



INTEGRATING LIVELIHOOD AND CONSERVATION GOALS

A Retrospective Analysis of World Bank Projects

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MEASURING IMPACT

CONTRACT INFORMATION

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Front Cover: A child from the Sao Felix community in the Brazilian Amazon with a basket of leaves, Brazil. Photo Credit: Neil Palmer/CIAT for Center for International Forestry Research (CIFOR).

Back Cover: Dusk at Danum Valley, Malaysia. Photo Credit: M. Edliadi for the Center for International Forestry Research (CIFOR).

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ACRONYMS

- ICR** Implementation Completion Report
- IEG** Independent Evaluation Group
- USAID** United States Agency for International Development

I. OVERVIEW

Strategic approaches that integrate biodiversity conservation and livelihood goals have been part of the conservation toolbox for decades. However, the evidence in support of their effectiveness remains mixed, and there is much to be learned about which project attributes are associated with successful implementation. Using a database of World Bank project evaluations, this analysis aimed to contribute to building the evidence base around the integration of biodiversity conservation and livelihood goals by focusing on three questions.

First, what are the attributes of integrated livelihood and biodiversity conservation projects associated with the achievement of economic, conservation, and social impacts? The analysis found that five interrelated categories of project attributes were frequently mentioned as drivers of successful implementation. These include aspects of project design and implementation, stakeholder engagement, the local policy context, monitoring and evaluation, and technical capacity.

Second, the analysis assessed the effect of integrating biodiversity conservation and livelihood goals on the odds of a project being evaluated as successful by the World Bank. By comparing World Bank project ratings, the analysis found that integration of livelihood and biodiversity conservation goals does not significantly affect the odds of a project being evaluated as successful.

Finally, the analysis asked whether the achievement of economic benefits was associated with conservation impacts. The analysis found no association between success in the provision of economic benefits and the achievement of biodiversity conservation goals. This finding may be because the projects included in the analysis did not always consider the livelihood and conservation strategic approaches as conceptually linked, and most often these approaches were implemented simultaneously, meaning that impacts in one strategic approach could rarely be a necessary precursor or result in another. This analysis also compiled a set of recommendations gleaned from the World Bank's experience implementing integrated biodiversity conservation and livelihood projects.

II. INTRODUCTION

Strategic approaches that integrate biodiversity conservation and livelihood goals have been part of the conservation toolbox for decades. Creating or highlighting explicit interdependencies between socioeconomic benefits and biodiversity conservation is expected to (1) reduce threats stemming from unsustainable natural resource exploitation and (2) contribute to human well-being by improving human quality of life in areas of conservation concern. However, the evidence to support the effectiveness of these programs and the attributes that influence their success are still being actively researched (Bowler et al. 2012, Brooks, Waylen, and Mulder 2013, Wicander and Coad 2015, Halpern et al. 2013, Roe et al. 2014, Roe et al. 2015). A recent systematic review found that carefully designed projects can deliver positive behavioral, attitudinal, economic, and ecological impacts (Brooks, Waylen, and Mulder 2013). Another review produced inconclusive results about the overall effectiveness of the strategic approach (Roe et al. 2015). Some studies have found little evidence that sustainable livelihood projects are generally both economically and environmentally successful (Bauch, Sills, and Pattanayak 2014). Others have concluded that project design or implementation flaws prevent accurate estimation of impacts (Brooks, Waylen, and Mulder 2012, Brooks, Waylen, and Mulder 2013).

To better understand the evidence and inform the design of United States Agency for International Development (USAID) biodiversity projects and activities, the Agency's Office of Forestry and Biodiversity in the Bureau for Economic Growth, Education, and Environment established the Conservation Enterprises Cross-Mission Learning Program in 2016. In consultation with many Missions that have used conservation enterprises approaches and with support from Measuring Impact, the learning program has developed a generalized theory of change for conservation enterprises as well as a learning agenda to help fill evidence gaps and strengthen the design of USAID biodiversity programs. This analysis and other short syntheses of evidence to inform USAID program design can be found at the USAID Biodiversity Conservation Gateway.

Like USAID, many conservation organizations and other major international donors have maintained or increased their investments in sustainable livelihood programming in recent years (Brock 2013, Martinez-Reyes 2014, Schuhbauer and Koch 2013). For example, in June 2015, the World Bank announced a \$90 million grant program to "promote investments in biodiversity conservation, preserve wildlife, and encourage sustainable livelihoods" (World Bank 2015). As investments in integrated livelihood and conservation projects grow, building the evidence base to guide programmatic decisions and improve project design and management becomes increasingly important.

To complement existing reviews of the published literature, this analysis reviewed integrated biodiversity and livelihood projects that the World Bank has implemented. For each project it undertakes, the World Bank produces standard evaluations with detailed information on project design, implementation, and overall outcomes. This report covers an extensive search and analysis of World Bank evaluations of integrated livelihood and conservation projects and makes recommendations about program¹ design and implementation. The analysis focused on three main questions:

1. What attributes of integrated livelihood and biodiversity conservation programs are associated with the achievement of economic, conservation, and social impacts?
2. Does the inclusion of livelihood activities in a biodiversity conservation program affect its odds of success?
3. Is the achievement of economic benefits associated with conservation impacts?

¹ In the USAID Program Cycle, a "project" is how USAID will achieve a result or set of results in a Country Development Cooperation Strategy or other strategy framework. The ADS Chapter 201 states that "project design typically incorporates multiple activities organized around a common purpose." In the World Bank context, "project" refers to an activity that is implemented on the ground. For this document, the word "program" has been adopted in instances that refer broadly to the World Bank project level and to the USAID project and activity levels (for which these findings are most relevant). The word "project" refers specifically to World Bank projects and/or USAID projects.

Question 1 aims at synthesizing information about attributes of project design or implementation that may be main drivers of development impacts. Question 2 was designed to investigate whether the integration of conservation and livelihood goals is associated with costs or benefits in terms of overall project success. A 2015 USAID technical brief outlines the generalized theory of change for supporting conservation enterprises. One of the key assumptions in this theory of change is that if participants in a conservation enterprise receive benefits, they will then change their behavior in favor of more sustainable forms of natural resource use. Question 3 was designed to use the World Bank project evaluation dataset to investigate whether there were associations between a project's economic benefits and its conservation impacts.

III. METHODS

The World Bank evaluates each of its projects through an Implementation Completion Report (ICR). These reports have a consistent format and are intended to be systematic evaluations of project performance and results. The Bank's Independent Evaluation Group (IEG) reviews ICRs and independently evaluates both the project and the quality of the ICR. This analysis used the World Bank IEG Project Design, Implementation, Performance, and Evaluation dataset, which includes 9,235 projects. Reviewers filtered the database for projects in the environment sector (361 projects). From this list, all projects that lacked a publicly available ICR were eliminated. The analysis focused on projects with biodiversity as one of the theme categories assigned by the World Bank. A project was determined to have a livelihood strategic approach if it included a livelihood objective or a project activity according to the classification described below. This produced a final set of 46 projects (Annex Table 1).

To characterize the diversity of implementation of livelihood strategic approaches in the final set of evaluations, the analysis identified three categories of livelihood strategic approaches:

1. An independent livelihood strategic approach was designed specifically to improve the economic situation of its stakeholders that did not qualify for inclusion in the two categories below. This included activities such as employment in protected area management.
2. An alternative livelihood strategic approach was designed to provide or encourage the use of resources, methods of exploitation, or occupations as alternatives to unsustainable means of living (Roe et al. 2014). This included activities such as biodiversity-friendly agricultural practices and agroforestry.
3. A conservation enterprise strategic approach was designed so that goods or services usually derived from biodiversity provide income and non-cash benefits to participants. This included activities such as locally owned ecotourism and the sustainable marketing of non-timber forest products.

Most projects implemented more than one type of livelihood strategic approach, and conservation enterprises were always implemented along with other types of livelihood strategic approaches (Annex Table 1). It was impossible, therefore, to draw inferences about the drivers of success or failure of a specific livelihood strategic approach.

This review examined the ICRs on projects with both biodiversity and livelihood goals. The review collected information on 30 project attributes (Annex Table 2), which included basic information about the project on location, total cost, and implementation dates; the project's main development objective; the livelihood activities included in the project's design; indicators and correlates of success or failure; governance structures mentioned; lessons learned; the outcome rating by both the ICR and the IEG reports; benefits generated by each project; and a categorical variable coding for the three kinds of livelihood activities.² This analysis recorded four types of impacts:

1. **Economic:** Impacts on income, including cash and non-cash benefits, such as increased access to food or medicine.
2. **Biodiversity:** Impacts on biodiversity and natural resource targets, such as increases in areas under protection.
3. **Human capital:** Impacts on people's attitudes, skills, and knowledge. This includes technical capacity, increases in a community's sense of pride, conflict resolution, gender equality, and local institution-strengthening. Benefits derived solely by project staff were not recorded here.
4. **Policy:** Impacts on governmental practices or policies beyond the project's implementation at any scale. For example, a project may inspire specific changes in national environmental policies, and thereby, affect conservation practice country-wide.

² The six Implementation Completion Report and Independent Evaluation Group ratings are Highly Unsatisfactory, Unsatisfactory, Moderately Unsatisfactory, Moderately Satisfactory, Satisfactory, and Highly Satisfactory. The analysis translated the ratings to a 1 to 6 scale. Project cost was expressed in dollars and project length in years. Region was noted using a categorical scale for Africa, Southern Asia, Eastern Europe, the Americas, North Africa and the Middle East, and East Asia-Pacific. Inclusion of livelihood activities was coded as a one-zero binary variable, in which inclusion was coded as one. Projects including a livelihood goal were further specified by the presence of one or more of the following subtypes: independent livelihood, alternative livelihoods, and conservation enterprises.

To compare outcomes across impact categories in a project, the analysis coded as successful those in which evaluations noted the achievement of the project's main objectives. For example, a project with the goal of developing sustainable wildlife management systems was considered to have been successful in producing a biodiversity impact because the ICR report noted marked improvements in wildlife population trends, strengthened ecological monitoring systems in focal areas, and increased awareness of conservation issues and the benefits of conservation (World Bank 2006). A project was considered to have been unsuccessful if it did not achieve its primary objectives in an impact category. Mixed results projects were those that achieved at least one, but not all, of their objectives.

Detailed descriptions on the analytical methods used to investigate each of the three main questions in this analysis are included in the Annex.

III. KEY RESULTS

QUESTION 1: What project attributes of integrated livelihood and biodiversity conservation projects are associated with the achievement of economic, conservation, and social impacts?

The quantitative analysis showed no statistically significant associations between the project attributes analyzed and overall project rating (for all comparisons, $p > 0.05$; Annex Table 3). The review also looked at qualitative information on any factor cited in the project evaluations as associated with successful implementation; this information complemented the quantitative analysis. Five interrelated categories of project attributes were identified:

1. Project design and implementation
2. Stakeholder engagement
3. Policy context
4. Monitoring and evaluation
5. Technical capacity

Project Design and Implementation

Successful projects defined realistic aims and scope. This included identifying the appropriate complexity and spatial and temporal scales for each strategic approach. Conservation and livelihood strategic approaches judged by the evaluators to be vague, overly complex, or too ambitious were likely to be unsuccessful. Successful projects were based on clearly articulated theories of change (See Tip 1).

Livelihood strategic approaches that built on evidence gathered from previous or concurring experiences, through existing project evaluations, and in the same sites tended to have better project design and to take advantage of proven methods, existing relationships, and awareness of the linkages between environmental conditions and livelihoods. In cases in which projects considered introducing novel strategic approaches, pilots helped identify and eliminate those that were least likely to succeed. Overall, robust monitoring, evaluation, and learning were associated with implementation success.

Stakeholder Engagement

Stakeholder engagement was frequently cited as a key project component (See Tip 2). Results indicate that consultative and collaborative processes used by government, implementing partners, and beneficiaries were critical to effective project design and implementation. Developing strong and equitable partnerships between project staff and project beneficiaries was mentioned as contributing to the achievement of conservation and livelihood objectives. Evaluations reported that consultative processes take time and can, therefore, slow the implementation, but these costs were minor compared to the benefits they produced. Successful stakeholder engagement was described as respectful, equitable, transparent, horizontal, and democratic. In some cases, projects benefited from the World Bank being perceived as a neutral actor.

Evaluations also pointed to potential risks in stakeholder engagement. Often, stakeholder engagement strategies include highlighting the benefits stakeholders can expect to obtain from the project, and therefore, they can create specific expectations about improvements in the quality of life.

Tip: Successful projects use explicit theories of change

Successful projects were implemented on the basis of robust logic, and explicit and clearly articulated connections among activities and how their implementation contributes to the main project goals. This included describing the relationships among threats and strategic approaches, and the roles and responsibilities of the key actors; in other words, developing an explicit theory of change as is required by USAID's Biodiversity Policy. For additional guidance see: [Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming](#).

Tip 2: Effective stakeholder engagement supports good outcomes

A 2016 [analysis](#) provides additional information on how to strengthen biodiversity program design through stakeholder engagement. The analysis includes a set of recommendations for designing and implementing stakeholder engagement efforts for biodiversity conservation goals.

Policy Context

As is the case in other conservation and development activities, favorable political environments and alignment with existing local government development objectives were often mentioned as an attribute of successful implementation. On the other hand, lack of interest or support from key government entities was often mentioned as a driver of implementation failure. One potential consequence of the lack of political support for the project was staff turnover, which was itself identified as a threat to successful or timely implementation. Evaluations also reported that ensuring the cooperation of all relevant government actors is critical because support in one key sector or at one scale, such as having support from the central government but not at the provincial level, may be insufficient.

Monitoring and Evaluation

In general, projects did not often quantify and report their economic and biodiversity impacts. This is in part the result of the complexity associated with quantifying progress in these areas, but it also reflects pervasive weaknesses in monitoring and evaluation systems that institutional initiatives at USAID and the World Bank are addressing throughout their programs. Projects specifically benefitted from a set of precisely defined, meaningful, and objectively measurable indicators; a clearly defined theory of change; and accurate and realistic baselines and targets.³ In the context of strategic approaches aimed at improving material quality of life, the review found that clarity, and a set of common, feasibly measurable indicators increased transparency, which itself was mentioned as an attribute associated with successful implementation.

Technical Capacity

A common practice among successful projects was identifying, engaging, and maintaining sufficient technical capacity to design and manage projects. These projects adequately matched the complexity of their strategic approaches to existing local capacity or identified individual or institutional capacity gaps and developed specific project activities to address them. The following are some of the aspects in which adequate capacity was mentioned as critical to project success:

- Harmonizing understanding of key concepts and tools among stakeholders
- Having the technical abilities to implement strategic approaches, including project management skills
- Using financial controls and safeguards
- Maintaining communication, dissemination, and outreach activities about the project

Overall, the World Bank's experience highlights the importance of careful project design based on realistic aims and consideration of local policy priorities; engaging and maintaining buy in from a variety of stakeholders; developing and implementing a strong monitoring and evaluation framework; and ensuring that sufficient technical capacity exists across all implementing partners. Further guidance about these topics in the USAID context is available in the [USAID Biodiversity and Development Handbook](#) and the [Biodiversity How-To Guides](#).

QUESTION 2: Does the inclusion of livelihood activities in a biodiversity conservation program affect its odds of success?

Activities that aim to achieve biodiversity conservation and livelihood goals are assumed to be at least as likely to be successful as those that do not include livelihood goals. To evaluate this assumption, the overall success ratings of the integrated conservation and livelihood projects were compared with those of a control group of 33 World Bank biodiversity projects without livelihood goals. The methods are described in more detail in the Annex.

There was no statistically significant difference in the odds of success across the two groups; that is, biodiversity conservation projects with and without livelihood goals are equally likely to be successful. This is

³ For additional guidance in the USAID context, please see [Biodiversity How-To Guide 1: Developing Situation Models in USAID Biodiversity Programming](#); [Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming](#); and [Biodiversity How-To Guide 3: Defining Outcomes and Indicators for Monitoring, Evaluation, and Learning in USAID Biodiversity Programming](#).

similar to the findings of a recent study that assessed the effect of including a biodiversity conservation goal in World Bank projects, which found no statistically significant effects on odds of success or failure in comparison with projects with “development-only” objectives (Kareiva, Chang, and Marvier 2008).

QUESTION 3: Is the achievement of economic benefits associated with conservation impacts?

The odds of achieving conservation goals were not significantly affected by the achievement of economic goals. That is, no association was detected between success in the provision of economic benefits and the achievement of biodiversity conservation goals. This finding may be because the projects included in this analysis did not always consider the livelihood and conservation strategic approaches as conceptually linked. Also, these approaches frequently were implemented simultaneously, meaning that success in one strategic approach could rarely be a necessary precursor or consequence of another. Additionally, the World Bank has noted that its experience suggests that rural development does not necessarily provide a sufficient or sustainable incentive for biodiversity conservation (World Bank 2005), especially when livelihood goals are perceived by stakeholders to be secondary to other project objectives (World Bank 2003).

Projects in this analysis that resulted in economic impacts that were likely to be sustained past the life of the project were not the norm. Human capital and policy impacts were widespread, and these effects may be some of the most important and lasting results of the projects analyzed; however, no information is available in the evaluations on the sustainability of these benefits. This is an area that needs further analysis.

IV. ADDITIONAL FINDINGS

The results of this analysis confirm and extend those of previous studies, and this analysis shares the conclusions of the evaluation of the USAID Initiative for Conservation in the Andean Amazon (Hofstede, Cabal, and Vásconez 2015), in several aspects: (1) often little reliable evidence is evident with which to assess the magnitude and sustainability of the economic impacts that result from livelihood strategic approaches; (2) implemented livelihood strategic approaches do not necessarily address the primary environmental threats, and thereby, the approaches have limited utility as a conservation tool; and (3) the linkages between livelihood and conservation objectives are often unclear, or at best, they are indirect. These findings imply that program design teams should be clear about what they are trying to achieve and how they will measure progress – both for conservation and for livelihood objectives – when they integrate these strategic approaches. USAID’s [Conservation Enterprises Cross-Mission Learning Program](#) offers additional resources to aid program design teams.

This analysis, as in previous studies, found social impacts to be prevalent and important (Bauch, Sills, and Pattanayak 2014, Hofstede, Cabal, and Vásconez 2015); that profitability in sustainable livelihood strategic approaches is relatively uncommon (Salafsky et al. 2001, Hofstede, Cabal, and Vásconez 2015); and that projects tend to be more effective at capturing data related to social benefits rather than to economic or biodiversity benefits (Hofstede, Cabal, and Vásconez 2015, Torell et al. 2010).⁴ Overall, this analysis suggests that the sustainability of the benefits derived from livelihood strategic approaches remains an open question that needs better data and long-term monitoring (Torell et al. 2010). The analysis also found that generalizations about drivers of success are challenging, considering a plethora of context-specific factors that can affect project results (Torell et al. 2010, Brooks, Waylen, and Mulder 2012).

⁴ For additional detail that synthesizes the evidence on these points, please visit the [Conservation Enterprises Learning Group](#) and the [Conservation Enterprises Brief](#).

V. IMPLICATIONS FOR USAID PROGRAM DESIGN

This analysis suggests that success in programs that use biodiversity conservation and livelihood approaches can be enhanced if they:

- Ensure that projects and activities have realistic aims and scope.
 - See [Biodiversity How-To Guide 1: Developing Situation Models in USAID Biodiversity Programming](#)
- Develop an explicit theory of change and identify key assumptions that underpin linkages between interventions, intermediate results, and goals.
 - See [Chapter 2](#) of the [USAID Biodiversity and Development Handbook](#) and [Conservation Enterprises: Using a Theory of Change Approach to Synthesize Lessons from Usaid Biodiversity Projects](#) and [Biodiversity How-To Guide 2: Using Results Chains to Depict Theories of Change in USAID Biodiversity Programming](#).
- Use the best available evidence to inform project design, including assessing whether there is sufficient evidentiary support for the project's key assumptions.
 - See [Identifying and Using Evidence in Biodiversity Programming](#).

USAID's project evaluation reports can provide useful evidence about past implementation experiences. For an example that includes insights about integrated biodiversity and livelihood projects see [Mid-Term Evaluation Report of the Initiative for Conservation in the Andean Amazon, Phase 2 \(ICAA2\)](#).

- Inform project design by engaging a variety of stakeholders in transparent consultative processes.
 - See [Stakeholder Engagement for Biodiversity Conservation Goals: Assessing the Status of the Evidence](#).
- Be explicit and realistic about the expected benefits of the project and how they will be distributed.
- Ensure that the project's goals and interventions are consistent with local and country level policy priorities.
 - See USAID's guidance on [Local Systems: A Framework for Supporting Sustained Development](#).
- Develop a strong monitoring and evaluation blueprint and ensure its systematic implementation.
 - See [Biodiversity How-To Guides](#) as well as [Chapter 2](#) of the [USAID Biodiversity and Development Handbook](#), the USAID Evaluation Toolkit, and PPL's Complexity-Aware Monitoring Brief.
- Ensure that partners, staff, and key stakeholders have the necessary technical capacity to manage and implement project tasks; if individual or institutional technical capacity gaps exist, design targeted project activities to address them.

VI. LIMITATIONS OF THE ANALYSIS

This analysis focused on identifying the context, overall impact, and attributes of successful implementation of livelihood strategic approaches in biodiversity conservation programs. World Bank projects in the sample, however, were invariably multicomponent. That is, projects had multiple strategic approaches and targets across and within World Bank themes and sectors. It was, therefore, difficult to separate the impacts and the correlates of success or failure of the livelihood strategic approaches in isolation. Each impact category had the potential for both successful and unsuccessful activities, which made identifying generalizable drivers of success challenging.

The project selection protocol produced a relatively small set of projects, limiting the power of statistical analyses and the choices for project comparisons. Project outcomes in the unsatisfactory range were relatively uncommon, which decreased the amount of information available to analyze the drivers of unsuccessful implementation. One important caveat should be noted on generalizing the results of this analysis: the conclusions apply only to the universe of World Bank projects that formed the treatment and control samples, and therefore, they are not generalized insights about all conservation projects that include a livelihood strategic approach.

VII. REFERENCES

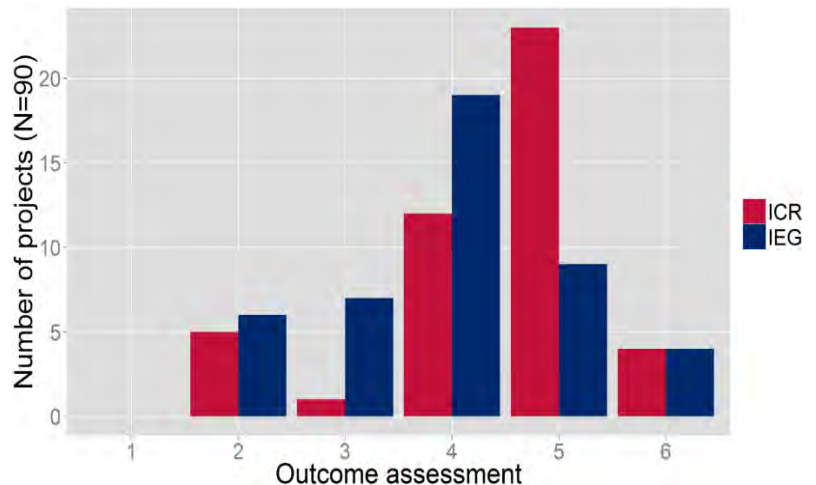
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ANNEX: METHODS

The distribution of outcome ratings in ICRs in our sample was strongly skewed, with a peak on Satisfactory outcomes (Figure 1). In contrast, the World Bank IEG review outcome ratings are closer to a normal distribution, with a peak on Moderately Satisfactory outcomes. That is, overall outcome assessments in the ICRs and the IEG reviews are not always in agreement. This analysis focuses on ICRs because they provide detailed information about each project. Considering the distribution of overall outcomes in the IEG reviews, IEG success ratings were used as a basis for comparing the influence of inclusion of livelihood strategic approaches on overall project outcomes. When publicly available, the full IEG report was reviewed in cases where its overall outcome assessment resulted in a change across the Satisfactory-Unsatisfactory divide, when compared to the ICR assessment. This helped ensure that important additional information, lessons learned, or other notable project attributes not included in the ICR were also captured.

Figure 1: Distribution of project outcome ratings in ICRs and IEG reviews. Outcome assessments are shown here in a numerical scale where 5 is equivalent to Satisfactory and 6 is equivalent to Highly Satisfactory.



QUESTION 1: What project attributes of integrated livelihood and biodiversity conservation projects are associated with the achievement of economic, conservation, and social impacts?

The influence of region, project start and end year, project duration, and total project cost (log transformed) on project ratings were evaluated as categorical variables using regression models. The influence of these variables was also tested using project success as a binary variable (success was defined as an IEG rating higher than three) using logistic regressions. A list of variables included in statistical analyses in this survey is included in Annex Table 3.

QUESTION 2. Does the inclusion of livelihood activities in a biodiversity conservation program affect its odds of success?

A control group was created to assess the effect of inclusion of livelihood goals, using the following criteria:

1. Biodiversity was defined by the World Bank as a project theme.
2. The project implemented no strategic approaches directly related to livelihood.

A list of 33 projects, using these criteria, provided comparisons and basic descriptors and ICR and IEG ratings were collected. The effect of inclusion of each type of livelihood strategic approach on overall project success (both ICR and IEG assessments) was evaluated using Fisher's exact test by building contingency tables matching livelihood strategic approach type with final project outcomes.

QUESTION 3. Is the achievement of economic benefits associated with social or conservation impacts?

A contingency table characterizing projects as having achieved success, mixed results, or failure across economic, biodiversity, and human capital impacts was built, and associations among impact classes were tested using Fisher's exact test.

TABLE 1: List of Projects Included in This Analysis

PROJECT	INDEPENDENT LIVELIHOOD	ALTERNATIVE LIVELIHOOD	CONSERVATION ENTERPRISE	ICR OUTCOME
Argentina – Biodiversity Conservation Project	X	X	X	Satisfactory
Azerbaijan – Rural Environment Project	X	X		Unsatisfactory
Bangladesh – Aquatic Biodiversity Conservation Project	X	X		Moderately Satisfactory
Benin – National Parks Conservation and Management Program	X		X	Satisfactory
Brazil – Parana Biodiversity Project	X	X	X	Moderately Satisfactory
Burkina Faso – Sahel Integrated Lowland Ecosystem Management Project	X	X	X	Satisfactory
Burkina Faso and Cote d'Ivoire – West Africa Pilot Community-Based Natural Resources and Wildlife Management Project	X	X	X	Satisfactory
Central America – Mesoamerican Barrier Reef System		X		Satisfactory
Central America – Integrated Ecosystem Management in Indigenous Communities Project		X	X	Moderately Satisfactory
Chad – Community-Based Ecosystem Management Project	X	X	X	Moderately Satisfactory
Colombia – Sierra Nevada Sustainable Development Project		X	X	Satisfactory
Colombia, Costa Rica, and Nicaragua – Integrated Silvopastoral Approaches to Ecosystem Management Project		X	X	Satisfactory
Costa Rica – Global Environmental Facility Trust Fund Grant for the Ecomarkets Project	X			Satisfactory
Croatia – Karst Ecosystem Conservation Project	X	X		Highly Satisfactory
Ecuador – National System of Protected Areas Project	X			Moderately Unsatisfactory
Ghana – High Forest Biodiversity Conservation Project	X	X	X	Satisfactory

PROJECT	INDEPENDENT LIVELIHOOD	ALTERNATIVE LIVELIHOOD	CONSERVATION ENTERPRISE	ICR OUTCOME
Ghana – Northern Savanna Biodiversity Conservation Project		X		Satisfactory
Guinea-Bissau – Coastal and Biodiversity Management Project		X		Moderately Satisfactory
Honduras – Biodiversity in Priority Areas Project		X		Satisfactory
Honduras – Sustainable Coastal Tourism Project	X			Highly Satisfactory
Jordan – Conservation of Medicinal and Herbal Plants Project				Moderately Satisfactory
Kenya – Tana River Primate National Reserve Conservation Project	X	X		Unsatisfactory
Kenya – Lake Victoria Environmental Management Project	X		X	Unsatisfactory
Latin America and Caribbean – Conservation and Sustainable Use of the Mesoamerican Barrier Reef System Project	X			Satisfactory
Lesotho – Maloti-Drakensberg Transfrontier Conservation and Development Project	X		X	Moderately Satisfactory
Malawi – Mulanje Mountain Biodiversity Conservation Project	X	X	X	Moderately Satisfactory
Mauritius – Biodiversity Restoration Project		X		Satisfactory
Mexico – Consolidation of the Protected Areas System Project	X	X		Highly Satisfactory
Mexico – Indigenous and Community Biodiversity Conservation Project	X		X	Satisfactory
Namibia – Integrated Community-Based Ecosystem Management Project	X	X	X	Satisfactory
Nicaragua – Atlantic Biological Corridor Project		X		Satisfactory
Pakistan – Protected Areas Management Project	X			Moderately Satisfactory

PROJECT	INDEPENDENT LIVELIHOOD	ALTERNATIVE LIVELIHOOD	CONSERVATION ENTERPRISE	ICR OUTCOME
Panama – Atlantic Mesoamerican Biological Corridor Project	X			Satisfactory
Peru – Participatory Management of Protected Areas Project		X		Satisfactory
Senegal – Sustainable and Participatory Energy Management Project		X	X	Highly Satisfactory
South Africa – Biodiversity Conservation and Sustainable Development Project	X			Highly Satisfactory
South Africa – Cape Peninsula Biodiversity Conservation Project	X			Satisfactory
South Africa – Greater Addo Elephant National Park Project	X			Moderately Satisfactory
South Africa – Maloti-Drakensberg Transfrontier Conservation and Development Project		X	X	Moderately Satisfactory
Sri Lanka – Conservation and Sustainable Use of Medicinal Plants Project		X		Satisfactory
Tanzania – Lake Victoria Environmental Management Project	X			Satisfactory
Tanzania – Lower Kihansi Environmental Management Project				Satisfactory
Tunisia – Protected Areas Management Project	X		X	Satisfactory
Turkey – Biodiversity and Natural Resource Management Project		X	X	Moderately Satisfactory
Ukraine – Azov Black Sea Corridor Biodiversity Conservation		X		Unsatisfactory

TABLE 2: Coding Fields for Each ICR Evaluated in This Analysis

1	Project ID
2	Region
3	Country
4	Project Cost
5	Agreement type
6	ICR outcome
7	IEG outcome
8	IEG evaluation date
9	Time to IEG evaluation (years from project completion)
10	ICR sustainability rating
11	IEG sustainability rating
12	Discrepancy between ICR and IEG ratings (Y/N)
13	Direction of ratings discrepancy
14	Project development objective
15	Livelihood strategic approach
16	Alternative livelihood strategic approach
17	Conservation enterprise strategic approach
18	Financial impacts
19	Natural capital impacts
20	Human capital impacts
21	Policy impacts
22	Indicators of success/failure
23	Correlates of success/failure
24	Governance factors
25	Lessons learned
26	Enabling conditions in place (Y/N)
27	Benefits realized (Y/N)
28	Behavior change observed (Y/N)
29	Threat reduction observed (Y/N)
30	Quality of the evidence supporting reported impacts

TABLE 3: Variables Used in Statistical Analyses in This Analysis

DEPENDENT VARIABLE	INDEPENDENT VARIABLE
IEG assessment	Region
	Country
	Log (cost)
	Entry year
	Exit year
	Project duration
IEG assessment disaggregated by livelihood strategy	Region
	Country
	Log (cost)
	Entry year
	Exit year
	Project duration
IEG assessment (binary variable)	Region
	Country
	Log (cost)
	Entry year
	Exit year
	Project duration
IEG assessment	Presence of livelihood goal (binary)
IEG assessment	Type of livelihood strategic approach
Type of impact (economic, biodiversity, human capital)	Project outcomes
Project cost (projects with a livelihood goal)	Project cost (projects without a livelihood goal)

Note: None of the tests was significant at the 5% level.

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