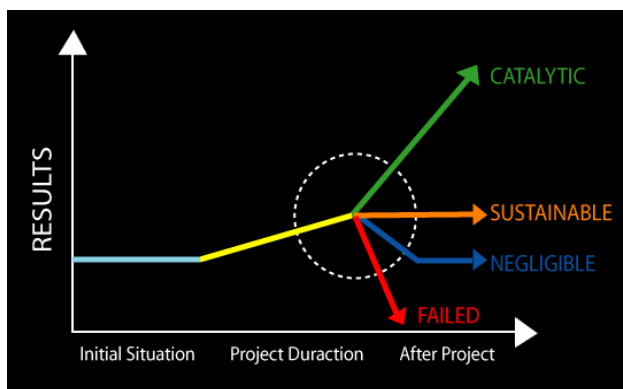


EVALUATION OF THE GEF CATALYTIC ROLE



Conceptual Framework

The Catalytic Role of the GEF: How is it Measured and Evaluated?

Technical Paper #3
18 November 2008

Draft

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1. Introduction

The challenges related to the role of aid for development have become more explicit in recent years. There is an increased emphasis on moving away from small-scale projects to national or programmatic approaches as well as towards budgetary support; improving effectiveness of aid flows; identifying impacts and then scaling up what is proven to work. For the Millennium Development Goals, there is time pressure on donors and developing country partners to deliver effectively and efficiently at larger scales. Implicitly or explicitly, all donors have catalytic aims for their assistance, namely to generate larger impacts beyond the direct effect of their projects.

For the Global Environment Facility (GEF), the catalytic role is a key operational principle:

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)

Operational Principle 9 has not been evaluated, and there is lack of data on the catalytic role and effect of the GEF. The GEF Council approved, in June 2006, a thematic evaluation on the catalytic role of the GEF. This evaluation aims to explore how the GEF, and other implementing agencies, conceptualize, measure, and implement their catalytic role, and also to identify projects that have produced catalytic effects. In December 2006, the Council was informed that the evaluation would take place in a phased approach, focusing on methodology aspects before proceeding with field testing and further fieldwork as part of the Fourth Overall Performance Study (OPS4).

This paper brings together components of a conceptual framework for evaluating the catalytic role of the GEF for the climate change, biodiversity and international waters focal areas, and responds to two key questions posed in the approach paper for the evaluation: (a) “How does the GEF conceptualize its catalytic role?”; and (b) “How can the catalytic role be measured?” It is based on two desk reviews; (a) a review of ‘catalytic aspects’ of completed GEF projects referred to in terminal evaluations (TEs) and implementation completion reports (ICRs); and (b) a review of design in sample project documents and GEF strategy documents.

The paper covers (a) the context of the catalysis and problems surrounding lack of clear definitions; (b) overview of the key findings of the desk reviews of ‘catalytic aspects’ in evaluations and project designs; (c) synergies with impact evaluation theories of change; and (d) an outline the conceptual frameworks to guide future fieldwork in the country case studies.

2. Context

In chemistry and biology catalysis is defined as *the acceleration or slowing down of a reaction* by means of a substance, called a catalyst, that is itself not consumed by the overall reaction. More generally, it may be defined as *anything that accelerates a reaction, without itself being consumed or changed*.

The word ‘catalyst’ has moved beyond science into more general usage in socio-political and private sector fields, for example, a “catalyst for political change,” “catalyst for market change.” The key notion is that a small substance or agent such as financing or technical assistance can cause larger change, such as change in political direction or policy or change in markets for a product.

Until relatively recent times, the concept or term ‘catalysis’ was not in common usage among donor agencies or organizations to describe their interventions, with some exceptions (the GEF and the International Finance Corporation, IFC). It is, however, beginning to gain prominence. Development

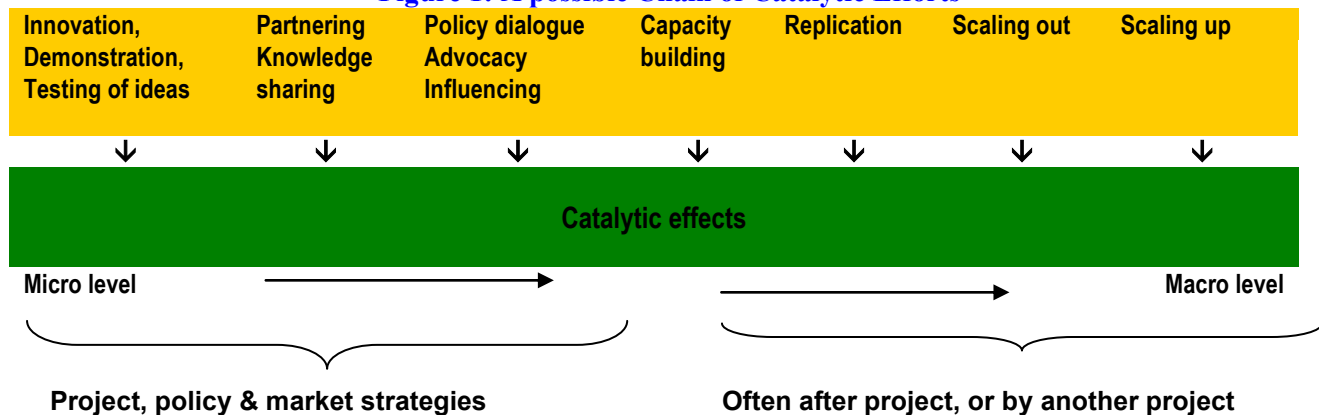
agencies tend to associate catalysis with terms such as ‘scaling-up,’ ‘scaling-out,’ ‘up-scaling,’ and ‘replication’ which imply an increase in geographical, target population coverage and/or acceleration of development activities and results.¹ A typical example of increasing prominence of ‘catalysis’ is the African Catalytic Growth Fund (ACGF), created in 2006 by The World Bank, DFID, and the Spanish Government. However, it does not explicitly define catalysis, in terms of what a catalyst is or will be and how it will work, except to state that the overall aim of the fund is to accelerate ‘scaling-up’ of interventions which give effective results.

The terms implicitly associated with catalysis, namely scaling-up and replication, lack a clear unified definition and theory of change. This makes the catalytic concept more opaque. For example, a recent review of scaling-up by the Wolfensohn Initiative,² showed that there are many perceptions of scaling-up and replication, but with a significant gap in evaluative assessments of the how and why scaling-up or replication occurred (or not). This paucity of evaluative data is partly caused by (a) lack of donor specificity on the meaning of scaling-up and replication in projects and programs, because in many interventions such objectives remain implicit; (b) lack of systematic monitoring and measurable implementation data, since scaling-up is often not an explicit goal of a project intervention; and (c) the fact that scaling-up processes are often embedded in particular contexts and hence there is no agreed framework for their evaluation.³

Other agencies that do not employ specific terms to describe the catalytic process may nevertheless pursue strategies and approaches that are intended to have a greater effect than the intervention itself (e.g., the concept of ‘influencing’). Such strategies focus catalysis implicitly on the notion of changing national processes, for example through policy advice, advocacy and campaigning, information exchange and raising awareness, networking and capacity development. Some agencies focus on catalysts for change; such as innovation, whereby the introduction of new ideas or approaches through direct investments can play a catalytic role, which might lead to some form of scaling up by government, individuals or private sector stakeholders.

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. See **Figure 1**.

Figure 1: A possible Chain of Catalytic Efforts⁴



For the GEF, the intended effect of catalytic interventions is to “maximize global environmental benefits” (Operational Principle 9, Operational Strategy, 1994). The Operational Strategy does not provide a definition of catalytic role. However, the strategy associates the catalysis with a *multiplier effect*, involving a range of approaches which address the need for ongoing *innovation, experimentation, demonstration, and replicability* (GEF Operational Strategy 1994, Chapter 1, Strategic Considerations).

3. Key Findings of Desk Reviews

The initial scoping for the evaluation established that catalytic role of the GEF is not well defined or understood. As a first step in formulating a conceptual framework two desk studies were conducted focusing on (a) evaluations (ex-post) and (b) on project design documents (ex-ante). The objectives of the desk studies were to identify:

- How GEF projects define their ‘catalytic role’ (a) ex-ante and (b) ex-post?
- How is catalysis conceptualized in project design?
- How is catalysis implemented and reported on in evaluations?

Both studies conducted a detailed content analysis of a sample of project design documents and evaluations to uncover explicit and implicit data on the GEF catalytic role. See Technical Paper #1: A qualitative analysis of terminal evaluations; and Technical Paper #2: A qualitative analysis of project documents, on www.gefeo.org (under ongoing evaluations, Catalytic Role).

Emerging Definitions of Catalytic Role

The overall results from the two desk studies show that catalysis is rarely planned for in design or reported on in evaluation documents; and lack a systematic and explicit definition, as follows:

Project Design

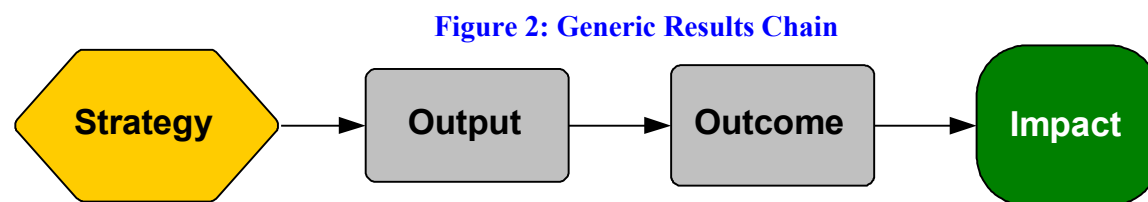
- The term ‘catalytic’ is mentioned in approximately 20 of 77 projects documents reviewed. The mentions are unsystematic and without discussion of meaning, or how to plan, implement and measure catalysis.
- When mentioned, catalysis tends to be associated with four other concepts, namely (a) co-financing; (b) promoting replication of a project activity; (c) mainstreaming of project interventions into national and/or local government; or (d) jump-starting an action or change through a ‘one-shot’ infusion of funding.
- Catalysis is associated implicitly with ‘accelerating change’ which involves two types of actors; namely (a) Catalyzing actors – who induce changes in other people, processes and institutions (associated with the project intervention); (b) Catalyzed actors (those institutions and individuals subjected to the project intervention) – who are targeted to have their behaviors changed, increased in frequency, or otherwise improved by other people, processes, or institutions.

Evaluations

- The term ‘catalyst’ (along with any of its associated terms) infrequently appears in the terminal evaluations. When the term is used, it describes triggering an action or changing a baseline action, such as a market, long-term procedures or legislative policies, or describes motivating other actors, such as the private sector or the government, to become involved in the environmental issue being addressed by the project.
- In the project evaluations, there is not a strong casual relationship between expanding the scope of the project and the catalytic role of the project.

In summary, both desk reviews concur that catalysis involves inducing and/or accelerating change, and hence can be defined as “any intervention that causes and/or accelerates change”. This is distinct from *replication* which describes the occurrence of a similar type of project (and usually of a similar size or scale) but in another location, or *scaling-up* which implies expanding the scale of the original project, such as taking it from a local to regional scale, or *mainstreaming*, namely having a national government incorporate the project into a national program or agency.

Project documentation and terminal evaluations are often not explicit as regards to intended impact, although the project objective often refers to the intended impact of the development interventions. There are subtle differences between catalytic effects and impact. The OECD’s Development Assistance Committee (DAC) defines impacts as “Positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended”, as illustrated in Figure 2¹. As such, catalytic effects are indeed a type of impact. The catalytic strategies discussed above can produce impact. However, catalytic effects *can* go beyond what project impact evaluations normally cover, that is the immediate consequences of project outputs and development outcomes in the scope covered by the project.



3.1 The Catalytic Role in Project Design

In project documents, three implicit theories about the GEF’s catalytic role and effects emerged:

- a. “Catalysis through Demonstration” which is common in climate change project design;
- b. “Catalysis through Local Practice Change” which is common in biodiversity project design; and
- c. “Catalysis through Policy Advocacy and Bureaucratic Improvement (capacity development),” which is common in international waters and also in biodiversity.

Each of the theories has six conceptual building blocks: (a) pre-existing practices; (b) catalytic actors; (c) catalytic goals; (d) plans of action; (e) time horizons; and (f) geographic space. Firstly, project designs address certain **pre-existing conditions** (context or baseline), which GEF interventions intend to improve or otherwise change. Second, project documents discuss particular **actors and stakeholders**, whose actions are envisioned to stimulate catalytic effects of different sorts. Third, projects discuss **plans of action** on what the project intervention intends to influence to induce such effects; and fourth, the geographical coverage of the intervention. Fifth, documents under-conceptualize the **time horizon** between GEF interventions and intended effects. Sixth, the project documents discuss the results of these building blocks, namely the **catalytic goal** or intended result of the intervention. Different combinations of the sub-types of these six building blocks constitute different implicit theories about the levers by which GEF projects are thought to induce catalytic change (see **Table 1**), although the levers are not made explicit.

¹ DAC, 2002. “Glossary of Key Terms in Evaluation and Results Based Management.”

Table 1: Conceptual Building Blocks of Implicit Catalytic Change Theories

Building Block		Definition	Shorthand Definition
1.	Pre-existing Phenomena	the baseline condition that GEF interventions are thought to improve, accelerate, or otherwise change	the “WHAT” of catalytic change, specifically what is targeted for change
2.	Catalytic Actors	1. catalyzing actors: actors who are thought to induce catalytic change 2. catalyzed actors: actors whose behaviors are themselves changed, accelerated, or otherwise improved	the “WHO” of catalytic change
3.	Plans of Action	the strategy of the GEF intervention thought to induce catalytic change	the “WHAT” that actors do, which is thought to induce catalytic change
4.	Geographic Space	the physical space within which catalytic effects occur, often defined by the pre-existing phenomena that projects are thought to address	the “WHERE” of catalytic change, specifically the geographic space in which it occurs and how it is defined
5.	Time Horizon	the period of time that elapses between the GEF intervention and realization of the catalytic goal	the “WHEN” of catalytic change, specifically when it is projected to occur
6.	Catalytic Goals	the intended result of the actor’s action, often a change in the pre-existing phenomena	the “WHAT” that is thought to emerge if catalytic change occurs
“Lever” of Catalysis		the implied causal mechanisms of catalytic change	“HOW” catalytic change is thought to occur

In project design, a significant impediment to the conceptual clarity regarding the GEF’s catalytic role is the absence of stated time horizons on which catalytic effects are thought to occur. This gives rise to challenges in terms of establishing cause and effect over time, or of attribution to the GEF or to other factors in causing catalytic effects (see **Box 1**).

Box 1. Externally Fired Combined Cycle (EFCC) Advanced Technology Cogeneration Project for the Costa Pinto Sugar Refinery in Piracicaba SP Brazil (Type 1 – Demonstration)

In the EFCC demonstration project design, there was a clear relationship between conceptual building blocks:

1. Catalyzed actor: investors, in this case owners of sugar-refining plants who have an interest in the EFCC technology as a long run cost-saving measure, but otherwise will not invest in it because of its high cost in the short term (a “barrier”). The GEF demonstration project is supposed to catalyze these actors insofar as its investment in the demonstration project lowers their cost of investing in EFCC technology. Ultimately, the GEF intervention induces behavior change on the part of investors by shifting their incentives. Although the specific actors vary by project, the type of actor is the same across the many projects I classify as “Type 1: Demonstration.”
2. Catalytic goal: expand the market for EFCC, in this case of opening up a large market for EFCC technology, an outcome likely to occur after the actual project ends. Although the specific market to be opened by the project varies across project, the goal of expanding the market remains constant across the many projects I classify as “Type 1: Demonstration.”
3. Catalytic plan of action: build a model In this case, this meant “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 tons per hour conventional steam generator.” Although the model to be built by the project varies across project, the plan of building the model to expand the market remains constant across the many projects I classify as “Type 1: Demonstration.”
4. Timing of catalysis: at some (not clearly defined) point in future, after project completion
5. On a technologically-defined geographic space: catalytic effects could occur within an industry for which the technology is useful, in this case the cane-refining industry worldwide. Importantly, the technology itself defines the space of catalysis.

3.2 The Catalytic Role in Project Evaluation

When analyzing the results and project strategies in the sampled terminal evaluations, several trends emerge. The overall results of the projects after they ended tend to fall into one of four categories, illustrated in **Figure 3**: Moving the response to an environmental issue to the next level (Figure A); moving the response to the next level and then having a second project funded by another donor raising results to the next level (Figure B); project failing (Figure C); or catalytic role of the project (Figure D).

Figure 3: Possible Results after Project End

Figure A. Next Level

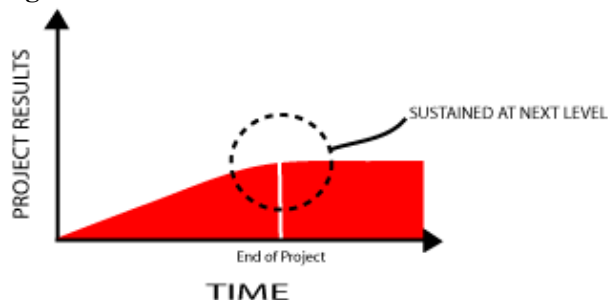


Figure B. Staircase

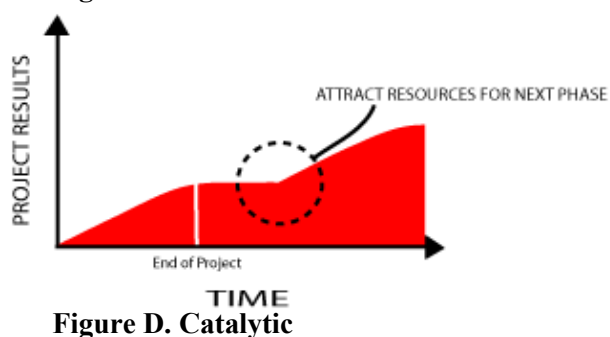


Figure C. Failure

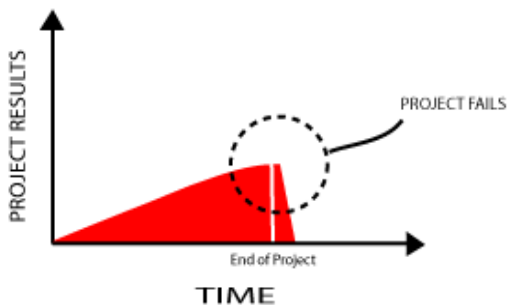
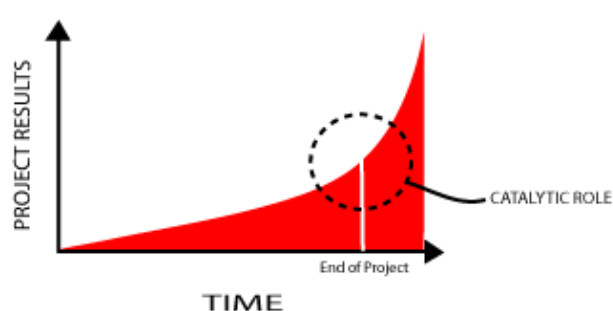


Figure D. Catalytic



For example, most biodiversity projects that focused on protected areas tended to fall into the “next level” category, where management plans and equipment purchases and resource management training improved the operation of the protected areas. However, a few projects managed to strengthen the mechanisms for the protected areas to collect user fees and develop other revenue streams. The protected areas then reinvested a portion of this increased revenue back into the park and awareness activities that attracted additional visitors that in turn increased its revenues even more. This concept can be referred as “self-perpetuating.” Therefore, the limited amount of money invested by GEF into the project generated exponential results for the protected area even after the project end.

The conceptual strategies observed in GEF project implementation can be divided into three general categories:

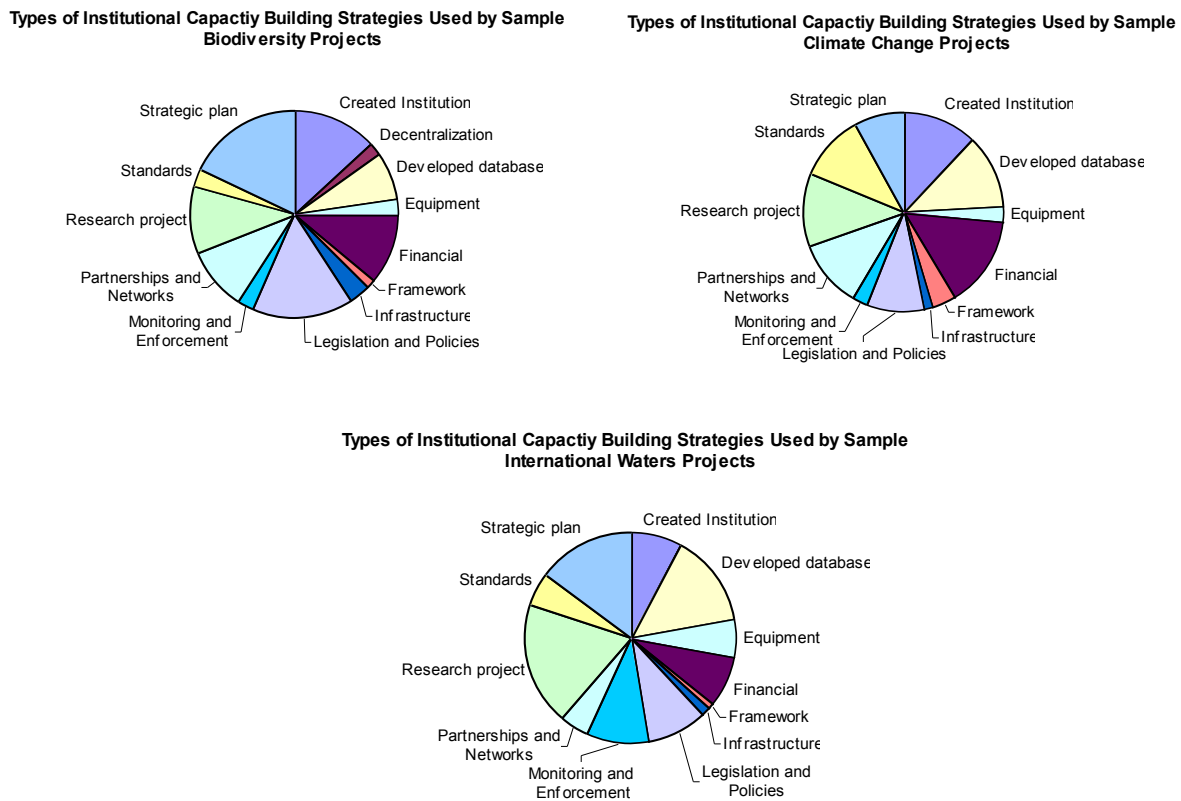
- a. **Foundation** – these strategies consist of awareness building and capacity building, and laid the groundwork for more ambitious project strategies.
- b. **Momentum** – these strategies range from creating markets to demonstration of techniques or technology, often based on foundation activities.
- c. **Expansion** – these strategies consisted of replication and scaling up of project components and tend to increase the scale of the project results.

Such strategies may of course be part of project design and described in project documents. They emerged, however, more clearly in the review of terminal evaluations which describe how project activities were implemented, and what was achieved.

Category A: Foundation Strategies

For foundation type activities, the dominant strategy is institutional capacity building. These are similar to the plans of action and levers of catalysis identified by the desk study of project design documents. **Figure 4** shows the distribution of different types of institutional capacity building activities by focal area. (Explanation of strategy classification is available in annex A.)

Figure 4: Types of Institutional Capacity Building Strategies by Focal Area



Strategic planning (including management plans for protected areas) and legislation activities appear the most frequently for **biodiversity** projects, with the strategies of providing equipment and ensuring monitoring and enforcement of environment-friendly practices among the least frequently used strategies. However, a study of factors for better forest conservation found that “monitoring is more important than three of the other frequently stressed variables assumed to lead to the improvement of forest conditions. Thus, regardless of levels of social capital, formal organization, or forest dependence, regular monitoring and sanctioning are strongly associated with better forest conditions.”⁵

For **climate change** projects, the most frequently used institutional capacity building strategy is creating a new institution, typically government offices to promote and oversee the implementation of a new energy efficient technology. Two of the *least* identified strategies under this category are providing equipment and infrastructure, though these typically falls under the category of demonstration as many of these projects aim to provide and demonstrate new types of energy efficient models.

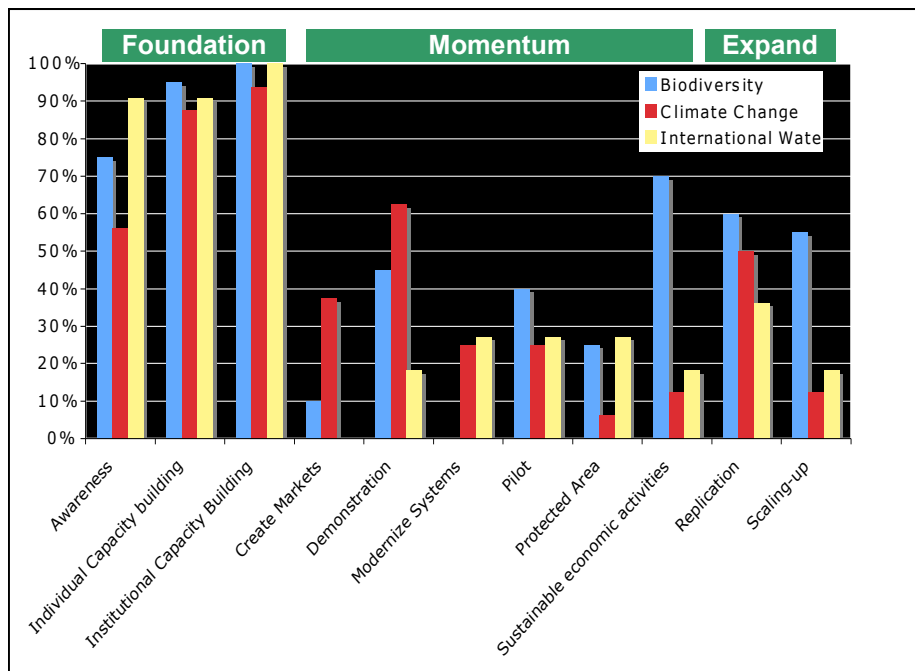
For **international waters**, the top three identified institutional capacity building strategies include undertaking research, developing a strategic plan, and developing databases. In some projects, the strategic planning resembles more of a momentum type activity as the goal is to provide research, awareness building, and technical training to bring countries together to develop long-term strategic plans to manage and conserve an international body of water.

Typically, the three foundation type activities provide the groundwork and support for the momentum type activities. In biodiversity projects, the dominant momentum strategy is *sustainable economic activities*; for climate change, *demonstration*; and for international waters, *piloting*. However, the terms “demonstration” and “pilot” tend to be used interchangeably in project reports, so adding those two activities together for the biodiversity projects would put it at the same frequency as *sustainable economic activities*.

Category B: Momentum Strategies

Under momentum activities, only a little more than half of *sustainable economic activities* and protected area activities rated as satisfactory for biodiversity projects,⁶ and 33% of the *demonstration* activities for climate change projects are identified as weak. The *create markets* activity is identified as satisfactory 100% of the time for the projects sampled, however, this may be attributed to a less defined scale for what denotes success under this activity (degree of market penetration, for example). **Figure 5** shows the prevalence of each strategy by focal area, which is dominated by foundation activities, with markedly less activities aimed at building momentum and expansion. This raises questions regarding the likelihood of catalytic effects.

Figure 5. Percent of Projects with Strategy by Focal Area (from Terminal Evaluations)



Category C: Expansion Strategies

The most common expansion type activities are (a) *replication* - the occurrence of a similar type of project (and usually of a similar size or scale) but in another location; and (b) *scaling-up*, namely expanding the scale of the original project, such as taking it from a local to regional scale, or having a national government incorporate the project into a national program or agency.

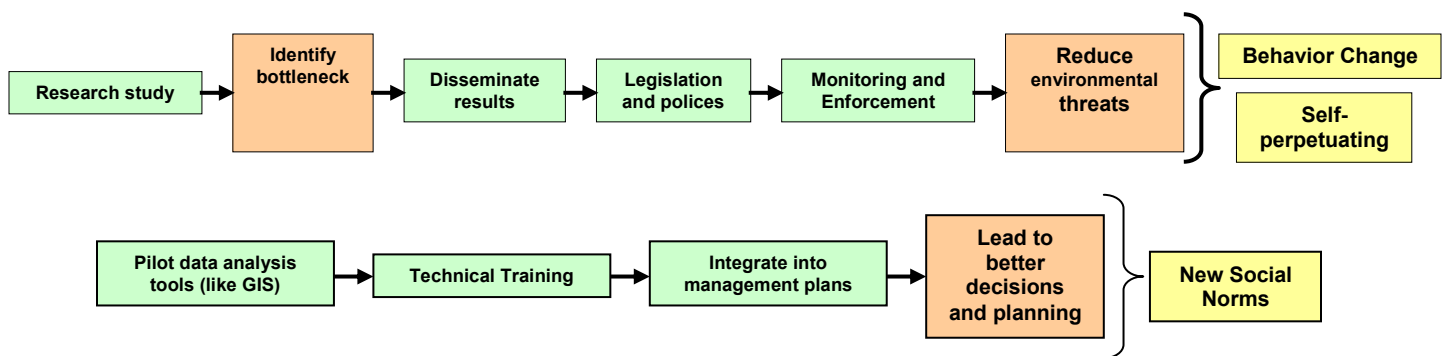
For biodiversity projects, there is a fairly even distribution between replication and scaling-up, while climate change and international waters projects describe replication activities more frequently. International waters projects already occur on a national or regional level, thus making it more difficult to scale them up, whereas the planning process of country-level projects can be replicated to other geographical locations. In general, the projects sampled expect replication and scaling-up to happen on its own without having to set aside resources for activities that facilitate the process. However, the more successful occurrences of these expansion type activities happened when the project design specifically set aside resources for project dissemination or created committees or mechanisms to oversee the expansion of the project.

Process Chains

While the figures show the dominant strategies used in projects by focal area, they do not depict the relationship of these strategies to one another. The qualitative and quantitative analysis of terminal evaluations revealed that no particular type of strategy is more catalytic than another. Rather, catalytic effects are determined by *how* the strategies are linked together to form a process chain that feeds into a catalytic result such as **behavior change** or a **paradigm shift**.

The process chains start with a particular activity and then answer the question “What happens next?” or rather, how is that initial activity built upon and used to feed into the larger project goal. For example, instead of just doing a training program for project participants, the training is then expected to lead to improved capacity for monitoring and enforcement activities, which in turn deter the amount of poaching in a protected area (see **Figure 6**).

Figure 6: Two Examples of Process Chains



In sum, the desk studies revealed common trends at different points in the project cycle, both in original design and final evaluation:

- Catalysis concerns change, and is not necessarily related to the concepts of replication and scaling-up. Replication and scaling-up may help to increase the catalytic role, but it does not signify that the project has been catalytic. Instead, it means that the project become larger, but not necessarily with better results. If the project activities had a catalytic role – such as changing behaviors or shifting

institutional paradigms – then it should be scaled up and replicated. This usually requires additional funding and planning, unless the project concerned a technology that could gain a greater market share on its own.

- The foundation and momentum strategies used (as found in project evaluation) tend to correspond to design based on policy advocacy and implementation; improving bureaucratic coordination and performance, especially in international waters.
- Projects designed for demonstration for market transformation, especially in climate change, apply momentum strategies.
- In biodiversity, momentum strategies include the designs of changing local practices such as changing local livelihoods practices through training and awareness building about alternatives.
- For expansion strategies, the lack of frequency found in evaluation generally reflects the weaknesses identified in the project design regarding the timeframes for catalysis.

4. Focal Area Conceptual Frameworks

This section provides more detail on the conceptual frameworks by focal area, building on section 3. Each framework combines levels of objectives, project outputs, strategies, results and how the project links to a catalytic role.

4.1 Biodiversity

Figure 7 (on later page) presents a conceptual framework for a catalytic role by combining the stated objectives and outputs for biodiversity projects from the operational strategy documents with the catalytic strategies and results described in the terminal evaluations. The strategies and related results are assumed to be catalytic; however, in most cases the activities carried out during project implementation did not lead to results greater than the project itself. The main lesson from this observation is that during the project design stage, the catalytic goal needs to be defined (for example, whether the catalytic goal is to change behavior or to cause a paradigm shift) and then strategies selected to achieve that goal.

Examples (extracts) from the terminal evaluations of strategies that contributed to the catalytic role of a biodiversity project include:

- **Behavior change:** 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 COREMAP [Coral Reef Rehabilitation and Management Project] reported using reef-friendly fishing gear as compared to 46 percent with high exposure. (Project no. 116, Indonesia)
- **New Social Norms:** 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.) (Project no. 220, Comoros)
- **Champions:** The Mongolia project (discussed further below) provided trainings and leadership opportunities for a core group of local community members who furthered the goals of the project during its implementation and are willing to carry on toward the project's goals afterward through establishment of nongovernmental organizations (NGOs) and other projects. (Mongolia, GEF #250)

- Self-perpetuating:** 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% 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 [rupiah] 300,000 to Rp 1,500,000 to the SeKarang Funds in each island. (Project no. 116, Indonesia)
- Paradigm shift** (the use of development plans before making decisions about coastal projects): 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. (Project no. 592, Belize)

Sometimes individual strategies are implemented without consideration of what happens next, perhaps under the assumption that undertaking an activity will automatically trigger follow-up activities. Instead of choosing and implementing separate activities, strategies that are linked together and build on one another seem to result in the project having a more substantial catalytic.

Figure 8 below presents an example from the Grasslands of Eastern Mongolia project (GEF #250), which maps out how an interrelated set of strategies changed the behavior of the community members, created local champions, and put into place systems that were self-perpetuating or would continue to build on themselves after the end of the project. Another way to conceive of the catalytic role of a project is those instances when activities occur that are inspired by the project but not originally planned for during the project’s design.

Figure 8: Example of Impacts of Interrelated Strategies in Mongolia

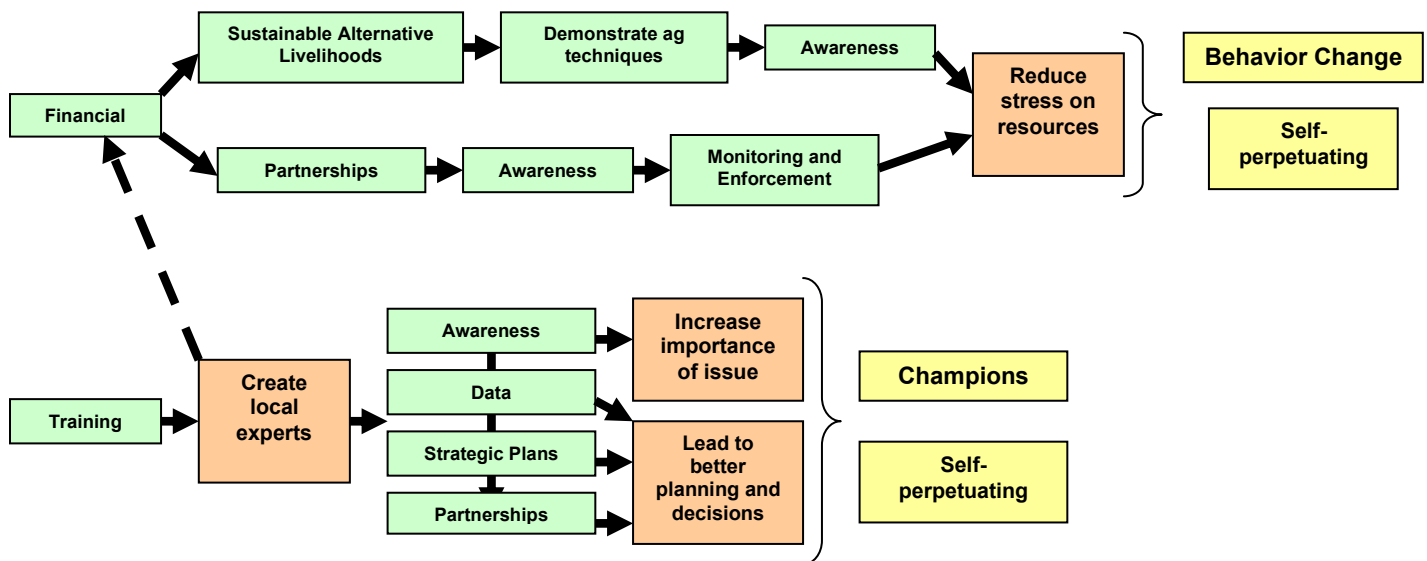
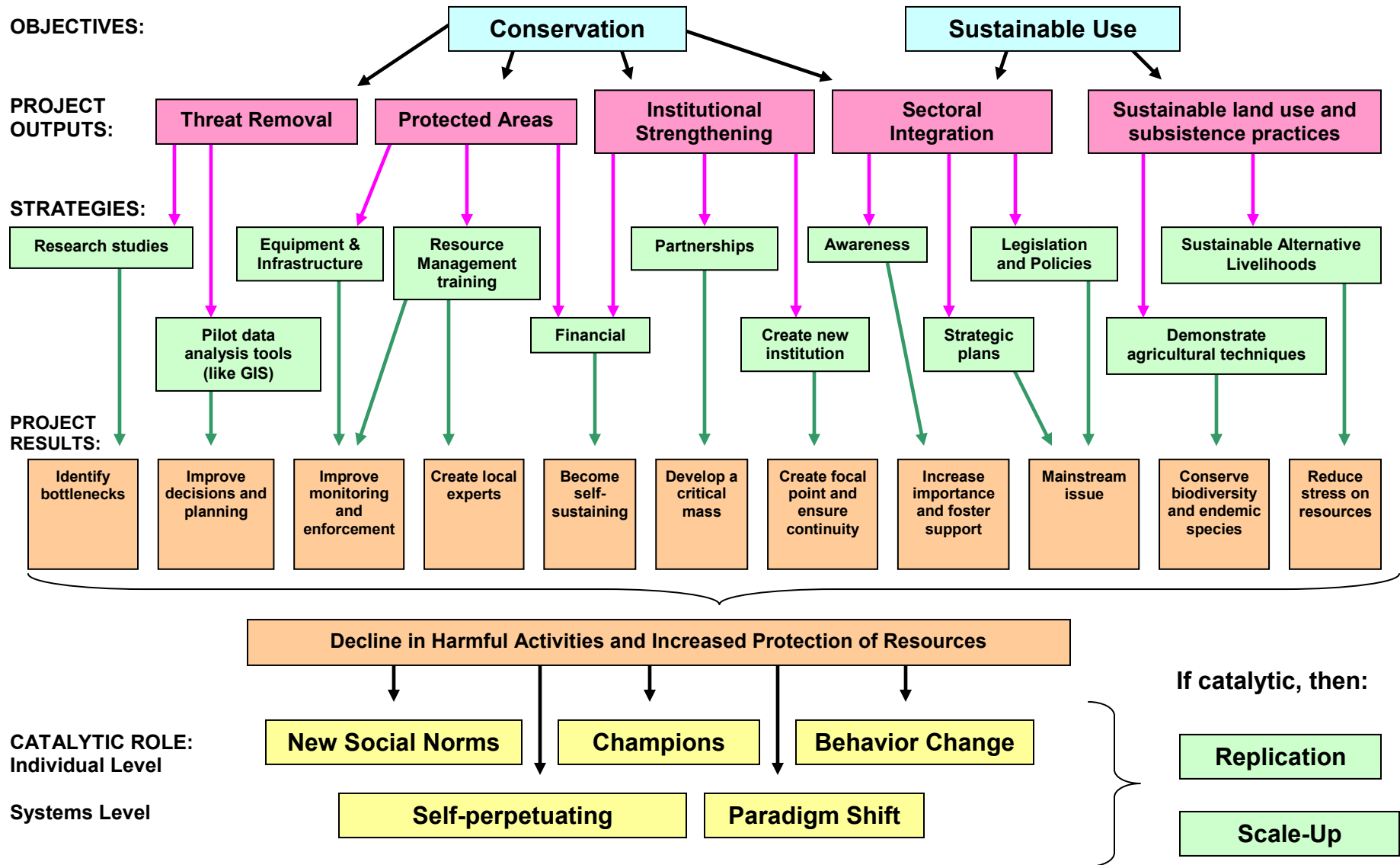


Figure 7: Biodiversity Project Framework



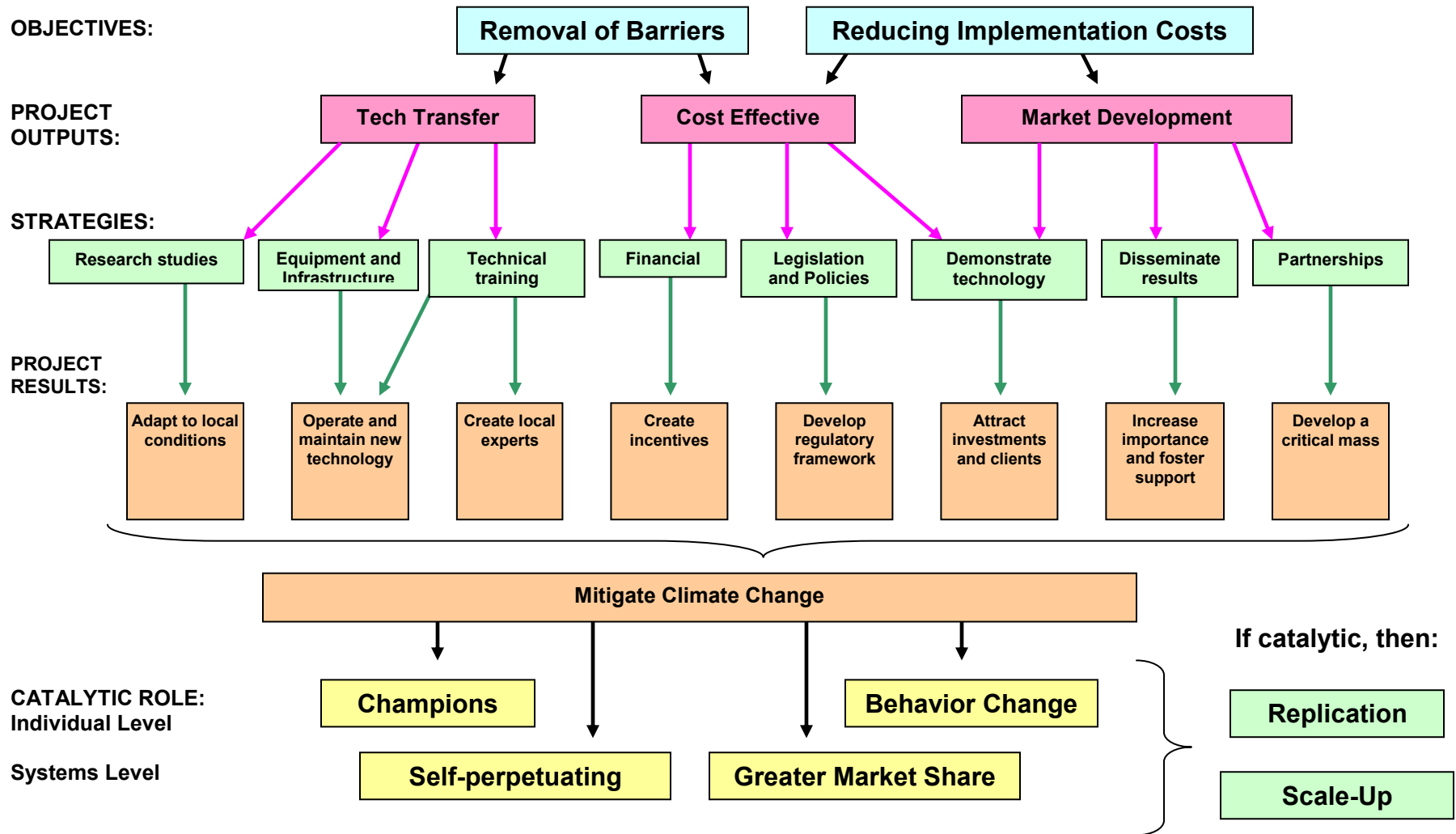
4.2 Climate Change

Figure 9 (on the next page) presents a conceptual framework for a catalytic role by combining the stated objectives and outputs for climate change projects from the operational strategy documents with the catalytic strategies and results described in the terminal evaluations. Compared with biodiversity projects, this framework is narrower in scope because emphasizes the adoption of new types of energy-efficient technologies.

Examples from the terminal evaluations of strategies that contributed to the catalytic role of a climate change project include:

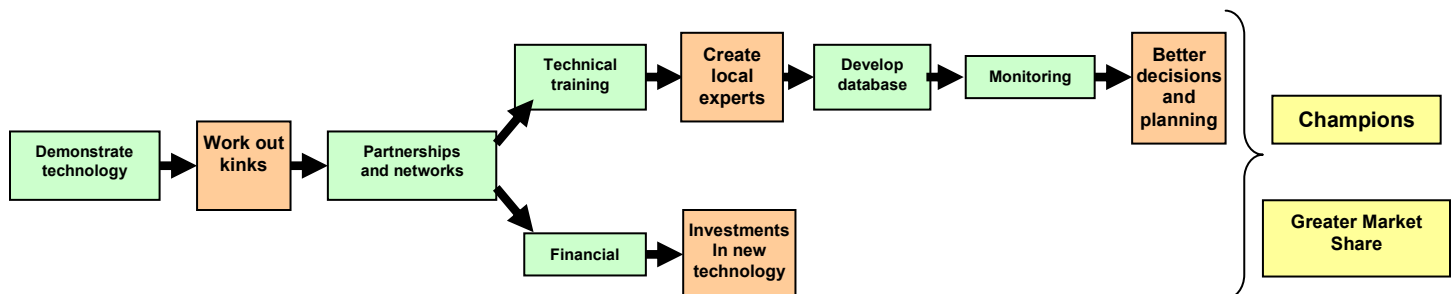
- **Behavior change** (by providing a visible feedback loop): The project has facilitated learning by requiring that data logger be installed with every new non-CFC [non-chlorofluorocarbon] chiller to keep track of the energy consumption data which have been used to provide clear evidence of energy saving 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. (Project no. 540, Thailand) 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.
- **Champions:** To increase its outreach and client support, IREDA [The Indian Renewable Energy Development Agency] established a cadre of business development associates in selected business centers of the country and is now piloting five regional representative offices. (Project no. 76, India)
- **Self-perpetuating** (through creating standards and an industry association to help to advocate for additional renewable energy investments): Solar companies such as Shell, Access, and Selco [Solar Electric Light Company], 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. (Project no. 104, Sri Lanka)
- **Greater market share:** The impact of the project on the Chinese industrial boiler sector has been broad and is considered substantial...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. (Project no. 97, China)

Figure 9: Climate Change Project Framework



Some of the climate change terminal evaluations also describe a chain of activities that facilitates the catalytic role of the project. **Figure 10** is an example from the Bulgaria project (GEF #302) that maps out how municipal demonstrations of technology and an energy network through which to share those experiences created local champions and a greater demand for those technologies.

Figure 10: Impact of Demonstration Strategy in Bulgaria



Aside from building on project activities, two other considerations in designing a project with a catalytic goal are the community context and the appropriateness of the technology. Although the Small Hydel Resources project in India (GEF #386) undertook key activities that could have a catalytic result, the community members ultimately did not use the new technology. In this project, the catalytic role needed to take place on both the systems level - to create a greater market share for the technology - and on the individual level, to convince community members to switch to using these new devices.

Apart from the planning for activities that lead to a catalytic role for a project, activities also happen outside the scope of the project that are inspired by the project itself, thus suggesting that the project is catalytic in nature.

4.3 International Waters

Figure 11 (on a later page) presents a conceptual framework for a catalytic role by combining the stated objectives and outputs for international waters projects from the operational strategy documents with the catalytic strategies and results described in the terminal evaluations. Similar to biodiversity projects, this framework is broad in scope because it emphasizes a range from changes in policies to adoption of strategic plans to implementation of those plans.

Examples from the terminal evaluations of activities that contributed to the catalytic role of an international waters project include:

- **Behavior change:** 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. (Project no. 59, Regional Organization of Eastern Caribbean States [OECS])
- **New social norms** (through changing decision making processes): 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 [Aqaba Special Economic Zone Authority] and is heavily involved in the planning process, e.g. land use and infrastructure development. (Project no. 72, Jordan)

- **Champions:** Formulation of national plans reinforced political will and commitment among technical ministries, institutions, NGOs, and individuals to improve ecological situation of Black Sea. (Project no. 341, Regional Black Sea)
- **Mainstream into bureaucracy:** GloBallast [Global Ballast Partnerships] 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. (Project no. 610, Removal of Barriers)
- **Accelerate a process:** 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 Program 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. There were many requirements which the country was not prepared to meet. However, ratification is well on the way as a result of the Program's intervention. (Project no. 396, East Asian Seas)

Some of the international waters terminal evaluations also describe a chain of activities that facilitate the catalytic role of the project. **Figure 12** below is an example from the Regional Water and Environmental Management project for the Aral Sea (GEF #73) which maps out how awareness about dam safety issues created local champions and accelerated the process for rehabilitating those dams.

Figure 12: Example of Chain of Activities from Regional Aral Sea Project

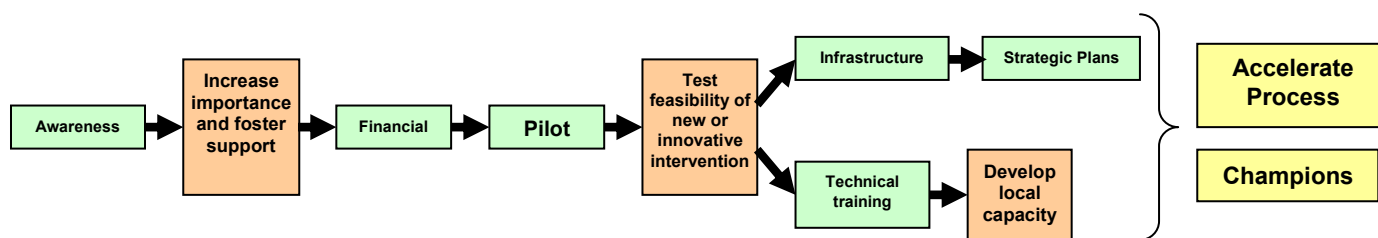
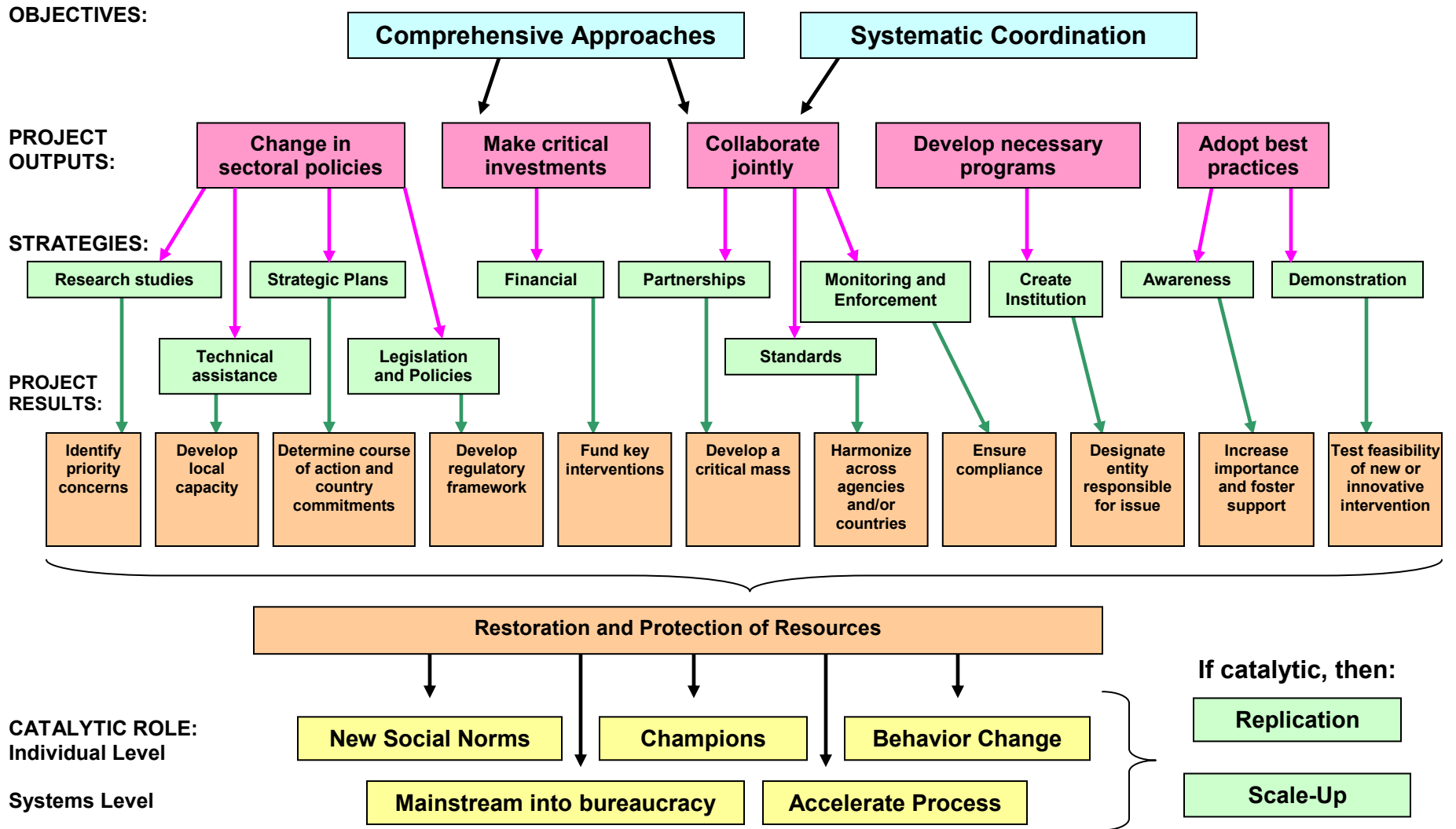


Figure 11: International Waters Project Framework



Annex A: Classification of Strategies

Strategies	How (sub-strategies)	Explanation
Awareness	<ul style="list-style-type: none"> • Increase knowledge about the issue • Dissemination of project results 	<ul style="list-style-type: none"> • Increase knowledge about the issue • Dissemination of project results
Individual Capacity Building	<ul style="list-style-type: none"> • Technical skills • Resource management 	<ul style="list-style-type: none"> • Technical skills • Resource management
Institutional Capacity Building	<ul style="list-style-type: none"> • Standards • Partnerships and Networks • Legislation and policies • Strategic plan • Financial • Developed database • Created institution • Framework • Infrastructure • Equipment • Research projects • Monitoring & Enforcement 	<ul style="list-style-type: none"> • Establish standards and codes • Develop Partnerships and Networks • Develop legislation and policies • Develop a strategic plan • Financial • Develop database • Create (or enhanced) institution • Framework • Build infrastructure • Provide needed equipment • Undertake research activities • Ensure monitoring and enforcement
Create Markets	<ul style="list-style-type: none"> • For new technologies • Incentives 	<ul style="list-style-type: none"> • Create market for new technologies • Provide incentives for market growth
Demonstration	<ul style="list-style-type: none"> • Provide a model • Show demand and use for product 	<ul style="list-style-type: none"> • Provide a model (of plant, approach) • Show demand and use for product
Modernize systems	<ul style="list-style-type: none"> • Upgrades • Replacement • Remediation 	<ul style="list-style-type: none"> • Upgrades of systems • Replacement of old systems • Remediation
Pilot	<ul style="list-style-type: none"> • Model new concept or product 	<ul style="list-style-type: none"> • Model new concept or product
Protected Area	<ul style="list-style-type: none"> • Create • Expand 	<ul style="list-style-type: none"> • Create protected area • Expand protected area
Replication	<ul style="list-style-type: none"> • Technique/program used by another place 	<ul style="list-style-type: none"> • Promote or fund technique or program used by others, or <i>to</i> others
Scaling-up	<ul style="list-style-type: none"> • Expansion of project • Incorporated into national government or agency 	<ul style="list-style-type: none"> • Expand the project scale • Incorporate project activities into government or agency
Sustainable Economic Activity	<ul style="list-style-type: none"> • Alternative livelihoods for local communities • Diversify local production systems • Ecotourism 	<ul style="list-style-type: none"> • Promote alternative livelihoods and income for local communities • Diversify local production systems • Promote ecotourism

Annex B: Issues for Field Work

The conceptual frameworks described above may help to identify activities during and after project implementation which have potential catalytic results. Fieldwork will help to refine these concepts, particularly the role of process chains. Case studies should aim to test and validate the conceptual frameworks for catalytic role; and gather findings and lessons learned on the application of the GEF catalytic role and emerging effects at country level. Each framework would have different implications for how to apply counterfactual logic in assessing catalytic effects. Specific issues to be addressed in case study field work could include assessment of the building blocks of catalytic change; analysis of the strategies applied; and identification of the results chain, as described below.

Context and Pre-existing Phenomena

- a. The **context** of the project at its start, evolution during the project, at project end and after. This would include relevant economic, political (policy changes), environmental, and social trends, to identify key changes in the development situation and the extent to which these can be considered catalytic; and contextual factors that influenced the project results (i.e. hindered or promoted catalytic effects). Are there certain initial or contextual features of a project, such as a perceived urgent situation, that promote a stronger catalytic result?
- b. **Factors or lessons learned** that contributed to (or are linked to) the catalytic role of the project, either external (see above) or internal to the project. The internal analysis would include discussion of which strategies were especially effective in catalytic effects, and why; timescale involved; and (if found) links to sustainability; policies; replication, capacity building; demonstration or pilots; cofinancing and/or individual champions.
- c. **Support provided by other** GEF projects in the country, and of other donors or organizations, and how these have added to or influenced the catalytic effect of the project studied. Given that people have limited time and resources, does it matter if the project occurs at the same time as other development projects?
- d. **Geographic Space:** the physical space within which catalytic effects occur, often defined by the pre-existing phenomena that projects are thought to address.

Catalytic Actors

- e. The **role** played by the GEF project in the context of the activities of other actors in the sector, and the extent to which this role was catalytic. The catalytic role played can be considered at several levels: At country level; sub-national (or provincial) level; project site level; sectoral level; and/or individual level. What implementation factors as important to success, such as identifying a champion within the government or community or institutional changes?

Plans of Action

- f. The **strategies** employed by the project, the combination of different strategies, and the effectiveness of these; and the results chain used by the project.

Time Horizon

- g. **Time:** considering that time horizons for catalytic effects are rarely specified. If the project initially seemed catalytic, how long does this stage last? What was left behind at the end of the project, such as new behaviors or technology transfer, that would contribute to catalysis and how long did they persist?

Catalytic Goals

- h. **Implications** of the project *beyond* its immediate outputs and outcomes, and immediate beneficiaries. The catalytic effects would surpass the intended effects on the target groups and intended impact.

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- i. **“Lever” of Catalysis:** identifying the implied causal mechanisms of catalytic change, and the underlying results chains, using the frameworks for each focal area.

¹ The African ‘Catalytic’ Growth Fund (ACGF) – this fund was founded in 2006 (by DFID, Spain and The World Bank) to ‘scale-up’ resources for Africa. Catalysis is interpreted primarily as process of acceleration or scaling-up of development.

² Lele, U et al (2007) *Scaling up Development Assistance: Lessons from Donor Evaluations and Evaluation Journals for Achieving Large Scale Sustainable Impacts*. Wolfensohn Initiative of the Brookings Institute.

³ Ibid.

⁴ Some strategies may be cross-cutting; capacity building can for example be a component of all the other strategies. The chain is *not* linear; the catalytic efforts may jump some stages, or may start at different points, depending on circumstance and context.

⁵ Gibson et al (2005) “From Local Enforcement and Better Forests,” *World Development*, Vol 33 No 2, pg 281.

⁶ Protected Area activities involve expanding or creating a protected area, not the improvement of a management system for a protected area, which is coded as Institutional Capacity Building.