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**ASSESSING IMPACTS OF FOREST  
GOVERNANCE INTERVENTIONS: LEARNING  
FROM WORLD BANK EXPERIENCE**

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## ACRONYMS

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AAA	Analytic and Advisory Activities
AES	Agriculture and Environmental Services
AfDB	African Development Bank
AFR	Africa
ALSS	Arun Valley Living Standards Survey
APL	Adaptable Program Loan
BNDES	National Bank for Economic and Social Development
BTOR	Back-to-Office Report
CCT	Conditional Cash Transfer
CIDA	Canadian bilateral assistance
CIF	Climate Investment Funds
CoP	Community of Practice
CWIQ	Core Welfare Indicators Questionnaires
DFS	District Forest Service
DGFP	General Directorate of Forests and Pastures
DIME	Development Impact Evaluation Initiative
DoF	Department of Forestry
DoFI	Department of Forestry Inspection
DP	Development Partners
DPL	Development Policy Loan
DPO	Development Policy Operation
DRC	Democratic Republic of Congo
EAP	East Asia Pacific
EC	European Commission
ECA	Europe and Central Asia
EIA	Environmental Impact Assessment
EITI	Extractive Industries Transparency Initiative
EMGRG	Economic Management and Governance Reform Grant Program
ENA-FLEG	Europe and North Asia Forest law Enforcement and Governance in Europe and North Asia
ENPI	European Neighborhood Policy Instrument
ENV TAL	Technical Assistance Loan for the Environmental Sustainability Agenda
EPA	Environmental Protection Agency
EU	European Union
FBiH	Federation of Bosnia and Herzegovina
ESW	Economic and Sector Work
FC	Forestry Commission (of Ghana)
FNCP	Forest Nature and Conservation Project
FFA	Federal Forest Agency

FLEGT	Forest Law Enforcement Governance and Trade
FM	Financial Management
FMIS	Forest Management Information System
FMU	Forest Management Unit
FPUA	Forest and Pasture Users Associations
FSC	Forest Stewardship Council
GAC	Governance and Anticorruption
GEF	Global Environment Facility
GEO	Global Environment Objective
GFW	Global Forest Watch
GIS	Global Information Systems
GIZ	German Society for International Cooperation
GoB	Government of Brazil
GoG	Government of Ghana
GoL	Government of Lao PDR
IBAMA	Brazilian Institute for the Environment and Natural Resources
IBRD	International Bank for Reconstruction and Development
IBTV	Igman-Bjelasnica-Treskavica-Visocica
ICCN	Congolese Nature Conservation Institute
ICMBio	Institute Chico Mendes Biodiversity
ICR	Implementation Completion Report
ICT	Information and Communication Technologies
IDA	International Development Association
IE	Impact Evaluation
IEG	Independent Evaluation Group
IOI	Intermediate Outcome Indicators
INPE	Brazilian Space Research Agency
ISR	Implementation Status Report
IV	Instrumental Variable
LAC	Latin America and the Caribbean
LED	Law Enforcement Division
LSMS	Living Standards Measurement Surveys
LUCC	Land Use and Cover Change
MDA	Ministries, Departments, and Agencies
M&E	Monitoring and Evaluation
MECNT	Ministry of Environment, Nature Conservation and Tourism (of the Democratic Republic of Congo)
METT	Management Effective Tracking Tool
MINEF	Ministry of Environment and Forestry
MINFOF	Ministry of Forestry and Wildlife (of Cameroon)
MIT	Massachusetts Institute of Technology
MMA	Ministry of Environment
MNRE	Ministry of Natural Resources and Environment
MoFEP	Ministry of Finance and Economic Planning
MTCC	Malaysian Timber Certification Council
MTR	Mid-Term Review
NBCA	National Biodiversity Conservation Areas
NFPP	Natural Forest Protection Programme
NGO	Non-Governmental Organization
NP	National Park
NPMO	National Project Management Office
NREG	Natural Resources and Environmental Governance Program

NRM	Natural Resources Management
NTFP	Non-Timber Forest Products
NUKCFP	Nepal-United Kingdom Community Forestry Project
OLS	Ordinary Least Squares
OM	Outcome Mapping
ONP	Ordubad National Park
PA	Protected Areas
PAD	Project Appraisal Document
PAF	Program Assessment Framework
PAME	Protected Areas Management Effectiveness
PAS	National Sustainable Amazon Program
PD	Program Document
PDO	Project Development Objective
PEFC	Programme for the Endorsement of Forest Certification (PEFC)
PES	Payment for Environmental Services
PFA	Production Forest Areas
PIU	Project Implementing Unit
PMC	Project Management Center
PMT	Project Management Team
PP	Project Paper
PRL	Programmatic Reform Loan
PROCEDE	Programa de Certificacion de Derechos Ejidales
PROFOR	Program on Forests
PRSC	Poverty Reduction Support Credit
PRSP	Poverty Reduction Strategy Paper
PSFM	Participatory Sustainable Forest Management
PSM	Propensity Score Matching
RCT	Randomized Control Trials
RDD	Regression Discontinuity Design
SAC	Structural Adjustment Credit
SAR	South Asia Region
SDNP	Shah Dag National Park
SEM	Sustainable Environmental Management
SFA	State Forestry Administration
SFB	Brazilian Forest Service
SFI	State Forest Inventory
SFM	Sustainable Forest Management
SIL	Specific Investment Loan
SUFORD	Sustainable Forestry for Rural Development
TA	Technical Assistance
TAL	Technical Assistance Loan
TTL	Task Team Leader
VD	Village Development
VPA	Voluntary Partnership Agreement
WB	World Bank
WRI	World Resources Institute
WWF	World Wildlife Fund

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## Executive Summary

The World Bank's 2002 Forest Strategy laid down two bold targets, which it saw as the collective outcome of global efforts to promote Sustainable Forest Management through improving forest governance. First, by 2012/13, a reduction of global illegal logging by 50 percent (from an estimated baseline value of \$10 billion per annum); and, second, a 50 percent decrease in the estimated value of taxes, fees, and levies willfully evaded. However, there has been little systematic evidence to assess the extent to which these targets have been achieved. More generally, the capacity to assess the impacts of interventions to improve governance for forests is of variable quality. This is a drawback (applicable not only to the World Bank but to other development agencies as well) as it limits our ability to learn from evidence and to apply the learning in designing effective interventions. By looking at a suite of the Bank's forestry programs and projects, this report identifies the bottlenecks to improve tracking the impacts of forest governance interventions and suggests ways in which they can be removed and the capacity for impact evaluation (IE) strengthened.

The report selected a sample of sixteen World Bank financed projects and programs which have significant forest governance components (see table 5.1 in the main report). This was complemented with a handful of Economic and Sector Work (ESW) and Technical Assistance (TA) projects, which focus on forest governance. For all activities in the sample the symptoms of poor forest governance and the project interventions proposed to tackle the root-causes of the symptoms have been identified. In each case, the report looks at the monitoring and evaluation approaches proposed and examine the extent to which the interventions were successful (or not) in addressing the identified problems, based on the evidence gathered from the monitoring and evaluation. In this process the report provides information on the design of and experience with the implementation of the approaches.

The report finds that most Bank financed projects are silent on a theory of change or an articulation of a causal pathway connecting the symptoms, the interventions proposed and their expected impacts. Thus, it is challenging to pinpoint exact linkages between the observed symptoms of poor forest governance and the interventions which are being proposed to address them. Tracking impacts in forest governance projects, has relied almost exclusively on specially developed log-frame matrices such as a Results Framework or a Policy Matrix. Both of these have been used primarily to measure progress toward project objectives through the use of performance indicators, coupled with baseline surveys and proposed target values. However, the ex-ante approaches to monitoring and evaluation in Bank projects, typically do not try to establish attribution, nor do they systematically track spill-over effects (positive or negative) and leakages resulting from project interventions. They also do not consider the role of "confounding factors" that is, non-project influences, which can influence expected project outcomes. Finally, in most cases impacts are not monitored beyond the life-cycle of the project. Because of these shortcomings the Policy Matrix or Results Framework approaches do not fully measure the impacts of Bank interventions.

The current weakness in being able to measure impacts systematically and comprehensively should not be taken to mean that Bank financed interventions have not had any impacts. The need is to develop a culture of measurement whereby impacts are objectively and routinely measured and the learning potential through IE maximized. To this end the report recommends three actions:

- Develop a compendium of practical techniques for IE in forestry and raise awareness among project task team leaders. Drawing upon actual case examples, this would demonstrate the value of starting with causal pathways linking the intended outcomes to the necessary inputs and outputs and clarify which elements in the causal pathways can serve as an early feedback and identify potentially undesirable outcomes to be mitigated. Equally importantly, it would put information in the hands of task team leaders, to enable a consideration of whether or not to embed an IE in the project or program and the most appropriate approach to use;
- Enhance resources and improve opportunities to embed IE in project design and implementation. The Bank should consider "up-streaming" a discussion of tracking project impacts at the Project Concept Note stage.

To carry out effective IEs strong technical skills in social science research design, management, statistics, econometrics, and a balance of quantitative and qualitative research skills on the part of the evaluation team, are needed. Thus, IE can be costly and time-consuming and more resources and more time must be made available to project teams in the development phase of the project; and,

- Establish a community of practice (CoP) and a help-desk on IE for forestry. Establishing a CoP within and outside the Bank with a variety of different stakeholders can increase member knowledge by sharing information and experiences to allow for an effective exchange of learning on a variety of IE related issues. Establishing a help desk will facilitate a consideration of project specific factors and the customization of the more generic evidence available with the broad CoP.

Because poverty reduction, improvements in the security of livelihoods, conservation of wildlife and biodiversity and cross-sectoral collaboration, to name some objectives, go hand-in-hand with interventions to improve forest governance, this report recommends that evaluation approaches should track all activity impacts. Thus, the three actions suggested above should consider tracking impacts more widely than for forest governance alone.

The report acknowledges the main limitations of the analysis. The experiences and the data are all from one institution—the World Bank—and (including as it does, twenty programs and projects) are limited in coverage. Thus, caution has to be exercised in any attempt to draw out general lessons. Nevertheless, this report provides a useful first cut contribution to the challenge of assessing the impacts of forest governance interventions and of assessing impacts more generally. Future work should emphasize collaborative exploration (among development partners assisting with sustainable forest management, and key client countries) as a way to build up the evidence base on cost-effective and easy to replicate impact evaluation techniques and to rapidly build up a compendium of practical approaches.

## ASSESSING IMPACTS OF FOREST GOVERNANCE INTERVENTIONS: LEARNING FROM WORLD BANK EXPERIENCE

*“The role of monitoring in governance is not only to track actual achievements, but also to create a learning dialogue among governance actors as a normal part of their institutional and participatory relationships. Thus, forest governance monitoring is also a process of continuous learning that is essential to governance.” (From the overview to the European Tropical Forestry Research Network News, Issue #53, April 2012).*

### Chapter 1: Background and Motivation

1. The World Bank’s 2002 Forest Strategy laid down two bold targets, which it saw as the collective outcome of global efforts to improve forest governance and promote sustainable forest management (SFM). These were: (i) a reduction, by 2012/13 of global illegal logging by 50 percent (from an estimated baseline value of \$10 billion per annum); and, (ii) a 50 percent decrease in the estimated value of taxes, fees, and levies willfully evaded. What is the evidence on how far we have moved toward achieving the above two targets? According to a Chatham House report (Lawson and MacFaul 2010), actions taken by governments, civil society, and the private sector over the last ten years, have led to: (i) a reduction in illegal logging of between 50 and 75 percent in Cameroon, the Brazilian Amazon, and Indonesia; and, (ii) a reduction of imports of illegally sourced wood to the seven consumer and processing countries studied of 30 percent relative to their peak in 2004. This indicates that significant progress has been made on this aspect. However, the findings are not uncontroversial and criticism has been leveled at the study’s choice of evaluation technique, baselines, time-period of analysis, coverage, and so on.<sup>1</sup> As regards the second target of a reduction in tax evasion, except for some scattered information related to tax collections at the level of a few individual countries, there is little evidence on impacts of efforts to reduce tax evasion. Despite the fact that the World Bank is by far the largest financier of forestry projects globally and has provided noteworthy support for forest governance improvements since 2001, little systematic information is available regarding the success of the interventions it has supported, more generally.<sup>2,3</sup>

2. Measuring the impacts of forest governance interventions is inherently challenging as such interventions involve significant policy, regulative, legislative, institutional, and organizational changes, which are hard to measure (see section III below). This fact may partly explain the current paucity of measurement efforts. Nonetheless, there are compelling reasons for engaging in a systematic measurement of impacts. These range from the possibility of making a comparison of the effectiveness of alternative interventions, to a benefit cost analysis of such interventions to strengthening accountability for results (see box 1.1 for a summary of the general benefits and box 1.2 for an example of benefits in the specific context of the *Bolsa Familia* program in Brazil). Thus, there is a case to be made to routinely apply robust approaches to measuring impacts.

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<sup>1</sup> The Chatham House report findings draw primarily from the perceptions of a large number of experts knowledgeable about issues of illegal logging. Perception-based (or qualitative) impact measurement is one of the many popular techniques being used today to trace impacts of programs and policies. However, perception-based information needs to be combined with quantitatively oriented evidence, to produce a more accurate assessment of impacts.

<sup>2</sup> In an assessment of 51 World Bank-financed forestry projects, it was found that 35 projects had clearly defined forest law enforcement and governance components. These components made up a total of US\$ 311 million and made up 11 percent of total project investments (World Bank 2006a).

<sup>3</sup> Just because IE has not been systematically incorporated into Bank-financed forestry activities should not be interpreted to mean that Bank-supported activities have had no impacts (the absence of evidence is not evidence of absence!). Ex post studies suggest significant impacts of Bank interventions although most of these studies do not estimate causal impacts. For example, a recent report evaluated the impacts of about a dozen activities and found them to be significant in the context of criteria such as “influencing policies or policy dialogue” and “developing new tools and methods,” among others (Wells et al. 2013).

3. By scrutinizing the experience on impact evaluation from a suite of World Bank financed forestry projects and programs, the main objective of this report is to identify the bottlenecks impeding the improved tracking of the impacts of forest governance interventions and to suggest ways in which these can be removed to improve both the coverage and the quality of impact evaluations (IE). In turn, this would contribute to strengthening our information base for evidence-based policy making and learning as well as for objective reporting on the outcomes and impacts of World Bank financed projects and programs.

**Box 1.1 Benefits to Conducting an Impact Evaluation (IE)**

An IE can be used to estimate the impacts of an intervention and distinguish these from the influence of other external and confounding factors. For example, an IE helps us better understand the extent to which interventions reach the poor and the magnitude of their effects on people's welfare, attributable to these interventions alone.

An IE can allow the comparison of the effectiveness (including cost-effectiveness) of alternative interventions. In the case of controlling illegal logging, control interventions include increasing the frequency and effectiveness of patrolling, raising the severity of fines, impounding assets of the illegal loggers, empowering local communities to apprehend loggers, reducing demand for illegal timber through "green campaigns," and so on. Carefully constructed IE design can aid in identifying the relative effectiveness of each intervention in controlling illegal logging and in informing the design of the most efficient intervention program in a particular context. (See boxes 2.2 and 2.3 for a sample of IE methods and approaches).

By enabling a benefit-cost analysis, an IE can help to clarify whether costs for an activity are justified and whether to expand, scale down, modify, or eliminate projects, programs, or policies. It can help draw lessons for improving the design and management of future interventions and it can strengthen accountability for results. In the specific context of projects, the combination of better data with an analytical strategy to understand the cause-effect relationships assists in improving the quality of the project, inform the regular project reviews and project completion reports, and strengthen the ability to track progress and report results on an agency-wide basis. In a nutshell, IE is crucial for learning to increase the effectiveness of interventions and to estimating of impacts for reporting.

(Source: Gertler et al. 2011, Gaarder and Annan 2013, Legovini, undated)

### Box 1.2 Impact Evaluation of the Bolsa Familia Program

In 2003, the newly elected government of Brazil moved to consolidate social policies. Three cash transfer programs were combined into one *Bolsa Família*, a pioneering conditional cash transfer (CCT) program. Today about one in four families in Brazil (approximately 15 million) are covered by the program, and it is one of the largest CCT programs in the world. The Government included impact evaluations as a way of assessing its performance, improving its coverage, and ultimately improving its purpose of reducing poverty. The evaluations also were designed to demonstrate that *Bolsa Família* was promoting an efficient use of public funds.

The first impact evaluation of *Bolsa Família* was conducted in 2006. The approach was a quasi-experimental longitudinal design, since families included in the program were selected in a non-random manner. Propensity score matching was used to allow comparisons between families receiving the *Bolsa Família* subsidy and families not included in the program. The evaluation showed that the transfer of cash into poor communities helped stimulate the local economy and that the bulk of the money was spent on necessities, such as food, clothing and school supplies rather than on alcohol and illicit drugs, as was the popular perception. The fact that children's education attainment increased further validated the effectiveness of the "conditionality" as a public-policy mechanism. According to *Bolsa Família* managers, the evaluation showed that although households were still in poverty, the program helped relieve negative coping strategies and that school attendance by children actually increased. In addition, better cross-check instruments were developed to avoid duplications of benefits. The IE is also credited with influencing the policy process in several ways:

- Pockets of neglected populations were detected and coverage was expanded;
- Program managers received training to overcome weaknesses in service delivery, such as bottlenecks in the distribution of benefits and poor monitoring of adherence to the conditionalities;
- Benefit structures were adjusted to the number of children in a household; and,
- Coverage was expanded to young people aged 16–17 to help them stay in school.

Six months after the release of the findings, policymakers' attitudes shifted and they increased funding to expand the program's coverage. One finding of general applicability relates to the timeliness of the study's findings. To be influential and relevant, a timely release of the results should be the first priority; otherwise the findings might lose their usefulness in the policy process. One way to do so is to provide more descriptive and intermediate results as the evaluation progresses.

Source: Soares 2012; Langou and Forteza 2012.

4. Two phases in our plan to transition toward better approaches to estimating forest governance impacts are envisaged. Thus, phase 1, or this report, will complete a stock-taking of completed and ongoing Bank governance programs and projects to document their M&E (Monitoring and Evaluation) and IE approaches used and how well these have worked in practice. Gaps in the current approaches will be identified and suggestions will be made to address these gaps in order to improve the future practice of estimating impacts.

5. Phase II (to be initiated following the completion of phase I) will focus on learning by doing. It will identify up to three forestry programs and projects in the World Bank's pipeline to incorporate the most feasible assessment systems in the early stages of design, on the basis of our learning from phase I.<sup>4</sup>

6. Although phase I of the work will consider the evidence from Bank-supported programs and projects, the findings and recommendations on how to better estimate impacts and improve the effectiveness of operations, among others, will be of interest to a wider audience--other development agencies and donor partners as well as for policy makers.

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<sup>4</sup>This work also gains relevance in the context of the discussions related to the IDA16 replenishments. The Report from the Executive Directors of the International Development Association to the Board of Governors (March 18, 2011) highlights Management's adoption of "a corporate strategic approach to the use of impact evaluations to enhance learning from IDA supported interventions . . ." The Report goes on to say that, ". . . Management will outline the range of monitoring and evaluation techniques and map out which approaches are appropriate for each category of IDA projects."

## Chapter 2: Monitoring, Evaluation, and Impact Evaluation: Definitions and Scope

7. Before proceeding further, it is necessary to clarify the distinction between monitoring, evaluation, and impact evaluation and their respective functions.

### 2.1 Monitoring

8. Monitoring is a relatively continuous process that tracks **what** is happening within a program or project through the systematic collection of data on specified indicators. This process uses this information to make the day-to-day management decisions on the program. For example, monitoring may take the form of tracking financial disbursements and adjusting them up or down depending upon the observed rates of expenditures.

9. Tracking program performance against expected results (using mostly administrative data), is referred to as *performance monitoring*. Performance indicators can include measures of inputs, processes, outputs, outcomes, and impacts for development projects, programs, or strategies. When supported with sound data collection, these indicators enable managers to track progress, demonstrate results, and take corrective action to improve performance. Performance indicators are also used to identify problems via an early warning system allowing corrective action to be taken. They also can indicate whether an in-depth evaluation or review is needed.

10. More generally, however, a monitoring approach tracks inputs, activities, and outputs, though occasionally it can include tracking of outcomes. Monitoring can be undertaken at the project, program, sector, and national levels—assessing a country's progress against Millennium Development Goals being an example of national level monitoring. Box 1.2 describes the Bank's core sector indicators for monitoring and measurement for forestry.

### 2.2 Evaluation

Evaluation answers questions related to the **why** and the **how**. Evaluations are periodic, objective assessments of a planned, ongoing, or completed program, project, or policy. Evaluations are used to answer specific questions related to the design, implementation, and results. In contrast to continuous monitoring, evaluations are performed at discrete points in time. An evaluation should enable the lessons learned into the decision-making processes of the activity, policy, or program being evaluated. In addition, an evaluation is a more detailed and time-consuming activity and because of the often high costs associated, needs to be conducted more strategically.

11. Evaluations can address questions spanning three broad categories—descriptive, normative, and cause-and-effect. Descriptive questions seek to determine what is taking place and collect information on processes, conditions, organizational relationships, and stakeholder's views. Normative questions compare *what* is taking place to *what should* be taking place. Finally, cause-and-effect questions examine outcomes and try to assess what difference the interventions undertaken are making to desired outcomes.

### Box 2.1 Core Sector Indicators for Forestry

To strengthen the monitoring and measurement of the quantitative and qualitative results of projects, as well as to improve performance assessments, beginning in 2009, the Bank designed a set of sector-specific indicators—core sector indicators. These indicators were developed through the collection and aggregation of standardized data from various Bank supported projects. All active projects must now try to incorporate at least one core sector indicator if applicable.

In 2012, a set of seven indicators for forestry were identified as under:

- Area restored or re/afforested (ha)
  - Area restored
  - Area re/afforested
- Forest area brought under management plans (ha)
- People in target forest and adjacent communities with increased monetary or non-monetary benefits from forests (number)
  - Female
  - Ethnic minority/indigenous people
- People employed in production and processing of forest products (number)
  - Female
- Forest users trained (number)
  - Female
  - Ethnic minority/indigenous people
- Reforms in forest policy, legislation, or other regulations supported (Yes/No indicator)
- Government institutions provided with capacity building support to improve management of forest resources (number)

Of the indicators above, three address the quality of forest governance: forest area brought under management plans; reforms in forest policy, legislation or other regulations supported; and, government institutions provided with capacity-building support to improve management of forest resources.

## 2.3 Impact Evaluation (IE)

12. These are a particular type of evaluation which focuses centrally on the cause-and-effect questions mentioned above. Impact evaluation is the systematic identification of the effects – positive or negative, intended or unintended – on individual households, institutions, and the environment caused by a given intervention. Unlike general evaluations, impact evaluations are structured around one particular type of question: What is the causal impact of a program on an outcome of interest? An impact evaluation looks for changes in outcomes that are directly attributable to the program, project or policy (Gertler et al. 2011). However, IEs frequently measure the difference in effect of multiple implementation strategies within a project. For instance, instead of asking the question “What is the effect on illegal logging of a project that provides alternative livelihoods?”, an IE might ask: “Which of the two--monetary rewards or providing alternative livelihoods--are more effective in stopping illegal logging?”<sup>5</sup>

13. Impact evaluations span a wide spectrum of tools and techniques. **An explicit articulation of a theory of change and a focus on causality and attribution are the hallmarks of impact evaluation and determine the methodologies that can be used.** Impact evaluation methodologies span a broad spectrum--ranging from quantitatively focused large scale sample surveys in which project populations and control groups are compared before and after the intervention, and possibly at several points in time during program intervention, to small-scale rapid assessment and participatory appraisals where estimates of impact are obtained from combining group

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<sup>5</sup> This approach can be used to experimentally combine different project techniques to discover which intervention is most effective. In many cases, this type of IE can be done early in a project, allowing the most effective practice to be scaled up during later phases of the project.

interviews, key informants, case studies, and available secondary data.<sup>6</sup> (See box 2.1 for a brief description of quantitatively focused and large “n” based IE approaches, and box 4 for qualitative approaches).

14. Incorporating the use of information and communication technologies (ICTs) and other web-based applications such as web-based tracking systems, Global Information Systems (GIS), and remote sensing can help in M&E of projects (IEG 2013). The use of GIS and remote sensing can assist protected area (PA) management by monitoring boundaries as well as bringing to light deforestation, land use changes, or illegal logging in other forest areas or national parks. The public and private sector are increasingly focusing on extending telecommunications and broadband networks to rural areas. New tools are being developed to allow the processing and storing of data which reduce costs and improve the efficiency of data collection. These tools also allow for effective dissemination of results. Rapid advances in use of GIS data and satellite imagery to monitor forest degradation and deforestation, suggest that they can be cost-effective technologies for M&E in the future, including the benefit of substantially reducing the lag in obtaining results (Castrén and Pillai 2011).

## 2.4 Monitoring and Evaluation (M&E)

15. Monitoring and Evaluation (M&E) are separate but synergistic activities and, taken together, the two provide a powerful approach for planning the future on the basis of what can be shown to work and what does not (World Bank 2008). While monitoring information can be collected and used for ongoing management purposes, reliance on such information on its own can introduce distortions because it typically covers only certain dimensions of a project's or program's activities. In contrast, evaluation has the potential to provide a more balanced interpretation of performance.<sup>7</sup>

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<sup>6</sup>World Bank 2004. Monitoring and Evaluation: Some Tools, Methods and Approaches. Available at: [www.worldbank.org/oed/ecd](http://www.worldbank.org/oed/ecd). For a succinct discussion of the challenges, of constructing counterfactuals, and of “large n” and “small n” evaluations, see Gaarder and Annan 2013.

<sup>7</sup>The evolution of M&E in economic development, from a project-based tool to a program-level tracking and management tool, in the context of agriculture and rural development, has been well described elsewhere, as have approaches to setting up practical M&E systems (World Bank 2008).

## Box 2.2 Quantitative Impact Evaluation Techniques

Being able to estimate a *counterfactual* (that is, what would have been the outcome, for program participants, if they had NOT participated in the program) is of key importance in impact evaluation. In practice this boils down to finding a valid comparator or control group and the various approaches in use are briefly described below. (Specific applications of some of these techniques to forestry are described briefly in Annex 7 of this report).

**Randomized Control Trials (RCT):** This experimental approach to impact evaluation involves the random selection of participants into the intervention or treatment and control groups. When this method is well implemented over a sufficiently large sample the only difference between the two groups is that the control group does not receive the intervention (or “treatment”). RCT is generally held up as the “gold standard” of evaluation, but is not applicable to all interventions.

**Regression Discontinuity Design (RDD):** RDD can be used for programs that have a continuous eligibility index with a clearly defined cutoff score to determine eligibility. To apply a RDD, two main conditions are needed: (i) a continuous eligibility index, in other words, a continuous measure on which the population of interest can be ranked, such as a poverty index, a test score, or age, and, (b) a clearly defined cutoff score, that is, a point on the index above or below which the population is classified as eligible for the program. For example, households with a poverty index score less than 50 out of 100 might be classified as poor, the cutoff score in this case being 50. The RDD method uses samples in the population in the vicinity of the cutoff score as the treatment and control groups and compares outcomes of those on either side of the cutoff.

**Pipeline:** This approach uses people, households, communities, or businesses already chosen to participate in a project at a later stage as the comparison or control group. The assumption is that, as they have been selected to receive the intervention in the future, they are similar to the treatment group, and therefore comparable in terms of observable and unobservable characteristics prior to the intervention.

**Matching:** This approach involves matching program participants to nonparticipants based on a number of observed characteristics. One such approach is that of propensity score matching (PSM), which uses a statistical model to calculate propensity of participation on the basis of the set of observable characteristics. Participants and non-participants are then matched on the basis of similar propensity scores.

**Double difference or difference-in-difference:** This method compares a treatment and a comparison group (first difference) before and after the intervention (second difference). The method can be applied in both experimental and quasi-experimental designs and requires baseline and follow-up data from the same treatment and control group. A baseline survey is conducted for the outcome indicators for an untreated comparison group as well as the treatment group before the intervention followed by a follow-up survey of the same sampled observations as the baseline survey after the intervention. The mean difference between the “after” and “before” values of the outcome indicators for each of the treatment and comparison groups is calculated followed by the difference between these two mean differences. The second difference (that is, the difference-in-difference) is the estimate of the impact of the program.

**Instrumental variable (IV):** This method is used in statistical analysis to control for selection bias due to unobserved characteristics. These variables are such that they determine program participation, but do not affect outcomes. The IV method uses one or more variables that matter to participation but not to outcomes given participation. This identifies the exogenous variation in outcomes attributable to the program, recognizing for example, that its placement may not be random but purposive.

17. A well-conceived and well executed M&E exercise focuses on long-term outcomes in addition to implementation progress and outputs. Thus, it can help improve projects and programs by allowing project teams to think through the expected chain of results from the start, and to focus projects on outcomes instead of only outputs or inputs. This can promote learning from experiences as feedback can be used to adjust the project and to better design future ones. Finally, it also serves the objectives of client countries that are increasingly managing for results. (World Bank 2004, 2008).

### Box 2.3 Qualitative and Mixed Method Impact Evaluation Approaches

Qualitative methods for data collection play an important role in impact evaluation by providing information useful to understand the processes behind observed results. Qualitative methods can be used to improve the quality of survey-based quantitative evaluations by helping generate evaluation hypothesis; strengthening the design of survey questionnaires and expanding or clarifying quantitative evaluation findings. Qualitative methods fall into three categories, as follows:

**1. In-Depth Interviews:** In-depth interviewing entails asking questions, and then posing additional questions to clarify or expand on a particular issue. There are three basic approaches to in-depth interviewing that differ mainly in the extent to which the interview questions are determined and standardized beforehand: the informal conversational interview; semi-structured interview; and the standardized open-ended interview. Each approach has different preparation and instrument development requirements. In depth interviews can be administered to individuals, groups, focus groups (small homogeneous groups) or communities (overall beneficiary consultations). This would include service delivery surveys, citizens' report cards, and Living Standards Measurement Study (LSMS), among others.

**2. Observational Methods:** First-hand observation of a program is another important source of qualitative data for evaluation. The main purpose of observational evaluation is to obtain a thorough description of the program including program activities and opinions of participants and their expectations from the program. It involves careful identification and accurate description of relevant human interactions and processes. Ensuring good quality data through observational evaluation requires skilled and trained evaluators.

**3. Document Review:** Evaluators may supplement observational fieldwork and interviewing with gathering and analyzing documentary material generated by a program such as laws, regulations, contracts, correspondence, memoranda, and routine records on services and clients. These kind of documents are a useful source of information on program activities and processes, and they can generate ideas for questions that can be pursued through observation and interviewing. In addition, program documents can provide valuable information that may not be accessible by other means.

**Mixed-Methods:** Evaluations that combine qualitative and quantitative data are termed mixed-methods. As mentioned above, qualitative approaches include focus groups and interviews with beneficiaries and other key informants (the Chatham House report mentioned at the beginning of this report relies on informant interviews to draw conclusions about global trends in illegal logging). Qualitative evaluations can be an important complement to quantitative approaches and they are important in shining a light inside the mechanisms through which the causal effects estimated by the quantitative methods operate (Bamberger, Rao and Woolcock 2010).

**Outcome Mapping:** Outcome Mapping (OM) is an impact evaluation approach that straddles the qualitative-quantitative divide. It is particularly suited to measuring behavioral changes, which are of critical concern in the context of policy, legislative, and organizational changes associated with improving forest governance. In a nutshell OM, "defines results as changes in behaviors of an intervention's direct (boundary) partners." (Note: "Outcome" in OM is defined as the "changes in behavior" which is postulated to enhance the probability of desired development impacts). To illustrate the technique consider the following hypothetical example: The World Bank (WB) is interested in working with its client to control illegal logging. It therefore partners with the law enforcement division (LED) of the forest agency in that country. LED becomes the boundary partner and the process has created a simple "Map" (that is, causal chain): The WB supported interventions in the LED will cause a change in behavior in the LED which will, in turn, cause a reduction in illegal logging. Demonstrating an impact then requires measurement of changes inside the LED. These could be related to showing that the LED has increased its patrolling in the field, is doing it strategically in the "hot-spot" areas, has increased its budget, training efforts and numbers of field officers, has clarified its institutional mandate to tackle the job at hand, and the like. Clearly a measurement plan (to measure changes inside LED in this case) has to be articulated up front (Earl, Carden and Smutylo 2001).

## Chapter 3: The Challenge of Measuring Impacts for Interventions to Improve Forest Governance

### 3.1 General Challenges when Measuring Impacts

18. The general challenge of measuring impacts may be broken down into two interlinked sub-challenges:
- Those that are conceptual or analytical and arise in the context of articulating a *theory of change*, and,
  - Those that are empirical or measurement-related and arise in the context of establishing attribution (cause and effect), isolating the confounding factors, capturing the spillover effects, and accounting for potential lag-effects.

19. *Conceptual:* Broadly speaking, a theory of change (or a program theory assessment), models the theory behind a development program, presenting a plausible and feasible plan for achieving the desired development outcomes. A logical framework then helps trace through the cause and effect relationship (or attribution) between interventions and intended impacts and is a critical construct for comprehensive identification and measurement of the expected effects of such interventions.<sup>8</sup>

20. To illustrate the idea concretely, figure 3.1 provides an example of a protected areas (PA) project (following the approach of the methodology overview from the Massachusetts Institute of Technology’s Poverty Action Lab and Gertler et. al. 2011).

**Figure 3.1 Illustrative Causal Pathway: Tracing the impacts of a PA project**

Symptom/Issue	Input/Intervention	Outputs	Intermediate Outcomes	Impact/Desired Results/Final Outcome	Long-term Goals
Designated Protected Area under threat from encroachers and illegal loggers.	World Bank project --supports the Ministry of Forestry to allocate more resources for improving the management of the PA, including hiring more forest rangers and exposing them to better training.  --promotes investments in rural enterprises.	# of rangers trained and surveillance patrols organized.  #of rural jobs created.	-Arrests of illegal loggers.  -Relocation of encroacher families.	--Improved protection of the PA.  --Reduction in vulnerability of local families due to reduction in illegal logging.  -Rural livelihoods enhanced.  --Reduction of rural poverty.	1. Long-term security of environmental and ecological services from the PA ensured.  2. Vulnerability reduced and livelihoods improved for local households.

<sup>8</sup>A logical framework (Log Frame) helps to clarify objectives of any program, project, or policy. It aids in the identification of the expected causal links—the “program logic”—in the following results chain:

**Inputs→Processes→Outputs (including coverage or “reach” across beneficiary groups)→Outcomes, and→Impacts.**

21. The causal pathway of figure 3.1 enables a systematic consideration of how an intervention (or combinations of interventions) can influence desired results, through the intermediate stages of outputs, intermediate outcomes, and final outcomes. Furthermore, it allows for the identification of performance indicators at each stage in this pathway, as well as bringing to light risks that can impede attaining the proposed objectives. It is also a vehicle to engage partners and other stakeholders in the operation, helpful in clarifying objectives and in designing effective interventions. Finally, during implementation the causal pathway serves as a useful tool to review the operations progress and take corrective actions if needed. **As such, a carefully constructed and comprehensive causal pathway is an important prerequisite to identifying feasible interventions and in designing approaches to estimate their impacts.**

22. *Empirical:* From the perspective of an empirical evaluation, establishing *attribution* between intervention and impact is a fundamental issue. In the example above, improved management of the PA, in addition to the intervention supported by the Ministry of Forestry, could also result from a reduction in pressures from illegal logging (itself due to a general slowdown of economic growth), or from the outflow of rural populations living in the vicinity of the PA due to urban migration, both of which could have been working simultaneously with the interventions described in figure 3.1. In order to disentangle the actual impact of the intervention (spearheaded by the Ministry of Forestry) from the other causal factors, a counterfactual comparison is required. Choosing the “right” counterfactuals is a major challenge for impact evaluation.

23. On the other side of the coin, the interventions for a PA may have positive spillover effects (such as information on better training and surveillance skills for the local police force), and those need to be captured to be able to get the full benefits of the intervention. Finally, it is reasonable to expect that interventions today will not necessarily have an immediate impact but would materialize after lags of varying lengths. Constructing a causal pathway, per se, cannot give us an idea of these lags. But at least it helps us recognize that such lags can exist and need to be factored into impact evaluation.

### 3.2 Challenges to Estimating Impacts in Forest Governance Interventions

Estimating causal relationships is relatively manageable in those cases where interventions are targeted solely at individuals or a well-defined social group (as is often the case of health and education programs). But it is challenging when interventions occur at the level of policy, regulation, legislation, institutional, and organizational changes, as is often true for forest governance interventions.<sup>9</sup> Policy changes typically occur at the national level whereas the practices are expected to change at the sub-national or provincial and local levels. In such cases, drawing causal links across administrative levels poses special methodological challenges to the monitoring of changes at the project level (Pfaff and Robalino 2012).<sup>10</sup> Care also needs to be taken to distinguish cases where forest governance is a key intermediate input for development (improved law-enforcement systems), from those where forest governance is a desirable developmental outcome in and of itself (such as robust participation systems).

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<sup>9</sup> Forest governance comprises mechanisms, processes, and institutions (formal and informal) through which citizens and groups (articulate their interests, exercise their legal rights, meet their obligations, and mediate their differences) manage the sector, to sustain and improve the welfare and quality of life for those whose livelihood depends on forests. Good forest governance is characterized by predictable, open, and informed policy-making based on transparent processes, a bureaucracy imbued with a professional ethos, an executive arm of government accountable for its actions, and a strong civil society, participating in decisions related to sector management and in other public affairs—and all behaving under the rule of law. Thus, key features of good governance include adherence to the rule of law, transparency and low levels of corruption, inputs of all stakeholders in decision making, accountability of all officials, low regulatory burden, and political stability (World Bank 2006b).

<sup>10</sup> Additional challenges to drawing causal links and tracing impacts arise from the fact that: (i) investments in improved forest management or in biodiversity conservation typically require a long time to show impact, (ii) natural population variability makes short term biodiversity outcomes problematic to measure and the sustainability of forest management can be measured only over several rotations (spanning decades), and, (iii) forestry interventions are directed at the production and protection of global public goods which manifest over a long period of time and are hard to quantify. Empirically robust methods to assess the impacts of forest investments on poverty outcomes are equally challenging because of the attribution problem.

24. As a concrete example, consider the challenge of controlling illegal logging. Typically, this type of activity takes place in remote forest areas characterized by some combination of local people mired in poverty, unclear property rights, poor monitoring, and weak official oversight. A theory of change suggests a number of measures that might be undertaken to address the problem such as providing alternative means of livelihoods, improving the supply of fodder and fuel wood, increasing patrolling and monitoring to discourage illegal logging, revising legislation to increase the severity of fines and prosecutions for criminals apprehended, establishing or clarifying ownership rights and decentralizing rights to local communities, appointing an independent monitor reporting directly to the forest department, and so forth.

25. In reality, to bring about significant improvements, the intervention would probably need to combine several of the above measures. Whether it is a single or a combination of measures, this intervention would likely trigger a number of changes, adjustments and counter adjustments. For example, increased vigilance and monitoring in one area could encourage illegal loggers to move their activities to other (less well patrolled) areas. Potential confounding factors include the (inadvertent) enhancement of bribery, corruption and social conflicts, as a result of strengthening vigilance but not accountability.

### Box 3.1 Measuring the Impacts of Forest Certification

Forest certification is a market-based mechanism to promote SFM. It recognizes responsible management through independently verified compliance with a set of underlying principles, criteria, and indicators that delineate the ecological, social, economic, and policy impacts, resulting from forest management for specific objectives. Certification emerged in the late 1980s, as a promising approach and as an alternative to other efforts which had failed to halt deforestation and promote SFM. Certification is also seen as a powerful approach to improving the overall governance of the sector.

Yet, there is insufficient empirical evidence on the impacts of certification and this is now being sought in a systematic way (Romero and Castren 2013, Romero et al. 2013). This is challenging because “certification impacts” refer to those changes in the forest itself and surrounding areas, that are attributable to certification, of several kinds (social, economic, and ecological) and in several places (neighboring local communities and workers, participating forest management units, ownership and license to extract, and local and national governments and legal frameworks). Compounding this is the fact that there are a number of credible certification schemes such as the Forest Stewardship Council (FSC), Programme for the Endorsement of Forest Certification (PEFC), and the Malaysian Timber Certification Council (MTCC), among others, all of which should be assessed for the efficiency of their impacts. Finally, as is the case with any other intervention, forest certification does not act in a vacuum, but is implemented in particular social, institutional, and political contexts that also influence decisions regarding forest use.

Because certification interventions are not implemented at random, quasi-experimental approaches are often appropriate to estimate impacts. To improve our understanding of the underlying mechanisms and processes through which change is effected qualitative monitoring can be helpful. Thus, inputs from the entire range of relevant stakeholders, coupled with compilation of the salient biophysical and socioeconomic characteristics of certified forest management units, can complement the evaluation of this intervention. Formulating theories-of-change and impact pathways are also necessary to provide the evidence base for estimating the impacts of certification (Romero et al. 2013).

26. In overall terms, it is improbable that a linear or unidirectional cause and effect relationship similar to that of figure 3.1 can be identified. Seeing a complex web of interactions, with multiple chains of cause and effect, identifiable in this web, is much more likely the case. These interactions will run at different administrative levels, between various implementing agencies working to resolve problems, forest institutions within a country, law enforcement agencies, would-be illegal loggers, local rural households, between illegal logging for local markets and those oriented to exports, to highlight a few. Similarly, complex and interconnected webs of inter-linkages will likely arise in the case of efforts to control other symptoms of poor forest governance, such as poaching, theft and arson, conflicts and corruption, poor participation, and so on. These complexities also test the potential of the commonly

available evaluation methodologies.<sup>11</sup> Box 3.1 gives a sample of the challenges associated with a robust estimation of the impacts in the context of forest certification.

27. From an operational perspective, these complexities, associated with the process of improving forest governance, will need to be at the center of our efforts not only in the process of designing interventions most likely to work, but also to trace and measure impacts of those interventions through implementation of practical approaches.

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<sup>11</sup> In a recent workshop to brainstorm on impact evaluation challenges, a Task Team Leader (TTL) mentioned that under his program many interventions included outputs such as providing policy and legislative support to countries, participatory processes, outreach, workshops, and professional training. However, measuring these impacts and determining attribution to the project is a challenge. The Lacey Act which has impacted timber exports from Russia, is a specific case in point. Monitoring the impacts gets complicated further when no baselines have been established from which to measure progress. Over time there are changes, but in the short term these changes cannot be pinpointed as being the direct result of any particular intervention. In addition, there is a need to monitor for spillover effects (unintended negative and positive consequences) in other areas impacted by the same project (see appendix 5 for a full report of this workshop).

## Chapter 4: M&E Approaches Used Routinely in World Bank’s Forestry Programs and Projects

28. There are many approaches to conducting M&E. Commonly-used M&E techniques include results framework and policy matrices, perception based or public opinion surveys, baseline ecological surveys against which performance targets can be measured, and tracking performance indicators, among others.<sup>12</sup>

29. Two of the most widely used M&E approaches at the Bank are—results frameworks and policy matrices. While the traditional investment projects use a results framework, Development Policy Operations (DPOs) and Development Policy Loans (DPLs) typically make use of a policy matrix. A brief description of these follows.

### 4.1 Results Frameworks<sup>13</sup>

30. A results framework represents the underlying logic explaining how the development objective of a project is to be achieved. This is accomplished by translating the results chain (Inputs→ Activities→ Outputs→ Outcomes) of an intervention into indicators that measure the degree to which inputs are being transformed into specific activities and outputs, and the degree to which a relevant target population uses those outputs as the anticipated outcomes of the project (OPSPQ 2013).

31. The results framework has three main elements: (a) a statement of the project development objectives (PDO); (b) a set of indicators to measure outcomes that are linked to the PDO and a set of intermediate results to track progress toward achieving outcomes; and (c) M&E arrangements specifying clear units of measurement for each indicator, baselines, annual and final targets for each indicator, as well as the roles and responsibilities of the organizations collecting, reporting, and analyzing data on those indicators (OPSPQ 2013).

32. It is important to highlight that, as “owners” of the results supported by the Bank financed projects, implementing units in partner countries should in principle be responsible for the design, monitoring and updating of the results framework and the establishment of adequate M&E arrangements.<sup>14</sup> In practice, the Bank might have to provide technical assistance in M&E due to limited capacity in many ministries overseeing project implementation. See appendix 1 for an example of a results framework from a World Bank Technical Assistance (TA) Project on improving forest law enforcement and governance.

### 4.2 Policy Matrices

33. A *policy matrix* used in a Development Policy Loan (DPL) presents the program and its intended results, including: (a) a definition of program objectives and selection of outcomes that are expected to be directly influenced or achieved by the operation, (b) actions that are expected to bring about the desired outcomes (including the prior actions and triggers, if it is a programmatic operation), and (c) outcome indicators with baseline and target values to

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<sup>12</sup> Some projects on protected areas and parks have used specially designed biodiversity tracking tools. For example, see projects Bosnia and Herzegovina Forest and Mountain Protected Areas Project (P079161 and P087094) and Gabon Natural Resources Management Development Policy Loan (P070196) both of which used a Protected Areas Management Effectiveness (PAME) Tracking Tool to assess PA management progress.

<sup>13</sup> Although the World Bank uses the term “results framework” in its work, similar conceptual tools, also designed to organize information regarding intended outcomes and results--logical frameworks, logic models, theories of change, results chains, and outcome mapping--are used across different agencies. Thus, the results framework captures the essential elements of the logical and expected cause-effect relationships among inputs, outputs, intermediate results or outcomes, and impacts.

<sup>14</sup> Costs for M&E should be clearly budgeted for. Usually M&E costs represent between 3 and 5 percent of the project costs and may be financed either by the borrower as part of the counterpart funds to the project or with the Bank proceeds to the project.

measure progress along the way and at completion. While under implementation, project actions, expenditures and progress toward identified objectives are mostly monitored by the implementing agencies, in the client countries (and reported on in a semi-annual or annual progress reports).

34. As per OP 8.60 (applicable to DPLs), *“the borrower implements the development policy operation, monitors progress during implementation, and evaluates results on completion. Bank staff assess and monitor the adequacy of the arrangements by which the borrower will carry out these responsibilities, with due regard to the country’s capacity.”*

35. See appendix 2 for an example of a policy matrix for a natural resources and environmental governance project in Ghana. Here the design of the M&E system was based on (i) A policy matrix of key actions and indicators, which details the baseline and expected outcomes for each component, the conditions for tranche release, and the key milestones of the program, and (ii) M&E indicators and baseline values, describing, for each condition and milestone, the results indicators, their baseline and target values, and the source of verification.

## Chapter 5: Looking Back and Learning from the Evidence

36. We will begin by examining a suite of World Bank financed projects which have significant forest governance components. This information will be complemented with the analysis of a handful of ESWs and TAs which focus on forest governance. For all projects selected for examination, we will list the symptoms of poor forest governance that were recognized as problems, identify the project interventions proposed to tackle the root-causes of the symptoms and examine the extent to which they were successful (or not) in tackling the problem.

37. The Bank puts a strong emphasis on using its M&E frameworks (typically these are the results frameworks or the policy matrices), for assessing project progress, performance and outcomes. Thus, documentation of the challenges faced in the design and implementation of project specific M&E, as well as any additional techniques used for measuring project outcomes, is necessary for this exercise.

### 5.1 Selecting the Sample of Forest Programs, Projects, ESWs, and TAs with Governance Components

#### 5.1.1 Project Identification

38. A list of forestry projects and programs, going as far back as FY07, was compiled from those tracked annually by the Agriculture and Environmental Services (AES) portfolio review team.<sup>15</sup> To ensure that all projects (including those from other sectors) with forest governance components were captured, this list was expanded by conducting key word searches including forest law, forest law enforcement, and forest governance for additional projects using the World Bank's Business Warehouse, and Operations Portal. These lists were then consolidated.

39. Once a final list of projects with forest governance components was drawn up, project summaries were reviewed to further determine the extent to which forest governance is addressed in the project. This gave us a sample of nine closed projects. This was considered too small a sample and as a way to increase the sample size, the timeframe was expanded to include projects starting from FY05. This increased the sample size to 13. To this we also added three active projects, as advised by TTLs in the Bank. Thus, a total of 16 closed and active forest governance projects were finally reviewed. Table 5.1 below provides an overview of the projects considered in this review.

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<sup>15</sup> This team tracks IBRD/IDA lending amounts per sub-sector (Agri-Industry, Irrigation and Drainage, Livestock, Natural Resources Management, Agriculture, Land Management, Forestry, Water Resources, Fisheries, Climate Change, among others) for all projects approved in a fiscal year. For Forestry, the team has tracked forest and forest related investments according to how closely they align to the three pillars of the 2002 Forests Strategy and also to forest governance. The team looks at how the project corresponds in terms of: harnessing the potential of forests to reduce poverty; forest governance (forestry related regulation, institutional and policy reform); and forest resources management (for example, agroforestry, plantation, timber, non-timber forest products, wood fuel); and lastly forest resources conservation (for example, forest related biodiversity conservation, carbon sequestration, water catchment protection, soil erosion control (reforestation, and so on.), watershed management). The total of the investments for all forest components are then computed and documented.

**Table 5.1 List of Forest Governance Projects Selected for Analysis**

No	FY	Project ID	Region	Instru ment	Country	Project	Total Cost	IBRD/ IDA	GE F	Status	ICR	ICR Performance Ratings ( Outcomes)
1	FY05	P066199	ECA	SIL	Azerbaijan	Rural Environment Project	8	8		Closed (Dec. 09)	Yes	Unsatisfactory
2	FY05	P082375/ P089061	ECA	SIL	Albania	Natural Resources Development Project	19.4	7	5	Closed (June 11)	Yes	Moderately Satisfactory
3	FY06	P070196	AFR	DPL	Gabon	Natural Resources Management Development Policy Loan	15	15		Closed (June 11)	Yes	Moderately Satisfactory
4	FY06	P070656/ P073020	AFR	DPL	Cameroon	Forest and Environment Development Program	35	25	10	Closed (Dec. 11)	Yes	Moderately Unsatisfactory
5	FY08	P101486	ECA	DPL	Armenia	Fourth Poverty Reduction Support Credit	18.5	18.5		Closed (June 08)	Yes	Satisfactory
6	FY08	P106458	AFR	DPL	Central African Republic	Economic Management and Governance Reform Grant	7.9	7.9		Closed (May 09)	Yes	Satisfactory
7	FY08	P102971	AFR	DPL	Ghana	Natural Resources and Environmental Governance Project I	20	20		Closed (June 09)	Yes	Moderately Satisfactory
8	FY08	P079161/ P087094	ECA	SIL	Bosnia and Herzegovina	Forests and Mountain Protected Areas Project	8.5	2.5	3.4	Closed (Nov. 10) (GEF Active)	N/A	N/A
9	FY03/ FY08	P108505/ P064886	EAP	SIL	Lao People's Democratic Republic	Sustainable Forestry for Rural Development (SUFORD I and II)	23.5	10		Closed (Dec. 12)	Yes	Moderately Satisfactory
10	FY09	P095205	LCR	DPL	Brazil	First Programmatic DPL for Sustainable Environmental Management	1300	1300		Closed (Dec. 12)	Yes	Satisfactory
11	FY09	P113176	AFR	DPL	Central African Republic	Economic Management and Governance Reform Grant 2	5	5		Closed (Mar. 10)	Yes	Moderately Satisfactory
12	FY09	P113172	AFR	DPL	Ghana	Ghana Natural Resource and Environmental Governance - DPO II	10	10		Closed (June 10)	Yes	Moderately Satisfactory
13	FY09	P100620/ P111621	AFR	SIL	Congo, Democratic Republic of	Forest and Nature Conservation Project	70	64	6	Active	N/A	N/A
14	FY10	P118188	AFR	DPL	Ghana	Natural Resource and Environmental Governance - DPO III	10	10		Closed (June 11)	Yes	Moderately Satisfactory

15	FY11	P121210	SAR	APL	South Asia	Strengthening Regional Cooperation for Wildlife Protection Project	42	39		Active	N/A	N/A
16	FY13	P123923	ECA	SIL	Russian Federation	Forest Fire Response Project	121.4	40		Active	N/A	N/A

Rating scale:

*Highly Satisfactory* There were **no** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

*Satisfactory* There were **minor** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

*Moderately Satisfactory* There were **moderate** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

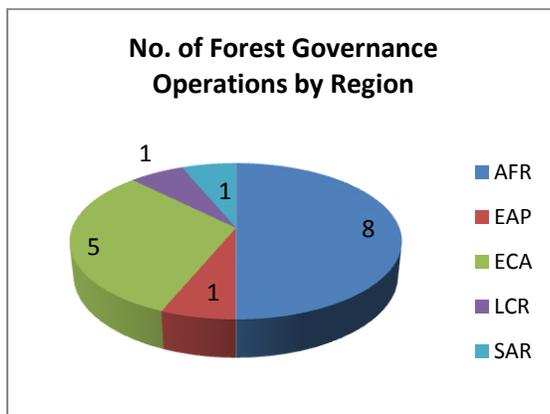
*Moderately Unsatisfactory* There were **significant** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

*Unsatisfactory* There were **major** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

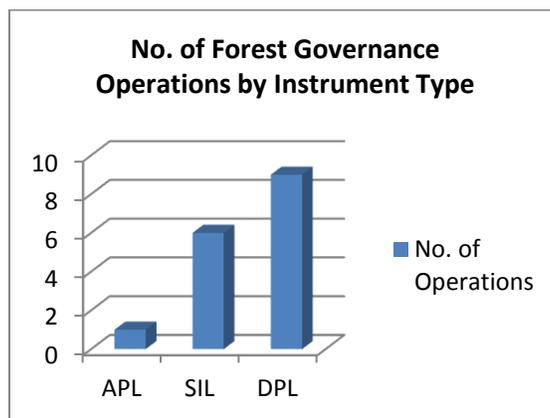
*Highly Unsatisfactory* There were **severe** shortcomings in the operation's achievement of its objectives, in its efficiency, or in its relevance.

42. In terms of World Bank regions, the review covered eight projects in Africa (AFR)<sup>16</sup>, one project in East Asia and the Pacific (EAP), five projects in Europe and Central Asia (ECA)<sup>17</sup>, one project in Latin America and Caribbean (LAC) and one in South Asia (SAR), encompassing 14 countries (see figure 5.1). As for the type of instruments used, these include 1 Adaptable Program Loan (APL), six Specific Investment Loans (SILs), and nine Development Policy Loans (DPLs), as seen in figure 5.2. Four of these projects (Albania, Cameroon, Bosnia and Congo, DRC) included Global Environment Facility (GEF) grants.

**Figure 5.1 Number of Forest Governance Operations by Region**



**Figure 5.2 Number of Forest Governance Operations by Instrument Type**



<sup>16</sup> A total of eight operations (7 closed, 1 active) in the Africa region were reviewed for this analysis. These operations included the FY06 Cameroon Forest and Environment Development Program; FY08 and FY09 Central African Republic Economic Management and Governance Reform Grant (EMGRG) I and II; FY09 Democratic Republic of Congo (DRC) Forest and Nature Conservation Project (active); FY06 Gabon Natural Resources Management Development Policy Loan; and FY08, FY09 and FY10 Ghana Natural Resources and Environmental Governance Development Policy Operation I, II & III. These operations supported a variety of activities ranging from key legal, regulatory, and institutional reforms for forest management, to protected areas and participatory approaches to forest management. See tables 5.1 and 5.2 above.

<sup>17</sup> In Europe and Central Asia (ECA) Region, the five operations comprised in the analysis include the FY05 Azerbaijan Rural Environment Project; FY06 Albania Natural Resources Development Project; FY08 Armenia Fourth Poverty Reduction Support Credit; FY08 Bosnia and Herzegovina Forests and Mountain Protected Areas Project (active); and FY13 Russia Forest Fire Response Project (active). Interventions in the region varied from strengthening institutional reforms within forest agencies, establishment and strengthening of protected areas and park management institutions, supporting participatory processes, support for forest small and medium sized enterprises, actions to decrease illegal logging, and fire management.

### 5.1.2 Collecting Project Information

43. Selected projects were analyzed to gain insights into the governance challenges faced and the interventions proposed to address these challenges as well as to determine their effectiveness. In addition, the analysis focused on the approaches used to assess impacts, the types of indicators used, the methods to construct baselines, and the overall challenges in measurement. A number of project documents were reviewed. Implementation Completion Reports (ICRs) were available for 11 of the 13 closed projects. For the other projects (including the active ones) for which ICRs were not yet available, information was obtained by reviewing Project Appraisal Documents (PADs) and any other available documentation including Implementation Status Reports (ISRs), Aide-Memoires, and Back to Office Reports (BTORs), found in the Project Portal.<sup>18</sup> For the three active projects that were included in this work, the PAD was the main document used to obtain insight into project objectives and the means to reach those objectives.<sup>19</sup>

44. To gain further insights, the results framework and monitoring, especially the data source and methodology sections were reviewed. ISRs of those projects (where available) were consulted to understand how the project results are monitored and are progressing under implementation toward project objectives. Some Project Development Objective (PDO) indicators are not measureable until the end of the project. However, if there were any interim measurements at significant progress points these were documented. To check into the current status of the project or program, the project portal was consulted and the outstanding key issues and actions for management attention reviewed. Some of the TTLs of the projects were also interviewed to gain additional insight into project structure and outcomes.

45. The projects were reviewed for their ability to recognize specific symptoms of poor forest governance. First, a list of 12 common symptoms of poor forest governance was compiled based on a survey of the literature and the experiences of experts dealing with forest governance issues. These range from the prevalence of illegal logging to poaching to corruption and unfair business practices (see box 2.3 for the full list). To identify the symptoms in the projects and programs, the country and sector background sections of the PAD or Program Document (PD), were reviewed and for the symptom/s identified, using corresponding roman numerals (i-xii). For some projects where the information was not obvious, the entire project document was searched to judge if any of the symptoms applied. The basic information for the 16 projects under scrutiny is summarized in table 5.2 below.

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<sup>18</sup> Upon completion of each lending operation financed, the World Bank conducts an assessment of the operation (self-evaluation) within six months after closing to review the results. The World Bank and the borrower government document the results achieved; the problems encountered; the lessons learned; and the knowledge gained from carrying out the project. The product, an ICR report, is independently evaluated by the Independent Evaluation Group (IEG), and is submitted to the Bank's Board of Executive Directors for information purposes. The knowledge gained from this results measurement process is intended to benefit similar projects in the future.

<sup>19</sup> The Project Appraisal Documents (PADs) include a review of the strategic context and rationale, project description, and monitoring and evaluation of outcomes or results of the implementation.

**Table 5.2 Symptoms of Poor Forest Governance Occurring in the Selected Projects**

No	FY	Project ID	Country	Project	Symptoms of Poor Forest Governance
1	FY05	P066199	Azerbaijan	Rural Environment Project	(i), (ii), (iii), (vi), (vii), (viii)
2	FY05	P082375/ P089061	Albania	Natural Resources Development Project	(i), (ii), (iii), (v), (vii), (ix)
3	FY06	P070196	Gabon	Natural Resources Management Development Policy Loan	(i), (ii), (iii), (iv), (vi), (vii), (ix), (x), (xii)
4	FY06	P070656/ P073020	Cameroon	Forest and Environment Development Program	(i), (ii), (iii), (vi), (vii), (viii), (ix), (x), (xii)
5	FY08	P101486	Armenia	Fourth Poverty Reduction Support Credit	(i), (ii), (iii), (iv), (vi)
6	FY08	P106458	Central African Republic	Economic Management and Governance Reform Grant	(i), (ii), (iii), (vi), (vii), (viii), (x)
7	FY08	P102971	Ghana	Natural Resources and Environmental Governance Project I	(i), (ii), (iii), (iv), (v), (vii), (viii), (ix), (x), (xii)
8	FY08	P079161/ P087094	Bosnia and Herzegovina	Forests and Mountain Protected Areas Project	(i), (ii), (iii), (vi), (vii), (ix)
9	FY09	P108505	Lao People's Democratic Republic	Sustainable Forestry for Rural Development II	(i), (ii), (vi), (vii), (viii), (x), (xii)
10	FY09	P095205	Brazil	First Programmatic DPL for Sustainable Environmental Management	(i), (ii), (iii), (vi), (vii)
11	FY09	P113176	Central African Republic	Economic Management and Governance Reform Grant 2	(i), (ii), (iii), (vi), (vii), (viii), (x), (xii)
12	FY09	P113172	Ghana	Ghana Natural Resource and Environmental Governance - DPO II	(i), (ii), (iii), (vii), (viii), (ix), (x), (xii)
13	FY09	P100620/ P111621	Congo, Democratic Republic of	Forest and Nature Conservation Project	(i), (ii), (iii), (iv), (vi), (vii), (viii), (ix), (x), (xii)
14	FY10	P118188	Ghana	Natural Resource and Environmental Governance - DPO III	(i), (ii), (iii), (vii), (viii), (ix), (x), (xii)
15	FY11	P121210	South Asia	Strengthening Regional Cooperation for Wildlife Protection Project	(i), (ii), (iii), (iv), (vi), (vii), (viii), (x), (xi), (xii)
16	FY13	P123923	Russian Federation	Forest Fire Response Project	(i), (ii), (iii), (v), (vii), (x), (xii)

### Box 5.1 Common Symptoms of Poor Forest Governance

The 12 common symptoms reflecting poor forest governance, organized into three broad categories, are:

- I. Resource use related**
  - (i) Prevalence of illegal and unregulated logging (for example, logging in protected areas, by unlicensed operations, in violation of environmental regulations, and so on.);
  - (ii) Trade in illegally logged timber;
  - (iii) Unauthorized encroachment of protected areas and other forest areas;
  - (iv) Illegal wildlife poaching and its trade;
  - (v) Frequent occurrence of arson and forest fires;
  
- II. Social and conflict related**
  - (vi) Prevalence of conflicts (state vs. communities, communities vs. communities) related to access and use of forests;
  - (vii) Existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits;
  - (viii) Corruption (at all levels), including, in agencies and organizations charged with management of forest lands;
  - (ix) Inadequate participation by stakeholders in the formulation of legislation and policies;
  
- III. Economic incentives and information related**
  - (x) Evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities;
  - (xi) Unfair and corrupt business practices, and;
  - (xii) Poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

46. The last column of table 5.2 confirms that each project selected for study recognized that several symptoms of poor forest governance were present and needed to be addressed. It is also obvious that four symptoms--prevalence of illegal and unregulated logging, trade in illegally logged timber, unauthorized encroachment of protected areas and other forest areas, and existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits that is, from Categories I and II of box 5.1—are found in almost all projects, while others are mentioned less frequently. The least frequent symptoms in this sample are--illegal wildlife poaching and its trade (five references), prevalence of conflicts related to access and use of forests (three references), and unfair and corrupt business practices (one reference).

47. All in all, table 5.2 supports the projects chosen in that they include a variety of forest governance weaknesses and, as such, we expect that the projects would include a number of corresponding interventions to address the underlying causes of the symptoms.<sup>20</sup> Therefore, an analysis of experience will yield useful insights as regards the impacts of proposed interventions.

#### 5.1.3 Selection of ESWs and TAs

48. For ESWs and TAs different guidelines apply than to projects, in terms of M&E. The most current guidelines indicate that it is at the CN stage that the activity's objective needs to be made clear--who the targeted audience is

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<sup>20</sup>This is also consistent with an earlier portfolio review which looked at 51 World Bank forestry projects and found that 11 percent (approximately US\$311 million) of the investments were directed toward addressing forest governance issues (World Bank 2006).

and how it is to be reached, and the risks involved and expected outcome when completed (World Bank 2013). In addition the results chain of task activities that leads to the expected intermediate outcomes that are expected to contribute to an outcome are to be described. It is usual that there is at least one intermediate outcome and one related indicator to reflect the development objective. At completion it is then reported how well the activities as well as intermediate outcomes and indicators have met the development objective according to a four point rating scale.

49. Thus, the emphasis of looking at ESWs and TAs was on insights they provide, especially on indicators, to measuring impacts in specific situations of poor forest governance. Four recent products were scrutinized and the findings are summarized in appendix 4.

## 5.2 Evidence on Outcomes and Impacts from Forest Governance Programs and Projects

50. In this section, the findings from the evidence from Bank forest governance programs and projects in terms of proposed interventions and approaches to assessing the impacts are presented, by the broad types. The findings from ten operations are presented in the main text, whereas appendix 3 reports on the other six.

### 5.2.1 DPLs

51. A DPL provides rapidly disbursing financing to help a borrower address actual or anticipated development financing requirements of domestic or external origins. DPLs aim to help the borrower achieve sustainable poverty reduction through a *program of policy and institutional actions*, for example, strengthening public financial management, improving the investment climate, addressing bottlenecks to improve service delivery, and diversifying the economy. DPLs typically use a Policy Matrix as their M&E framework. That DPLs are appropriate and popular instruments to address forest governance issues, is supported by the fact that there are 9 DPLs in the sample of 16.

#### 5.2.1.1 Brazil FY09 First Programmatic DPL for Sustainable Environmental Management

52. In the Latin America and Caribbean Region, the **Brazil FY09 First Programmatic DPL for Sustainable Environmental Management (SEM DPL)** aimed to support efforts to (i) improve the effectiveness and efficiency of policies and guidelines of the Brazilian environmental management system; and (ii) further integrate principles of environmentally sustainable development in the development agenda of key sectors.

53. The symptoms reflecting poor forest governance, recognized during project development were related to resource use and social conflicts. These were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; prevalence of conflicts related to access and use of forests; and existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits (see table 5.2).

54. This DPL included efforts to promote the sustainable management of agricultural lands, forests, and water resources; reduction of deforestation in the Amazon; reduction of the environmental degradation of land, water and other resources. The project resources were to be released under two tranches. The two tranche design was key to the success of the operation by allowing the Bank to widen the scope of the program.

55. The interventions the operation supported were focused on improving the sustainability of natural resources management. Specifically there were three:

- Strengthen the forest legal framework through the enactment of three key legal acts: Public Forest Management Law which promotes forest management in public land; Atlantic Forest Law which promotes conservation of this highly endangered biome; and, Resolution 3545 of the National Monetary Council that regulates bank lending to agribusiness;

- Improve the Amazon regional planning for sustainable development and reduced deforestation by working to approve the National Sustainable Amazon Program (PAS) by the government and the governors of the Amazon region.
- Improve rainforest conservation through a presidential decree regulating the Amazon Fund issued, to support grant activities that promote sustainable use of natural resources, rehabilitated degraded areas or, prevent/combat deforestation.

*Contribution of the project to strengthening forest governance*

56. The sustainable natural forest management of private and public areas expanded to 33,415 sq. km. by the project end. (The original target of 50,000 sq. km was to be achieved by 09/11. However, the actual achievement is close to the intermediate target of 35,000 sq. km by 06/10). The annual average rate of deforestation fell by 40.3 percent and significantly exceeded the original target of 20 percent.

57. On the legal, policy, and institutional front, noteworthy achievements included:

- Strengthening of the forest legal framework, through the enactment of three key legal acts: Public Forest Management Law which promotes forest management in public land; Atlantic Forest Law which promotes conservation of this highly endangered biome; and, Resolution 3545 of the National Monetary Council that regulates bank lending to agribusiness
- Approval of the National Sustainable Amazon Program by Government of Brazil GoB and the governors of the Amazon region
- Restructuring of the Ministry of Environment (MMA) and its affiliates to support the implementation of environmental policies, processing of environmental licenses and enforcement of environmental regulations through: the establishment of a new institutional structure for MMA; the creation of the National Biodiversity Management Institute (*Institute Chico Mendes – ICMBio*) and the Brazilian Forest Service (*SFB*); the restructuring of the Brazilian Institute for the Environment and Natural Resources (IBAMA) to focus on environmental licensing and enforcement; and, increase staffing of MMA and IBAMA.

58. In terms of the design which was fundamental for the success of the operation, this was a two-tranche design. This approach allowed the Bank to widen the scope of the program, keep the discussion and engagement with the client and ensure a quick execution of all policies in order to release the second tranche as early as possible. This DPL gave the Bank an opportunity to participate and influence a national debate on environmental reforms and good practices. The operation also resulted in sectoral synergies as the Bank was able to bring together two key institutions to design and mainstream environment and resource management policies and guidelines National Bank for Economic and Social Development (BNDES) and Ministry of Environment (MMA). While MMA had the responsibility to design policies at a national level, BNDES mainstreamed sectoral environmental best practices in its operations. This led to a program including both command-control and economic market-based instruments, a combination that is necessary and which proved to be successful in this operation.

*Design of M&E and the key indicators chosen*

59. The progress of the SEM DPL series toward achieving its objectives and outcomes was monitored according to the *Policy Matrix* which shows the second tranche release conditions of the operation, the proposed triggers for the second loan and expected outcomes of the SEM DPL series.

60. Key indicators in the project include:

- The sustainable natural forest management of private and public areas expanded to 50,000 km<sup>2</sup>
- Reduction in the average annual rate of deforestation in the Amazon for the period 2007-2009 to 20 percent below the 2005-2009 average

- An increase in the number of hectares (500,000) receiving support from the Amazon and Atlantic Forest Funds for activities that promote sustainable use of natural resources and biodiversity, rehabilitate degraded areas, or prevent and combat deforestation.

61. In order to monitor the operation and the entire SEM DPL series, the Ministry of Finance and the Ministry of Environment (MMA) used the monitoring system developed through the Technical Assistance Loan for Environmental Sustainability project (ENV TAL) to monitor the previous Programmatic Reform Loan (PRL) and the ongoing ENV TAL. The monitoring system was updated to include intermediate steps necessary to achieve the tranche release conditions of SEM DPL I, the triggers for the SEM DPL 1, and the expected outcome of the SEM DPL series. This system is web-based and open to the public, ensuring transparency and enabling social participation.<sup>21</sup> This monitoring system was under the responsibility of the project management unit of the ENV TAL under the direct supervision of Ministry of Environment Executive Secretariat.

#### *Experience with the implementation of the M&E approach*

62. The operation strengthened its overall environmental management system particularly in forests and reduction of deforestation in the Amazon. As stated earlier, a set of outcome indicators for measuring progress and achievements of the objectives of the SEM DPL series were developed, consistent with the previous project—ENV TAL. However, due to unforeseen bureaucratic delays in contracting the information technology firm, the system was not updated during the course of the project. The project ended up by reviewing progress on actions and outcomes during the meetings and supervision missions with the implementing agencies, and by directly tracking and reviewing publicly available monitoring systems (for example, annual deforestation rate measured by Brazil Space Research Agency-INPE). Thus, an important lesson from this operation relates to the importance of using existing indicators regularly monitored by implementing agencies whenever possible instead of creating program specific ones. This is particularly the case, with the indicator for annual deforestation rate monitored by the INPE.

#### **5.2.1.2 Forest and Environment Development Program**

63. In **Cameroon** the Forest and Environment Development Program DPL focused on forest institutional, policy, and legal (concession) reforms.<sup>22</sup> This GEF blended operation sought to consolidate and scale up Cameroon's first round of successful forest sector policy reforms, support capacity-building, and strengthen forest and environment institutions.

64. Several symptoms reflecting poor forest governance were highlighted during project development related to resource use, social conflicts and economic incentives. Some of these were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; prevalence of conflicts related to access and use of forests; and, poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on. (Refer to table 5.2 for details.)

65. The DPL operation supported a large number of interventions, related to: completion of the forest estate zoning plan; ensuring implementation on the ground of forest management policies and plans; promoting efficiency and value-added in timber processing and reducing waste; ensuring efficient control of forest production field operations by industry, as well as law enforcement and application of penalties; strengthening protected area, biodiversity and wildlife management; and, valuation of non-timber forest products (NTFP).

66. In terms of community forest resources management, the project supported:

- capacity building for community forest and natural resources management;

<sup>21</sup>This M&E system was designed for the National Tourism plan and emphasized environmental sustainability. The website for this system is: <http://sistemas.mma.gov.br/smts/>

<sup>22</sup>Development Policy Loan of IDA \$25 million (P070656) & GEF 10 million (P073020).

- reforestation and forest regeneration; and,
- promotion of fuel wood supply.

#### *Contribution of the project to strengthening forest governance*

67. The project recognized several weaknesses of forest governance and attempted to address their underlying causes through several project interventions such as improving law enforcement and raising penalties, supporting the development of management plans for production forests, improving the capacity of communities to manage forests and promotion of fuel-wood supplies. Several indicators to track progress were included, including an innovative approach to measuring illegal logging using Global Information Systems (GIS) information. However, it is difficult to assess the contribution of the project because the M&E system served mainly as an overall reporting tool and as the instrument to assess progress for tranche release. It was used only partially to assess the overall outcomes and results achieved by the Program as its indicators were not quantified with reliability and accuracy.

#### *Design of M&E and the key indicators chosen*

68. The M&E system for the project was based on (i) the policy matrix of key actions and indicators, which detailed the baseline and expected outcomes for each component, the conditions for tranche release for the DPL, and the key milestones of the program, and (ii) the M&E indicators and baseline values, which described, for each condition and milestone, the results indicators, their baseline and target values, and the verification source. Definitions, baselines, and values of expected results were worked out during program preparation to facilitate monitoring. Particular emphasis was placed on indicators of results rather than process indicators.

69. To ensure that performance reflected appropriately the broader performance of the forest and environment sector, the monitoring system extended beyond measuring program specific indicators to also include indicators that reflected the country's overall performance in environmental management, governance and social equity in the forest sector. Some of the indicators measured included: increased percentage of production forests under a forest management plan; forest management units with reviewed management plans; and, communal forests with reviewed management plans and gazette decree.

70. Progress in some of the sensitive areas such as wildlife and biodiversity conservation, management of national parks and reduction of illegal logging was measured through well-defined protocols minimizing the room for subjective interpretation and contradictory perceptions regarding performance. For example, progress in protected area management was scored according to the "Tracking Tool" Protected Areas Management Effectiveness (PAME). As another example, progress in the fight against illegal logging was measured in terms of variations in the length of logging roads located within unallocated forest concessions and national parks. This was itself inferred from a time series of satellite images, interpreted collaboratively by the Government and the Global Forest Watch Program (GFW) of the World Resources Institute (WRI). The baseline values, methods and sources to review time series of relevant parameters were integrated into the program's monitoring system.

#### *Experience with the implementation of the M&E approach*

71. The government was in charge of implementing the M&E system with core responsibility given to a monitoring unit within the Ministry of Forestry and Wildlife (MINFOF). Some external monitoring of the program was provided under an independent review commissioned by the MINFOF and by the joint annual donor supervision missions.

72. The indicators used to monitor and evaluate implementation of the program were relevant and well-structured to measure the outcomes expected from the Program. However several shortcomings arose in implementation. Due to funding constraints, planning of the Program took precedence over developing an effective M&E system, which resulted in incomplete data collection and superficial evaluation of indicators. The rating system,

adopted for many indicators, was not suitable for measuring the intermediate progress achieved by several aspects of the program. Also little verification of data was organized. (An independent review was carried out, but this review was descriptive rather than analytical and mainly highlighted positive aspects of the implementation of the program.)

73. As can be seen above, there was a large number of program interventions. However, the progress reports, which provided cumulative assessment of the program activities, could not reflect adequately the diversity and complexity of the program. These progress reports were fed into a matrix developed by the Canadian bilateral assistance (CIDA Matrix), which was considered more appropriate for M&E (and superseded the Bank matrix). However, this matrix was not effectively used by the implementing Ministry.

#### *Overall key lessons learned from project implementation*

74. Lessons learned from design and implementation include: (i) to ensure success of reforms and reform implementation efforts, development partners should work not only with the executive branch of the Government, but with a broader range of partners including the legislature, the public at large, non-governmental organizations (NGOs), and community development partners; (ii) getting the correct framework and high-level Government buy-in are more important than physical investments. Through the forest component of SAC III, the Bank realized that, unless healthy institutions are created and distortions eliminated, results on the ground cannot be achieved; (iii) forest sector reforms require a clear understanding of issues and options by all stakeholders; clarity of expected outcomes, a focus on fundamental objectives, and flexibility to adapt to changing situations are important factors for the success of forest sector reforms and operations; (iv) creating a strongly appropriate regulatory, institutional, legal, and incentive framework is critical for achieving desired goals. Establishing an effective and legitimate rule of law provides a balance between positive incentives that reward compliance to the law, and the deterrent value of penalties for breaking the law; (v) In the context of Cameroon's forest sector, a results-based instrument such as sectoral structural adjustment tends to be far more effective and feasible than other types of lending instruments; (vi) biodiversity values should be given more prominence in land use planning. (vii) individual area-based project interventions can be very complex to manage are less likely to have an enduring impact than broad landscape-based national programs.

#### **5.2.1.3 Natural Resources and Environmental Governance Program**

75. In **Ghana**, the five year Natural Resources and Environmental Governance Program (comprising NREG I, II, and III) sought to improve transparency in systems and procedures for natural resources management. It targeted three sectors—forest, mining and the environment.

76. The symptoms reflecting poor forest governance, recognized during project development related to resource use, social conflicts, and economic incentives and information gaps. These were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

77. To ensure good governance in forestry, the Government prioritized its actions under four strategic policy areas:

- strengthening institutional capacity of the sector to ensure effective policy implementation and law enforcement and securing predictable and sustainable financing of the forestry sector;
- promoting collaborative resource management, promoting forest and wildlife investments;

- increasing supply of legal timber on the domestic market; and,
- securing the natural ecosystem and strengthening monitoring and evaluation and information communication technology.

78. The expected outcomes at the end of the series included: improved management of government revenues and finances in the forestry sector; reduced illegal logging; reduced social conflict in forestry communities; and, integration of environmental considerations into policy formulation and implementation across government, including risks associated with climate change.<sup>23</sup>

#### *Contribution of the project to strengthening forest governance*

79. Several important improvements in forest governance were achieved, over the duration of the Operation. Strengthening of institutions and governance Implementation of Forest Law Enforcement Governance and Trade (FLEGT) systems in the formal forestry sector progressed well through a consultative process. The Voluntary Partnership Agreement (VPA) was signed with the EU, outlining the safeguards that Ghana would follow to retain access to European Union (EU) timber markets, a tracking system to verify the legality of timber has been piloted with 4 companies, and a Timber Verification Department established in Forestry Commission (FC) to issue FLEGT licenses. On revenue transparency, district revenues have been published, although dissemination at the local level remains rudimentary. Ghana plans to make forestry EITI-compliant, and combining with mining and oil sectors offers potentials for strengthening dissemination of sub-national revenue that Ghana is attempting to pioneer through its Extractive Industries Transparency Initiative (EITI) program. National Resources and Environmental Governance (NREG) targets on the signing of leases and benefit-sharing agreements contributed to expansion of plantations beyond the 15 percent target, but FC struggled to attract as much private sector investment as desired, and most of the increase was through direct government action. Under the Financial Framework, measures were implemented to improve the collection rates of stumpage fees and debts, and revenue collection performance has risen to 95 percent (however the available data do not reveal the impact of improved collection performance).

80. However, significant challenges remain, and the following items are illustrative. A proposal to increase domestic supply by allowing chainsaw operators to retrieve stumps and residues from licensed timber coupes got delayed by questions over legal rights. Other proposals to better enforce the requirement on sawmills to supply the domestic market or to regularize informal chainsaw operators more generally, have yet to be developed into detailed policies. A number of legislative options for increasing revenues were proposed by FC, but have met with obstacles (park visitor fees have been revised upwards, but this is a very small component of overall forest revenues). Linking stumpage fees to exchange rates is under consideration, but being resisted by the industry. Clearly since the Operation is closed, it will be up to the national monitoring systems to track these (and other) changes. To help consolidate the impacts achieved under NREG, the series is being followed up with a TA project (P129769) whose objective is to increase the knowledge base and to strengthen capacities at the government and local level to support the policy reforms instituted under the NREG Program.<sup>24</sup>

#### *Design of M&E and the key indicators chosen*

81. Progress toward achieving the programs objectives of the NREG Program were measured using a broad policy matrix framework or Program Assessment Framework (PAF) along with a set of prior actions for each year along with agreed set of triggers along with means of verification. Information on the attainment of triggers and broader PAF targets were used as a basis for disbursement by the Bank and other DPLs, respectively. It was thus used not only to capture key policy reforms and outcomes, but a much wider set of activities and intermediate steps.

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<sup>23</sup>Project results in forestry included a log tracking system to verify the legal origin of timber exports being piloted, starting in 2010, by four large timber companies.

<sup>24</sup>To help consolidate project achievements, it can be useful to ensure that DPOs have access to TA, to not only allow governments to formulate policies but also ensure their implementation.

At the beginning of the program, however, the triggers and means of verification were left somewhat flexible to allow for adjustments to be made depending on the evolution of the program.

#### *Experience with the implementation of the M&E approach*

82. The decision was taken during project preparation to avoid using a separate policy matrix for the DPO, but instead to work with the PAF resulting from broader sector budget support goals and a government-led process. The PAF included a set of policy objectives, targets, outcome indicators and means of verification that were jointly identified and revised with the Government on an annual basis.

83. Though it was agreed that the PAF should be limited in size and comprise only the most crucial objectives and targets of the three sectors, the DPO-1 matrix ended up including 24 program or policy objectives and more than 60 targets for each of the first three years. From the outset, the PAF was used not only to track key policy reforms and outcomes, but for a much wider set of activities and intermediate steps. Ministries, departments and agencies familiar with investment projects used the PAF to plan NREG-related activities and justify their claim on resources to the Ministry of Finance. Many PAF targets were therefore output-oriented, which led to issues of subjectivity in the subsequent performance assessments; outputs were produced, but there were some disagreements between Government and development partners over their quality.

84. During preparation of DPO-II, an M&E specialist from the Bank was mobilized to support streamlining the PAF, resulting in a decrease in the number of policy objectives to 16 and annual targets to 35. Three- and five-year outcome indicators were also included for each of the 16 policy objectives. Six annual triggers were selected, which provided more focus, as evidenced by the higher performance against triggers in comparison to other annual PAF targets. Three-year outcomes linked to the six triggers were established during preparation of DPO-II as Key Outcome Indicators for the DPO series. Of the 12 indicators identified, however, five were actually outputs (such as the design of survey tools, application of fiscal models or preparation of an investment plan). Those that are genuinely outcome-oriented, typically did not have established baselines even by DPO-II, and, some presented attribution issues, such as the target to increase timber revenues by 15 percent.

85. The three-year outcome indicators, including the DPO series PDO indicators, did not receive appropriate attention. With the Government of Ghana (GoG) focused on a five-year NREG lifespan, the three-year outcome targets were inserted into the PAF essentially in relation to the Bank's financing schedule, but did not receive effective follow-up since 2008. There was no systematic attempt to report against the indicators at the end of DPO-III, nor were they updated during DPO-III preparation, despite the fact that many of the corresponding PAF targets had changed. As a result, several of the indicators were no longer realistic in comparison to the PAF targets expected by the end of D(PO-III. This explains some of the disconnect between the achievement of triggers and PDO indicators.

86. To systematize the PAF assessment, it was originally proposed that the government would establish, at first for the NREG triggers and ultimately for all targets, a methodological data sheet (clarifying responsibilities, data collection methods, means of verifications, and so on), but this was not carried through. For the 2009 PAF assessment, a small group of international and national consultants was to carry out an independent assessment. The intention was to reduce the transaction burden of the annual PAF assessments on Ministries, Departments and Agencies (MDAs), Ministry of Finance and Economic Planning (MoFEP) and Development Partners (DPs), whilst providing a more objective and transparent process, and M&E Technical Assistance support to the MDAs more generally. Nevertheless, the MDAs received it unenthusiastically as more of a policing than a support function (due to an accident to one of the members of the assessment team the forestry sector was not covered). The exercise was not repeated for the 2010 assessment.

87. It was recognized that the M&E framework for NREG was weak due to an overly complicated Program Assessment Framework (PAF) that itself substituted for under-developed sector planning systems and did not provide sufficient focus on key results. Weak sector M&E systems also made it challenging to monitor

implementation in a more detailed or real-time manner. For example, information on Environmental Impact Assessment (EIA) processing performance by the Environmental Protection Agency (EPA) was available in 2011 to verify if the 2010 target and outcome indicator was met, but was not available in time to adjust performance ahead of the milestone. This fundamental shortcoming, constraining monitoring for implementation and impacts, is being addressed through the development of comprehensive M&E systems including the establishment of Planning, Monitoring & Evaluation Units, for each of the NREG agencies.

#### *Overall key lessons learned from project implementation*

88. It is important to highlight that the NREG program's complexity brought with it benefits as well as costs. The inclusion of three NRM sectors was seen by both GoG and DPs to have been beneficial in terms of sharing lessons on parallel activities such as revenue management and participation of local communities, and raising the profile of cross-cutting themes, such as environmental management and climate change. The harmonization of the support of five DPs around a single program was highly appreciated by GoG, although it added to the burden of coordination, reporting and dialogue for the MDAs. From a DP perspective, transaction costs have been higher due to the need for greater donor coordination. An informal understanding between the DPs on division of labor in supervision support did not function as well as intended. Overlaps in the technical dialogue remained because individual DPs were still accountable for results across all sectors, whilst some specific gaps occurred, such as adoption of clear responsibility for support to a second-phase PSIA study. Conversely, the need to present a coordinated DP position limited agility at times, particularly with respect to the oil and gas sector, where the Bank's interest in using NREG to respond to emerging national priorities was greater than that of other development partners. Even within the Bank team, supervision involved both the African Environment and Natural Resources and the Gas, Oil and Mining sector units, and staff from the latter at times felt that they lacked the freedom and resources to engage to the extent which a separate mining operation would have allowed.

#### **5.2.1.4 Forest and Nature Conservation Project**

89. In the **Democratic Republic of Congo (DRC)**, the Forest and Nature Conservation Project (FNCP) provides support to increase the capacity of the Ministry of Environment, Nature Conservation and Tourism (MECNT) and the collaboration among government institutions, civil society and other stakeholders to manage forests sustainably and equitably for multiple uses, in selected pilot areas of DRC.

90. The symptoms reflecting poor forest governance, recognized during project development related to resource use, social conflicts and economic incentives and information gaps. (See table 5.2).

91. The project aims to build the long-term monitoring capacity of the MECNT and strengthen its links with the social and environment monitoring efforts of other development partner organizations by helping the institution access, analyze and store information, images and data. Specific interventions include:

- strengthening the institutional capacity MECNT in terms of forest management technical capacity as well as reforms within the institution;
- increasing local community and civil society participation in forest management; and,
- better management of protected areas and support to the Congolese Nature Conservation Institute (ICCN).

#### *Effectiveness of project interventions in addressing forest governance weaknesses*

92. The project recognized several symptoms of weak governance and the three major interventions—strengthening the capacity of and modernizing MECNT, increasing the role of community management of forests and improving the management of protected areas—are likely to contribute to strengthening forest governance. The establishment of the computerized log tracking system should make a direct dent on illegal and unauthorized logging.

93. Under the present M&E system, the indicator related to remote-sensing statistics on illegal logging and deforestation, could provide a record of illegal logging and unauthorized forest clearing but little else as regards progress on other forest governance problems. Furthermore the M&E system is poorly placed to capture those (beneficial) impacts likely to materialize in the long run, such as those through the strengthening of MECNT and increasing participation of communities.

#### *Design of M&E and the key indicators chosen*

- To determine progress toward the project development objectives, the project uses a results framework with a set of key indicators. The set of project indicators will give project managers information useful for adaptive management, and give policy makers clear benchmarks for evaluating the project's effectiveness. Output and process indicators include among others:
  - statistics on office rehabilitation, equipment, and staff training at central and field offices;
  - remote-sensing-based statistics on deforestation, illegal logging, and land-use changes;
  - statistics on water, sanitation, feeder roads, and other small participatory infrastructure projects implemented with project financing;
  - trends in the abundance of key bio-indicator species;
  - number and area covered by various types of forest land management plans and agreed upon by MECNT and other stakeholders (this is the only indicator of sustainability included in the project); and,
  - statistics on forest industry's compliance with environmental, social, and fiscal obligations ("social responsibility contracts").

#### *Experience with the implementation of the M&E approach*

94. The project has established a new, computerized log tracking and control system that has been institutionalized by the government, and that should help reduce illegality in the sector. The indicator, "Forest concessions with social responsibility contracts signed and publicly available," currently accounts for 100 percent of all forest concessions and this should improve accountability and transparency. On the other hand, institutional rejuvenation and retraining has been delayed by the postponement of the retirement of senior Environment Ministry officials. Also, the US\$ 0.9 million reserved for community forestry has been canceled as the decree necessary for its implementation has still not been signed by the Prime Minister. Finally, the indicator, "Area covered under forest land management plans. . . ." has been dropped due to changes in project activities.

A restructuring of the project was completed in March 2013, mainly to reallocate funding between expense categories to accommodate cost increases in the retirement payments and the log tracking and control system, and allow for the fact that some activities originally planned under the project have been funded by France and Japan. The results framework has been adjusted to take into account these changes, and to include the new World Bank core forestry indicators, for direct project beneficiaries and for biodiversity.

#### *Additional recent achievements*

The list of senior Ministry of Environment (MECNT) officials eligible for retirement has been prepared on the basis of the biometrical identification of all the Ministry staff completed in 2011, and the Presidential Decree necessary for their retirement is under consideration in the Council of Ministers. The project will co-fund the implementation of the training plan validated by MECNT earlier this year, together with the German Society for International Cooperation GIZ, to ensure that newly recruited and promoted staff has the required capacity. The Direction of Control and Internal Verification (DCVI) of MECNT is using the new computerized log tracking system introduced under project funding with considerable effect, and the amount of confiscated illegal timber has increased by an order of magnitude. One hundred and thirty micro-projects are under implementation in the four conservation landscapes, benefiting an estimated 110,000 people, almost double the 2012 number. Negotiations between the authorities and

the ex-Simba rebels in the Maiko National Park are nearing conclusion and the project will start implementing their voluntary resettlement outside the Park shortly.

## 5.2.2 SILs and APLs

### 5.2.2.1 Natural Resources Development Project

95. **Albania** supported a variety of interventions to achieve the objective to establish or maintain sustainable, community-based natural resource management in 218 communes in upland and mountainous erosion-prone lands.<sup>25</sup>

96. The symptoms reflecting poor forest governance, recognized during project development spanned those related to resource use, social conflicts and economic incentives. They were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; frequent occurrence of arson and forest fires; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; and, inadequate participation by stakeholders in the formulation of legislation and policies (see table 5.2).

97. The interventions supported included:

- participatory approaches to management of forests and pastures;
- strengthening and improving the legal and regulatory framework for forest and pasture management by supporting institutional reform and development within General Directorate of Forests and Pastures (DGFP) and District Forest Service (DFS); and,
- developing the inter-sectoral action plan to address illegal logging, and implementing elements of the action plan in project areas; and,
- enhancing forest fire management at local levels.

#### *Contribution of the project to strengthening forest governance*

98. In terms of strengthening and improving the legal and regulatory framework for forest and pasture management, the Project provided support for the following legal outputs: (i) a review of the legal status of Forest and Pasture Users Associations (FPUAs); (ii) drafting of necessary decisions for the Forest Law; and (iii) guidelines on working volumes. However, the activity on developing and implementing an action plan to address illegal logging in project areas was not covered by the project. Instead, it was covered under the Ensuring Forest Law Enforcement and Governance in Europe and North Asia (ENA-FLEG-I) initiative supported by the World Bank and the EU, wherein a National Action Plan was developed with wide consultations. The project documents do not allow an assessment of the success achieved in controlling illegal logging).

99. As regards, enhancing participation by local communities, communal and participatory forest and pasture management plans were introduced in 251 communes, covering an area of almost 768,000 hectares. This exceeded the target value of 660,000 hectares. In 240 of these communes, management plans were finalized including clarification of usufruct rights. This has been linked to increases in household incomes ranging from 8 percent (in forestry and pasture communities) to 28 percent in micro-catchment communities.

#### *Design of M&E and the key indicators chosen*

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<sup>25</sup>Specific Investment Loan (SIL) of IBRD \$7.4 million and GEF \$5 million.

100. To track progress toward development objectives, the project included routine M&E, combined with baseline, midterm and final impact assessments. The project used three key results indicators:

- about 660,000 ha of land (most of the upland erosion-prone commune land in the country) be managed by local communities in accordance with sustainable natural resource management plans, supporting the rehabilitation of natural resources, habitats and indigenous species;
- at least 10 percent increase in economic benefits at the commune or village level derived from sustainable use of natural resources; and,
- usufruct rights defined, agreed, documented, mapped and demarcated in 218 communes.

101. The above three key indicators were deemed to provide an adequate framework for tracking progress toward achieving the objective, including the proposed sustainability objective. Monitoring and evaluation was set to assess performance against project objectives and indicators at the central, regional and commune levels.

102. The responsibility for monitoring and evaluation activities was conferred to the Project Management Team (PMT). It was to be staffed accordingly to ensure timely and qualitative monitoring and evaluation of the Project's activities. The monitoring and evaluation arrangements were to be based on inputs from a monitoring and evaluation specialist, a data entry specialist, and regional managers and coordinators, and were to include routine monitoring and evaluation, combined with baseline, midterm and final impact assessments. A baseline survey was to be carried out, with regular updates of information on indicators to be recorded in a database, and at mid-term and at the end of the project, an impact assessment measuring the social, environmental and economic benefits of the project components had to be conducted. The PMT's reporting requirements envisaged quarterly reports covering progress on physical implementation, use of funds, and project impact. Quarterly reports were to be consolidated into semi-annual progress reports, and submitted to the Bank.

#### *Experience with the implementation of the M&E approach*

103. Monitoring and evaluation activities were envisaged to be implemented by the PMT. Unfortunately, the initial efforts to set up a system for monitoring and evaluation were fraught with delays and failures. The development of a system was eventually outsourced to a consulting company, but even then the implementation of the task proved extremely tedious and was marred by lengthy delays and several contract extensions. The resulting system, and especially the designed software, was over-designed and complex. To a large extent, these problems were caused by poor terms-of-reference and technical specifications, weak contract management, and the inability of the management entities to take swift and determined decisions of substance in the early stages of the project.

104. The lack of a functioning M&E system had a negative impact on the ability of the PMT to comply with its reporting requirements in the first years of implementation. The data collected and presented to the Bank was limited mostly to procurement and financial management, with very little information on emerging project outputs and progress indicators!

105. The original Global Environmental Objectives (GEO) outcome indicator was changed for one better suited for measuring the GEO (reduced erosion). However the relegation of an outcome indicator (usufruct rights) to intermediate outcome indicator was misplaced as that was capturing an important dimension of sustainable community-based natural resource management in the project area. An additional intermediate outcome indicator (number of communes that have registered the land that has been transferred) was added at mid-term review. However, the justification for this indicator was questionable, since it not only expanded the expectation for what the project would achieve, but it did so without having project control over key factors of success.

106. Despite this early lack of progress on the establishment of the monitoring and evaluation system, things improved after the mid-term, allowing the PMT to begin producing progress reports and impact assessments. The quality, amount and breadth of data have been recognized by the Bank team as adequate for the progress reporting requirements and impact assessment needs. Data was generated primarily during the duration of the project – most

notably from communal forest and pasture management activities, and micro-catchment management activities, for all 240 communities where project interventions were carried out. Data was made available for commune, regional and national levels. Data was also utilized for impact assessments, such as the one carried out in the Korca Region to determine annual growth rates of communal forestry and effectiveness of project financed interventions. However, the general impression is that available data has not been utilized as a potent tool for project evaluation and adjustment in implementation.

107. Some lessons learned from the experience with M&E include: natural resource management projects are most difficult to monitor and, to be effective, any system needs to be as simple and easily used by non-information systems specialists as possible; great care has to be taken in adding, eliminating or otherwise modifying indicators as in this case while one indicator was improved via modification, another one was unjustifiably dropped and a third one added without it having a link to project objectives; the project should provision adequate resources so that data generated can be processed for assessment of impacts in a timely manner; in a project such as this, where a management plan is such an important part of project implementation, standardized digital mapping is essential to effective implementation; and, local stakeholder involvement is necessary for receiving feedback on local site conditions, other community-specific issues and measuring impacts of project interventions.

#### **5.2.2.2. Forests and Mountain Protected Areas Project**

108. In **Bosnia and Herzegovina**, the Forests and Mountain Protected Areas Project seeks to strengthen the institutional and technical capacity for sustainable protected area management, and expand the national network of forest and mountain protected areas. The objective of the Project was, “to assist with the implementation of legislated reforms in forest organization and management, which are expected to increase revenues from forest resources, improve forest management, and enhance biodiversity conservation through participatory approaches in forest use and planning.”

109. The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; and, inadequate participation by stakeholders in the formulation of legislation and policies (see table 5.2).

110. The Project interventions were organized under 4 components and several activities within each component: protected area development by supporting PA management plans, operations, assessments, and facilities development in existing and new PAs<sup>26</sup>; design of an M&E system for both the PAs and the project which includes support for ecological assessments to be used as inputs to the PA management planning and decision-making as well as for subsequent monitoring of biodiversity status including tracking of key habitats and species; capacity and support for biodiversity conservation which focuses on strengthening the institutions responsible for planning, establishment, and management of PAs; and, local initiatives in biodiversity conservation which supports biodiversity conservation efforts by local stakeholders which promote improved natural resource management and generate economic benefits to local communities involved in PA management.

#### *Contribution of the project to strengthening forest governance*

111. All PDO indicators and the intermediate indicators target were 100 percent achieved. The project has helped improve legislation, regulations and policies relevant for the forest sector, bring about a separation of forest administration and forest enterprise, into distinct organizations, improve information on forests through a forest

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<sup>26</sup>The project finances the development and implementation of new PA plans for the two existing National Parks (NPs) Sutjeska and Kozara, for the existing Janj and Lom forest reserves and for the new National Parks (NPs) in Una River and Igman-Bjelasnica-Treskavica-Visocica mountain complex (IBTV).

inventory and use of GIS technology and strengthened protect areas management with community participation. As such, it has improved the overall governance climate for the sector and going forward it is expected that this will be reflected in a reduction of the symptoms of weak forest governance. However, these conclusions are based on indicators which have essentially monitored project disbursements and outputs. Information on impacts-long-term health of protected area, optimization of harvesting through use of inventory information and GIS techniques, increased enterprise revenue collections, will be needed to assess the effectiveness of the institutional, organizational and promotion of use of technology, fostered by the project.

#### *Design of M&E and key indicators chosen*

112. Project monitoring and evaluation has been guided by a Results Framework. Technical assistance was provided to more fully establish the entire M&E framework and train managers in associated principles and methodology. (The total cost for all forms of M&E is estimated at US\$600,000, of which US\$340,000 is financed by GEF.)

113. The project identified five PDO level indicators and four intermediate outcome indicators. The PDO indicators consisted of progress in: implementing institutional reforms, improved economic and financial frameworks, developing GIS-based FMIS systems, implementation of a forestry inventory in FBiH and RS, and development of biodiversity conservation strategies and plans, based on participatory consultation processes. The intermediate indicators related to accelerated implementation of legal, institutional and economic frameworks, FMIS, State Forest Inventory, and project management.

#### *Experience with the implementation of the M&E approach*

114. Project actions, expenditures and progress toward identified objectives were envisaged to be monitored by the implementing agencies and reported in a semi-annual progress report to members of the Project Guidance Committee and other concerned officials so that appropriate action can be taken. Most of the M&E in the project was in the form of activities under the Ecological and PA Management Assessment Subcomponent, with the exception of more narrowly focused project monitoring which was handled under the Project Management Subcomponent.

115. This overall M&E system provided parameters to support policy formulation and planning for both the existing and new protected areas, and to monitor their ecological status thereafter. M&E made use of existing data sources (such as the National Biodiversity Strategy and Action Plan) supplemented by data collection within the project and special survey and assessment updates, plus case studies undertaken by contracted specialists. PA managers also adapted the Protected Areas Management Effectiveness (PAME) Tracking Tool to assess PA management progress.

#### *Additional outcomes and opportunities*

116. The ISR rating of the project is upgraded to Satisfactory because the outcome and intermediate results meet, and in some cases exceed, the agreed final targets as revised at the time of Additional Financing. The achievements of the project are especially noteworthy, given the challenging political and fiscal status of the country. The results and post-project plans demonstrate the ownership of the PDO. However, it is too early to assess whether or not the full project impacts can be sustained in the evolving fragile political context of Bosnia and Herzegovina, and hence the PDO continues be rated as Moderately Satisfactory.

117. Some of the project results also strengthen the evidence on the economic and environmental importance of the forest sector, and set examples of institutional development which are relevant to other sectors. The analysis of the State Forest Inventory (SFI) shows that total coverage of forest land is 3.2 million ha (that is, over 62 percent of the total area of the country) which is much greater (by about 500,000 ha) than previously believed. Furthermore, those forests are in better condition than previously estimated (550 million cubic meters rather than 350 million cubic

meters of standing volume, with a potential sustainable annual yield of 11 million cubic meters instead of 6 million cubic meters). Government plans for post-project funding have strengthened the likelihood of sustainability of the Project-initiated SFI and Forest Management Information System (FMIS) activities. Line ministries in both entities have also developed proposed strategic plans for the forest sector for government consideration.

118. Sustainable forest management certification of an additional 405,000 ha in the Federation of Bosnia and Herzegovina (FBiH) is almost complete. The project's efforts to improve corporate governance in the forest sector are now widely recognized, as reflected by RS Sume being invited as a special guest to an EU conference, and in the FBiH new required training in corporate governance for managers and governing boards of all public enterprises.

119. For the future, the forest sector will need to continue to operate in the country's fragile and evolving political context. Fully addressing the associated institutional issues has been beyond the scope of the project, and in any case this needs to be an ongoing process. For example, in the FBiH, municipalities have expressed concerns about not having sufficient access to and control over forest resources, especially in forest rich cantons. As mentioned in previous supervision reports, this is influencing consideration of a new Forest Code.

### **5.2.2.3. Sustainable Forestry for Rural Development Project**

120. In East Asia, the FY09 **Lao People's Democratic Republic** Sustainable Forestry for Rural Development Project (SUFORD I and II) sought to scale up and enhance the activities of the first project started in 2003.<sup>27</sup> The project assists in achieving the sustainable management of production forests to alleviate rural poverty and implementing forest policy reforms.

121. The symptoms of poor forest governance recognized during project development were many, and spanned all three groups listed in box 2.3. They were: prevalence of illegal and unregulated logging; trade in illegally logged timber; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and institution's responsible for management of forest lands; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities; and, poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

122. The overall development objectives of the project were to:

- improve the policy, legal and incentive framework enabling the expansion of sustainable, participatory forest management throughout the country by assisting the Government in its implementation of policy reforms described in its Letter of Forest Management Policy;
- bring the country's priority natural production forests under Participatory Sustainable Forest Management (PSFM); and,
- improve villagers' well-being and livelihoods through benefits from sustainable forestry, community development and development of viable livelihood systems.

123. SUFORD I activities focused specifically on:

- assisting the government to develop its forestry institutions, including regulatory framework and organizational arrangements, and enhancing capacity to provide training, extension, control, and monitoring services to support PSFM;
- providing support for establishing a Production Forest Area (PFA) system together with the National Biodiversity Conservation Areas (NBCAs), provincial conservation areas, designated watershed areas from the permanent National Forest Area;

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<sup>27</sup>P108505 SUFORD Project II, IDA \$10 m. SUFORD I P064886 \$9.9 m. SUFORD II is also called SUFORD-AF (Additional Financing).

- supporting forest management capacity building, piloting, and scaling-up of implementation of PSFM systems; enhancing village development planning and implementation capacity in project villages and financing village development plan implementation to establish and institute viable sustainable livelihood systems and employment opportunities; and,
- strengthening village organizations, their capabilities, access to assets and decision-making power to enable them to solve their priority problems and make sound decisions regarding the management of the surrounding forest land resources.

124. Project achievements under SUFORD I were significant. They included the establishment of a nationwide Production Forest Area system consisting of 51 PFAs covering about 3.6 million hectares; the development of a national code of practice for production forests and guidelines on revenue sharing and competitive timber sales; and successful implementation of PSFM in eight priority PFAs of four provinces covering about 650,000 hectares. Of these 50,000 hectares (in five sub-forest management areas in two provinces) were certified in compliance with international standards of the Forest Stewardship Council (FSC). In addition, village institutions for PSFM implementation and village development (VD) were established and are functioning in all 18 project districts and 412 villages, with communities participating in all forest management and village development activities, which are funded by timber revenues and supplemental village grants provided by the project. Finally, forest monitoring and control systems were developed and piloted at a significant scale.

125. To promote the consolidation of the successes achieved in SUFORD I, SUFORD II (SUFORDAF) sought to scale up the activities undertaken in the first phase. The scaled up interventions were:

- the geographical expansion of the proven SUFORD PSFM model from currently eight designated PFAs, in four project provinces to eight new sites in five new project provinces, covering in total approximately 1.3 million hectares of natural production forests;
- national policy formulation and implementation covering the development of the national forest estate (including a system of protected forest areas), equitable timber revenue and benefit sharing arrangements with local communities, transparent timber sales procedures to maximize timber revenues, and timber products industry restructuring; and,
- technical assistance to develop and implement a comprehensive program of forest sector monitoring, forest management control, independent forest certification, and forest law enforcement.

126. The key policy and institutional reforms supported by the project included creating an enabling environment for participatory forest management. The indicated reforms were to ensure Village Forestry Associations an appropriate degree of involvement in management and commercial aspects of forestry, access to fair and equitable conflict resolution mechanisms, and viable revenue sharing arrangements. Reforms and institutional measures to strengthen the Government's forest law enforcement program (including setting up a new Department of Forest Inspection) were also initiated.

#### *Design of M&E and the key indicators chosen*

127. The performance of SUFORDAF was monitored via a *results framework*. Efforts to update and improve SUFORD-I's performance indicators were made in the AF Project Paper (PP) as targets were updated and scaled-up and PAD outcome and impact indicators were adopted as project development outcome (PDO) indicators. Four PDO indicators and thirteen intermediate outcome indicators (IOI) were proposed. These included indicators related to:

- improvements in forestry revenue-generation and equity in benefit-sharing;
- number and area of forest management units fulfilling certification criteria;
- reduction in illegal land conversions and logging and better compliance with management plans;
- improvements and maintenance of forest ecosystem health and increased availability of subsistence and economic NTFPs and wildlife resources; and,

- improved household-level food security, community infrastructure and number of people benefiting from the development project.

128. The Project's monitoring and evaluation system relied on participatory monitoring and evaluation, which included village self-monitoring of its own village development projects. Villagers were also involved in monitoring of the forest management activities.

#### *Experience with the implementation of the M&E approach*

129. Project level monitoring and evaluation were the responsibility of the National Project Management Office (NPMO), with support from the Finnish TA team. NPMO provided regular quarterly updates on project activities and deliveries against an agreed work plan and timeline for completion.

130. Some minor adjustments were made to reflect the completion of project activities or to account for fine-tuning of component design or to adapt to feasibility of measurement. Thus, the indicator, "reduction in illegal land conversions and logging operations" was maintained as a Provincial level pilot analysis (based on new remote sensing technology) and was measured for two provinces to allow for comparison and analysis of deforestation trends 1992-2002-2008. Likewise, the indicator, "increased availability of subsistence and economic NTFPs and wildlife resources" could not be measured widely due to conceptual and technical complexity. Instead, participatory community-based NTFP monitoring systems were developed and tested and the indicator was constructed for selected PFAs and FMs, indicating trends in NTFP abundance and sustainability. One gap in the M&E implementation was the lack of baseline information to measure project impacts on forest-based income and food security at household level.

131. On the positive side, the Implementing Agency pursued an opportunity to implement a rapid assessment of forest cover change in an area where harvesting had been authorized to facilitate hydro and mining developments. This assessment provided an innovative and cost effective way to evaluate the impacts of development activities on project PFAs and adjoining forests.

#### *Contribution of the project to strengthening forest governance*

132. SUFORD was successful in achieving considerable results in a challenging institutional and dynamic external environment and contributed significantly to sustainable management of the forestry resources in the country.

133. On the institutional change and organizational strengthening front, a key outcome of the project from 2003 to 2012 was strengthening of the capacity of the Department of Forestry (DoF) and the Department of Forest Inspection (DoFI). The forest law enforcement program was significantly mature including the development and approval of a law enforcement strategy, interagency agreements, and operations training and raising public awareness. The project has also helped the DoF develop a set of comprehensive guidelines for PSFM and use of the village development grants, including guidelines for working with ethnic groups. SUFORD also assisted in developing a set of management tools, including a national forestry reporting system, internal monitoring system, document management system, budget planning system, and budget monitoring system. These have all contributed to improving transparency and efficiency of the Government of Lao (GoL) forest management agencies; and have addressed many of the symptoms of poor forest governance identified during project development.

134. The project introduced the concept of rapid surveys conducted by professionals both outside and inside line organizations to focus on selected activities. The objective was to provide implementing agencies with timely feedback so that corrective action can be taken while the work was ongoing. This has become a useful tool for DoF managers and in future, its use needs to be developed and expanded further. In the same context, M&E produced several impact assessments and case studies that contributed directly to improved project performance. Project

studies were used to evaluate and refine project approach and strategy, for example, increasing the focus on ethnic group engagement and strengthening outreach to women (but this came only during the later stages of project implementation). Forest sector monitoring and data collection have improved substantially thereby addressing another underlying cause of poor governance (however more training on information systems is likely needed at the subnational level).

#### **5.2.2.4 Strengthening Regional Cooperation for Wildlife Protection Project**

135. The one project in South Asia included in this analysis is the Strengthening Regional Cooperation for Wildlife Protection Project which seeks to assist the participating governments (**Bangladesh and Nepal**) to build or enhance shared capacity, institutions, knowledge and incentives to collaborate in tackling illegal wildlife trade and other selected regional conservation threats to habitats in border areas.<sup>28</sup>

136. The symptoms reflecting poor forest governance, recognized during project development were many: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; evasion of taxes, fees, and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

137. The interventions proposed are:

- Capacity building for addressing the illegal trans-boundary wildlife trade to bring about regional harmonization and collaboration in combating wildlife crime through strengthened legislative and regulatory frameworks, well-equipped specialized agencies and systems, as well as relevant training and awareness programs for staff across the range of agencies that contribute to the enforcement of wildlife laws and regulations;
- Promoting wildlife conservation in the region; and,
- Establishing coordination and communication to provide services, Technical Assistance (TA) and incremental costs for project staff as well as operating costs for the management and coordination of the project.

#### *Design of M&E and the key indicators chosen*

138. Progress toward the development objectives of this project is monitored through a *results framework* to track the process, outputs, and outcome indicators. The project implementing unit (PIU) in the two countries will carry out baseline surveys, especially of the biodiversity status, populations, and habitats of flagship species, to establish baselines. Mid-term and end-of-project evaluations are to be carried out. In addition, each country is to carry out technical, environmental, and social audits through independent consultants during project implementation.

139. The respective implementing units are also to ensure that cross-cutting issues are embedded in the project activities and are regularly monitored and reported. These include: (i) women's participation and gender equity; (ii) compliance with the environmental and social safeguards; and (iii) good governance. The implementing units report on the results of the M&E activities in quarterly (Bangladesh) or trimester (Nepal) progress reports.

140. There are four PDO level indicators:

- Progress toward the development of sustainable regional mechanisms for addressing illegal wildlife trade and other conservation threats,

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<sup>28</sup>P121210 IDA \$39 million. Of this 35.5 million is for Bangladesh.

- Development of at least one protocol each on a common research agenda, knowledge sharing, collaboration, and division of labor,
- Agreement among the enforcement agencies on at least two regional protocols, including approaches and solutions, and,
- Implementation of at least three regional pilots or initiatives in wildlife enforcement and conservation.

141. The intermediate results indicators include two regional ones (development of a common conservation research program for regional wildlife management with a particular emphasis on tiger conservation, and, set up a knowledge sharing mechanism among participating countries), twelve for Bangladesh and eleven for Nepal, including a core sector indicator (areas brought under enhanced biodiversity protection) for each.

*Experience with the implementation of the M&E approach*

142. Progress toward achievement of the PDO has been downgraded to Moderately Satisfactory due to the potential risks associated with not being able to meet the PDO without India participating in the Regional Wildlife APL and with the risks linked to the implementation delays of the Bangladesh component. According to information in the ISR of September 2013, progress on the other three PDO indicators is reasonable and as of now the targets are all expected to be achieved by the end of the project.

143. The core sector indicator on “areas brought under enhanced biodiversity protection (ha)” had to be dropped. The activities in protected areas (PAs) are linked to demand-driven proposals submitted by the conservation agencies in Bangladesh and Nepal, therefore the target value for the project cannot be determined until after all proposals have been submitted.

144. As regards the country specific, intermediate results indicators, there is progress. However, in Bangladesh, only 10 percent of the International Development Association (IDA) credit has been disbursed in the two years since inception and unless disbursements are accelerated over the next few months, the mission will have to propose project restructuring, including a partial cancellation of the credit during the mid-term review (scheduled for December 2013).

145. In Nepal, despite a slow start, the pace of implementation of project activities has continued to accelerate. All project progress indicators for Nepal are considered “satisfactory,” except for Financial Management and Procurement performance which have been rated as “moderately satisfactory” due to slow disbursements and procurement delays.

*Contribution of the project to strengthening forest governance*

146. Implementation in Bangladesh is considered lacking whereas in Nepal it is considered satisfactory. However, these conclusions are based on indicators which are essentially monitoring project performance in terms of disbursements and outputs. Information on impacts, in terms of greater effectiveness of protection of PAs, or of a reduction in illegal trans-boundary trade, and so on is unavailable in the project documents.

## Chapter 6: A Summary of Findings from Forest Governance Initiatives of the World Bank

147. To gather evidence on the measurement of the impacts of forest governance interventions, the experience from Bank supported initiatives (APLs, DPLs, SILs, ESWs and TAs) was reviewed. The detailed findings from projects are reported in section V and in appendix 3, and from ESWs and TAs, in appendix 4. We also gathered information through brainstorming and conversations with project TTLs and impact evaluation experts with the main findings summarized in appendix 5. Based on these sources of information, the emerging stylized facts are as follows:

148. *Recognition of governance shortcomings and implementing innovative interventions:* Bank financed projects and programs recognize a variety of factors symptomatic of poor forest governance. These have ranged from the prevalence of illegal and unregulated logging, trade in illegally logged timber, unauthorized encroachment of forest and protected areas, existence of ill-defined or unclear access and use-rights related to forest lands, as well as, poorly defined and inequitable sharing of forest related benefits (found in almost all sample projects), to others less prevalent such as illegal wildlife poaching and its trade, the prevalence of conflicts related to access and use of forests and unfair and corrupt business practices (refer to table 5.2 and box 5.1).

149. The interventions undertaken to address the underlying factors have shown equal variety, ranging from capacity enhancement, organizational strengthening, and setting up forest law enforcement systems, to legislative reforms, appointing independent forest monitors, developing budget planning and monitoring systems, and supporting national forestry inventory updates and technology enhancement.

150. *Multifaceted nature of expected impacts:* Even though this report has looked at forest programs and projects and their impacts primarily from the lens of forest governance, few of those are purely on governance. The evidence in section V of this report clearly demonstrates that reductions in poverty, improvements in the security of livelihoods, wildlife, and biodiversity conservation and cross-sectoral collaboration go hand-in-hand with interventions to improve forest governance. Implications of this for impact assessment will be drawn in the next section.

151. *Developing a theory of change:* Most Bank financed projects are silent on a theory of change or an articulation of a causal pathway connecting the symptoms, the interventions proposed and their expected impacts. Thus, it is challenging to pinpoint the linkages between the observed symptoms of poor forest governance and the interventions which are being proposed to address them.

152. *Tracking impacts using M&E approaches:* As in all other Bank projects, tracking impacts in forest governance projects, has relied almost exclusively on specially developed log-frame matrices such as a Results Framework (in the case of SILs) or a Policy Matrix (in the case of DPLs). Both of these have been used primarily to measure progress toward project objectives through the use of performance indicators, coupled with baseline surveys and proposed target values. However, the ex-ante approaches to M&E in Bank projects, typically do not try to establish attribution, nor do they systematically track spill-over effects (positive or negative) and leakages resulting from project interventions. They also do not consider the role of “confounding factors” that is, non-project influences, which can influence expected project outcomes. Because of these shortcomings the Policy Matrix or Results Framework approaches do not fully or accurately measure the impacts of Bank interventions.

153. *Contribution of M&E approaches to improving project interventions:* Conceptually, M&E approaches allow for probing into attribution and impact measurement, under the “cause-and-effect” part of the “E” (refer to section II of this report). However Bank practice has been to use its M&E for measurement of project performance and rarely to address impact measurement. The SUFORD project in Lao PDR is the exception in our sample as it initiated several impact assessments to address specific needs that arose during the course of project implementation. These assessments were not tracking governance outcomes and their contribution to project improvement was limited

because some results became available only toward the closing stage of the project. Even so, information from the Policy Matrices and Results Frameworks can provide a handle on the effectiveness of project interventions and assist in their revision and improvements. In only one project under review, was such information used explicitly to improve project targeting and implementation (Karnataka watershed management project, box 6.1 which included forestry components, but did not focus on forest governance).

154. *Quality of the design and implementation of M&E:* In practice the quality of the design and implementation of M&E in projects has been variable. M&E implementation proceeded with the least problems when existing indicators were used and regularly monitored by implementing agencies, instead of creating program specific ones. This was the case, for instance, of the indicator for annual deforestation rate monitored by INPE in Brazil. Sometimes M&E can be completed effectively and economically by relying on external monitoring mechanisms. Engaging an independent forest monitor has been demonstrated to improve transparency and accountability in the use of forest resources. Thus, in an innovative move, an independent forest monitor was identified to monitor the outcomes of operations in Cameroon, whereas the national space agency of India was entrusted with that responsibility in the case of the Karnataka watershed project.<sup>29</sup>

155. *Role of indicators:* Indicators are currently designed to measure progress in the implementation of project interventions, rather than in the reduction of perceived problems. Sometimes optimistically too many indicators are proposed for M&E some of which are not even practically measurable. This finding is clear from our analysis of the various environment DPL programs where monitoring was hampered by the overly complex and ambitious approach to selecting indicators (for example, Ghana NREG projects). Box 6.1 lists the most frequently used indicators in the context of monitoring forest governance in Bank projects.

#### **Box 6.1 Improving Implementation through M&E in India (Karnataka Watershed Management Project)**

An example of where effective M&E was used to improve project implementation in agriculture sector comes from the Karnataka Watershed Management Project (P067216, US\$100.4 m, closed in 2009). The Project addressed poverty alleviation in (mainly) rain-fed areas by improving the productive potential of degraded watersheds through a focus on soil and water conservation and sustainable use. In addition, it was designed to strengthen the capacity of communities in project districts for participatory involvement in planning and implementation, and in social and environmental management.

The important feature of the project was the M&E system, conducted by the Indian Space and Research Organization. The M&E system included a household survey with baseline and control groups and remote sensing monitoring of changes in vegetative cover and cropping patterns. (Hydrological measurements were less reliable, since planned equipment was not acquired.) In a departure from the norm, the M&E system was integrated into project management and had a significant impact on improving project implementation in real time. For example, it was instrumental in the mid-term review decision to shift funding into revolving funds for self-help groups, a move that resulted in a sharper poverty focus for the project and improved opportunities for women and the landless. Similarly, when it was found that a high proportion of project funds were flowing to large farmers for soil and water works, the beneficiaries' contributions from small and marginal farmers were reduced, leading to improved equity.

Source: IEG. Lessons from Recent Evaluations: Environment, Agriculture, and Rural Development (Issue 2 February/March 2013).

156. *Congruence between DPLs and SILs:* This analysis does not show any significant differences between DPLs and SILs with respect to the way forest governance issues were identified and addressed. Both categories of projects included interventions ranging from policy and institutional strengthening reforms and capacity building, to

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<sup>29</sup> The role of independent forest monitors, in general, has been more controversial. Thus, experience with an independent monitor which also continued to play its traditional advocacy role in Cambodia was especially problematic.

instituting log-tracking and law enforcement systems. Often a second SIL followed on the heels of the first to enable longer-term engagement in forest governance improvements.

157. *Ownership of Policy Matrix:* In the case of DPLs, strictly speaking (as per OP 8.6), the Policy Matrix should be used by the borrower to monitor progress during implementation and evaluate results upon completion. However, most frequently, the Policy Matrix is viewed as a Bank monitoring tool to justify the release of a next tranche under the Development Policy Loan. Thus, the Matrix is often not owned by clients due to a disconnect in expectations. This limits the effectiveness of the Policy Matrix as a joint tool to evaluate the DPL. To incorporate IE into the M&E frameworks it is necessary to engage stakeholders from the very beginning at the project design phase.

158. *Behavior change and tracking for impacts which manifest themselves in the long-term:* Successful implementation of forest policy reforms, legislative improvements or organizational strengthening (and governance reforms more generally) plus long term interventions are needed as the reform process takes time due to the requirement of a behavioral change on the part of the counterpart. This analysis has highlighted a few programs (Laos, Ghana, and Armenia, for example) which were implemented over several years. Some of these interventions were more successful than others in instituting change in the governance of forests. The indicators selected in these interventions frequently allowed progress to be tracked over time, but not outside of the duration of the operation.

159. *ESWs and TAs:* For ESWs, approaches to measuring impacts are often unclear and infrequently mentioned in the document. In many instances impacts are evaluated only post hoc, often by IEG (as was the case for the China work—see appendix 4). A similar lack of clarity (similar to that for ESWs) on impact measurement pertains to TA work. However, there are exceptions, especially in the case of high profile TA work such as ENPI-FLEG Phase II which is using a well-articulated Results Framework approach.

## Box 6.2 Examples of Forest Governance Indicators Used in World Bank Projects

**Core Sector Indicators:** Developed by the collection and aggregation of standardized data from projects supported by IDA. Projects must try to incorporate at least one applicable core sector indicator.

- Forest area brought under management plans (ha)
- Reforms in forest policy, legislation, or other regulations supported (Yes/No)
- Government institutions provided with capacity building support to improve management of forest resources (number)

### **PDO Indicators**

- Increase in percentage of production forests under a forest management plan
- Communal forest with reviewed management plan and gazette decree (%)
- Percentage of concessions under Sustainable Forest Management Plans
- Percentage of forest fees and area tax collected
- Percentage of territory under effective national parks status with a secured legal and institutional framework
- Social and environmental impacts forests programs monitored.
- Illegal logging monitored and controlled
- Forestry taxes allocated to logging communities per the law
- Sustainable natural forest management of private and public areas expanded
- Number, types and areas covered by various types of forest land management plans agreed upon by the Government and other stakeholders (adopted and under implementation)
- Percentage of logging infractions discovered that are prosecuted in (that is, pilot provinces)
- Number of logging infractions revealed by independent observers

### **Intermediate Outcome Indicators**

- Improved revenue generation and benefit-sharing systems
- Number and area of forest management units fulfilling the certification criteria and indicators
- Reduction in illegal land conversions and logging operations
- Increased participation of women, ethnic minorities, and poor households in forest management activities
- Increased number of village forestry committees established and functioning
- Integrated forest inventory and cover monitoring and data management system developed
- Forest law enforcement program developed and implemented
- Maintenance and expansion of independent certification of the forest
- Increased institutional capacity to monitor and regulate forest use
- Improved populations' knowledge of their statutory rights and increased participation in land use decisions
- Reduced ratio of violations of park regulations (that is, poachers arrested, fire arms seized, traps found, endangered species confiscated) to number of patrols conducted

## Chapter 7: Recommendations for Moving Forward

161. Efforts at tracking the impacts of Bank efforts in forest governance projects have mostly focused on the application of policy matrices and results frameworks. These approaches (in conjunction with information on baseline values) are helpful in getting a handle on how things have changed in the context of a project (that is, they give information on before-and-after assessments). However, a before-and-after assessment can only tell us that the situation changed, but cannot identify the reasons why and is much less helpful in causally linking outcomes and impacts to project interventions, or in estimating the magnitude of the impacts accurately.

162. Estimating impacts with attribution is achieved through impact evaluations (IEs). An explicit articulation of a theory of change and a focus on causality and attribution are the hallmarks of IE and provide insights into the methodologies that can be used.<sup>30</sup> These can range from qualitative approaches to highly quantitative and data intensive ones which are the most common ones with varied implications for costs and precision and the credibility of the data generated. The practitioner needs to select that evaluation approach which best fits the nature of the intervention and the project's needs. (It is eminently possible that in particular situations the perceived benefits are marginal and therefore an evaluation is not undertaken).

163. A carefully constructed IE enables the attribution of results to the intervention in question and therefore is fundamental for developing insights on what works and what does not, and which intervention (in a suite of interventions) is most effective. This information enables improving project components to get the “maximum bang for the buck.” However, as a review of the portfolio undertaken for this report has shown, IE approaches have seldom been used in Bank financed projects dealing with improving forest governance. This review was unable to identify any application of IE to measure impacts of governance focused interventions in any of the 16 projects and programs scrutinized. The SUFORD project in Lao PDR did apply some *impact evaluation* techniques. However, these were not directed at forest governance issues, but rather to address specific concerns such as how to increase the focus on ethnic group engagement and how to strengthen outreach to women.

164. As stated at the very beginning of this report, just because IE has not been systematically incorporated into the Bank's forestry activities should not be interpreted to mean that Bank supported activities have had no impacts! Ex post studies suggest significant impacts of Bank interventions. Thus, a recent report evaluated the impacts of about a dozen activities and found them to be significant in the context of criteria such as “influencing policies or policy dialogue” and “developing new tools and methods,” among others (Wells et al. 2013). However, the emphasis of this report is on ex ante evaluations and the potential to learn from those. A robust IE, integrated into the project from the outset, will allow for better overall monitoring of impacts and project objectives to be reached. It will also lead to the strengthening of projects that are to be replicated or scaled up. Integrating IE into project design will allow for the full picture to emerge as to why the proposed intervention worked or failed (box 1.2). Thus, IE tools allow us to test, tweak, and scale up in the design and implementation stages what does work and improve the impact of interventions. Stronger projects, as a consequence, will therefore lead to better outcomes. This will mean less project restructuring, as well as less projects being cancelled and dropped, thus strengthening the overall Bank portfolio.

165. Even though this report has looked at forest programs and projects and their impacts primarily from the lens of forest governance, few of those are purely on governance. The evidence in Section V of this report clearly demonstrates that a reduction in poverty, improvements in the security of livelihoods, conservation of wildlife and biodiversity, and cross-sectoral collaboration go hand-in-hand with interventions to improve forest governance. In other words forestry projects and programs typically aim to achieve a number of impacts. Therefore, from the comprehensiveness and cost-effectiveness perspective, evaluation approaches should track all activity impacts.

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<sup>30</sup> It is illustrative that a report on an evaluation of the World Bank's engagement on Governance and Anticorruption (GAC) states that, “Even though the GAC Strategy did not contain a formal logical framework, the (this) evaluation developed a results chain in order to make informed assessments of the Bank's efforts” (IEG 2011).

Thus, the recommended actions below should be considered to apply to tracking impacts more widely rather than for forest governance alone.

166. Based on the empirical findings of this work, coupled with the significant learning benefits to IE, ***the overall broad recommendation of this report is to strengthen the mainstreaming of IE into forestry programs and projects ex ante***. In order to move forward on this recommendation three actions to address the demand side (clarity on when to incorporate an IE, the benefits and motivation for TTLs to do so) and supply side (resource scarcity and paucity of practical examples to guide actual application) constraints are being suggested. These actions are not meant to be sequential, and all are necessary to break the constraints.

### **7.1 Action 1: Develop a Compendium of Practical Techniques to Doing IE in Forestry and Raise Awareness among TTLs.**

167. The limited application of IE in forest projects stems partly from the fact that benefits to doing an IE are seldom clear, whereas the associated costs are perceived to be large, the IE is time consuming to design and implement, long-drawn out in generating results and that available approaches are often inappropriate for forestry interventions, especially those related to forest governance.

168. Addressing the above limitations requires **collecting case study material illustrating the most appropriate and cost effective IE approaches in specific situations**, and demonstrating how learning from impact evaluation studies can benefit project effectiveness. As an earlier section of this report makes clear, there is a spectrum of IE approaches ranging from qualitative to quantitative. They vary enormously as regards costs, time needed and the precision of results generated. The case study materials should be organized in terms of suitable approaches to the context with due consideration to their cost, time and results aspects. In addition, compiling a list of measurable and verifiable indicators is also necessary. The Bank's core sector indicators (box 2.1), those compiled from our present analysis (box 6.2) and those mentioned in other ESWs (World Bank 2006a; Magrath et al. 2007) provide a promising start.<sup>31</sup>

169. While crucial to do so, building up this compendium of case studies is far from trivial, partly because measuring the impacts of forest governance interventions is itself not easy (for reasons that we mentioned in an earlier section of this report). From a practical perspective only very few examples of IE for forestry are available currently. In the quantitative category, our search revealed ten from the forestry sector, only three of which focused on forest governance impacts (including one from Uganda which looks at the impacts of reforms in the country's national forest policy). Many of them use matching and instrumental variable approaches. These studies are summarized in appendix 6. The currently sparse set of case-studies points to the need to also look "outside the box" for other IE approaches which may be better suited to take account of the complexities associated with forest sector interventions (for example, Outcome Mapping mentioned in box 2.3). Additionally, there is a vast data bank of IE

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<sup>31</sup>Three core sector indicators specifically address forest governance. The "forest area brought under management plans (ha)," is one of the most widely used indicators in Bank financed projects, and is considered a process or effort measure. This indicator measures the forest land area, which as a result of the project, has been brought under a management plan. This particular indicator is often also used by projects under implementation as a proxy indicator for SFM outcomes. Second, "reforms in forest policy, legislation or other regulations supported," is used by projects that aim to support reforms of forest policies, forest products trade policies as well as legal and institutional frameworks in countries. This indicator measures whether a project has supported forest sector reforms via a "Yes/No" record. Adoption of reforms can be indicated by approving new legislation or by issuing implementing regulations or decrees. Finally, "government institutions provided with capacity building support to improve management of forest resources," covers capacity-building projects aiming at strengthening forest administration institutions and other institutions to deliver services to the forest sector. The targeted institutions may also be outside the forest sector. This indicator includes capacity building in terms of training of officials, support to operations, information management, or investments in physical infrastructure of other facilities.

applications in other sectors (agriculture, health, education, poverty, and so on) which needs to be analyzed for their relevance to forest governance.<sup>32</sup>

170. Alongside the development of a compendium of case examples, all **TTLs should be required to attend mandatory training focusing on available IE approaches and potential benefits to applying a suitable one.** This too will help address the constraints mentioned above. The training and awareness raising should be driven by the availability of good examples and best practices in the compendium. This training would demonstrate the value of starting with causal pathways linking the intended outcomes to the necessary inputs and outputs and clarify which elements in the causal pathways can serve as an early feedback and identify potentially undesirable outcomes to be mitigated. It would also clarify the distinction between project performance monitoring and attributed impacts assessment. Equally importantly, it would put information in the hands of TTLs to enable a consideration of whether or not to embed an IE in the program or project and the most appropriate approach to use. This would also allow for an approximation of costs and time required to complete the evaluation. In this context, creating a fundamental e-learning course on IE would be a good complement to the face-to-face training and could be used by TTLs to update their knowledge on IE.

171. Training and raising awareness would need to be complemented by a help desk where TTLs could have their specific questions answered—during project design and implementation (also see action 3 below).

## **7.2 Action 2: Enhance Resources and Improve Opportunities to Embed IE in Project Design and Implementation**

172. To reiterate, not all projects should be required to do an IE. Considerations of costs and time taken for the evaluation, the nature and size of the intervention itself, and so on will determine when to undertake an evaluation and action 1 above should enable TTLs to decide which projects should include an impact evaluation up-front and what type of approach ought to be applied.

173. The costs of applying IEs depend on program size, complexity, and scope of data collection. Qualitative impact evaluations can be done for as little as US\$50,000, whereas more ambitious quantitative ones can easily go over one million dollars. IEs are also time-consuming and some can take two years or more to complete. Additionally, to carry out effective IEs strong technical skills in social science research design, management, statistics, econometrics, and a balance of quantitative and qualitative research skills on the part of the evaluation team, are needed. Thus, IE can be costly and time-consuming and more resources and more time must be made available to TTLs in the development phase of the project.

174. In the sample of projects considered, this report found that IE was used when the project team had access to additional funding coming from other sources (through a development partner in the case of the SUFORD project). Thus, limited resources do pose a constraint and raising supervision budgets for project teams would be quite essential to addressing this.<sup>33</sup>

175. Projects currently spend about 6-12 months being prepared before going to the Board. It is during this time that data is collected to create the performance indicators to be monitored and this is an opportune time for IE approaches to be incorporated into the overall M&E framework. To ensure this, the Bank should consider “up-

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<sup>32</sup>A study for India looks at the credit effects of land registry computerization in India, and exploits variations in the timing of shifts from manual to digital, to quantify impacts on credit availability against land titles, through a regression analysis using appropriate indicator variables (Deininger and Goyal 2012). As one of the challenges associated with measuring impacts of forest governance is that of impact measurement of policy changes, an example such as this, is of particular relevance.

<sup>33</sup>It is worth keeping in mind that modern ICT approaches such as satellite imagery, crowd sourcing, mobile phones, availability of compact PDAs, and so on, are bringing down the costs of monitoring and evaluation and making available results in (close to) real time. This report discusses examples of application of ICT in Cameroon, Lao PDR, and India and is indicative of the huge promise ICT holds for improving transparency in the forest sector.

streaming” a discussion of tracking project impacts at the Project Concept Note stage. An M&E expert should be made available to the project team to complement the up-streaming of the impact measurement.

176. To further motivate incorporating an appropriate IE approach up front, the project implementation processes must allow for a discussion between the Bank (as the funding agency) and the recipient, of the learning generated by the IE, and the opportunity to incorporate improvements and modifications in the project going forward. The ISR stage in a Bank project cycle provides a potential entry point to incorporate evidence-based modifications and should be used as such, at the same time as creating other opportunities to incorporate feed-back. In recent discussions around the on-going change process in the Bank, senior Bank management has stressed that there is a need to “change the culture from one of developing large projects, to that of developing the right interventions to serve desired outcomes.” The idea of having “a system which allows for making mid-course correction--in Bank projects--is also part of this discussion.<sup>34</sup>

177. Streamlining the M&E of projects and programs by consolidating efforts and applying existing data and indicators used by the country to monitor progress in the sector or alternatively by using a system already established and functioning in the country developed by other can increase effectiveness and ensure consistency across the sector. This can, for example, also consolidate donor (bilateral) efforts or partnerships with other stakeholders in the country supporting or working on project interventions. Indicators in projects are often different and change over time which can hamper the ability to make realistic comparisons at the end of the project. In Ghana for example indicators changed from the first NREG project to the third intervention. In Cameroon, project progress was monitored using a matrix developed by CIDA. Bridging organizations and building partnerships can allow for knowledge sharing, coordination and collaboration to increase cooperation between stakeholders, building trust, and resolving conflicts to increase project impacts and ultimately to improve natural resource governance.

### 7.3 Action 3: Establish a CoP and a Help Desk on IE for Forestry

178. Numerous factors determine the design and the potential impacts of forest governance interventions. These, obviously vary by region and country. Governmental reform programs take time to implement and are dependent on various factors such as the political and economic stability of countries, political will, organizational coordination, capacity of the country for implementation, and so on. Interventions that work in one country are not guaranteed to succeed in other countries. Establishing a community of practice (CoP) within and outside the Bank with a variety of different stakeholders can increase member knowledge by sharing information and experiences to allow for an effective exchange of learning on a variety of topics in forestry including governance.<sup>35</sup> (There is also a need to use existing or similar evaluation methods and indicators across institutions to aggregate and benchmark data and improve the scope for learning.) The CoP could help organize brainstorming sessions between IE specialists and forestry TTLs as those can be particularly effective in identifying innovative and cost-effective approaches to integrating IE approaches (see box 7.1).

179. Drawing upon lessons and case studies which distinguish interventions that worked well toward achieving objectives, from those which did not, can assist TTLs in incorporating the most effective interventions in specific context of their project. The CoP should consider the establishment of a help desk as one of its key mandates. A help desk will be a necessary complement to the TTL training suggested in action 1 above. Furthermore, a help desk will facilitate a consideration of project specific factors and the customization of the more generic evidence generated via

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<sup>34</sup>The *Performance Learning Reviews* which have been proposed as part of new World Bank Group Strategy provide an important opportunity for country specific feedback and mid-course correction (World Bank Group 2014).

<sup>35</sup>The 3ie (International Initiative for Impact Evaluation) seems a particularly relevant initiative for inclusion in forming an international CoP. It has a large body of case examples and impact measurement specialists to draw upon. (<http://www.3ieimpact.org/en/>).

the broad CoP. Project teams in the Bank can work with Development Impact Evaluation Initiative (DIME), for example, to incorporate appropriate IE approaches.<sup>36</sup>

#### **Box 7.1 When NRM and IE Specialists Meet, Good Outcomes Happen**

A brainstorming of Bank forestry and NRM specialists and IE specialists (from DIME, IEG, and CIF), organized by Program on Forests (PROFOR), fostered a mutual appreciation of the challenges faced by two groups in measuring impacts. The discussions led to extremely insightful observations pertaining to the design of projects and ensuring change through better monitoring techniques.

- To move the reform process along, the forging of alliances with other Ministries and stakeholders can be useful. In Gabon the interventions and learning from forestry were applied to the fisheries sector. Thus, building “social capital” through appropriately meshed project components across ministries, created a strong momentum for change.
- The use of community co-management schemes and social control mechanisms can be effective in managing natural resources in terms of establishing self-enforcement mechanisms. Thus In Vietnam, an impact evaluation is underway to test whether increased government surveillance increases adherence to co-management plans. This will be compared with community-based incentives adherence to co-management. The challenge is to implement a monitoring system that can detect violations of co-managment rules, as these activities are frequently illicit. IE can be used as a management tool instead of just a monitoring tool and used in real time to see policy changes. Data from monitoring can feed into IE to create synergies and save costs to make M&E more effective. Thus, in Nigeria, in a land erosion project an integrated watershed management approach was used to tackle gully erosion. A lack of trust between the government and local communities was addressed by requiring collective action to tackle the erosion issue. Women-groups, especially, were engaged to address waste disposal issues in the gullies. The project costs from civil works were disclosed to the villagers to increase overall project transparency and trust between the villagers and the government.

(See appendix 5 for a more detailed record of the brainstorming.)

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<sup>36</sup> “Development Impact Evaluation (DIME) is a global program hosted in the [World Bank's Development Research Group](#). Its purpose is to increase the use of impact evaluation (IE) in the design and implementation of public policy and increase institutional capacity and motivation for evidence-based policy. DIME's work focuses on three areas: evaluating programs at scale to answer policy-relevant questions, building capacity to strengthen country institutions for evidence-based policy-making, and building theory on mechanisms in strategic development areas based on high-quality evidence. By doing so, DIME attempts to overcome the challenge to identify true cause-and-effect relations in policy programs. By linking researchers to policy-makers and feeding results back into policies, DIME fosters systematic use of evidence which informs adoption, mid-course corrections, and scale-up of policies. Through workshops and clinics with operational staff and government clients, joint research teams, active field coordination, as well as research products such as seminars, papers, and policy briefs, DIME builds capacity while forming a wider community practice.”

## Chapter 8: Concluding Thoughts

180. This empirical exploration of Bank programs and projects shows that a variety of factors symptomatic of poor forest governance have been recognized and addressed. These have ranged from the prevalence of illegal and unregulated logging, trade in illegally logged timber, unauthorized encroachment of forest and protected areas, existence of ill-defined or unclear access, and use-rights related to forest lands, as well as poorly defined and inequitable sharing of forest related benefits (found in almost all sample projects), to others (mentioned less frequently) such as illegal wildlife poaching and its trade, the prevalence of conflicts related to access and use of forests and unfair and corrupt business practices. The interventions undertaken to address the underlying factors have shown equal variety, ranging from capacity enhancement, organizational strengthening, and installing forest law enforcement systems to legislative reforms, appointing independent forest monitors, developing budget planning and monitoring systems, and supporting national forestry inventory updates.

181. However, most Bank financed projects are not explicit in articulating a theory of change or of a causal pathway connecting the various factors, the interventions proposed and their intended impacts. As a consequence, programs and projects have a weak focus on estimating the impacts arising from the interventions. Thus, we not well-placed to estimate the causal impacts of ongoing interventions to improve governance for forests; nor is it possible to aggregate up to an estimation of the overall impacts of the portfolio as a whole. These are serious drawbacks, especially as it limits the Bank's ability to learn from evidence and to apply the learning in designing effective interventions. In principle, through IE studies done retrospectively, it would be possible to estimate the impacts of interventions. No doubt this would be useful and contribute to evidence-based learning toward future improvement. But the report recommends that taking a forward looking approach to mainstreaming IE in upcoming projects from the get go, is a better use of resources.

182. The report suggests three actions to bring about such a mainstreaming: develop a compendium of practical techniques for IE in forestry and raise awareness among TTLs; enhance resources and improve opportunities to embed IE in project design and implementation; and, establish a CoP and a help-desk on IE for forestry. Because reduction in poverty, improvements in the security of livelihoods, conservation of wildlife and biodiversity and cross-sectoral collaboration, to name some objectives, go hand-in-hand with interventions to improve forest governance, this report recommends that evaluation approaches should track all activity impacts. Thus, the three actions suggested above should consider tracking impacts more widely than for forest governance alone.

183. Going forward, we intend to support action learning by identifying a couple of forest governance projects and programs in the pipeline, and supporting the project TTLs, to incorporate the most feasible impact evaluation approach in the specific context of their projects.

184. It is important to acknowledge some limitations of the information presented here. The experiences and the data are all from one institution—the World Bank—and (including as it does, 20 programs and projects) is quite limited in coverage. Thus, any attempt to draw out general lessons for the practice of international development agencies and country clients has to be cautious. Nevertheless this report provides a useful first cut contribution to the challenge of assessing the impacts of forest governance interventions and of assessing impacts more generally. Future work should emphasize collaborative exploration (among development partners assisting with SFM, and key client countries) as a way to build up the evidence base on cost-effective and easy to replicate impact evaluation techniques and to rapidly build up a compendium of practical approaches.

185. Forest governance issues have assumed a central importance in our efforts to slow down deforestation and degradation and promote SFM. They will likely be important for some considerable time to come. Thus, investments in building up the evidence base and developing a better understanding of what works and how and at what cost, will likely yield huge dividends in the near future.

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## Appendix 1: Results Framework and Monitoring, an Example

**Country: Europe and Central Asia**

**Project Name: ENPI East Countries FLEG II Program (P131138)**

**Results Framework**

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### Project Development Objectives

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#### PDO Statement

The Program will support the participating countries to strengthen forest governance through improving implementation of relevant international processes, enhancing their forest policy, legislation and institutional arrangements, and developing, testing, and evaluating sustainable forest management models at the local level on a pilot basis for future replication.

The three specific Program Development Objectives are to:

- i) make progress implementing the 2005 St. Petersburg FLEG Ministerial Declaration in Georgia and Armenia and support these countries in committing to a time-bound action plan to ensure its implementation and follow-up activities (regional level);
  - ii) review or revise (or establish a time-bound action plan to review or revise) forest sector policies and legal and administrative structures; improve knowledge of and support for sustainable forest management and good forest governance (including the impact of related EU regulations) in the participating countries (national level); and,
  - iii) test and demonstrate best practices for sustainable forest management and the feasibility of improved forest governance practices at the field-level on a pilot basis in all participating countries (sub-national level).
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## Project Development Objective Indicators

Indicator Name	Core	Unit Measure of	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	End Target			
Government institutions provided with capacity building to improve management of forest resources	<input checked="" type="checkbox"/>	Number	0					38 <sup>37</sup>	Semi-annual	Program reports	PCTs, PMT
Monitoring plan for implementation of the St. Petersburg Declaration designed and regularly updated in participating countries	<input type="checkbox"/>	Number	0					14	Semi-annual	Program reports	PCTs, PMT
<i>Monitoring plan designed</i>		<i>Number</i>	<i>0</i>					<i>7</i>			
<i>Monitoring plan regularly updated</i>		<i>Number</i>	<i>0</i>					<i>7</i>			
Reforms in forest policy, legislation or other regulations supported	<input checked="" type="checkbox"/>	Yes/No	No					Yes	Semi-annual	Program reports	PCTs, PMT

<sup>37</sup>Based on Armenia (5), Azerbaijan (3), Moldova (1), Russia (25), Ukraine (4).

Forest users trained	<input checked="" type="checkbox"/>	Number	0					2527 <sup>38</sup>	Semi-annual	Program reports	PCTs
<i>Forest users trained—Female</i>	<input checked="" type="checkbox"/>	<i>Number</i>	<i>0</i>					948			<i>PCTs</i>
<i>Forest users trained—Ethnic minority/indigenous people</i>	<input checked="" type="checkbox"/>	<i>Number</i>	<i>0</i>					170			<i>PCTs</i>
Understanding and awareness of FLEG principles by forest practitioners and other stakeholders improved	<input type="checkbox"/>	Percentage	TBD by survey instrument					TBD	initial and final assessment	repeated perception surveys of key decision makers	PMT
Best practice models on sustainable forest management and improved forest governance developed and demonstrated	<input type="checkbox"/>	Number	0					21 <sup>39</sup>	Semi-annual	Program reports	PCTs

<sup>38</sup>Based on Armenia (127), Azerbaijan (350), Moldova (50), Russia (1000), Ukraine (1000).

<sup>39</sup>Based on Armenia (2), Azerbaijan (3), Moldova (3), Russia (10), Ukraine (3).

## Intermediate Results Indicators

Indicator Name	Core	Unit Measure of	Baseline	Cumulative Target Values					Frequency	Data Source/ Methodology	Responsibility for Data Collection
				YR1	YR2	YR3	YR4	End Target			
Regional efforts at cooperation under the framework of the St. Petersburg declaration undertaken	<input type="checkbox"/>	Number	0					TBD	Semi-annual	Program reports	PMT
<i>Regional studies undertaken</i>		<i>Number</i>	<i>0</i>					TBD			
<i>Regional events undertaken</i>		<i>Number</i>	<i>0</i>					TBD			
Forest sector knowledge exchange between participating countries and EU Member States is ongoing	<input type="checkbox"/>	Number	0					10 <sup>40</sup>	Semi-annual	Program reports	PCTs
Decision-makers' awareness of modern technology and information to improve forest law enforcement and governance is increased	<input type="checkbox"/>	Percentage	TBD by survey instrument					TBD	Initial and final assessment	Repeated perception surveys	PMT

<sup>40</sup>Based on Azerbaijan (1), Moldova (2), Ukraine (7).

Media coverage of FLEG issues is increased	<input type="checkbox"/>	Number	0					140 <sup>41</sup>	Semi-annual	Media monitoring plan	PCT communications coordinators
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### Project Development Objective Indicators—Descriptions

Indicator Name	Description (indicator definition and so on.)
Government institutions provided with capacity building to improve management of forest resources	PDO i. This refers to the number of national or sub-national institutions that have received capacity building as a result of the Program. The baseline value is zero. The end target value is determined by the PCTs based on the Country Work Plans.
Monitoring plan for implementation of the St. Petersburg Declaration designed and regularly updated in participating countries	PDO i. This refers to the number of monitoring plans designed (one per participating country). The monitoring plans (which will be monitored in addition to this Results Framework) will include key Chatham House indicators. Break-down by “monitoring plan designed” and “monitoring plan regularly updated.”
Reforms in forest policy, legislation or other regulations supported	PDO i and ii. This measures whether a Program has supported forest sector reforms (yes/no). This includes support to revised policies or legal and institutional reforms that have been adopted by the client. It also includes well-defined, time-bound phased action plans that have been launched with the objective of achieving such forest sector reforms.
Forest users trained	PDO ii. This refers to the number of forest users and community members that have received capacity building through training as a result of the project. The concept may need to be adjusted according to local practice or national legislation. Training needs to be targeted to specific audience. General media or public awareness campaigns are not included. When estimating the number of people trained, it is essential to avoid double counting if same individuals have participated in a series of training events. Data must be disaggregated by ethnicity and gender. The baseline value is zero. The end target value is determined by the

<sup>41</sup>Based on Azerbaijan (20), Moldova (25), Russia (15), Ukraine (100).

	PCTs based on the Country Work Plans. Break-down by gender and ethnicity.
Understanding and awareness of FLEG principles by forest practitioners and other stakeholders improved	PDO ii. As demonstrated in perception surveys. The baseline value will be assessed through a survey instrument, which will then be used by the PMT to determine the end target value.

### Intermediate Results Indicators—Descriptions

Indicator Name	Description (indicator definition and so on.)
Regional efforts at cooperation under the framework of the St. Petersburg declaration undertaken and disseminated	PDO i. This indicator refers to the number of regional studies and events over the lifetime of the Program. The baseline value is zero. The end target value is determined by the PMT. Break-down by “regional studies undertaken” and “regional events undertaken.”
Forest sector knowledge exchange between participating countries and EU Member States is ongoing	PDO ii. This indicator refers to the number of EU Member States with active knowledge exchange resulting from phase 2 of this Program. The baseline value is zero. The end target value is determined by the PCTs based on the Country Work Plans.
Decision makers’ awareness of modern technology and information to improve forest law enforcement and governance is increased	PDO ii. As demonstrated in perception surveys. This indicator is expected to capture both officials’ access to ICT and public access to information. The baseline value will be assessed through a survey instrument, which will then be used by the PMT to determine the end target value.
Media coverage of FLEG issues is increased	PDO ii. This indicator refers to the number of publications and articles, and so on. by country, including FLEG II Program media outputs (for example, Program newsletters). The baseline and end target values are determined by the country communications teams.

## Appendix 2: Policy Matrix, An Example

Country: Ghana

Project Name: Third Ghana Natural Resources and Environmental Governance Project (P118188)

Policy Matrix

Program / Policy Objectives	Target 2009	Means of Verification (MOV)	Progress Against Achievement of 2009 Triggers and Targets	EXPECTED OUTCOMES 2012 (End of 5 years)
F1. Institutional Strengthening and Governance	Baseline survey conducted on percentage of 'legal' timber in domestic market	Market surveys	Achieved. Market survey completed and discussed at stakeholder workshop. Clarity on the future of the resource base needs to be determined in advance of decisions on policy options.	Improved law enforcement in the Forestry Sector:  - 20% increase in Legal Wood supply to the Domestic Market;  - 75% of all timber exports verified as legal
	Policy options and implementation plan for domestic wood supply approved by MLNR	Ministerial directives; License registers	Achieved. Strategy for implementation of Mobile Recovery Team program (which would utilize stumps and marginal timber remaining after felling on reserves), submitted to MLNR by FC. Legal issues regarding ownership of material to be solved before program can be implemented. Additional options identified in the domestic market survey are under consideration by MLNR.	
	Pilot program of wood tracking systems commenced, to verify the origin of timber with at least three commercial companies that are involved in the harvesting, processing and export of timber, as a means of implementing the Voluntary Partnership Agreement	Verification reports	Achieved. A contracts have been awarded to implement the wood tracking system in four pilot areas and companies, including: <ul style="list-style-type: none"> <li>• Samartex (SAX)</li> <li>• John Bittar and Co. (JCM)</li> <li>• Bibiani Logging and Lumber ( BLLC)</li> <li>• Kumi &amp; Co. (KC)</li> </ul> and field testing of equipment is on-going	

Program / Policy Objectives	Target 2009	Means of Verification (MOV)	Progress Against Achievement of 2009 Triggers and Targets	EXPECTED OUTCOMES 2012 (End of 5 years)
F2. Secure Natural Ecosystems for the benefit of all segments of society	Wildfire strategy fully implemented	Wildfire Annual Reports; Field visits	<b>Achieved.</b> Report for 2008/2009 is available. Key strategies for wildfire management include: (i) Wildfire awareness education and preparedness and (ii) Establishment of firebreaks around forest reserves in the transition zones and fuel treatment facilities	Improved forest health: - <i>Incidence of wildfires reduced by 70%</i>  - <i>Presence of keystone species in Protected Areas increased by 5%</i>
	Develop (10) Review (5) and implement (5) Management plans for forest reserves and Protected Areas (PAs)	Budgets; Annual reports; Field visits; Management Plans	<b>Achieved.</b> 15 management plans for forest reserves have been developed or reviewed, and the quality of management plans and implementation under scrutiny. Use of management effectiveness scorecards as part of wider management processes proposed.	
F3. Sustainably Finance and Promote Investment in Forestry Sector	Legislation related to financial framework approved	Minutes of Parliamentary deliberations;	<b>Not fully achieved.</b> Two bills approved by Parliament (review of timber export levy from 3% to 2%; and revision of wildlife fees). Ministry seeking legal advice on Timber Utilization Contracts (TUCs) and Timber Rights Fees (TRFs).	Predictable and diversified sources of funding for Forestry Commission secured: - <i>Timber Revenues increased by 20% (Base year is 2008)</i> - <i>Eco-Tourism revenues increased by 10% (base year is 2008)</i> - <i>Payment for environmental services (PES) revenues increased by 10% (base year is 2010)</i>  Increased Private Sector investment framework in Forest and Wildlife Sector: - <i>Carbon financing implemented.</i> - <i>Export of Tertiary Processing Wood increased by 15%.</i> - <i>Plantation Forest Area increased by 30%, through increased Private investment.</i>
	Potentials for accessing carbon credit schemes assessed	Reports on revenues; Budget forestry sector;	<b>Achieved.</b> Ghana's REDD Readiness Preparatory Proposal submitted to the FCPF. Expression of interest for Forest Investment Program submitted. REDD Steering Committee, chaired by Deputy Minister MLNR, established. Options for linking REDD+ to wider issues on forest governance, FLEGT/VPA and sustainable forest management being explored.	
	Strategy for tertiary wood processing developed and approved	Annual reports forestry sector	<b>Achieved.</b> Strategy for tertiary wood processing has been approved by MLNR. Practicalities of linking with the VPA need to be further defined as the strategy has implications for the industry, given that	

Program / Policy Objectives	Target 2009	Means of Verification (MOV)	Progress Against Achievement of 2009 Triggers and Targets	EXPECTED OUTCOMES 2012 (End of 5 years)
			tracking system would need to be extended to tertiary products.	
	Land lease and Benefit Sharing Agreements with 10 investors signed and monitored	Archive of Benefit Sharing Agreements	Achieved. Land leases have been signed with 14 investors for commercial plantation development over 9,000 ha. Outstanding discussion on land rights and benefit sharing delays processing of additional investments and modified taungya schemes.	
F4. Strengthen Monitoring & Evaluation / Information Communication Technology Systems	M&E System for Forestry Commission and MLFM approved.	Joint annual review	Achieved. Draft M&E system of FC and MLNR developed. The draft is being pursued at the time of assessment. This draft needs to be considered in conjunction with the minerals M&E system.	Evidence-based management decision making system put in place: <i>Data from M&amp;E system being generated on a monthly basis, disclosed and submitted to policy and decision-makers</i>
	Comprehensive Database Management System designed		Achieved. ICT policy which guides the development of a database management system developed.	
F5. Promote equitable resource access rights and benefits for all segments of society	Conduct a survey ( work to be contracted to an entity with the requisite technical expertise and be undertaken with NGO engagement) to assess current level of awareness at community level on resource access rights and benefits	Survey report	Achieved. Study has been undertaken, with incisive commentary on the degree to which communities are aware of and perceive resource rights and benefit sharing.	Data on revenue collection and distribution fully and actively disclosed to local communities (transparency):  <i>Percentage of beneficiary communities actively informed on revenue collection and distribution.</i>
	Procedures established to improve transparency of forestry revenue disbursements	Disbursement reports; Independent verification by CSOs	Achieved. Procedures established, as evidenced by the dissemination of all available revenue disbursements reports to the district councils.	Active participation of communities in decision-making regarding resource management:
	10 Regional and 1 National Forest Forum adequately resourced and functional	District Assembly reports; Field surveys	Achieved. Adequate funds released for the operation of all Forest Fora. Modalities have been developed for Forest	<i>Number of Forest Forums functional</i>

Program / Policy Objectives	Target 2009	Means of Verification (MOV)	Progress Against Achievement of 2009 Triggers and Targets	EXPECTED OUTCOMES 2012 (End of 5 years)
			Fora at the district level. Role/value of regional fora to be considered in 2010.	

## Appendix 3: Evidence from Other Bank Forest Governance Projects in Our Sample

### 1. Central African Republic

In the **Central African Republic**, the Bank provided support through two projects, the Economic Management and Governance Reform Grant I and II (EMGRG I & II) which aimed at strengthening the legal and regulatory framework and enhancing transparency and accountability in the country, including in the forest sector.

- EMGRG I supported a new forestry law in compliance with the Forestry Law Enforcement Governance and Trade (FLEGT) initiative.
- EMGRG II supported the implementation of the revenue sharing mechanisms in the new law and improvements in transparency. This emphasized the disclosure of the forestry revenue sharing between the government and the logging communities and of the amount of local taxes paid by logging operators to communities.

The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; frequent occurrence of arson and forest fires; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

#### *Approach to M&E*

To monitor and assess implementation progress of the EMGRG I & II operations, a policy matrix was used with relatively easy-to-monitor key indicators which could be incorporated in subsequent EMGRGs. In EMGRG I, the indicator used for monitoring progress in the forestry sector, was “the number of firms in breach of national regulations in forestry.” The outcome indicator was “improved compliance with forestry laws and regulations.” The indicator in EMGRG II was “in compliance with the new law in the distribution of forestry revenues (stumpage fees and reforestation tax) to the logging communities.” Four supervision missions assessed performance on these indicators and completed two implementation status reports (ISRs).

#### *How did the M&E approach fare?*

The EMGRG I & II largely achieved their development objectives as evidenced by government performance in relation to the targeted indicators. In EMGRG I, the M&E framework developed for the project was used by the African Development Bank (AfDB) and European Union which was an important step for ensuring coordinated monitoring of progress made under the program by different donors. This harmonized framework improved the predictability of aid, facilitated administration of donor support and improved focus. EMGRG II furthered and built on earlier actions from EMGRG I. The indicator monitored was “compliance with the new law in the distribution of forestry revenues . . . .” The Government had cancelled permits of two logging companies that were not in compliance with the new law.

### 2. Gabon

In **Gabon**, the Project Development Objectives (PDO) of the DPL were to: review all logging permits and repossess those that were in the hands of non-compliant companies and individuals; step up the enforcement of fiscal measures and the obligation to prepare sustainable forest management plans; strengthen forest controls in the field and reduce illegal logging; change the mode of access to permits from discretionary to transparent and competitive;

adopt new transparent and competitive allocation procedures, and cancel the monopoly held by the National Timber Marketing Company on the sale of the major timber products.

The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; frequent occurrence of arson and forest fires; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices; and poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

### *Approach to M&E*

Progress toward achieving the objectives as well as satisfaction of the Prior Actions and Triggers was monitored solely using the Policy Matrix including the measurable and targeted indicators. The Government was in charge of monitoring progress toward objectives, as well as progress toward the satisfaction of the Prior Actions and Triggers. No external monitoring mechanism was included to monitor the outcomes of the operation: It was considered that the supervision by the World Bank team would adequately serve the purpose of the external monitoring. This Matrix was regularly updated and reviewed during supervision missions.

Under the GEF grant component of the project, progress in protected area management was scored according to the “tracking tool” consistent with the recommendations of the World Commission on Protected Areas Management Effectiveness (PAME). Progress in the fight against illegal logging was measured in terms of variations in the length of logging roads located within unallocated forest concessions and national parks, observed in time series of satellite images.

### *How did the M&E approach fare?*

The PDO was over-ambitious and the key outcome indicators were considered partially disconnected from the PDO: they were indeed more focused on enhanced governance and transparency in NRM sectors (considered as strategic sectors to eventually drive economic diversification) than on their contribution to national income or on reduction of dependence on oil sector, which were critical national objectives. Key Outcomes and Medium-Term Objectives indicators were but many were loosely defined, and did not include baseline or target values as well as means of verification.

Nevertheless, the condition and status of natural resources in the country has improved significantly due to DPLs contribution. The achievements were:

- 80 percent of remaining concessions being brought under sustainable forest management plans compared to 30 percent at the start of the program;
- 80 percent of forests area tax being collected, compared to 30 percent at the start of the project;
- 10 percent of Gabon’s territory coming under effective national Parks status with a secured legal and institutional framework; and,
- social and environmental impacts of forest programs coming under regular monitoring.

### *Overall lessons learned*

There is a need to understand the political economy. The NRM-DPL design did not adequately reflect the reform dynamics (as well as the strength of likely resistance to reforms) within the Government. When designing DPLs, it is thus critically important for the Bank to have an adequate understanding of the local institutional “political economy”

prior to proposing significant sectoral and institutional reforms. The “political economy” analysis should serve two major objectives: (i) better identify, anticipate and, hopefully, mitigate potential resistance of an institutional or political nature both within the immediately affected ministries and agencies, and on the part of other government and non-government stakeholders which are likely to be affected by the proposed reforms, and (ii) establish efficiency and effective project coordination and implementation arrangements, especially when the types of resistance mentioned in (i) above are present, which is almost always the case when natural resources, both renewable and non-renewable, are involved.

Another lesson is to be clear that the reforms to support Governmental programs are broad by definition and the design phase of a development policy operation should focus on targeting a set of reforms within the overall reform program of the Government in a given sector. It is very important that both parties share the same understanding of the reforms to be implemented under the policy lending as well as the associated prior actions and triggers: Indicators need to be well-specified, agreed up-front with the Borrower, and closely monitored by both the Borrower and the Bank during implementation (the Policy Matrix proved to be a useful tool in this program).

There is also a need to adequately assess the technical capacities and associated TA needs. Satisfactory implementation of Policy reforms can sometimes be hampered by insufficient capacities in the targeted Ministries. Adequate TA support should be designed to accompany the DPL reforms. Ideally, support to policy reforms (through DPL) and the required TA should be prepared as a package.

### 3. Armenia

In **Armenia**, the Poverty Reduction Support Credit (PRSC)-IV was designed to build on the progress achieved under PRSC-I, II, and III.

The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; frequent occurrence of arson and forest fires; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees, and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

The series supported policy and institutional reforms in:

- consolidating macroeconomic discipline and strengthening of governance;
- sharpening competition and entrenching property rights;
- mitigating social and environmental risks, and
- modernizing the rural economy.

In the realm of environmental management, the primary objective of the PRSCs was to establish a national forestry policy and the institutions required to monitor and control illegal logging. This plan included the establishment of community-managed forest areas. In PRSC I a National Action Plan to combat illegal logging was adopted. In PRSC II, a forest code was submitted to parliament. A system for monitoring of (i) illegal logging and (ii) forest removal or exploitation was also established. In PRSC III a plan was developed for the implementation of the illegal monitoring system. PRSC-IV was to implement the illegal logging monitoring system, with autonomy built into the operations of its monitoring institution. The expected outcome of this operation was that illegal logging was to be monitored and controlled on all forest in Armenia through an autonomous monitoring institution.

### *Approach to M&E*

The four PRSC series relied on a policy matrix to coordinate implementation. The government was to closely monitor and evaluate through periodic surveys and assessments implementation of the PRSC in the context of the overall monitoring of the PRSP process, using a set of performance indicators. In PRSC IV, the first indicator used was illegal logging monitored and controlled with a baseline where the forest monitoring system was completely non-existent. At completion, the project was able to introduce a monitoring system. The second indicator was the share of discretionary customs inspections decreased. No information is provided on what occurred with this indicator.

Overall, the PRSCs build on the extensive set of monitoring indicators set forth in the PRSC I, which was maintained with some changes throughout the series. The choice of indicators was, for the most part, reasonable. In a few cases the causal linkages between policy measures to be taken and the indicators chosen to monitor their impacts was conceptually weak. In a few cases, the quantitative targets associated with indicators lacked clarity. There were a few instances in which there was inconsistency between indicators and targets cited in the policy matrices and those included in the appendix tables on monitoring indicators.

### *How did the M&E approach fare?*

For the most part, data on the selected indicators could be gathered by relevant agencies. The National Statistical Service, which had become an increasingly engaged partner of the Bank and whose capacity had been much strengthened by joint work on poverty and social monitoring and analysis, conducted an annual household survey (the Integrated Living Conditions Survey), provided much of the information about poverty and utilization of social services. However, data on outcome indicators tended to be less easily available from the two agencies that were reluctant reformers—the civil aviation department and customs and tax administration. Data was supplied but with delays.

A key instrument for monitoring progress was the annual report on the Poverty Reduction Strategy Paper (PRSP) produced by the government. The Bank provided Trust Fund resources to help the government improve its M&E capacities and program within this context. Capacity to undertake this task has grown steadily, in part as a result of the dialogue with the Bank. The government's move toward program budgeting will encourage it to further improve M&E.

### *Project achievements*

The PRSCs helped the government adopt a National Forestry Action Plan and a National Action Plan to combat illegal logging, and, after much internal debate about its location within the government and its responsibilities, it established the multi-agency State Forest Monitoring Center to monitor and control illegal logging. Through this process, the public awareness of the issues of forestry management and illegal logging was increased. The monitoring committee, under the chairmanship of a senior minister, has representation from various ministries and agencies (such as customs and tax and the police) and the political authority to monitor illegal logging. In the four years of PRSCs, a monitoring system was introduced from one where this was previously non-existent.

In addition, the legal basis has been put in place for community forest management, which will likely lead to better control over use of forest resources. But such community forest management is only in the pilot stage, and the authority and capacities of this system remain to be established. It will likely take several years, at least, for these positive steps to bear fruit in terms of better forest management.

### *Lessons learned*

First, encourage governments to assume full responsibility for M&E for DPO outcomes as an integrated part of its overall M&E system. This would enhance the understanding that the DPOs are the government's program, not the

Bank's. In the case of the Armenia PRSCs, the Bank did this to some extent but perhaps could have done so more effectively.

Second, the experience with this DPO shows that in building support for reforms, the Bank should routinely undertake major AAA work that underpins DPOs as joint exercises with the government and, whenever possible, give the government the leading role in such exercises

Third, is to keep in mind the timing of DPO appraisals and approvals. These need to be synchronized with the government's budget cycle.

#### 4. Azerbaijan

The Project in **Azerbaijan** sought to improve biodiversity conservation and introduce more sustainable natural resource management and economic activities in two mountainous areas of Azerbaijan, to restore the ecological health and productivity of their natural forests and pastures.

The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; frequent occurrence of arson and forest fires; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; Inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

The project included:

- support for the establishment of Shah Dag National Park (SDNP),
- expansion of Ordubad National Park (ONP), and adjacent Protected Areas (PAs),
- assisting 55 villages inside or immediately adjacent to the two national parks and surrounding PAs to shift their traditional agricultural and natural resource use practices toward more modern and efficient approaches that place less pressure on natural resources and ecosystems,
- support for economic diversification stimulation in the project areas by assisting local entrepreneurs to start or expand environmentally sustainable small and medium commercial enterprises.

#### *Approach to M&E*

A results framework was used to monitor project objectives and indicators. The framework was to serve as the basis for development of a more detailed M&E plan during the first year of the project. A detailed socio-economic study was to be carried out during the first year, to supplement information from studies done during preparation. For biodiversity impact monitoring, the project would support detailed forest and rangeland inventories during the first year, and use the World Wildlife Fund (WWF) World Bank Alliance/GEF Management Effectiveness Tracking Tool (METT) and Tracking Tool for GEF Biodiversity Focal Area Strategic Priority Two: Mainstreaming Biodiversity in Production Landscapes and Sectors.

#### *How did the M&E approach fare?*

Key indicators were well chosen to measure progress toward the objective and the measurable part of the global environment objective ("introduce and pilot an eco-system-based approach for PA management in Azerbaijan"). Key Indicators were measurable with data that emerged during implementation. The results framework presented detailed output indicators related to key indicators; most included baseline values and target values by year. Social indicators

were to be refined based on data from a socio-economic study to be carried out during the first Project year. Parts of the M&E framework were utilized in gauging Project progress relative to targets, as documented in mission Aide Memoires.

The implementing unit was understaffed during most of implementation and had no designated M&E staff. Nevertheless, progress was measured in the few Project activities that were implemented; specifically SDNP establishment and ONP enlargement, for which detailed qualitative and quantitative (area) data were documented. Also monitored and documented was progress in selecting qualified sub-projects in Project areas to receive grant funding. However, the socioeconomic study planned for the first Project year was never carried out. Thus, detailed socio-economic data could not be included in park management planning or used to measure local public awareness and support for Project activities.

This downgraded the project effectiveness and thus the project obtained “unsatisfactory” rating.

## 5. Russia

The **Russia Forest Fire Response Project** seeks to improve forest fire prevention and management and to enhance sustainable forest management.<sup>42</sup> Furthermore, the project contributes to raising public awareness and education standards in forestry issues in general, with specific reference to forest fires prevention and control and forest governance issues. The primary aim of the project is to strengthening of capacity for forest fire prevention and management. Capacity will be developed through training, technical assistance, and technology transfer to agencies responsible for forest fire detection, prevention, and suppression. Strengthening the legal and regulatory framework for forest fire management will also enhance the probability of long-term sustainability of project interventions and support.

The symptoms reflecting poor forest governance, recognized during project development were: prevalence of illegal and unregulated logging; trade in illegally logged timber; unauthorized encroachment of protected areas and other forest areas; illegal wildlife poaching and its trade; frequent occurrence of arson and forest fires; prevalence of conflicts related to access and use of forests; existence of ill-defined or unclear access and use-rights related to forest land and poorly defined and inequitable sharing of forest related benefits; corruption in agencies and organizations responsible for management of forest lands; inadequate participation by stakeholders in the formulation of legislation and policies; evasion of taxes, fees and levies and consequent low levels of revenue collection from commercial forestry activities; unfair and corrupt business practices, and; poor availability of public information relating to forest inventory, land tenure, revenue collection, and so on.

The interventions this project supports include:

- improving the effectiveness of forest fire prevention and management by (a) improving the capacity for early detection and quick response to fight forest fires and (b) reducing the number of fires of human origin through awareness raising and environmental education programs;
- increasing forest and protected areas (PAs) management capacity and help address key policy and management issues that either create perverse incentives or exacerbate conditions contributing to the extent and intensity of fires in the extensive forest landscape and protected areas; and,
- through the PIU to provide support to the core implementing agencies—Federal Forestry Agency (FFA) and Ministry of Natural Resources and Environment (MNRE)—in project management, including procurement, financial management, project coordination, reporting, and monitoring.

### *Approach to M&E*

The project uses a *results matrix* to track progress toward project objectives. The project indicators include:

- reduction in average area of fires at detection in pilot regions extensive forest landscapes and project PAs;

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<sup>42</sup>P123923, Specific Investment Loan (SIL) of IBRD \$40 million.

- increase in percentage of fires contained within 24 hours following detection in pilot regions extensive forest landscapes and project PAs; and,
- area of model forests in pilot regions established and under new silvi-cultural systems.

The project will establish baselines for economic and financial analyses to determine the key indicators to be collected throughout the project lifetime by the implementing agencies. Standardizing and collecting key datasets will be of critical importance to monitor progress of the project and its outcomes. The studies will be repeated at the end of the project to evaluate the overall impact of the project interventions and the project outcome. The project will report on its indicator status on a yearly basis.

#### *Project status*

As of December 2013, the project is not yet effective. Baseline and target values will be established during a baseline analysis conducted during project implementation.

Although the Government is making good progress in meeting the project effectiveness conditions, one of the four conditions of effectiveness is still to be completed. The Government finalized the Project Operational Manual in September 2013, and the Operational Manual and Agency Agreements were formally approved by Interagency Committee on October 4, 2013. Also, although the Government provided the Bank with a legal opinion (the remaining condition of effectiveness) on October 29, 2013, this opinion does not fully satisfy the Bank's General Conditions. As such, the Bank agreed to a 45 day extension of the effectiveness deadline from November 5, 2013 to December 20, 2013. The implementing agencies anticipate that a revised legal opinion will be provided to the Bank by the end of November 2013. A Bank team will travel to Moscow in mid-November to meet with the PMU and project implementing agencies (Federal Forestry Agency and Ministry of Natural Resources and Environment). The objective of these meetings are to agree on arrangements for the upcoming Project launch mission, review the project's first year procurement and implementation plan, as well as review Terms of Reference for the project's initial consulting contracts and technical specifications for initial bidding packages. Another key objective will be to follow up on the status of the legal opinion.

## Appendix 4: Evidence on M&E from Economic & Sector Work (ESW) and Technical Assistance (TA)

### 4.1 The Rainforests of Cameroon: Experience and Evidence from a Decade of Reform<sup>43</sup>

In 1994, the Government of Cameroon introduced an array of forest policy reforms, both regulatory and market-based, to support a more organized, transparent, and sustainable system for accessing and using forest resources.

The barriers to placing Cameroon's forests at the service of its people, its economy, and the environment originated with the extractive policies of successive colonial administrations. The barriers were further consolidated after independence through a system of political patronage and influence in which forest resources became a coveted currency for political support. In 1994, the government introduced an array of forest policy reforms, both regulatory and market based. The reforms changed the rules determining who could gain access to forest resources, how access could be obtained, how those resources could be used, and who will benefit from their use.

Some of the forest reform measures in the Structural Adjustment Credit (SAC) in Sustainable Forest Management started in 1994 with the introduction of forest management plans implemented by private firms in permanent production forests and monitored by the Forest Administration. Then under the SAC III, measures included: (i) the adoption of procedures to prepare, approve, and monitor forest management plans, (ii) selection of international nongovernmental organizations to monitor and assess the implementation of forest management plans on the ground, (iii) implementation of a guarantee system to ensure compliance with forest management plans, and, (iv) the adoption of reforms in forest taxation, including the creation of a program to enhance forest tax revenue (through better monitoring and recovery of forest taxes) and a system for redistributing annual area revenues (the state to receive 50 percent, local councils 40 percent, and local communities 10 percent).

#### *Monitoring of the reform processes*

To facilitate monitoring of the reform process, the national forest estate was classified into distinct zones (based on surveys of forest characteristics, population density, and use) which provided a foundation for protecting forest land and also for specifying those forest areas that could be converted to other uses. Geographic zoning identified which forest land belongs to which classification; the subsequent gazetting process legally ratified the classification. Together, zoning and gazetting enabled the government, communities, industry, and other stakeholders to establish secure use rights. In Cameroon these actions made it possible to introduce some degree of regulation and clarity into a previously chaotic system under which the government acted as the landlord of the forest, while lacking the capacity to monitor and control its use. Zoning and gazetting also permitted recognition of traditional forest use rights and made it possible to develop a national strategy for allocating forest harvesting rights.

Partnerships with independent observers, to monitor law enforcement, and with national and international NGOs, for additional monitoring, were also created. The World Resources Institute (WRI) was tasked to monitor the status of forests by detecting illegal logging in forest concessions and protected areas through satellite image interpretation and information dissemination. To support enforcement of forest laws in the field, Global Witness was asked to collaborate with the Ministry of Wildlife and Forests (MINFOF) control teams. These partnerships strongly influenced the international credibility of forest sector governance in Cameroon and discouraged questionable behavior.

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<sup>43</sup>Topa, Giuseppe; Karsenty, Alain; Megevand, Carole; Debroux, Laurent. 2009. Forêts tropicales humides du Cameroun : une décennie de réformes. Directions in development ; environment and sustainable development. Washington D.C. - The Worldbank. <http://documents.worldbank.org/curated/en/2009/01/11343393/rainforests-cameroon-experience-evidence-decade-reform-forets-tropicales-humides-du-cameroun-une-decennie-de-reformes>

The use of remote sensing and geographic information systems also contributed to an increasingly effective monitoring of forest resources. In June 2002, the government of Cameroon signed a formal agreement with the World Resources Institute–Global Forest Watch to jointly monitor all timber harvesting nationwide. The monitoring, based on remote sensing and geographic information systems, includes such tools as interactive maps and databases consistent with original Forest Department data, field observations and comparisons of data with the private sector and national NGOs. The information gathered was verified with all stakeholders before being officially accepted by the MINFOF and released on the Internet as the annual Interactive Forestry Atlas for Cameroon. The atlas has become a powerful tool for governance, because it discloses detailed data on forest harvesting permits, maps the location of harvesting in all types of forests, and reveals the presence of unauthorized forest roads and other physical signs of legal and illegal logging

### *Impacts and achievements*

The reforms in Cameroon brought significant achievements including:

- Competitive allocation of timber harvesting permits resulting in transparent allocation of forest exploitation permits; improved quality of bidding documents; participation of an independent observer in the permit allocation committee meetings; exclusion of companies convicted of major infringements of forestry legislation and regulations in the past.
- Planning of forest concessions allocation leading to allocation of forest concessions according to the program objectives, including recognition of traditional rights.
- Forestry taxation reform through pursuance of fiscal reform implementation including effective and efficient consultation between the Government (MINEF-MINFB) and the private sector.
- Combating illegal forest exploitation resulting in charging all established offenders; strict application and collection of penalties; exclusion of all companies guilty of serious offences from submitting tenders for exploitation permits; and revoking valid permits still in their keeping.

## **4.2 People's Republic of China--A Cluster Assessment of Forest Projects and Analytic and Advisory Activities<sup>44</sup>**

The package of Analytic and Advisory Activities (AAA) activities assessed, aimed to provide a stronger analytic basis for government and Bank initiatives on forests in China. The sector report (ESW) responded to a demand within the Bank—not from China—to examine the justification for continuing the Bank's engagement with forests along the lines previously pursued (that is, exclusively devoted to establishing plantations). The concept note for the ESW observed that the combination of alternative sources of investment for forestry, stiffer lending terms, and increased costs of safeguards and other Bank requirements had challenged the relevance of the Bank's forest interventions in China.

### *Contribution of the AAA pieces*

In terms of analytic techniques used, this was the first ever World Bank sector work on forests in China so there was a great opportunity to make a substantial knowledge contribution. The resulting report set the scene for an important debate about the next round of institutional and policy reforms, and the knowledge provided was relevant to that discussion. The report gave a good summary of salient facts about the forest resource in China (such as tree cover,

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<sup>44</sup>The Cluster Performance Assessment Report included three AAA products: P107885 Forest Policy Dialogue (ESW), P102694 Collective Forest Tenure Reform (TA) and P090719 Forestry Supply (TA); and two investment projects: Forestry Development in Poor Areas Project (P046592) and Sustainable Forestry Development Project (P064729 and P060029-GEF). It was prepared by IEG.

forest type, age structure). It also provided an instructive overview of the main forest policies and institutions. Details were given on the logging quota system and the forest management plans that are used to define the quotas.

The report furnished new information about outcomes in collective forest areas that had undergone tenure reform. It provided solid evidence that, in the Northeast, there was considerable potential for a sustainable increase in timber production. This was an important contribution because previously the Bank had had little engagement in this region—or, more specifically, with the state forest enterprises that controlled large areas of natural forest in that part of China—and there had been no information with which to assess the scope for sustainable harvesting.

In the context of analyzing collective tenure reform, a regression analysis was used of the household survey data to identify how changes in the distribution of tenure types were influenced by a variety of possible drivers (for example, village characteristics, market development, scope for earning off-farm income, share of village revenue derived from forestry).

Finally, the data collected on state forest farms in Heilongjiang were used to build a supply function from known costs and outputs associated with each identifiable forest management activity. This was a complex exercise led by an international expert who helped train Chinese counterparts in the use of this particular technique.

### *Impacts and achievements*

The IEG assessment of the above group of activities came to the following conclusions regarding impacts and achievements.

- Access to information (particularly information at the county level) remains problematic in China and the sector work performed a valuable service by generating new knowledge based on specially commissioned household surveys in collective forest areas and a major collaborative exercise with Chinese counterparts to pull together data on management and harvesting of timber in the resource-rich province of Heilongjiang, an important center of state forest enterprise.
- Progress in the dialogue on policy reform will depend in no small measure on the Bank's ability to engage with new government agencies in China: The State Forestry Administration's (SFA) Project Management Center (PMC) has proved to be a highly effective partner for plantation establishment—with a first-rate performance record, probably unparalleled in the world—but if the Bank is to broaden its engagement on forest interventions it needs to develop a dialogue with other interlocutors in addition to PMC. Since the sector work evaluated in this report was completed there is some evidence that the Bank's forestry team in China has diversified the scope of its engagement: although continuing to work with the Project Management Center (specifically, on plantation establishment), the Bank is working with other departments in the State Forestry Administration and directly with provincial governments.
- There is no evidence that the work influenced government forest policy or shaped the dialogue with development partners. The Policy and Legislation Department of State Forestry Administration (SFA) informally supported Bank engagement on policy issues but it did not act as a champion for the work; nor is there evidence of a SFA-wide commitment to closer engagement on policy matters.
- In principle, the timber supply modeling for Heilongjiang could have been extended to other provinces. However, the assessment found that there was no budget to do so. Also, none of the senior managers interviewed in the forestry bureau in Hailin (a county of Heilongjiang) were familiar with the supply modeling exercise. Moreover, these managers were not aware of the options for restructuring state forestry enterprise that were alluded to in the report. In particular, there appeared to be no commitment to exploring ways of divesting the burdensome social overheads that are undermining the capacity of these enterprises to be financially self-sustaining.

### 4.3 Timber Theft Prevention: Introduction to Security for Forest Managers<sup>45</sup>

This report argues that the susceptibility of forests to illegal logging is a predictable consequence of the poor quality of forest management planning and practice around the world. The report's discussion of the links between good forest management and security against illegal logging highlights the need for attention and effort to focus on the basics of forest planning, resource assessment, and consultation. The report, advocates a deliberate and analytic effort by forest managers to identify and target the most serious threats and to address the most vulnerable parts of forest supply chains. This report highlights the need for commercially sound, transparent, and predictable land and timber allocation and sales; and for audits, oversight, and accountability at all levels. Most of all, it puts the obligation for diligent efforts by responsible resource managers at the forefront of the forest law enforcement and governance challenge.

Regular monitoring and evaluation are critical to the success of the proposed approach and the report discusses several tools to better monitor timber theft, such as the intelligence cycle, an iterative process that integrates surveillance results in resource protection programs. The intelligence cycle consists of the following five steps (see also figure 6A.1):

1. *Direction.* Potential threats and vulnerabilities identified during Forest Management Unit (FMU) planning and from ongoing experience during implementation of the management program should be targeted for monitoring and surveillance.
2. *Collection.* Surveillance results from monitoring devices, guards, patrols, other staff, and other sources should be assembled and collected.
3. *Evaluation.* Collected information should be assessed to determine significance and validity.
4. *Analysis.* Information should be analyzed and reports prepared (for example, to law enforcement agencies) recommending responses such as filing charges or "target hardening."
5. *Dissemination.* Information ought to be delivered in usable form to decision-makers such as owners, managers, law enforcement, or others who can direct actions or responses, including redirection of intelligence collection.

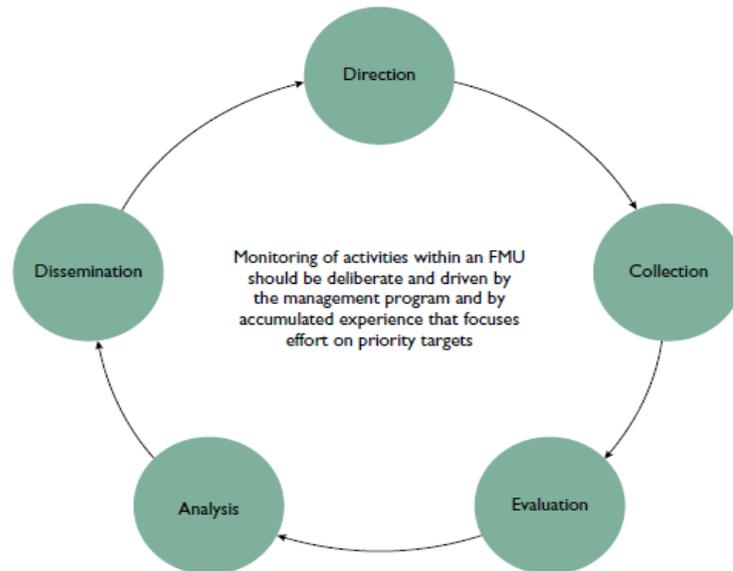
Within the intelligence cycle, "red flags" provide the signals for action. A sample of red flag indicators that can be used as a basis for developing enterprise specific indicators include:

- Timber provides a large cash flow from diverse operations (yes/no, red flag).
- Timber sales have unique, inherent contract problems (yes/no, red flag).
- Timber and forest products are very valuable and easily accessible assets (yes/no, red flag).
- Security is essential to prevent or detect the theft of assets, and recover assets if stolen (yes/no, red flag).

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<sup>45</sup>Magrath, William B.; Grandalski, Richard L.; Stuckey, Gerald L.; Vikanes, Garry B.; Wilkinson, Graham R. 2007. Timber theft prevention: introduction to security for forest managers. Washington D.C. The World Bank. P098111. <http://documents.worldbank.org/curated/en/2007/08/8608967/timber-theft-prevention-introduction-security-forest-managers>

**Figure 6A.1 Intelligence Cycle**



**Box 4A.1 Examples of Red Flags Indicating Possible Timber Theft or Fraud**

- Logs left or stored in the woods. A logger may be trying to get a quick load and haul it undetected, or it could be a crowded log deck.
- Contractors who work on weekends, holidays, or unusual hours. These are times at which very few inspections are conducted, so contractors have unlimited opportunities to steal.
- Contractors who do not comply with procedures.
- Complaints about a contractor. All such complaints should be investigated.
- Contractors who do not know the name or location of the tract that they are cutting. They could be a sign of kiting by the forester or manipulation of tracts by the logger.

The report provides examples of many specific measures and general planning approaches that are directly applicable to developing country forestry. Of special interest to the World Bank are the public policy and investment implications of the proactive protection approach advocated by the authors. Some parts of a theft prevention approach can be implemented without adding to the costs of sustainable forest management. However, several of the proposed measures will involve new costs and require additional sources of finance. In addition, widespread adoption of the innovations urged by the authors will require political will, supportive public forest policies, public and private capacity building, and technical assistance.

**4.4 The ENPI East Countries FLEG II Program<sup>46</sup>**

This program will support the participating countries strengthen forest governance through improving implementation of relevant international processes, enhancing their forest policy, legislation and institutional arrangements, and developing, testing and evaluating sustainable forest management models at the local level on a pilot basis for future replication. It builds upon the foundation laid down through ENPI I (of the European Neighborhood Policy Instrument). The three objectives are to:

<sup>46</sup> P131138.

- Make progress implementing the 2005 St. Petersburg FLEG Ministerial Declaration in the participating countries and support the participating countries commit to a time-bound action plan to ensure its implementation and follow-up activities (regional level);
- Review or revise (or establish a time-bound action plan to review or revise) forest sector policies and legal and administrative structures; improve knowledge of and support for sustainable forest management and good forest governance (including the impact of related EU regulations) in the participating countries (national level); and,
- Test and demonstrate best practices for sustainable forest management and the feasibility of improved forest governance practices at the field-level on a pilot basis in all participating countries (sub-national level).

The Program progress will be monitored through the Results Framework and Monitoring (reported in appendix 1). During the Inception Phase of the Program, a more detailed results framework at the country and activity level will be developed to monitor the progress of the country and regional work plans.

A mid-term review (MTR) will be carried out after two years of implementation. This MTR will review progress at the Program level, country or regional level, and implementing agency level (including the World Bank). The review will focus on the effectiveness and relevance of Program activities. It will also make recommendations if and how Program resources should be reallocated between countries and implementing organizations.

The European Commission EC will monitor and evaluate the Program following its own Monitoring & Evaluation processes and as agreed in the Administration Agreement. The ENPI FLEG Program will utilize the lessons learnt from these processes to guide the planning and implementation of Program activities.

The ENPI-I interventions included outputs such as providing policy and legislative support to countries, participatory processes, outreach, workshops, and professional training. However, measuring these impacts and determining attribution to the project is a challenge (for example, the Lacey Act which has impacted timber exports from Russia). Monitoring the impacts gets complicated further when no baselines have been established with which to measure progress. Over time there are changes, but in the short term these changes cannot be pinpointed to the result of any particular intervention (project). ENPI-II is considering how the impacts of such outputs can be measured and an approach will be formulated at the inception stage.

## Appendix 5: Forest Governance Interventions, Monitoring, and Impact Evaluation: A Roundtable Brainstorming with Bank Staff

The objectives of the brainstorming sessions were:

(i) To share approaches, challenges, and experiences on monitoring and evaluation of the impacts of forest governance interventions from a) forestry and b) agriculture, irrigation, and fisheries;

(ii) To highlight the lessons that they provide for better integration of project objectives with monitoring and evaluation in the context of forest governance.

### *Overall Observations*

1. Early lessons from the portfolio review show that the tools for monitoring in Bank financed projects and programs are the Results Framework (investment lending) and Policy Matrix (development lending). Progress toward objectives is measured through the use of performance indicators coupled with baseline surveys and target values. In practice, the design and implementation of monitoring approaches in projects is variable.
2. An overview of the work being conducted by DIME team in the context of impact evaluation for agriculture and natural resources, provided lessons the forests sector. Many issues encountered in the management of common pool resources are the same in various sectors. Some of the highlights include access to information, development of an effective communication strategy, creating the right incentive, risk aversion (to new ways of doing things), and testing in the early stages of interventions to determine early on what to scale up or to adopt (take up). Specific points to consider include:
  - Clarity on the distribution of property rights, in order to set up robust governance structures that are enforceable.
  - Maintaining the adoption of sustainable practices over time and thus focusing on creating mechanisms that assist in changes in behavior in the long run. For example, in PES, payments are conditional on doing things in a certain way.
  - Pre-commitment mechanisms in agriculture (for example, setting aside money for next season's seeds, at the time of this season's harvest) promote increases in investments which have significantly enhanced productivity of agricultural lands.
  - Investments in social capital to implement new methods that work so as to change current management practices.
  - Governance interventions do not always have a fixed return. IE tools allow us to test, tweak, and scale up in the design and implementation stages what does work, and to improve the impact of interventions.

## **1. Learning from Project Implementation**

### *1.1 Monitoring and Evaluation*

- Often, the Policy Matrix is viewed as a Bank monitoring tool and not owned by clients because of a disconnect in expectations. The Policy Matrix should be designed in close consultation with the client and used as a joint tool to evaluate programs.
- Project focus should move from actions to outcomes.
- There is a need to first tackle the achievable targets ("low-hanging fruits") to create trust and then go for those that require more effort, thus building on what has been achieved.
- There is a need to monitor impacts that have not been successful, to improve future implementation.
- There is a disconnect between donor financing cycles and what is required for effective M&E.
- Donors require regular reporting for which often input indicators are used which are not always the most useful.

- Indicators are currently designed to measure progress in the implementation of proposed solutions or interventions, rather than in the reduction of perceived problems.
- There is a need for “impact indicators” to change the risk reward paradigm, as well as a need to use similar indicators across institutions to aggregate and benchmark data. For example, in wildlife tracking using number of prosecutions instead of number of rangers (move to the use of a controlled delivery approach).

## 1.2 Project design and implementation

- Designing interventions along short, medium, and long term will be more conducive to tracking progress over time.
- When financing policy reforms, long interventions are needed as the reforms process take time. However, this tends to not be compatible with Bank financing and time frames.
- To move the reform process along, the forging of alliances with other Ministries and stakeholders can be useful (examples: In Gabon, the Prime Minister’s office led the effort which sped up process; Cameroon, Ministry of Finance led the process, unlocking barriers and resistance). In Gabon the interventions and learning from forestry were applied to the fisheries sector. Thus, building “social capital” (through appropriately meshed project components) to increment the ability of ministries and institutions to work together effectively, learn from each other and push each other, can create a momentum for change.
- In ECA many interventions included outputs such as providing policy and legislative support to countries, participatory processes, outreach, workshops, and professional training. However, measuring these impacts and determining attribution to the project is a challenge (An example is the Lacey Act which has impacted timber exports from Russia). Monitoring the impacts gets complicated further when no baselines have been established with which to measure progress. Over time there are changes, but in the short term these changes cannot be pinpointed to the result of any particular intervention (project). In addition, there is a need to monitor for spillover effects from projects that can impact other areas.
- Increasingly stronger efforts to incorporate impact evaluation are being made. The Russia forest fire response project is working to trace impacts in a without vs. with project comparison. In Albania, the environment services project under finalization, will trace impacts by constructing a baseline using satellite images, for 2015, the start year of the project. In addition to forest cover, the project will monitor the income level of communities. Furthermore impacts will be traced at the mini-landscape level, the scale at which the project will operate.
- Improving forest governance requires behavioral change and is a long term process.

## 2. Learning from Innovations and New Approaches

### 2.1 Monitoring and Evaluation

- The use of community co-management schemes and social control mechanisms can be effective in managing natural resources (example of coastal fisheries project in Vietnam) in terms of establishing self-enforcement mechanisms to address overfishing. In Vietnam, an impact evaluation is underway to test whether increased government surveillance increases adherence to co-management plans. This will be compared with community-based incentives adherence to co-management. The challenge is to implement a monitoring system that can detect violations of co-management rules, as these activities are frequently illicit.
- IE can be used as a management tool instead of just a monitoring tool and used in real time to see policy changes. Data from monitoring can feed into IE to create synergies and save costs to make M&E more effective. Two examples: (i) in Nigeria, in a land erosion project an integrated watershed management approach was used to tackle gully erosion. A lack of trust between the government and local communities was addressed by requiring collective action to tackle the erosion issue. Women’s groups, especially, were engaged to address waste disposal issues in the gullies. The project costs from civil works were disclosed

to the villagers to increase overall project transparency and trust between the villagers and the government; (ii) in Senegal, to address recurring flooding due to blocked drainage channels, mapping of where blockages were occurring was done with community help and then social contracts are being used to clean drains.

- The need to integrate other M&E tools (real time approaches) in M&E systems because routine monitoring of core indicators often does not yield useful information on which to base decisions. For example in the Climate Investment Funds (CIF) Pilot Program for Climate Resilience, five core indicators form the basis for routine performance reporting and for aggregation across projects. However, each project has embedded its own IE framework.
- Consider the relevance of approaches such as the study measuring impacts of digitization of land records on credit availability, exploiting variations across states in India, to control for confounding factors; and how these can translate to tracing impacts of forest governance interventions.
- Incorporate the use of information and communication technology (ICT) in monitoring, especially for forest governance reforms, but do not let the “technology tail wag the impacts dog.”

## *2.2 Project design and implementation*

- To make interventions more effective, engaging stakeholders from the very beginning with governments to incorporate IE into M&E frameworks can be useful.
- The challenge is to balance robust M&E systems to report regular progress with a flexible dialogue.
- Using social contracts with communities to identify solutions can be a useful M&E tool.
- When designing interventions create or build on the existing systems.
- In projects monitor for (positive) spill-overs and adverse effects and how this applies on a broader scale in terms of the chain of causality.
- Think of the confounding factors to track data over time in terms of attribution (for example, the impacts of increased overall economic growth on illegal logging).

### *Attendees*

Peter Dewees, Nalin Kishor, Ijeoma Emenanjo, Jeff Alumai, Christine Roehrer, Daniel Stein, Vincenzo di Maro, Tuukka Castren, Stig Johansson, Andrew Mitchell, Carol Megevand, Valerie Hickey, Aparajita Goyal, Marie Gaarder, Arianna Legovini, Maria Ana de Rijk and Dan Miller (by phone).

## Appendix 6: Impact Evaluation Applications in NRM: A compendium of examples

**Linking Management Effectiveness Indicators to Observed Effects of Protected Areas on Fire Occurrence in the Amazon Rainforest.** (Nolte, C & A Agrawal, 2013).

**IE Method:** Matching

**Geographical Focus:** Amazon Rainforest

**Major Objectives:** Management-effectiveness scores are used widely by donors and implementers of conservation projects to prioritize, track, and evaluate investments in protected areas. However, there is little evidence that these scores actually reflect the capacity of protected areas to deliver conservation outcomes.

**Summary of Methodology:** The authors examined the relationship between indicators of management effectiveness in protected areas and the effectiveness of protected areas in reducing fire occurrence in the Amazon rainforest. The study used data collected with the Management Effectiveness Tracking Tool (METT) scorecard, adopted by some of the world's largest conservation organizations to track management characteristics believed to be crucial for protected-area effectiveness. The occurrence of forest fires from 2000 through 2010 as a measure of the effect of protected areas on undesired land-cover change in the Amazon basin was studied. Matching was used to compare the estimated effect of protected areas with low versus high METT scores on fire occurrence. The effects of individual protected areas on fire occurrence was estimated and explored to determine the relationship between these effects and METT scores.

**Main Findings:** The relationships between METT scores and effects of protected areas on fire occurrence were weak. Protected areas with higher METT scores in 2005 did not seem to have performed better than protected areas with lower METT scores at reducing fire occurrence over the last 10 years. Further research into the relations between management-effectiveness indicators and conservation outcomes in protected areas seem necessary, and the results show that the careful application of matching methods can be a suitable method for that purpose.

**Lessons Learned and Limitations:** Although the findings do not allow the researchers to establish causality, the lack of observed associations between management-effectiveness indicators of protected areas and their effectiveness in reducing forest fires is informative. Developed by experienced protected-area experts, METT has been endorsed by major conservation donors as a mandatory evaluation tool, which makes METT a de facto standard for assessing Protected Area Management Effectiveness (PAME).

Given the widespread use of PAME scores in conservation projects and policy worldwide, it seems necessary to direct further efforts into understanding the relation between protected area management, protected area effectiveness, and the indicators used to measure both. The authors suggest that future studies should examine the strength of associations between PAME indicators and effectiveness estimates of protected areas in other ecoregions and apply data from other widespread PAME methodologies (for example, Rapid Assessment and Prioritization of Protected Areas, Parks in Peril Site Consolidation Scorecard). Insights into relations between indicators and effectiveness of protected areas would allow evaluators to learn which indicators are more closely associated with effectiveness and adapt existing evaluation methods accordingly. The widespread use of PAME scores for accountability purposes also justifies a renewed quest for indicators that are cheap to verify, costly to fake, and possibly more objective than the existing judgments of adequacy, which can differ considerably among respondents and protected areas and over time.

However, to understand why some areas are effective and what type of support makes them effective, future analyses will need to examine causation rather than correlation. The large number of protected areas and support projects around the world make it increasingly possible to construct such counterfactual evidence for a number of

management interventions, an approach that promises to provide strong evidence for the relative effectiveness of such investments.

The author's methods offer a new way to improve the utility of matching methods in estimating the relative effectiveness of protected areas. The authors found that studies comparing protection-effect estimates of different protected area groups versus unprotected groups can conflate potential differences of the effectiveness of protected-area groups in reducing undesired land-use changes with differences in the probability of the occurrence of such land-use change in the absence of protection. Between-group matching allows one to single out these two estimates and thus to provide a better estimate of differences in the relative effectiveness between groups of interest. In addition, the approach to computing effectiveness estimates at the protected-area level allows for comparisons that assign the same weight to each protected area (and METT score) and are thus less vulnerable to differences in the size of protected areas.

### **Effectiveness of Strict- vs. Multiple-Use Protected Areas in Reducing Tropical Forest Fires: A Global Analysis Using Matching Methods** (Nelson, A & K Chomitz 2011)

**IE Method:** Matching

**Geographical Focus:** Developing countries (recipient countries of World Bank loans)

**Major Objectives:** The study analyzes the global tropical forest biome using forest fires as a high resolution proxy for deforestation; disaggregates impacts by remoteness, a proxy for deforestation pressure; and compares strictly protected vs. multiple use PAs vs. indigenous areas.

**Summary of Methodology:** The study uses matching techniques to control for bias. Fire activity was overlaid on a 1 km map of tropical forest extent in 2000; land use change was inferred for any point experiencing one or more fires. Sampled points in pre-2000 PAs were matched with randomly selected never-protected points in the same country. Matching criteria included distance to road network, distance to major cities, elevation and slope (terrain), and rainfall. The control groups were areas that had never been protected up through 2008.

**Main Findings:** In Latin America and Asia, strict PAs substantially reduced fire incidence, but multi-use PAs were even more effective. In these regions, where there is data on indigenous areas, these areas reduce forest fire incidence by 16 percentage points, over two and a half times as much as naïve (unmatched) comparison with unprotected areas would suggest. In Africa, more recently established strict PAs appear to be effective, but multi-use tropical forest protected areas yield few sample points, and their impacts are not robustly estimated.

The study finds in general that strict protected areas are effective, but less than a naïve assessment would indicate. In contrast, multiple use protected areas are in general more effective in reducing deforestation than strict protected areas, and are more effective than a naïve assessment would suggest.

**Lessons Learned and Limitations:** This analysis does not attempt to measure “leakage”—the degree to which protection of one forest plot merely displaces conversion to another, unprotected plot. The analysis is also unable to detect some kinds of forest degradation. Surreptitious removal of timber can result in biodiversity damage and lower carbon densities, but may not be detected through fire data. There is a need to complement land cover and land management measures with monitoring of human welfare and conditions in protected and unprotected forest areas. It is important to stress that protected areas may be effective along other dimensions, even where there is little impact on current deforestation rates. This is especially true for protected areas established in remote regions with little current pressure for agricultural conversion. Such areas may already be effective in mitigating other threats, such as poaching of mammals and selective logging. Equally important, it is easier to reach consensus on the necessity and approach to protecting a forest before there are large economic pressures for conversion. A well-established

protection regime may be better able to withstand pressures for unsustainable exploitation when the frontier arrives, as it eventually will in many currently remote places.

**Evaluating Initiatives with Direct Conservation Payments: Econometric analysis of the Costa Rican program of payments for environmental services.** (Arraigada et al. 2007)

**IE Method:** Propensity Score Matching

**Geographical Focus:** Costa Rica

**Major Objectives:** To determine the level of participation in PSA.

**Summary of Methodology:** The study designs and interprets rigorous program evaluation of Payments for Environmental Services (PES) at the property level using different matching techniques to construct the counterfactual. These methods are applied to data from a survey of landowners in a case study region in order to estimate the impact of participation in the first phase of the PSA program.

**Main Findings:** The findings are that the PSA had a statistically significant impact on forest conservation, but that this effect is small and not very robust to changes in the sample, specifications, or other assumptions.

**Lessons Learned and Limitations:** The outcome of interest—change in mature forest cover—is ideally measured objectively through remote sensing before and after establishment of the PES Program. Satellite images can create historical records, but comparisons across time periods are only valid if the same processing and classification methods are used, and the study did not have access to such land cover classifications. Thus, in the case study, forest cover was measured by asking the landowners directly to report current and retrospective land use. The advantages of the self-reported measures are that it is not subject to errors in the interpretation of the satellite image, and it measures land use rather than land cover (for example, an area with scrubby land cover could be cattle pasture or regenerating forest). The disadvantages are that respondents might not remember or misreport land use. However, the bias is unknown; that is, it could be that PSA participants are less likely to report loss in forest cover because of their contractual obligations, or if only non-PSA participants lose forest cover, they might not report this due to other legal restrictions. Thus, these numbers must be treated with caution.

**Conserving Forests: Mandates, Management or Money?** (Baylis et al. 2012)

**IE Method:** Difference-in-difference

**Geographical Focus:** Mexico

**Major Objectives:** Decision-makers are keen to learn which policy instruments are most effective at preserving forest cover. Using data from a patchwork of programs designed to preserve the overwintering forest habitat of the Monarch butterfly in central Mexico, the authors compare the effectiveness of three conservation instruments in limiting deforestation and forest degradation: logging bans, payment for environmental services (PES), and forest management.

**Summary of Methodology:** The study area was divided into a uniform grid of cells 1 ha each (100 m x 100 m) for a total of 342,774 cells. ESRI ArcMap 9.3 was used for spatial transformations and analysis. Each cell was linked with basic biophysical information: mean elevation, slope, distance to roads, and presence or absence of monarch colonies. Each cell also included political information such as State Government, Municipality and local community. Most rural communities in Mexico are community owned and managed as either Ejidos or Indigenous Communities. In areas where the management structure was unknown, the study assumed the area to be a private property for a total of 1143 property units. Various sources of ownership data were combined in order to generate the most

complete dataset. These sources included data from World Wildlife Fund and the Mexican Federal Government, including the formal boundaries established under the PROCEDE (Programa de Certificación de Derechos Ejidales) program, which certified land tenure rights for common property. Using data from Landsat imagery in 1993, 2000, 2003, 2006, and 2009, the total hectares of conserved forest and total forest per cell (0.0-1) and the dominant tree species were calculated. The authors compared the forest cover in these cells by treatment groups over time, in a difference-in-difference approach.

**Main Findings:** In this study the authors provide empirical evidence that alternate policy instruments generate different conservation outcomes. The study observes little evidence that protected area status generates benefits on its own in the study region. The authors find that the PES helped increase forest conservation, but not dense forest cover. Thus, indications that communities may have received payments for conserving forest and then engaged in some selective logging, reducing dense forest cover is seen. One possibility is that while clear cutting is known to be highly visible, selective logging may be less easy to observe by community or state monitors, leading to substitution between harvest methods. The study also finds that these results are very sensitive to the set of control parcels used. When a broader range of control observations that less precisely match the characteristics of those parcels receiving a PES was used, the effect switches signs. Perhaps most promising, is the evidence seen that management helped preserve conserved forests, and that those parcels with pre-existing management plans also conserved more forest under the PES and logging bans.

**Lessons Learned and Limitations:** The authors believe this study does make several contributions. First, unlike most literature, the authors not only see the coincidental move from no regulation to regulation + payment, the initial imposition of regulation is observed, then the expansion of the regulated area + payment. It is also observed that some regions that had regulatory changes but were ineligible for payment, and other regions that had no regulatory changes but did have payments. Second, this study is one of the few to empirically estimate the effect of forest management. Third, unlike most literature, the authors are able to observe forest disturbance such as might occur with selective logging, not only complete deforestation. These data are particularly important for policy since the illegal logging often occurs as selective logging and the move to full deforestation is often much harder to reverse than when communities have only thinned forest. Last, the study is fortunate to have data before and after the program, within the 'treated' region as well as clearly outside the region. These data better allow the authors to construct counterfactuals for the various treatments.

There are a number of limitations of this study. First, the authors ignore the potential endogeneity associated with forest management planning except to the degree that this endogeneity is generated by time-invariant community characteristics. Future work will use measures of community governance to instrument for forest management plans and for participation in the PES. Second, the PES program explored in this study is never totally unbundled from regulation, so no variation is observed in PES participation that would occur with a truly voluntary program such as Mexico's payment for hydrological services.

### **An Evaluation of the Impact of the Natural Forest Protection Programme on Rural Household Livelihoods (Mullan et al. 2008)**

**IE Method:** Propensity Score Matching & Difference-in-Differences

**Geographical Focus:** China

**Major Objectives:** In this study, the impact on local household livelihoods of the Natural Forest Protection Programme (NFPP) is estimated, the largest logging ban program in the world that aims to protect watershed and conserve natural forests. The study focuses on evaluating the impacts of the NFPP on two facets of the livelihoods in the affected areas, those of household income and employment opportunities.

**Summary of Methodology:** To conduct the study, the authors use a series of policy evaluation micro-econometric techniques to assess the impacts of the NFPP on two interrelated facets of household livelihoods, namely income and off-farm labor supply. Measuring the impacts of the NFPP on household incomes and labor opportunities is not a straightforward matter, mainly because the Chinese economy has been undergoing huge changes during the period that the program has been in place. Further, household income and labor decisions cannot be observed both in the presence and the absence of the program, and therefore face an identification problem. To address this, the NFPP was treated as a natural experiment, using panel survey data to compare the changes in income and labor opportunities over time in the areas where the program was in place with changes in the areas where it was not introduced. To ensure the robustness of results, the changes in income resulting from the program using various parametric and non-parametric policy evaluation techniques were estimated. Using similar evaluation methods as for the income impacts, the effect on off-farm employment is estimated.

**Main Findings:** The study finds that the NFPP has had a negative impact on incomes from timber harvesting but has actually had a positive impact on total household incomes from all sources. Further, findings indicate that off farm labor supply has increased more rapidly in NFPP areas than non-NFPP areas. This result is strongest for employment outside the village. On the basis of these results policy implications for household livelihoods are drawn.

**Lessons Learned and Limitations:** There are a few caveats to the study. The first of these is that the results represent average impacts across households. Some households are likely to have been affected to a greater extent than suggested, either because they previously specialized in timber production or have lost investments, or because their alternative income generation opportunities are more limited. The first of these may have implications for the long term environmental impacts of the program. If the ban creates disincentives to invest in timber plantations then forest cover will not increase over time without the continuous involvement of the state. The second factor is important in relation to poverty alleviation in rural areas such as those where the NFPP has been implemented. Another caveat is that these results pertain to a specific province in China. The authors have argued that they may be broadly representative of the southern collective forest areas. However, the different socio-economic, institutional and environmental conditions in the southwest and northeast forest areas of China mean that the effects of the ban may have been different.

A final issue is that even if the ban on logging does not reduce household incomes overall, it can be argued to infringe on the rights that the households hold to forest land. Through the Household Responsibility System, they were allocated the rights to harvest timber on their plots of forest land, and in many cases provided contracts for 30 years or more. That land use rights have been removed without compensation may have implications in terms of equity or in terms of incentives to sustainably manage forest or other types of land in future.

### **Forest Incomes After Uganda's Forest Sector Reform: Are the Rural Poor Gaining? (Pamela Jagger 2008)**

**IE Method:** Difference-in-difference

**Geographical Focus:** Uganda

**Major Objectives:** The aim of this study is to examine how Uganda's recent forest sector governance reform has affected the contribution of forests to rural incomes.

**Summary of Methodology:** To make claims about causal relationships between governance reforms and various outcomes a quasi-experimental research design is required. To understand how the reform has affected a particular unit of observation, be it a demographic group such as the rural poor or specific forest area, it is necessary to have data from before the reform was implemented to compare with data collected sometime after implementation has taken place. In addition, it is necessary to have a counterfactual, or a control group, to account for changes that occur due to other factors. The control group serves as an indicator of what would have happened in the absence of the reform (World Bank 2008). This study employs a quasi-experimental research design called the nonequivalent

comparison group design. Households in forest sites affected by the reform (that is, treatment groups) are compared with households in a forest site that was not affected by the reform (control group). In this case the pre- reform and post-reform samples are independent. Household level data from the first and second time period are analyzed together as a pooled cross section.

**Main Findings:** While the reform is still in the early stages of implementation, the findings point to some striking changes or, in some cases, lack of change, in the role of forests in rural income portfolios in western Uganda. Overall, for Ugandans living in or near forests on private lands, the impact of the forest sector reform on rural livelihoods is negligible. Four years after the transition from Forest Department governance to District Forestry Service governance rural households have not increased the share of their income from forests through the sale of unprocessed or processed forest products. While wealthy households obtain larger incomes from forests and a larger share of total income from forests, the values are not large, and are indicative of the subsistence nature of forest product harvesting in this area. These findings indicate that forest sector decentralization to local government in Uganda has not had the desired outcome of increasing the role of forests in rural household income portfolios.

Several policy recommendations emerge from this research. First, in both the case of the decentralized DFS and the parastatal NFA there are few incentives for forestry officials to ensure that rural smallholders and, in particular the poor, have improved access to high value forest resources. Facilitating legalized engagement of local resource users in the sustainable harvesting of high value forest products and small scale forest enterprise development may increase awareness of the value of trees and forested land, increase income from forests, and reduce the incentive for corrupt officials to extract bribes from illegal producers.

Second, the incentives of forestry officials should be carefully evaluated. Currently, there appear to be few incentives for forestry officials to do their jobs as they were envisioned. This includes evaluating hiring practices, performance evaluation, salaries, and so on.

Third, in the control group site, collaborative forest management agreements and the sharing of tourism revenues with local communities has a favorable effect on both local livelihoods and forest management. Opportunities for community engagement in forest management should be pursued, with the caveat that successful collaborative forest management initiatives generally take a very longtime to negotiate.

Finally, the differential effect that the reform is having on the contribution of forests to the poor versus wealthy rural households points to the necessity of collecting data that can be used to monitor the progress of reforms as they are implemented. While Uganda is still in the early stages of implementation, these findings highlight the presence and magnitude of elite capture that has been anecdotally observed in numerous studies on the topic of decentralization and livelihoods.

### **Government Initiated Community Resource Management and Local Resource Extraction from Nepal's Forests** (Eric Edmonds, 2002)

**IE Method:** Instrumental Variables (IV)

**Geographical Focus:** Nepal

**Major Objectives:** This study considers the effect on local resource extraction of an ambitious, government-initiated community forestry program in Nepal. Beginning in 1993, the government of Nepal began to transfer all accessible forestland from the national government to local communities by creating local groups of forest users. This study uses institutional details about the implementation of this program to evaluate its impact on the extraction of wood for fuel. Transferring forests to local groups of forest users is associated with a significant reduction in resource extraction in communities that receive new forest user groups.

**Summary of Methodology:** Using household survey data from 1995/96 merged with an administrative census of forest groups in the Arun Valley of eastern Nepal, this study compares resource extraction in areas with and without forest groups. For this study data from the Arun Valley of Nepal was used. The household survey used in this study, the Arun Valley Living Standards Survey (ALSS), is a random sample of 1200 households in 100 communities that were interviewed during one Nepali calendar year spanning 1995 and 1996 of the Gregorian calendar. The survey follows the format of the Living Standards Measurement Surveys, collecting a wide array of information about the household and the activities of its members. The study focuses on the households fuel wood collection problem as a measure of resource extraction. The collection of wood for fuel is one of the two main causes of deforestation in Nepal (agricultural conversion of forest land is the other). The ALSS questionnaire asks each household: "On average, how many bharis of firewood do you collect each month?" In order to compare resource extraction in areas with and without forest groups, data on the location of forest groups was required. For this, a database assembled by the Nepal-United Kingdom Community Forestry Project (NUKCFP) was used. The NUKCFP operates all forest offices in the Arun Valley, and hence funds and trains all of the foresters in the three districts of the Arun Valley. It is responsible for all of the forest groups created under the Forest Act in the Arun Valley. The NUKCFP database (1997) is a census of all forest user groups in the Arun Valley and has been matched in this study to the location of communities in the ALSS.

**Main Findings:** The evidence in this study is consistent with forest user groups reducing household extraction of fuel wood from the forest. Point estimates of the magnitude of this effect vary across estimation methods, but all results are within a 99 percent confidence interval of the 14 percent reduction in wood extraction found in the raw sample mean.

Researchers differ in whether they describe the resource regime absent forest groups as national management, open, or informal institutions. Given this ambiguity, the findings in this study cannot be interpreted as evidence that, in comparing two specific policy options, government initiated community management leads to greater resource reduction. Similarly, nothing in this study suggests that the level of resource extraction associated with government initiated community forestry is "optimal" in any sense. Nevertheless, the results from this study do raise the possibility that governments may be able to initiate a successful, large-scale community resource management program.

**Lessons Learned and Limitations:** In this study, two important issues have not been addressed. First, although findings indicate that government initiated user groups appear to reduce resource extraction, the mechanism through which user groups influence household extraction of wood for fuel cannot be addressed. That question requires a larger sample with greater variation in the characteristics of communities with forest groups and reliable information on the characteristics and operation of forest groups. Second, since the analysis of this study focuses on household behavior three years after the passage of the institutional reform, the long-term effect of transferring forests cannot be evaluated. Most proponents of community forestry in Nepal want to reduce current forest extraction, giving the forest time to regenerate. If this happens, community forestry might lead to a greater abundance of forest products and increased resource extraction. The long-term consequences of government initiated community institutions and the mechanism through which they affect local resource use are clearly important topics for future research.

### **Tropical Deforestation, Community Forests, and Protected Areas in the Maya Forest (Bray et al. 2008)**

**IE Method:** Instrumental Variable (regression analysis)

**Geographical Focus:** Guatemala & Mexico

**Major Objectives:** Community forests and protected areas have each been proposed as strategies to stop deforestation. These management strategies should be regarded as hypotheses to be evaluated for their effectiveness in particular places.

**Summary of Methodology:** The authors evaluated the community-forestry hypothesis and the protected-area hypothesis in community forests with commercial timber production and strict protected areas in the Maya Forest of Guatemala and Mexico. From land-use and land cover change (LUCC) maps derived from satellite images, the authors compared deforestation in 19 community forests and 11 protected areas in both countries in varying periods from 1988 to 2005.

**Main Findings:** Deforestation rates were higher in protected areas than in community forests, but the differences were not significant. An analysis of human presence showed similar deforestation rates in inhabited protected areas and recently inhabited community forests, but the differences were not significant. There was also no significant difference in deforestation between uninhabited protected areas, uninhabited community forests, and long-inhabited community forests. A logistic regression analysis indicated that the factors correlated with deforestation varied by country. Distance to human settlements, seasonal wetlands, and degree and length of human residence were significant in Guatemala, and distance to previous deforestation and tropical semi-deciduous forest were significant in Mexico.

**Lessons Learned and Limitations:** Varying contexts and especially colonization histories are highlighted as likely factors that influence different outcomes. Poorly governed protected areas perform no better as a conservation strategy than poorly governed community forests with recent colonists in active colonization fronts. Long-inhabited extractive communities perform as well as uninhabited strict protected areas under low colonization pressure. A review of costs and benefits suggests that community forests may generate more local income with lower costs. Small sample sizes may have limited the statistical power of the comparisons, but descriptive statistics on deforestation rates, logistic regression analyses, LUCC maps, data available on local economic impacts, and long-term ethnographic and action-research constitute a web of evidence supporting the conclusions. Long-inhabited community forest management for timber can be as effective as uninhabited parks at delivering long-term forest protection under certain circumstances and more effective at delivering local benefits.

### **Explaining Success on the Commons: Community Forest Governance in the Indian Himalaya (Agrawal, A & A Chhatre 2006)**

**IE Method:** Instrumental Variable Regression model – ordinary least squares (OLS)

**Geographical Focus:** India

**Major Objectives:** In the past two decades, scholarship on resource use and management has emphasized the key role of institutions, communities, and socio-economic factors. Although much of this writing acknowledges the importance of a large number of different causal variables and processes, knowledge about the magnitude, relative contribution, and even direction of influence of different causal processes on resource management outcomes is still poor at best.

**Summary of Methodology:** This study addresses existing gaps in theory and knowledge by conducting a context-sensitive statistical analysis of 95 cases of decentralized, community-based, forest governance in Himachal Pradesh, and showing how a range of causal influences shape forest conditions in diverse ecological and institutional settings in the Indian Himalaya. The authors use statistical techniques to probe potential causal mechanisms, but also draw on findings from case studies and intensive fieldwork to motivate the analysis, choice of causal influences, and interpretation of regression results. The study thus combines the strengths of single case-oriented approaches and larger-N studies, and contributes to a more thorough understanding of effective resource governance.

**Main Findings:** All the five demographic variables in the analysis (Size, Population Change, Grazing of Migratory Sheep, Cattle-Months, and Cattle-Number) are statistically significant, but the unexpected signs for some of them indicate that some theoretically interesting causal processes may be at play.

**Lessons Learned and Limitations:** The study, underscores the importance of contextual variations and awareness of such variations in knowing how to specify and operationalize the variables of interest. This need for intimate familiarity with data, informed by knowledge of field conditions, has a prime implication for the study of the commons. Variations in how the same factors operate and should be operationalized in different macro-contexts should make us pessimistic about the possibility of a universal theory of the commons.

**Social and Ecological Synergy: Local Rulemaking, Forest Livelihoods, and Biodiversity Conservation**  
(Persha et al. 2011)

**IE Method:** Outcome Relationships

**Geographical Focus:** East Africa (Kenya, Tanzania, and Uganda) and South Asia (Bhutan, India, and Nepal).

**Major Objectives:** The study analyzes the patters of outcome relationships between forest-based livelihoods and biodiversity conservation and the potential explanations associated with the joint production of these two forest benefits. It uses a data set on 84 sites from six countries in East Africa and South Asia.

**Summary of Methodology:** The study uses the percent of households that depend substantially on the forest for subsistence livelihoods as an indicator of livelihood contributions of the same forest. Tree species richness is used as an indicator of forest biodiversity. The study also uses the percent of households that depend substantially on the forest for subsistence livelihoods as an indicator of livelihoods contributions of the same forest. The study classifies the outcome relationships between tree species richness and forest-based subsistence livelihoods into categories on the basis of above- or below-average levels for each of the two indicator variables, relative to other forests in the same forest type in the data set. The approach focuses on three joint-outcome categories where (i) species richness and livelihoods contributions are both above average (sustainable forest systems); (ii) species richness and livelihoods are both below average (unsustainable forest systems); and (iii) either species richness is above average relative to other forests and livelihoods are below average, or species richness is below average but livelihoods are above average (trade-off forest systems).

**Main Findings:** Both positive and negative relations are found, leading to joint wins, losses, and trade-offs depending on specific contextual factors; participating in forest governance intuitions by local forest users is strongly associate with positive outcomes for forests. The results indicate that forest systems are more likely to have sustainable outcomes (above-average tree species richness and subsistence livelihoods) when local forest users participate in forest rulemaking whereas unsustainable forest systems outcomes are more likely when users do not participate in rulemaking

**Lessons Learned and Limitations:** In constructing the model, the significance of additional variables was also tested, particularly market distance and population density, which were found to be associated with biodiversity and livelihoods when treated as independent outcomes.

There are some important regional differences in the broader set of biophysical, socioeconomic, and institutional factors associated with the East African versus South Asian cases. Forests are larger on average in East Africa, and a greater proportion of households rely on the forests for commercial income. Also differences were found in the strength of association of some of these explanatory and broader contextual factors between the two regions, even as overall patterns of outcomes in the relationship between tree species diversity and subsistence livelihoods are similar. It is suggested that this may point to the likelihood of multiple pathways for achieving these outcomes, differentiated, for instance, across varied regional contexts and key factors that also likely operate at broader scales.

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