barriers.

302, Bulgaria; lines 284:284; Code: Result

The results of the implemented project have significantly contributed to the defined development objective of “overcoming barriers to increased energy efficiency and to the associated reductions in GHG emissions”. The major impacts are not only GHG emission reduction actually achieved by the implementation of the demonstration projects and projects developed and implemented in association with main demonstration activities. The strong capacity building component has significantly helped to train municipal energy managers in developing energy efficiency projects, which will accelerate energy efficiency project implementation once commercial financing will become more available. The first commercially financed projects have been implemented already by the end of the project period.

370, India; lines 1249–59; Code: Result

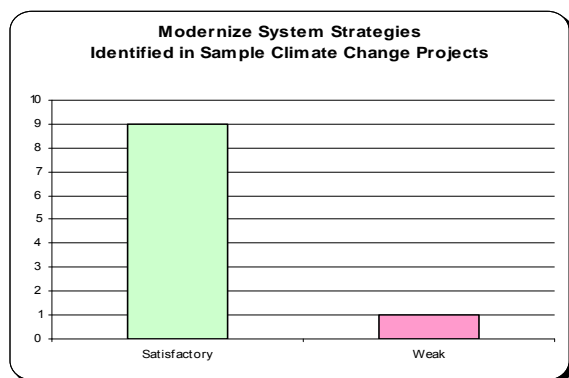
One objective of the demonstration subprojects was to identify certain bottlenecks in the technology options, processes and equipment and to propose suggestions for improvements in the process, making the operation easier or for cost reduction by employing cheaper technology. Examples of such bottlenecks are given in Text Box 1 and in Annex B.2 for the projects visited by the evaluation team. In this sense, the project contributed to absorption, modification and standardization of the cost effective technologies. One main bottleneck was formed by the limited number of technologies suitable to identified substrates worldwide. The other self-imposed constraint was the non-repetition of the same technology in similar types of substrate. These limitations have led in some cases to acceptance of technologically more risky options. Finally, due to the high content of imported equipment in some of the subprojects, the capital and operation and maintenance (O&M) cost have gone up.

386, India; lines 1312:1312; Code: Result)

It may also be mentioned here that the team’s interaction with the developers has revealed that other interested potential developers were regularly evincing interest in the functioning of these demonstration sub projects. We can thus conclude that the sub projects have been to some extent successful in attracting the interest of potential developers not only in the participating States but from other regions of the country as well.

Modernize Systems

Figure G.14: Modernize System Strategies Identified in Sample Climate Change Projects



97, China; lines 203–05; Code: Objective

(i) Upgrading of existing Chinese boiler models (\$53.1 million, GEF contribution of \$16.5 million) through the introduction from abroad of advanced combustion systems and auxiliary equipment, especially the application of simple automatic controls.

97, China Boilers; lines 206–208; Code: Objective

(ii) Adoption of new high efficiency boiler models (\$44.1 million, GEF contribution of \$13.7 million) through the introduction of modern manufacturing techniques and boiler designs suitable for burning Chinese coals.

123, Latvia; lines 230–33; Code: Satisfactory

Remediation of existing disposal site: The dump, which has been in use since 1965, has been completely remediated, covered by soil, and revegetated. Leachate from that part of the landfill, which earlier drained into the groundwater, is now collected and treated in accordance with both Latvian and international regulations.

123, Latvia; lines 240–47; Code: Satisfactory

Establishment of a sorting line for separation of recyclable materials and arranging for storage of separated material as well as hazardous waste: This activity has been subcontracted to a company linked to “Green Point” organization, which operates on the site with mobile sorting equipment. This company has contracted all the remaining scavengers, who now have employee status and are paid on a monthly basis, working several days a week on shift system. In parallel, the major waste hauling company promotes waste separation at source - more than 5000 containers for various types of sorted waste (e.g. glass, plastic, organic waste, paper, metals) are placed throughout Riga. Such a practice significantly contributes to delivery of “cleaner” waste and to extended lifetime of the energy cells.

123, Latvia; lines 254–63; Code: Satisfactory

Collection of landfill gas: Landfill gas with a methane content of about 50% or more is collected from both the old waste pile and the newly established energy cells. The collection of gas from the energy cells is gradually increasing, and the amount is on par with the forecast made at appraisal. There are 166 gas wells on the old waste pile, of which only approximately 120 function as expected. Therefore, the gas collection from the old waste pile is below expectation due to a number of problems with installed gas wells as well as collection pipes. Getlini Eko’s own staff, after training under the SIDA financed technical assistance, have started to restore malfunctioning gas wells and will

during 2005 establish new wells to replace those which are not repairable. As a result of research in the framework of the technical assistance, 29 wells have been revitalized, while 16-20 wells will be closed and replaced by new ones, equipment procured under the loan.

127, Czech Rep; lines 397–407; Code: Satisfactory

The major component of the project, the CHP plant, including auxiliary equipment, was completed in April 1999 after a year of intensive building and installation activities. After completion of the trial testing of the CHP Plant, the heat and power facility was put into operation in October 1999. The CHP Plant utilizes waste heat from the VMG glass Factory and additional new gas-firing facilities (gas turbines), as well as a steam turbine, to produce heat and electricity. The gas is supplied by the South Moravian Gas Company (JMP). The CHP Plant supplies heat and electricity to VMG, sells its electricity surplus to the regional grid of the South Moravian Power Company (JME), and sells heat to the district heating system of the adjacent City of Kyjov. JMP, JME, and VMG, were main shareholders in the project until a foreign shareholder was selected after an international call for tenders. Subsequently, VMG sold its shares to the foreign shareholder (Isar-Ampere Werke, now EON of Germany). The city of Kyjov also holds a small share in the company.

127, Czech Rep; lines 409–14; Code: Satisfactory

The objective of modernization and expansion of the district heating network in the City of Kyjov and linkage with the CHP Plant was also achieved. For the purposes of project implementation the City of Kyjov converted its district heating department into a fully owned self-standing company Teplo Kyjov. Fifteen old boiler houses (two more than originally planned) were decommissioned, reconstructed and replaced with new heat exchanger sub-stations.

376, Côte d’Ivoire & Senegal; lines 306:306; Code: Weak

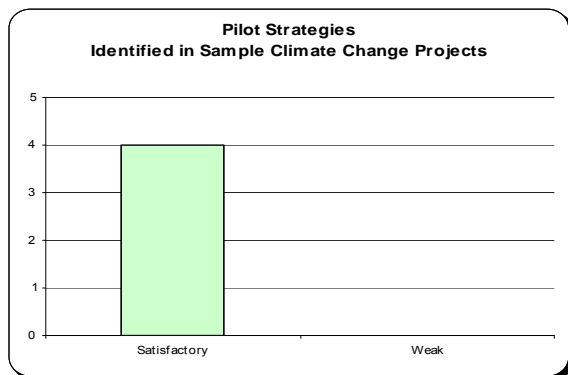
A third operation will be carried out in Senegal (Assemblée Nationale Parliament). The retrofitting operations started with great delays so that there was neither room left for setting novel financing schemes, nor monitoring and evaluation activities or media coverage. The result was that their impact as demonstrative operations were curtailed.

123, Latvia; lines 222–25; Code: Result

Other important results of the Project include arresting ongoing ground and surface water contamination, treatment of collected leachate to a level, which in some cases is even higher than the background values for surrounding surface water, and the large reduction in emission of greenhouse gases. Over the lifetime of the Project, calculated at 25 years, the estimated reduction of Carbon Dioxide (CO) equivalent is about 5.5 million tons. At appraisal this figure was estimated to be 5.85 million tons.

Pilot

Figure G.15: Pilot Strategies Identified in Sample Climate Change Projects



540, Thailand; lines 198–202; Code: Objective

This demonstration effect was expected to lead to even more widespread use of energy efficient chillers in the chiller market, leading to a significant reduction in emissions of greenhouse gases (GHGs) and use of ODS. A successful pilot would demonstrate the economic viability and feasibility of the non-CFC chiller technology, with the expectation that the government would follow this with a program that would cover a much larger set of chiller users.

104, Sri Lanka; lines 270–80; Code: Objective

Pilot Grid-Connected Wind Farm Component. This component intended to pilot the feasibility of small-scale wind power generation projects in Sri Lanka from a technical and commercial standpoint. The Ceylon Electricity Board (CEB) implemented a 3-MW pilot wind farm project, based on previous studies that indicated a significant wind potential. The pilot was designed to obtain technical know-how and long-run economic potential of wind power in Sri Lanka and to assess the scope for private sector participation. The key design choice of the pilot wind farm component was selection of CEB as the implementing agency. This choice was reasonable because: (i) CEB was the only entity positioned to manage the risk of new technologies such as Wind (It is useful to note that previous in-country experience relating to implementation of SHS, village hydro and small hydro projects allowed for a financial intermediation design for those technologies), and (ii) Pricing for a private supplier of wind energy would have been difficult given the lack of prior benchmarks.

540, Thailand; lines 351–56; Code: Satisfactory

The project clearly demonstrated that it is possible to successfully replace CFC chillers with non-CFC chiller systems with remarkable outcome as follows. This success has demonstrated significant lessons for the replication efforts.

- The reported average annual energy saving rate was 902,970 kWhr [kilowatt-hours]/year, which is quite superior to the designed saving of 874,800 kWhr/year.
- The average reported cost of replacement at USD 139,714 was much lower than the original design average of USD 207,290. Assuming the target size of CFC chillers at 500 refrigerant tons (RT), this suggests an actual cost per RT which is 34 percent lower than the designed cost per RT (USD 310 per RT compared to USD 415).
- The overall estimated savings of THB [baht] 32.3 million per year (approx. USD 830,000) also suggests that the entire loan amount that was disbursed can be repaid in less than 3 years, making this a very profitable investment.

104, Sri Lanka; lines 400–402; Code: Satisfactory

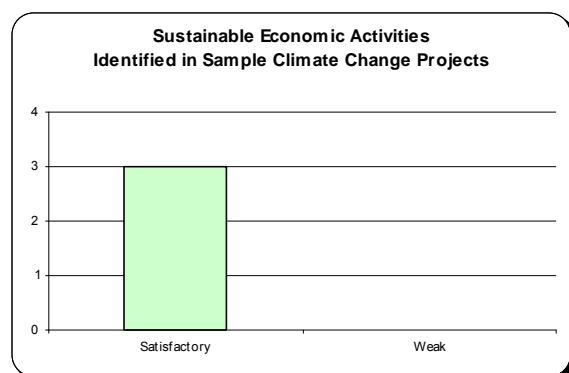
Pilot Wind Farm: The pilot grid-connected wind farm component was completed in February 1999 and certified in May 2000 (see website <http://www.ceb.lk> for detailed information). Despite a commissioning delay of 9 months, CEB has logged 31 months of operating experience by the time of project closing. The plant consists of five 46-meter towers with 600 kW turbines designed to supply a total annual capacity of about 4.5 GWh [gigawatt-hours]. Total economic project cost amounted to US\$1,175/kW, which is acceptable for a first grid-connected wind farm operation in a country and compares to the expected estimates at appraisal. The CEB continues to monitor and record operational data from the wind farm and learn from this experience the issues that must be addressed for integrating nondispatchable and intermittent renewable power. The successful implementation and operation of the wind farm has catalyzed significant interest among private developers looking to develop private power projects.

97, China; lines 449–52; Code: Weak

One small effort--the pilot cities program designed to showcasing GEF-supported boilers--proved ineffective as the original participating cities of Shanghai and Jinan initiated policies to restrict the use of coal-fired boilers and withdrew from participation.

Sustainable Economic Activity

Figure G.16: Sustainable Economic Activities Identified in Sample Climate Change Projects



118, Senegal; lines 236–38; Code: Objective

Providing technical assistance and limited financial support for the economic diversification of existing urban charcoal traders (“exploitants forestiers”).

377, Sudan; lines 211–12; Code: Satisfactory

Community development activities: A fundamental assumption of the project concept was that in order to achieve long-term carbon sequestration benefits, it would be necessary to implement in parallel activities designed to meet near-term development needs of the local communities. Such activities were considered essential in helping to diversify the local production system and thereby contribute to easing pressures to extend cultivation on rain fed, marginal lands, where severe land degradation was taking place.

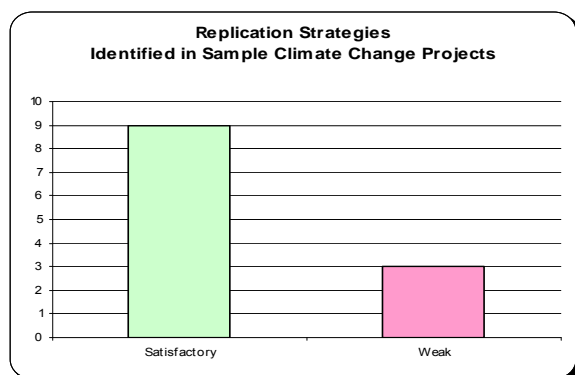
A total of 39 activities were implemented (or nearly 40% of all project activities) that focused on small-scale irrigated vegetable gardens, construction/management of water wells, sheep for goat substitution program, revolving funds to finance local income generating activities, central pharmacy for human/animal medicines, and a grain storage and credit program for drought preparedness. While many of these activities were implemented late in the project (i.e., during 1998 and 1999), this was not considered to be a liability to the overall efficacy of the effort. The identification of these activities in the project document typically did not indicate the implementation sequence since its purpose was to highlight the logical framework. Nevertheless, earlier implementation would have allowed for greater monitoring and performance review.

377, Sudan; lines 383:383; Code: Result

Notably, the additional 600 hectares was improved on the basis of voluntary communal decisions that were made after being collectively persuaded of the benefits of such action. In addition, individual households set aside about 500 hectares of private cultivated land for conversion to rangelands. This represented an enhancement in ecological capacity that had not been foreseen in the objective as originally conceived. It also coincided well with the overall aim of the project to reduce the extent to which marginal lands are cultivated for agricultural purposes.

Replication

Figure G.17: Replication Strategies Identified in Sample Climate Change Projects



934, Ukraine; lines 172–75; Code: Objective

The project planned by GEF-UNDP at the beginning of year 2000 included two main components: (i) establishment of a municipal ESCO and, (ii) demonstration of the energy saving program. The project was broken down in two Phases: 1) implementation of EE demonstration program and 2) implementation of a citywide saving program in Rivne and its replication in other cities.

97, China; lines 661–72; Code: Success

Arrangements have been made to promote wider replication and dissemination of GEF-supported boiler designs and technical innovations, as well as to continue to support project beneficiaries in their marketing and product enhancement efforts after the implementation completion. As part of the technical assistance to the PMO, a business plan for a technical service/consulting company was prepared before project completion. The company, named BGEF, which includes the project’s original beneficiaries among its shareholders, should help facilitate further dissemination of technologies and expand the impact of the project. The replication and dissemination process is likely to take place in the absence of formal licensing procedures as many of the new boiler design features are not complicated and can be studied in the open and replicated without resorting to special instruction and training. In addition, except for the CFBC technology, all of the original rights to GEF-supported technologies either have expired or will expire before the end of 2004.

302, Bulgaria; lines 304:304; Code: Satisfactory

The successful results from the demonstration projects in Gabrovo, which were made known to a large number of municipalities in Bulgaria thanks to the targeted information and training activities of EcoEnergy, played the role of a catalyst for a large number of similar projects in Network member-municipalities. The municipalities of Stara Zagora, Varna and Gorna Oriahovitza implemented projects for energy efficiency retrofit of hospital buildings. The municipalities of Rousse, Stara Zagora, Varna, Pernik, Kazanlak, Pazardjik and Belogradchik implemented projects for energy efficiency retrofit of school buildings. The municipalities of Stara Zagora, Rousse, Sliven, Pazardjik, Pernik, Omurtag, Svishtov and Blagoevgrad implemented projects for energy efficiency reconstruction of street lighting systems. In addition to the above listed municipalities, a number of other municipalities, which are not yet members of EcoEnergy, implemented or are implementing projects for retrofit of hospitals, educational establishments and street lighting systems.

370, India; lines 2453–65; Code: Satisfactory

The technical replication potential expected up to 2017, under the strategic action plan arising from the National Master Plan sponsored by the Indian UNDP/GEF programme, is anticipated to be in the region of 2,600 MW installed capacity. Regarding the interest from other developers, some 17 subprojects with an aggregate MNES [Ministry of Non-Conventional Energy Sources] supported capacity of more than 45 MW have been installed with

MNES support in India (besides the 13 subprojects of the UNDP-GEF project) and two projects of capacity over 10 MW are currently under installation.

104, Sri Lanka; 1037–42; Code: Satisfactory

Output focused co-financing grants provide incentives for private companies to enter new markets and deliver pre-defined products. The project provided grants to cover some of the incremental cost for the introduction of environmentally friendly technologies. These grants were output focused and only disbursed after the pre-defined results were achieved. This approach was replicated by one of the provincial governments (Uva province) when it became clear that its budget for rural electrification (through grid) could support at least three times more households through an off-grid program.

377, Sudan; lines 423:423; Code: Satisfactory

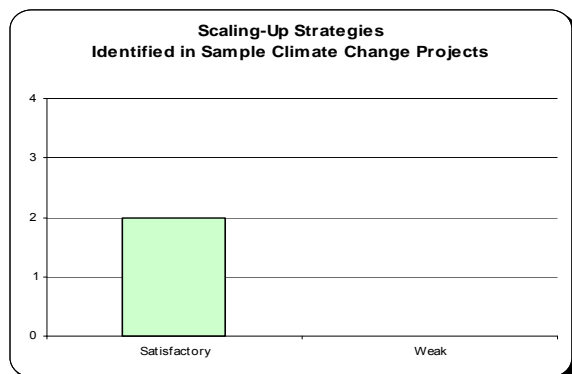
Outside the project area, there is evidence of positive leakage as several villages that have not been involved in the project have, by virtue of accepting the premises of the intervention through contact with project villagers, begun to implement some of the project strategies.

292, Russia; lines 504:504; Code: Weak

From a design-for-replication point of view the virtually 100% grant provided by the GEF for project activities is certainly questionable. Equipment purchased was certainly state-of-the-art, but appears to have been the most expensive that could be afforded, rather than the “most appropriate for local needs.” This is evident in the choice of metering and controls installed (the project used electronic meters and thermostatic valves, both of which are fairly luxury items and less common than simple evaporative meters and manual valves even in Western Europe), and the three imported building-level boilers.

Scale-up

Figure G.18: Scale-up Strategies Identified in Sample Climate Change Projects



540, Thailand; lines 496–502; Code: Satisfactory

The Government is committed to phasing out of ODS, and it is well understood that there will not be ready availability of CFCs beyond 2009. The financial attractiveness of the energy efficiency gains, as well as the highly economical costs of chillers at levels lower than anticipated, provides the ideal environment and incentive for replicating the benefits of the project. Additionally, the Ministry of Energy is providing financial incentives in terms of low interest loans totaling USD 50 million to finance energy efficiency activities including replacing old CFC chillers with new energy efficient non-CFC chillers.

370, India; lines 1490–96; Code: Satisfactory

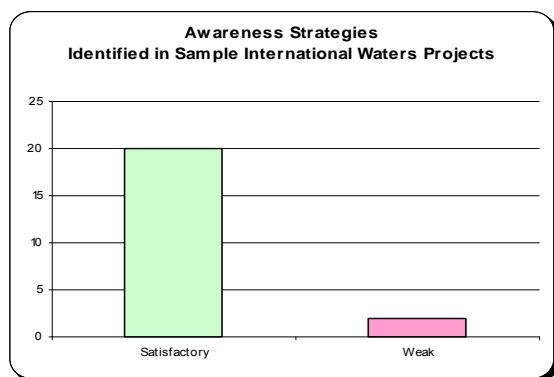
The Ministry of Environment and Forest has notified the Municipal Solid Waste (MSW) management and Handling

Rules 2000, according to which every municipal authority shall be responsible for implementation of any infrastructure development for collection, storage, segregation, transportation, processing and disposal of MSW and have to set up waste processing and disposal facilities. MNES has also formulated schemes for the Accelerated Programme on Energy Recovery from Urban and Industrial Wastes for the year 2005-06 to provide incentives including capital subsidy.

G.6 International Waters Quotations by Strategy

Awareness

Figure G.19: Awareness Strategies Identified in International Waters Projects



460, Regional Tumen; Code: Objective

Most of the design treats awareness raising as a separate component that is run in parallel with the production of the SAP, but that is not really linked to the SAP. The one exception is under the “End of Project Situation” discussion of the awareness raising component where it is stated, “...the SAP will have been prepared using a Participatory Approach and by mobilizing grass root participation”. This presents a clear linkage with the SAP, but this linkage is not developed in the Outputs and Activities of Implementation Objective 2. Most of the design treats awareness raising as an inherently “Good Thing”, without presenting strong justification, focus or linkage with the SAP. The Small Grants activity is part of the same Implementation Objective. The only justification for small grants is as support to awareness raising and participation.

One must question the inclusion of awareness raising and small grants in a short, two-year project for the following reasons:

- Awareness raising on environmental issues is much more effective when it is tied with clear messages to the target audience about what they can do about it. The whole purpose of the SAP is to strategically identify concrete actions that can be taken to address priority environmental problems. But these clear messages on what can be done only come near the end of the two-year project.
- The project was under an incredibly tight schedule to complete the TDA [transboundary diagnostic analysis] and SAP in the two-year period. Developing a true “grass roots” level involvement in TDA and SAP preparation, in the original sense of the term, would have been highly desirable, but very unrealistic in the two-year time frame.
- The inclusion of a small grants component is also questionable, both as a tool for effective awareness raising, and as an administratively complex task to undertake in such a short period. A limited number of grants could have been used strategically as a tool to test new, innovative ways of addressing certain problems, but this is not the justification developed in the design.

73, Regional Aral Sea; lines 270–73; Code: Objective

Key features included developing a public awareness campaign in the five states, development of a communications strategy on water saving, and creation of advisory committees.

396, East Asian Seas; lines 420:420; Code: Satisfactory

Another aspect of institutionalization is the ratification of International Conventions relating to marine pollution in the East Asian Seas region. Good progress has been made; the number of ratifications by the 11 countries in 1997 stands at 64, almost double the number in 1994 (Table 1). One reason for this substantial progress is a new awareness of the benefits of the global instruments as well as the increased political will and public interest in the protection of the marine environment. The Programme has contributed to this increased awareness through the holding of workshops, the setting up of an information database and the organization of a regional network of interested legal practitioners.

59, Regional OECS; lines 1787–93; Code: Satisfactory

Public awareness and education are essential in building support for major changes. Public awareness not only may help to ease difficult transitions, such as the move of government salaried employees and functions from the ministries to the SWMEs [solid waste management entities], but it can also lead to a higher level of achievement of outcome objectives. In this project, the public's efforts to change old habits of disposing of their garbage on the roadside helped to increase the impact of the project. This was only achieved when community groups took it upon themselves to organize clean-up campaigns. Public awareness campaigns are relatively inexpensive methods for inducing significant change in community behavior.

610, Removal of Barriers; lines 653–55; Code: Satisfactory

The evaluation team has considered the objective 2 achievements as **highly satisfactory**, recognising that with respect to awareness raising, viewed as the greatest barrier to global action on the threat of ballast-borne invasive marine species, the project's outputs were of exceptionally high quality. From the wealth of information generated by the project, it can be surmised that this barrier has been lowered as a result of GloBallast, especially in the pilot countries. Also, due to the publicity raised through the project, including the actions of the pilot countries, as well as through IMO and UNDP, interested persons in other countries around the world have access to considerably more information on threats and responses. It is important to note that no effort was made within GloBallast to quantify changing perceptions, or to gauge the extent that the GloBallast "marketing" campaign had an effect. Consideration should be given in future IW [international waters] projects with significant public awareness raising components to utilise commonplace market survey techniques in order to gauge the effectiveness of awareness raising efforts.

460, Regional Tumen; lines 532:532; Code: Weak

The public awareness component the EIC [education, information, and communication] has been successful, specifically targeting schools and, through mass media, the general public. Innovative approaches were supported under the SGP, such as the Tumen River Green Pilgrimage which brought together NGOs and communities in different countries. However, there is little evidence that the AWARE component (AWARE; Awareness Raising and Small Grants Program); targeted or reached the decision makers at political or administrative levels through their campaigns, and these are the people whose support will be required to approve and move the SAP on to implementation.

73, Regional Aral Sea; lines 925–28; Code: Result

The greatly heightened awareness of the risks of dam failure generated by the project make it likely that states will find the modest funds needed to operate and maintain the new equipment. This component has already led to additional investments in dam safety and improved operation of dams in all CACs [Central Asian countries]. (Lake Sa-rez, Chardara, Kayrakum).

610, Removal of Barriers; lines 694:694; Code: Result

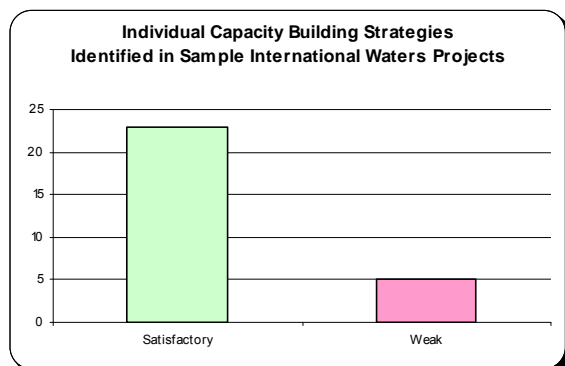
There has been growing interest from shipping and marine technology companies in the ballast water discharge issues, driven by the GloBallast effort, and especially the new BW Convention. It is noteworthy that Vela International Marine, (Saudi Aramco), Wallenius lines and BP [British Petroleum]-Shipping have agreed to provide financial support for the development of a BBC documentary on the subject. Private sector support is building - especially in the development of new technologies to deal with the technical hurdles of monitoring and BW treatment.

610, Removal of Barriers; lines 695–96; Code: Result

GloBallast shows evidence of effectiveness in mainstreaming its objectives into the wider community—especially driving changes in the way that shipping and port managers are considering their environmental responsibilities. An issue that in the past was considered solely a question of ship safety has now been recognised as having significant environmental consequences.

Individual Capacity Building

Figure G.20: Individual Capacity Building Strategies Identified in Sample International Waters Projects



394, Yemen; lines 458:458; Code: Objective

Training in environmental information collection and interpretation, through on-the-job training of national specialists and trainees, training workshops and tropical coastal management, data collection and analysis, computer application, instrumentation, diving and cartography.

88, LVEMP; lines 479–86; Code: Satisfactory

- Excellent progress has been made on the primary objective of introducing co-management into the Lake Victoria fishing communities. The Fisheries Act has been reviewed and a new Fisheries Act has been presented to Parliament. This includes legitimising BMUs [beach management units] and a Fish Levy Trust.
- A fisheries licensing database to help monitor and regulate fishing effort has been developed.
- An extensive monitoring, control and surveillance programme has been put into place and numerous gears have been destroyed, undersized fish confiscated, persons arrested and vessels impounded.
- An extensive public awareness campaign involving numerous radio programmes, seminars (both with BMUs and fishing communities) and workshops has raised important issues and helped reduce illegal fishing activities.
- Fishing communities, in collaboration with Fisheries Department and TAFIRI [Tanzania Fisheries Research Institute] staff, have identified 141 new fish breeding areas and 53 landing sites for gazettement.
- Progress on harmonising legislation within the region is slow. But a joint task force report is ready for presentation and discussion by the Regional Steering Committee.

(Rating: Highly satisfactory)

88, LVEMP Tanzania; lines 677–86; Code: Satisfactory

Overall objective: To establish sustainable long-term capacity for maintaining control of water hyacinth and other invasive weeds in the Lake Victoria Basin.

The main objective was clearly achieved, within the limits imposed by pollution problems on the lake, resolution of which were outside the remit of the component. The residual hotspots of water hyacinth infestation, largely related to these nutrient-polluted areas have however been clearly identified during Phase 1, and sensible plans have been put forward to deal with the problem in a long-term sustainable manner during Phase 2. The Review's conclusions under the three "elements" or sub-components are as follows:

- Biological control: seven of the eight objectives have been achieved with Highly Satisfactory or Satisfactory ratings; the remaining objective (reducing weed inputs from the Kagera River to the Lake) was only Marginally Satisfactory.
- Manual control: work assessed under the second sub-component was impressive, with a Highly Satisfactory rating. (Perhaps the highly-organised social structure of Tanzania contributed to this, via the village committee system - and the interfacing work with communities, mainly done by LANESO [Lake Nyanza Environmental and Sanitation Organization].)
- Supervision, dissemination, legislation and public awareness: For this component, with its very clear and concrete main objective, it could be argued that success in meeting these subsidiary objectives has a relatively low priority, but in Tanzania activities in this sub-component were pursued with commitment and energy and the ratings are all either Satisfactory or Highly Satisfactory.

610, Removal of Barriers; lines 659–68; Code: Satisfactory

TRAIN -X methodology used to develop the training package was tested in each of the pilot countries and after each training session improvements were made to the package to the extent where it is now ready for wider distribution and use. All the objectives of the course were attained and the responses of the participants to the opinion questionnaire were extremely positive. For some groups of participants the course was an "eye-opener", for others an avenue to confirm and expand existing knowledge. Several pilot country participants noted that the training programme greatly benefits from using experienced trainers with hands on shipping and ballast water management experience.

394, Yemen; lines 467–69; Code: Weak

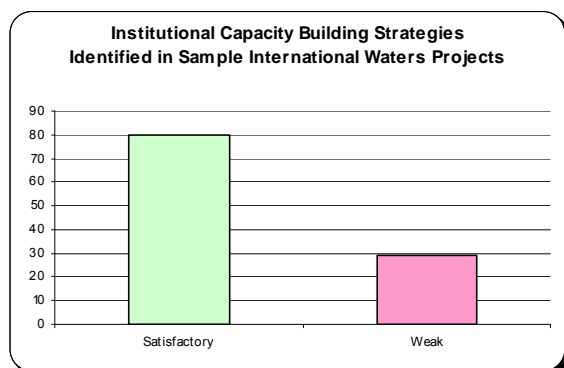
This component was not achieved. Training was not given in EIA [environmental impact assessment] or the design and implementation of a monitoring programme. The same comments apply as made above in regard to the lack of clearly defined training needs.

Instruction in the use of equipment was limited to field survey gear (quadrates, transects etc), underwater cameras and SCUBA gear. No instruction was given in the use of laboratory equipment, or in the maintenance of either field or laboratory equipment. The absence of training in EIA and the conduct of a continuous environmental monitoring programme are matters for concern, since this severely undermines the longer-term impact that the Project might have had in building national capacity in these key areas.

As in the case of output 2.1 above, no specific evaluation/technical reports or training manuals as aids for future training were produced and the same comments apply.

Institutional Capacity Building

Figure G.21: Institutional Capacity Building Strategies Identified in Sample International Waters Projects



Monitoring and Enforcement

72, Jordan; lines 334–45; Code: Satisfactory

Transboundary Environmental Management, including Monitoring with a regional Focus.

Regular marine water quality monitoring by the Marine Science Station (MSS) is ongoing. All equipment purchased under the project is functioning and monthly reports of monitoring data are submitted to ASEZA. The 2001 Annual Synthesis Report, which addressed comments made by the Bank, has been finalized. The Industrial Pollution prevention activity has been successfully completed and provides an exemplary model for the rest of Jordan with its zero discharge strategy. The ASEZA law outlines how audits will be carried out and, defines a pollution charge system and fining regulations for violations. The law is being implemented and fines for violations have been issued. The Geographic Information Systems (GIS) activity has been completed beyond expectations. The GIS Division, formally assigned to the Environment Department, is now supporting all the Commissions of ASEZA and is heavily involved in the planning process, e.g. land use and infrastructure development.

394, Yemen; lines 449–52; Code: Weak

This output was not achieved. The most important sources and types of marine and coastal impacts were successfully identified, but primarily as a result of the literature review undertaken under Output 1.1 rather than through the Project's surveys.

A specific, detailed and cost-effective monitoring programme has not been established because no such programme was designed. The failure of the national implementing agency, MFW [Ministry of Fisheries Wealth], to provide adequate funding and institutional support for field monitoring activities has meant that even ad hoc monitoring activities have not been possible after the departure of the international consultants. A brief outline design for a coral reef monitoring programme is given in the Final Book. However, this focuses solely on monitoring dead and live coral cover at two specific reefs. It does not contain sufficient information on the logistical and technical aspects to be of practical value. The outline monitoring plan does not include other key habitats (i.e. mangroves, sea-grass beds).

The reports reviewed by the Evaluation Team did not clearly address how national institutions might build on the Project to instigate effective monitoring of marine impacts from various potential threats. The GIS provides an oil pollution simulator, which in theory could assist in modelling the behaviour of oil spills under varying conditions. A report produced by Danish consultants under the Project provides recommendations for the national Port Authorities to improve their oil terminal management capacity and also recommends action on oily waste, garbage and chemical wastes. However, no oil spill contingency plan has been drafted.

A technical evaluation report is called for in the Project Document. Again, no stand-alone technical document other than the Progress Reports and Final Book were produced.

Financial

396, East Asian Seas; lines 380–82; Code: Satisfactory

For the ICM [integrated coastal management] demonstration projects and the Malacca Demonstration Project, efforts have been made through a variety of mechanisms for financing environmental improvement projects through the identification of opportunities for investment, public sector-private sector partnerships, and economic instruments for use by local government units. A good deal of emphasis has been placed on the participation of the private sector in ensuring the financial sustainability of marine management projects. We support the Mid-Term Evaluation Report comments on administrative mechanisms for sustainable financing based on the principle of user-pays. In general, we found it difficult to make substantive recommendations here as most of these activities are not yet complete.

610, Removal of Barriers; lines 681–87; Code: Satisfactory

While the international donor conference did not occur, other significant self-financing activities have taken place, which bode well for future ballast water management activities in the 6 pilot countries and at IMO...On behalf of the whole programme, South Africa has coordinated a consultant review of self-financing mechanisms for BW management already in place around the world. The final draft of the report was presented at the 6th GPTF [Sixth Global Project Task Force]. This should allow countries to assess options and select those that may be suitable for implementation in their contexts. It is clear that continued financial support from IMO will be provided. IMO has established and allocated funds for a Secretariat to handle the ratification process for the BW Convention and to establish necessary operational guidelines. IMO is committed to continuing to serve as the lead organisation for solutions to the problem of ship-carried invasive species.

341, Regional Black Sea; lines 1248–58; Code: Weak

The Environmental Fund feasibility study mission financed by the project in 1998 visited Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine, and met with representative of several key ministries including those of finance. The mission found that:

1. The countries prefer to restrict the use of national financial resources to co-finance investments on their own territories.
2. The countries agree to link the Environmental Fund with the Istanbul Commission.
3. The countries lack resources that may be committed to the Environmental Fund.

Thus, the existing national funds are limited and committed, and the private banks are not involved in environment financing. Although there was “a political support for the establishment of a BSEF among the national institutions visited...,” there was no financial commitment to the Fund. According to the mission, “developing and implementation of new economic instruments in order to finance the fund ...will be a very lengthy process and face some major political, legal and institutional obstacles.” Seeing lack of commitment by the Black Sea countries to tackle the Black Sea deterioration, the mission stated that a Black Sea Environmental Fund is neither needed nor feasible.

Standards

341, Regional Black Sea; lines 703–18; Code: Satisfactory

The project contributed to development of a basin wide approach for Black Sea protection. In 1997, the Black Sea and Danube Commissions established a joint technical working group. Since then, technicians and representatives of the concerned countries participated in ad-hoc experts meetings organized by both Commissions. They prepared national reports about pollutants in territorial waters, and discharges from land based sources. The reports were synthesized into a regional (Danube and Black Sea) report. On that basis, the Commissions prepared a Draft Memorandum of Understanding and later agreed on a final draft.

The drafting process was at the origin of more comprehensive and focused cooperation between the Black Sea and Danube Commissions that resulted this year in preparation of a common Black Sea Basin Programme that will facilitate implementation of nutrient reduction programme by seventeen countries in the region. It is expected that the

GEF will support the incremental costs of the project.

Another achievements of the Black Sea and Danube Basin countries' collaboration were:

- development of a common methodologies for pollution and environment assessment
- agreements on harmonized procedures for port state control in the Black Sea ports
- preparation of a list of components and parameters to be monitored
- common approach to environmental quality objectives and standards in the Black Sea basin
- agreement on Regional Black Sea Oil Spill Contingency Plan

One of the promising results of the Committees' initiative was the World Bank recent proposal of establishing Strategic Partnership for Nutrient Reduction project concerning the Danube River basin and the Black Sea littoral countries (\$70 million project, financed from the GEF).

610, Removal of Barriers; lines 659–68; Code: Satisfactory

The R&D Symposiums were particularly helpful to the development of the draft BW Convention. The first R&D Symposium provided the opportunity for the world's top marine biologists and other scientists to come together for the first time to address the issue, particularly the complex issue of ballast water standards. The outcome of these symposiums greatly assisted MEPC [IMO's Marine Environment Protection Committee] in determining standards.

Legislation and Policies

460, Regional Tumen; lines 1414–15; Code: Objective

The second output under IO 4 is "Harmonised technical and legal conditions of Environmental Impact Assessment (EIA) developed across the region. The implied logic is that harmonised EIA conditions and the establishment of EISs [environmental impact statements] will provide the capacity to implement the SAP. Again, the logic is flawed. Harmonising conditions is not only impractical (one would have to change all the relevant legislation in each of the countries), but it has little to do with the capacities to control water pollution, to manage a park or to develop sustainable use systems.

533, Regional Western Indian Ocean; lines 238–45; Code: Objective

This component assisted the four island nations harmonize their national legislative framework with the provisions of the CLC92 [Civil Liability Convention of 1992], FUND92 [International Fund for Compensation of Oil Pollution Damage of 1992], and OPRC90 [International Convention on Oil Pollution Preparedness, Response, and Cooperation]. Specifically, the component supported (a) a regional workshop on the ratification and implementation of the conventions to highlight the experience of countries that have already ratified and are implementing them; (b) technical assistance to assist Comoros and Madagascar to ratify the international conventions; and (c) technical assistance to assist all four countries to draft national laws and regulations in conformity with the conventions. This component also financed the enrolment of legal officers in the master's program at the International Maritime Organization (IMO) International Maritime Law Institute (IMLI).

396, East Asian Seas; lines 372–74; Code: Satisfactory

The project promotes awareness of the value of marine-related international conventions among nations. But more importantly, it seeks to develop national capacity to ratify and implement these conventions through database, marine legislation training, and opportunities for public sector-private sector partnerships. As a direct service to national governments, the project provides guidelines on national legislation that would facilitate the implementation of international conventions. We felt that this work was important and should be satisfactorily completed as planned with specific products such as the Legal Information database and handbook for the network of legal advisors.

610, Removal of Barriers; lines 659–68; Code: Satisfactory

The Legislation and Regulation review was of significant aid to the pilot countries in building legal expertise and capacity and in helping them prepare for ratifying and implementing the new Ballast Water Convention. The Legislative Review also served to generate research and broader comparisons regarding legal and administrative systems and the first international workshop on legal aspects of ballast water management and control held in Malmo, Swe-

den provided a unique opportunity for cross-fertilization among the six Pilot Countries and for further dissemination of legal aspects related to transfer of invasive species. One country believed the Legislation and Regulation Review has helped reduce the time it will take them to ratify by one year, as they now have a template of legislation, which is designed around that country's legislative requirements. In hindsight, it would have been useful to update the legislative review at the conclusion of the project, to track the extent of legislative change already as a result of GloBal last activities.

59, Regional OECS; lines 1075–91; Code: Satisfactory

National component 3: Rationalization of the existing institutional framework for ship and land based solid waste management in all six countries. While the project provided only very limited funding for this component (through the regional component), it proved to be one of the most successful components. Activities under this component included: (i) the creation of SWMEs, based on a regional model, for all six countries; (ii) the preparation of draft laws for submission to parliament on solid waste management and ship-generated waste management; and (iii) the development of cost recovery mechanisms to ensure that operational costs were covered for SWMEs. All six countries successfully established a Solid Waste Management Authority or Corporation, with nearly all of the SWMEs becoming fully staffed and operational (except Dominica and Nevis). With technical assistance from the regional component (see regional component 1 below), all six countries prepared draft legislation on solid waste management, with three parliaments actually passing legislation (Dominica, Grenada, St. Vincent and the Grenadines). A Ship-Generated Waste Management Act has been passed in St. Vincent and the Grenadines, and legislation has been drafted in the others (except St. Lucia). Cost recovery mechanisms have also helped all but two SWMEs (Dominica and Nevis) to cover operational costs, reducing the level of reliance on Government subventions.

59, Regional OECS; lines 1287–94; Code: Weak

Delayed passage of legislation through Parliament: While nearly every SWME produced draft legislation for solid waste and ship-generated waste management, half of the countries' Parliaments have yet to pass Solid Waste Acts, and only one country (St. Vincent and the Grenadines) has passed a Ship-Generated Waste Act. These delays in the passage of legislation have prevented the SWMEs moving forward in the drafting of supporting regulations and in preparing integrated solid waste management plans. The different starting points of the countries with regard to their existing maritime legislation, and the existence of two models for such legislation (International Maritime Organization (IMO) model and one prepared under the project) delayed the preparation of ship-waste legislation.

Strategic Plan

341, Regional Black Sea; lines 584–90; Code: Objective

(1) Consolidation of the Policy Strategy to Implement the Black Sea Strategic Action Plan; (2) Preparing the Technical Implementation of the Black Sea Strategic Action Plan; (3) Public Involvement in the Implementation of the Black Sea Strategic Action Plan; (4) Developing the financing of the Black Sea Strategic Action Plan.

73, Regional Aral Sea; lines 251–62; Code: Objective

The component supported development of regional and national water management strategies. These included development of scenarios of water demand and allocation at the regional level to help enable political decision-makers to reach agreements for improved water, salt and broader environmental management. At the national level, it supported development of water and salinity policies, strategies and action plans to provide guidance for investments in the sector. Expected outputs included: an updated Strategic Action Program for the next 5 to 10 years, an improved knowledge base on water and salinity management, reduction in withdrawals of water for irrigation by 15%, participation by water users in strategy development, and a gradual build-up of consensus and capability for reaching interstate agreements.

341, Regional Black Sea; lines 1145–49; Code: Satisfactory

The local authorities' role was enhanced to a great extent through the process of drafting and negotiating the national strategic action plans. During the development of NSAPs [national strategic action plans], the coastal authorities exposed their problems related to the marine environment, their planned activities and investments; they attended the workshops and contributed to drafting the NSAPs.

Most of the investments identified and included in the NSAPs were connected with the coastal localities. The local

authorities started to implement the investment projects based on their own financial sources or taking loans from IFIs [international financial institutions]. A good example of local involvement stimulated by NSAP is the main wastewater treatment plant in Constanta that was upgraded with the financial support from EBRD [European Bank for Reconstruction and Development].

460, Regional Tumen; lines 495–96; Code: Satisfactory

The process of moving from the general, preliminary recommendations in the TDA to a set of prioritised actions in the SAP has only just started. The Lead Agency responsible for developing the SAP is the Ministry of Environment of the Republic of Korea. The countries also have established National SAP Task Forces that will play a major role in driving the policy process. National SAP Task Forces include political decision makers at national and provincial levels (environment, foreign affairs, finance, and economic development portfolios) technical experts from the TDA phase, NGO and business representatives. They also include the national TRADP [Tumen River Area Development Program] coordinators to ensure mainstreaming of SAP recommendations with parallel TRADP driven efforts.

72, Jordan; lines 356–68; Code: Satisfactory

Emergency Assessment of Oil Pollution Hazards: oil spill risk minimization and waste oil recovery. This component has been successfully completed and is rated as satisfactory. The Memorandum of Understanding between the Ports Authority and ASEZA, defining responsibilities for oil spill response and legal measures as well as outlining preventive measures for chemical oil spill prevention, has been signed. The Port Authority has upgraded all its facilities into environmental compliance under the new ASEZA laws, a notable achievement. Solid waste for instance is the Port Authority's responsibility and is subject to environmental compliance. The oil spill contingency plan has been updated. The Jordan Petroleum Refinery, together with ASEZA, has completed a system for waste oil recovery from trucks and small garages to prevent the sale of this noxious product to fuel ovens. ASEZA and Ports Authority staff have been trained in state-of-the-art oil spill prevention operations and marine vessel pollution prevention procedures. The training program was designed to help establish in depth knowledge about oil spill preparedness and response, pollution prevention, emergency cases, wastes treatment and handling from ships in legal, technical and organization contexts.

396, East Asian Seas; Code: Satisfactory

The Programme has developed an approach focused on the practical aspects of convention implementation in addition to providing information on the requirements for ratification. The approach is based on the fact that the decision to ratify a convention depends on the technical capability of implementation of the convention in question, making the two processes very much interrelated. The Programme therefore worked with national administrations to formulate plans for the initial steps to be made before progressing towards improved implementation of conventions. The benefit to countries for taking these initial steps cannot be overestimated, for too many countries the prospect of implementing the technical aspects of pollution conventions is an intimidating hurdle. This is very well illustrated by a review of the requirements for the Philippines to implement the International Convention for the Prevention of Pollution from Ships, or MARPOL [short for marine pollution]. There were many requirements which the country was not prepared to meet. However, ratification is well on the way as a result of the Programme's intervention.

610, Removal of Barriers; lines 659–68; Code: Satisfactory

The PIP stresses that the development and implementation of the actual ballast water management measures that are necessary to minimise the risk of introduced marine species constitutes the “back bone” of the programme at each pilot site. It is these measures that will produce the practical benefits of the programme. The Evaluation Team, reviewed the National Strategic Plans, and was impressed with the extent of Country adoption of ballast water management measures. One important area for future focus will be the development of port specific plans that define the ballast water management measures to be adopted and implemented at each port. Port visits and discussions with port officials lead us to conclude that the baseline surveys and risk assessments were perceived to be useful, one-off efforts, and there is a much better appreciation now of ballast water issues, however the assessments have not led substantial port management changes, other than the continuing collection of ballast reporting forms. An interesting and notable exception to this port follow through may come from South Africa, with the linkage of ballast water management to its ISO [International Organization for Standards] 14000 accreditation programme for each port. This linkage to the setting of ISO environmental standards for port management deserves further consideration.

59, Regional OECS; lines 1217–26; Code: Weak

Technical assistance in the preparation of sewerage master plans (Unsatisfactory).

The PMU [project management unit] completed a pre-feasibility study early on in project implementation, but only Grenada was able to prepare a country-specific master plan based on the regional study. This shortcoming was largely due to: (i) costs of undertaking country-specific master plans, which were seriously underestimated (Grenada's cost over US\$600,000 alone whereas the estimate at the appraisal stage had been US\$400,000); (ii) significant project delays required the Bank and participant countries to refocus efforts on core solid waste activities; (iii) the Bank had not planned to provide further financing in the sector, as other donors were already actively involved in wastewater projects; and (iv) most SWMEs did not have water sanitation as part of their mandate, thus making them less enthusiastic about completing this sub-component.

533, Regional Western Indian Ocean; lines 865–69; Code: Lesson

Pairing weaker countries with stronger ones in a regional project can help to quickly build the capacity of the weaker ones. Mauritius and Seychelles, with much greater capacity, shared their knowledge and experience with Comoros and Madagascar. Being part of a regional plan provided a strong incentive for Comoros and Madagascar to build capacity, even during periods of political uncertainty.

341, Regional Black Sea; lines 628:628; Code: Result

Formulation of national plans reinforced political will and commitment among technical ministries, institutions, NGOs, and individuals to improve ecological situation of Black Sea.

Partnerships and Networks

533, Regional Western Indian Ocean; lines 546–47; Code: Satisfactory

The project has played an important role in creating partnerships with the oil and shipping industries to prepare for and respond to an oil spill emergency.

59, Regional OECS; lines 1239–41; Code: Satisfactory/Result

The PMU and the OECS-ESDU [Environment and Sustainable Development Unit] provided critical regional leadership by helping to coordinate and move forward both national and regional-level project activities. Project workshops, roundtables and annual meetings all facilitated the development of a common approach to solid waste management through discussion and information sharing amongst the SWMEs. The OECS-NRMU [Natural Resources Management Unit] also helped to channel independent knowledge sharing among SWMEs, by putting interested staff from one SWME in touch with staff from another country to share experiences or best practices. Finally, the backstopping regional procurement work taken on by both the PMU and the OECS-ESDU helped countries meet procurement deadlines, which was key to completing critical project activities. As evidence of the success of the regional model, the participating countries at a final symposium agreed to the need for maintaining some regional coordination mechanism to continue information sharing.

Equipment/Infrastructure

533, Regional Western Indian Ocean; lines 250–52; Code: Objective

This component financed the: (a) assessment of baseline situation to determine equipment needs; (b) specification of equipment needed; (c) procurement of equipment, and (d) training in equipment operation and maintenance.

533, Regional Western Indian Ocean; lines 450–61; Code: Satisfactory

Oil spill response equipment (US\$1.1 million revised to US\$1.7 million) Outputs of this component are satisfactory. All significant oil handling facilities in the four beneficiary countries have been equipped with the recommended set of Tier 1 oil spill equipment. Three sets of equipment have been procured for Comoros, eight sets have been procured for Madagascar, and two sets have been procured for Mauritius, including one for Rodrigues. Supplying additional equipment has ensured that the response to an oil spill is as short as possible. Properly storing equipment was a problem for some facilities shortly after acquiring the equipment, but had been largely solved by the time the project closed. Staff of the entities that would be responsible for addressing a spill have been trained in the use of the equipment through mock exercises. Not all the participants in the training, however, were the appropriate people, because countries sometimes nominated high-level officials rather than front-line staff for training. The entities re-

sponsible for maintaining the equipment have created maintenance registers.

59, Regional OECS; lines 1056–73; Code: Weak

Project design flaws in the Ship-Generated Waste Management components prevented the procurement of the MARPOL bins, which were referred to in project documents but were not in existence at the time of implementation. To compensate, many countries have made available alternative bins procured under the Solid Waste Management Project for both large and small craft harbors. All countries, with the exception of St. Lucia and St. Vincent and the Grenadines, have also procured barges under the project for ship-to-dock handling of waste. However, their costs were well over the appraisal estimate, resulting in delays while necessary adjustments were negotiated. As documented in 4.1, the barges have so far been largely under-utilized for a variety of reasons, including: (i) the lower volume of waste from cruise vessels than originally anticipated; (ii) unwillingness of some Port Authority to sign the MOUs [memoranda of understanding]; and (iii) higher than expected operating costs causing shipping agents to opt for private haulers. Because of this under-utilization, the barges are not bringing in enough revenue to cover their operating costs, let alone their maintenance. Some Port Authority representatives (as in Nevis) say they were reluctant to sign MOUs and take over barge operation for fear that they would be stuck with the costs of maintaining the barge without opportunities for recovering them.

Research Studies

460, Regional Tumen; lines 386–88; Code: Satisfactory

The lead institutions then started the real task of writing the sector reports. The underlying concept was that these would be based on compiling and analysing existing data. Again a considerable effort was made to stick to the timetable, and incredibly all the reports were in their final form within a couple of weeks of their deadline and were available for the TDA Workshop that was subsequently held in Vladivostok at the end of August 2001.

While the technical quality of the reports is variable, and there have been complaints among the scientists that the data quality is poor and inadequate, the information presented in almost all cases provides a very sound basis for taking management decisions. The purpose of the TDA is to evaluate the root causes of key issues and these key issues are brought out in the sectoral reports.

88, LVEMP Tanzania; lines 545–52; Code: Weak

The specific objectives of the aquaculture sub-component are to improve income and food security of the riparian communities living in the Lake Victoria basin through improved aquaculture production and restoration of stocks of previously important commercial species of Lake Victoria. Despite interruptions because of the extensive staff training programme, some notable progress has been made, as for example:

- An inventory of the status and potential for fish farming in the region has been undertaken and is available in draft form. (It shows that demand for aquaculture increases with distance from the lake shore.)
- LVEMP 1 has produced a strong core of research personnel to provide the scientific basis for aquaculture development in Tanzania.
- 45 ponds have been constructed at Tarimi as demonstration ponds but little extension work to train the local communities in aquaculture has taken place.
- There is improved supply of *O. [Oreochromis] niloticus* fingerlings from the fish ponds managed by TAFIRI in Mwanza, although production levels need to be scaled up to meet potential demands.

However, whilst progress has been made, the majority of the work has been research orientated and little transfer to the communities or participatory research has taken place. The research also duplicated much of what has been achieved in the international arena or what has been carried out in the other riparian countries. Although some documentation has been produced, considerably more effort needs to be expended on producing guidelines and manuals on farming practices and reporting of the research.

(Rating: Marginally satisfactory)

73, Regional Aral Sea; lines 495–504; Code: Result

Improve the management of international waters: the strategic studies supported under WEMP demonstrated that the

principal water management problems of the basin are not due to management and allocation tensions at regional level. They are due to deteriorating irrigation and drainage infrastructure and poor water management at national level, principally within the two countries which comprise 75% of water use within the basin, Uzbekistan and Turkmenistan. Furthermore, when there have been transboundary difficulties, these have generally been at a bilateral or sub-basin level. The Central Asian Countries' focus during the project period shifted from the Sea to the upper river basins and from regional to national issues. In the Syr Darya basin, the energy-irrigation uses emerged as major issues and the countries made several agreements to address them. In the Amu Darya basin, energy-irrigation issues were less severe.

Developed Database

460, Regional Tumen; lines 1401–12; Code: Objective

The weakest linkage is for IO 4 and its two outputs. Output 4.1. is stated as “Environmental research and information system for the Region developed”. The Project document does not explain why this is it needed, how it will be used or what type of information is needed. It does state that, “This will help strengthen cooperative mechanisms...” and “data... will be made accessible to all concerned and interested parties”. But these statements are so vague as to be of little use.

In particular, the EIS is not linked in the design to the TDA and SAP. A regional EIS would clearly be of use for developing the TDA and the SAP. However, the EIS is under Immediate Objective 4, “Capacity to implement SAP strengthened and the National and Regional Levels.” The type of data needed to implement the SAP is quite distinct from that needed to do national and regional analyses.

An EIS for the sharing of water pollution monitoring data for an international water body (the Tumen River) is one component of an overall EIS, and probably a minor one in terms of actual management requirements.

It is less clear what is required in terms of an EIS supporting the sustainable use or conservation of biodiversity.

For example, the SAP would typically identify specific activities for biodiversity conservation such as creation and management of new protected areas or the pilot development, testing and extension of sustainable use systems for biodiversity resources. The information needs for these activities will be very specific.

The information systems should be developed accordingly, but they cannot be developed during the project, because the identification of the SAP activities is the last thing the project will do. More importantly, an EIS is only one small part of the capacities needed for SAP implementation.

396, East Asian Seas; lines 376–78; Code: Satisfactory

The aim of this project is to demonstrate the effectiveness of management-oriented monitoring programs and the possibility for a regional monitoring network. Management-oriented monitoring is particularly important in the region because marine environmental monitoring in the past was largely unfocused and not coordinated. A well-designed monitoring program focusing on critical environmental parameters is a cost-effective tool in coastal management. Both in Batangas and in Xiamen coastal monitoring programs have been initiated. In Xiamen data has been available since 1986. The usefulness of the information generated from these monitoring programs is already obvious. Data indicates that in Xiamen, despite a significant increase in the population and economic activities, the efforts in pollution control seems to have been rather effective. In Batangas data have been used in the environmental management decisions concerning the bay. However, it should be emphasized that the training of staff and the strengthening of the analytical capability need to be carried out continuously. Training workshops and intercalibration exercises are important tools that will have to be repeated with some frequency. The monitoring program should be designed so that it may provide answers not only to today's questions but also to those of tomorrow. Hence, the program will have to be anticipatory in nature, taking into account the probable trends in development and the consequent needs for environmental monitoring. This has been done in some regions in the industrialized north, and PDMO [Project Development and Management Office] could strengthen the sharing of experience through organizing workshops at the demonstration sites with invited experts from abroad as advisors.

460, Regional Tumen; lines 558–63; Code: Weak

Geographical Information Systems are seen by many of the research institutions as an integral component of scientific and management EIS. The majority of research and planning institutions have, or have access to, GIS.

Throughout the region the common software is ArcInfo/ArcView, however as the PCU [project coordinating unit] noted, many of these systems are effectively non-functional and data is rarely exchanged between institutions. This is partly a result of the choice of this non-user friendly system promoted by international partner institutions with dedicated GIS support. When international support and the specific project ends, the local incentive for maintaining the system stops.

Despite there being many non-functional systems, there is clearly still the capacity in the region to produce dedicated thematic maps, which can be reformatted for web sites. However, the PCU felt that the quality of the locally produced maps was not adequate for presentation purposes and has contracted an Australian company to prepare project maps to support the TDA and SAP. While clearly maps are extremely important in presenting information crucial to the TDA and SAP, the project may have missed an opportunity to build local capacity, even if it would have resulted in a slightly lower quality product.

88, LVEMP Tanzania; lines 425:425; Code: Weak

The overall project strategy seems to have placed emphasis on data and research, rather than on key management issues of Lake Victoria. It has not been made clear how the data that has been collected will be used—or even *who* will use it with regard to management decisions about the lake. A management information systems (MIS) strategy was not developed, even though each National Secretariat has a MIS officer. The MIS officers have been used mainly for producing information about the activities of the project. A relevant MIS strategy would have identified who the decision-makers are concerning the Lake, what sort of information they need to make informed decisions, and then describe how the information was to be collected, presented, distributed and followed-up. This would have been a core element in the planning, implementation and monitoring of LVEMP.

Created Institution

532, Global; lines 1263–73; Code: Objective

Create a Global Knowledge Network - An interlinked network of information and communications technology (ICT) access points will together support the social and organizational evolution of the international waters (IW) knowledge community. This is a central element of IW:LEARN. In Section I the deficiencies of the original project design have been highlighted and the new objectives designed to overcome these problems. The expected outputs remain ambitious however. By year 3 it is expected that they will be: 2 regional “support sites” installed; at least 10 “learning hubs” installed; and develop and disseminate “portable classrooms.”

72, Jordan; lines 287–300; Code: Satisfactory

Two directorates, established within the Environment Commission of ASEZA, are fully operational: the Directorate of Environmental Planning and the Directorate of Environmental Supervision and Enforcement. The Directorate of Environmental Planning incorporates, among others, the environmental impact assessment, environmental inspection and auditing, and industrial pollution prevention standard-setting functions of the Project. The Directorate of Environmental Supervision and Enforcement includes divisions addressing public awareness, coastal policing and enforcement, marine pollution prevention and response, and marine park management -all central elements of the GAEAP [Gulf of Aqaba Environmental Action Plan]. With regard to regulatory capacity-building, key project elements (e.g. environmental impact assessment and environmental auditing procedures) have been fully incorporated into binding ASEZA legislation. Other elements (e.g. coastal zone management, marine park management, marine vessel pollution prevention, industrial pollution prevention) are generally mandated, with specific implementing provisions to be adopted through subsequent regulations.

610, Removal of Barriers; lines 648–50; Code: Satisfactory

This objective was achieved in a **highly satisfactory** fashion, during the early phase of the project. While the pilot countries selected differing agencies, i.e. some selected the maritime safety administration, some the environmental agency, nevertheless each has had a positive impact. The country focal points and their assistants have been essential and effective participants. The CPTFs were instrumental in achieving wide support for the project both from other government agencies and a wider stakeholder community.

The mere fact that interministerial and multisector CPTFs were developed, and met on a regular basis, can be seen as a significant project success. The project CPTFs had to overcome logistical problems relating to capital and port city separation in each of the countries, and required that individual agencies and organisations commit some of

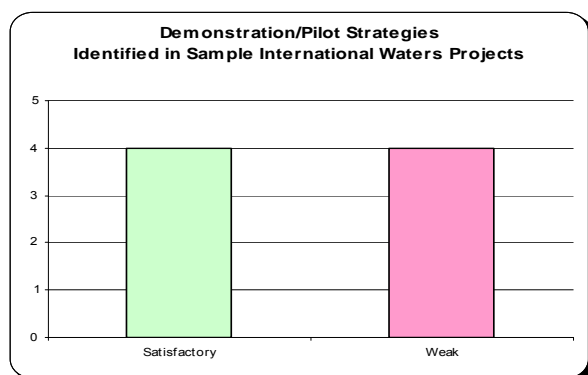
their own funds for participation. As with all such efforts, there were differing levels of activity and participation amongst different task force members in the different pilot countries. The key is for the function of CPTF meetings to shift from information dissemination to decision taking. It was noted by one pilot country that there would have been significant benefit in having hands-on experts in ballast water management/operations to participate as active member of the CPTF.

73, Regional Aral Sea; lines 683–727; Code: Weak

The physical separation of PMCU from the EC-IFAS secretariat meant that the larger objective of strengthening EC-IFAS was not achieved. In fact, EC-IFAS may have been weaker at the end of the project than at the beginning. During the long preparation phase of the Aral Sea Basin Program (ASBP), prior to WEMP, substantial donor assistance (about US\$32 million) was provided to the EC-IFAS, mainly in the form of technical assistance for various studies. At that time, PMCU and EC-IFAS were almost “one and the same,” due to the close link between EC-IFAS and PMCU, and the location of EC-IFAS and PMCU in Tashkent. Further, various personnel were carrying out dual functions. After the start-up of WEMP, when EC-IFAS was separated from PMCU and moved to Ashgabat, all resources remained with the PMCU.

Demonstration/Pilot

Figure G.21: Demonstration/Pilot Strategies Identified in Sample International Waters Projects



73, Regional Aral Sea; lines 264–68; Code: Objective

The component was to be implemented for a four year period (1999-2002). Its objective was to encourage water users and providers to introduce low-cost water conservation measures by providing grants for pilot water conservation projects.

396, East Asian Seas; lines 237:237; Code: Objective

Develop and demonstrate working models on marine pollution reduction/prevention and risk management.

73, Regional Aral Sea; lines 614–29; Code: Satisfactory

Support for the safety assessment of 10 dams helped to create awareness among the governments about the urgency of problems related to dam infrastructure, and led to several follow-up investments. With the support of pilot projects, the safety of at least nine dams has been improved. Several professionals have been trained in dam safety assessment and are serving on the panels of experts for dam safety. Initially, governments gave only limited support for the component, since decision makers across the basin were not aware of the dangers posed by the unsafe dams. However, by the end of the project the activity enjoyed the countries’ full support. Kazakhstan, Kyrgyzstan and Tajikistan have now developed their own plans for rehabilitating dams and introduced modern technologies to monitor dam safety. Further, work under the component directly led to a separate IDA and Swiss-financed project for Lake Sarez in Tajikistan. In Kazakhstan, rehabilitation of Chardara Dam was included in the Syr Darya Control and Northern Aral Sea (SYNAS) project and Kayrakum Dam was included in the proposed Tajikistan Ferghana Valley

Water Management Project. Priority works for Tuyamayun Dam in Uzbekistan were included in the Uzbekistan Rural Water Supply and Sanitation Project. Rehabilitation of these dams is also helping to resolve the water and energy conflicts between upstream and downstream users by increasing re-regulating capacity below the Naryn Cascade on the Syr Darya and increasing the supply of water to generate energy in winter and irrigate crops in summer.

396, East Asian Seas; lines 364–66; Code: Satisfactory

The two demonstration sites, Batangas Bay and Xiamen, have been described in the Mid-Term Project Evaluation Report. They were selected to demonstrate the effectiveness of the ICM concept for marine pollution control and management of coastal resources. These sites provide clear examples of the ICM concept in action and these sites should be built upon as effective tools for capacity building under the regional network. The development of detailed criteria for this selection was a useful activity. In both sites, the local governments are fully participating together with other stakeholders through interagency and/or intersectoral partnerships. The project has facilitated the cooperation among stakeholders and the integration of issues in order to achieve more sustainable development in the two demonstration sites. What is significant in these partnerships is the sharing of information and resources to combat water pollution and environmental degradation.

88, LVEMP Tanzania; lines 588–92; Code: Weak

The specific objectives are to ““create wetlands”” in order to test treatment through a) filtration of municipal waste in Mwanza and b) filtration of industrial waste from various industries in Mwanza City:

- The Review Mission reports for the first pilot project non-compliance and delay—circumstances out of the hands of the project.
- The second pilot project has barely started

610, Removal of Barriers; lines 750:750; Code: Lesson

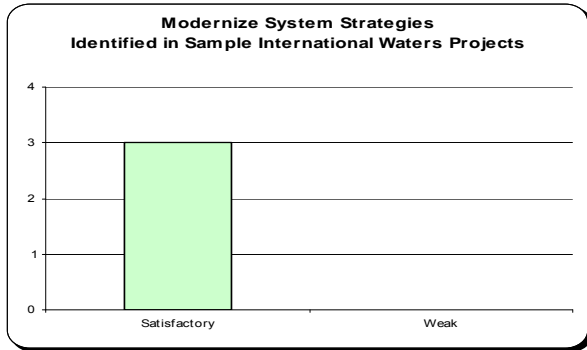
Projects can benefit from taking a two-pronged approach to the management of demonstration sites. The first is to develop global mechanisms and templates for use by all sites. The second is to enable the country pilots to develop their own country-specific activities. Country buy-in and financial support can be significantly increased when Counties have the flexibility to shape the project to their specific needs.

73, Regional Aral Sea; lines 519–25; Code: Result

The project provided the technical and analytical bases for improving water resources management and allocations among riparian states and sectors. Awareness of dam safety was introduced, which led to new investments to improve overall water management in the basin. Better records of water flows will be available for planning water resources, as well monitoring and management. Wetlands restoration provided a practical model for addressing the environmental degradation problems around the Aral Sea. These physical models of improved water management are being widely replicated in the basin. Thus in terms of physical outcomes and their sustainability, this project may be rated satisfactory.

Modernize Systems

Figure G.22: Modernize System Strategies Identified in Sample International Waters Projects

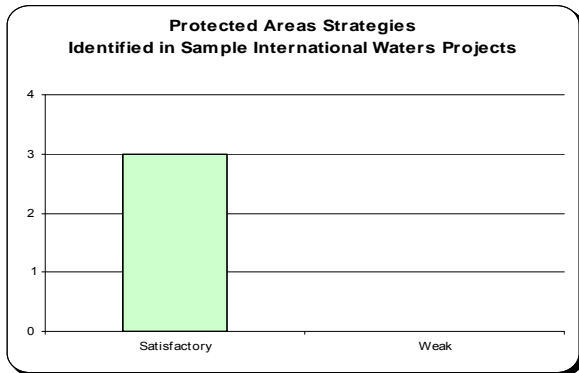


59, Regional OECS; lines 323–29; Code: Objective

This comprises (i) the procurement of collection, storage, disposal and monitoring equipment; (ii) the development of new sanitary landfills or managed disposal sites; (iii) the closure, redemption and reclamation of unsuitable or inappropriate existing dump sites; (iv) the construction of transfer stations (Grenada and Dominica only); (v) the procurement of equipment for the treatment of bio-medical/hospital waste (Antigua and Barbuda, St. Lucia and St. Kitts and Nevis only); and (vi) the procurement of equipment to promote waste recovery and recycling.

Protected Area

Figure G.23: Protected Areas Strategies Identified in Sample International Waters Projects



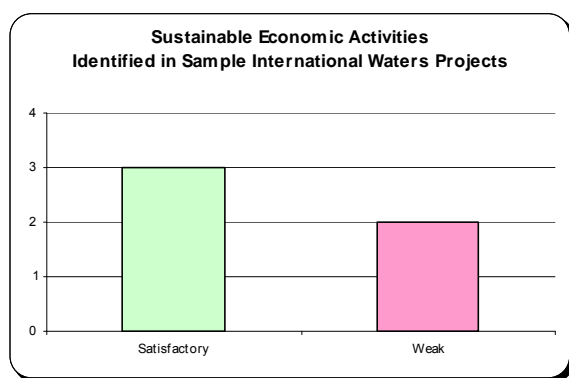
72, Jordan; lines 388–411; Code: Satisfactory

Protection of Globally Important Coral Reefs - Development and Implementation of the Jordanian Marine Park (§): The mandate to protect the marine environment has been clearly established under the Environmental Protection By-Law (Arts. 52-64). On January 30, 2001, the Cabinet approved Marine Park By-Law No. 22 for the Year 2001. Art. 5 of this By-Law, calling for the establishment of an “Aqaba Marine Park Committee” (which includes representation of diverse stakeholder groups), has been implemented. The committee, which is responsible for administering the Park under the chairmanship of the Commissioner for Environmental Affairs, is fully operational. The annual Marine Park Management Plan is updated on a regular basis. The last update, under the project, was finalized and subsequently adopted by ASEZA Board, pursuant to Art. 5 of the Marine Park By-Law. The Marine Park By-Law gives general enforcement powers to Park employees, public security forces and coastal policemen, with delineation

of specific powers and procedures to be set forth in an instruction that is to be approved by the ASEZA Board. Zoning and infrastructure of marine park facilities have been completed, including: 4 jetties (2 funded by the project), terrestrial demarcation, toilet and shower facilities, umbrellas, parking, camping grounds, ranger posts, and first-aid station. ASEZA has constructed one additional jetty in the El Morjan beach area to provide access to bathers without damaging coral reefs. Construction has also been completed of additional toilet facilities, camping and parking demarcation and sun shades south of the Visitor Center as an ASEZA contribution. The Visitor Center has been completed, including multi-media equipment, interpretation and public awareness activities. The implementation of the landscaping of the surrounding area, funded by ASEZA, is to be completed by end 2002. Rangers training and hiring is completed. The Marine Park Management Plan has been updated and subsequently adopted by ASEZA's Board. The Arabic version has been updated accordingly and its fundamental principles and supporting regulations are disseminated widely through public relations materials. The Public Awareness Specialist has been recruited as an ASEZA staff. All Marine Park brochures have been finalized and printed in Arabic and English.

Sustainable Economic Activity

Figure G.24: Sustainable Economic Activities Identified in Sample International Waters Projects



73, Regional Aral Sea; lines 290–97; Code: Objective

The component supported restoration of Lake Sudoche, a Delta Lake on the border of the Southern Aral Sea, which had become desiccated due to poor water management. Restoration was expected to yield substantial biodiversity benefits, and to provide opportunities for enhanced income for the local people from fishing and livestock grazing. Component design included construction of infrastructure to raise the level of the lake and improve quality of water in the lake, an access road, and monitoring of biological and economic impacts.

88, LVEMP Tanzania; lines 633–39; Code: Satisfactory

Of the four specific objectives of the sub-component, the main outcomes have been:

- Economic benefits from wetland products have been quantified in pilot areas.
- Management strategies for sustainable use of wetlands are partially achieved; guidelines have yet to be prepared - and the production rate of papyrus and biomass report is lacking.
- Demonstrations on the use of wetlands for crop production have taken place in pilot areas.
- Substantial training has taken place for local communities on wetland wise use practices.

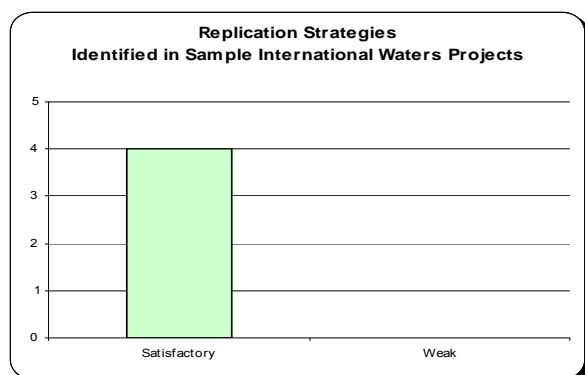
88, LVEMP Tanzania; lines 719–20; Code: Weak

In Tanzania, as in Uganda, a “wide-angle” view has been taken of the micro-projects programme. Emphasis has been put on “investments with wider social impact”. A very wide range of facilities and services have been funded - including schools and dispensaries. Of the 76 micro-projects, 31 of them have been related to schools and 16 with health facilities - these having no direct bearing on environmental management issues. It seems that the rationale for

the micro-projects has been more to do with providing incentives or making compensation, rather than manifesting the environmental conservation and sustainable utilisation objectives of LVEMP. The consequence has been overlap with other community development initiatives funded by other donors - and a missed opportunity for demonstrating alternative means of livelihoods' enhancement based on effective management of Lake Victoria's resources.

Replication

Figure G.25: Replication Strategies Identified in Sample International Waters Projects



533, Regional Western Indian Ocean; lines 397–404; Code: Satisfactory

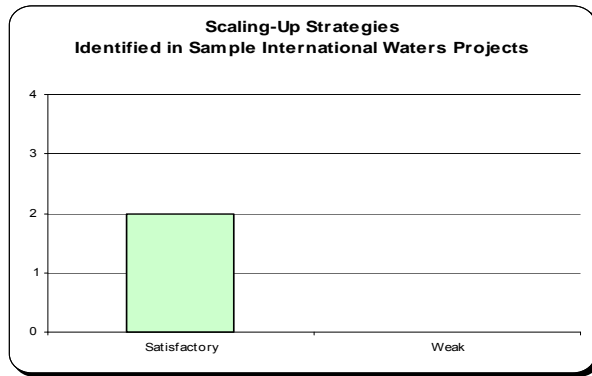
The project design is being replicated in the follow-on Western Indian Ocean Marine Electronic Highway and Coastal and Marine Protection Project. The East African coastal states of Mozambique, Tanzania, and Kenya have requested to be included in the regional oil spill contingency plan as a means of fulfilling their obligations under the Nairobi Convention. Parties to this convention agree to cooperate in responding to pollution emergencies in the convention area and to reduce or eliminate pollution or the threat of pollution, and to this end to develop and promote, individually and jointly, contingency plans for responding to incidents involving pollution or the threat of pollution. This is a very positive outcome, given that the project was developed with replicability in mind.

610, Removal of Barriers; lines 348–350; Code: Lesson

It is clear from the project documentation that replication was given prominence in project formulation. The proposed funding for a global resource centre to be located at IMO was a fundamental part of the strategy to bring about replication of project results. This centre would become responsible for assisting developing nations in more effectively managing ballast water control after the project completion. Replication was envisioned at the country and region levels. The project was designed to develop regional replication mechanisms. It was anticipated that port specific ballast management activities would then be replicated by the countries in other ports, and expanded regionally, and serve as a model for countries in other regions. Component 6 in the Project Implementation Plan directs the project participants to: “Make provision, as appropriate, for the creation and operation of Regional or Sub-Regional Task Forces to increase regional level awareness, cooperation and eventual replication of project results across the region.” Replication was also envisioned through the development of a ballast water management training programme producing “adaptable training packages.”

Scale-up

Figure G.26: Scale-Up Strategies Identified in Sample International Waters Projects



533, Regional Western Indian Ocean; lines 539–41; Code: Satisfactory

The project also succeeded in creating or significantly strengthening capacity in each of the four countries to coordinate a response to an oil spill. All have formed special units in the ministries of environment for this purpose.