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A WORLD BANK OPERATIONS EVALUATION STUDY

Forestry

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Forestry

THE WORLD BANK'S EXPERIENCE

Operations Evaluation Department
The World Bank
Washington, D.C.

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Foreword

On the development agenda, forestry has not been given the priority it needs. The loss of forest resources has already had significant negative ecological and economic effects. Many developing countries face the rapid depletion of their forests, driven by population pressure but encouraged by both sectoral and economywide policies. The solutions to many of these problems are rooted not only within the forestry sector, as traditionally defined, but in broader socioeconomic and institutional policies and development initiatives. They may call for a redefinition of traditionally agreed sectoral boundaries.

The World Bank began lending for forestry 37 years ago; its consolidated lending for forestry now amounts to more than $2 billion. Of this, 91 percent has been lent since 1978, when the Bank issued its first Forestry Policy Paper.

The present study reviews a decade of experience with that policy, to provide insights and recommendations for the Bank's own policies and projects in the 1990s (see *The Forest Sector: A World Bank Policy Paper*, World Bank, 1991) and to help inform the debate on forestry issues in the development community generally.

Operations evaluation in the Bank provides a systematic, comprehensive, and independent review of the Bank's development experience. The Director General, Operations Evaluation has overall responsibility for the evaluation function. He reports directly to the Bank's Board of Executive Directors, who represent its member governments, and has an administrative link to the President. Operations Evaluation Department is the staff arm of the Director General. All OED reports are made available to the member governments of the Bank and those of general interest are published.

The study was prepared by Alfredo Sfeir-Younis of the Operations Evaluation Department. While preserving their statutory and professional independence, OED staff work with Bank staff and country officials so that all views, including dissenting views, are adequately reflected in OED reports. This practice has been followed in producing this report, which has been distributed to the Bank's Executive Directors.

Yves Rovani
Director General
Operations Evaluation
October 1991

Abbreviations

AFTAG	Africa Region Technical Agriculture
AGR	Agriculture Department – World Bank
AGREP	Agriculture Department, Economic and Policy Division – World Bank
AGRPT	Agriculture Department, Technical Division – World Bank
AR	Annual Report
ASAL	Agricultural Sector Adjustment Loan
BCA	Benefit Cost Analysis
CFA	African French Franc
CSP	Country Strategy Paper
CY	Calendar Year
EMENA	Europe, Middle East and North Africa
ENVST	Environment Department – World Bank
ERR	Economic Rate of Return
FAO	Food and Agriculture Organization
FAO/CP	Food and Agriculture Organization/Cooperative Program
FD	Forestry Dept.
FRR	Finance Rate of Return
FY	Fiscal Year
GDP	Gross Domestic Product
GIS	Geographical Information System
GOI	Government of India
GOMP	Government of Madhya Pradesh
GOPNG	Government of Papua New Guinea
ICB	International Competitive Bidding
IUFRO	International Union Forestry Research Organization
LAC	Latin America and the Caribbean
NCA	National Commission on Agriculture
NGO	Non-government organization
NRDP	National Reserve Development Project
OED	Operations Evaluation Department
OMS	Operational manual
PCR	Project Completion Report
PIER	Public Investment Expenditure Review
PPAR	Project performance audit report
PPR	Policy Planning and Review Department
SAL	Structural adjustment lending
SAR	Staff appraisal report
TAN	Tanzania
TFAP	Tropical Forestry Action Plan
UNDP	United Nations Development Program
WID	Women in Development

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Introduction

This is the first OED review of Bank experience in the forestry sector. The review examines three areas: development performance of Bank-financed operations, implementation experience, and sector work. Its aim is to provide a more solid foundation for helping the Bank's operational staff and policy makers design projects and establish adequate policies. The most important reason for undertaking such a study is the need to take stock of experience in a sector central to the development/environment debate. As perceptions about the role of forests in development have changed, donor agencies are making efforts to expand their lending programs. It is important to review past experience and assess the extent to which new lending modes and strategies are needed.

Another reason for the study is to provide input to formulation of the Bank's new forestry policy. As the Bank moves from one policy statement to another, several considerations need to be taken into account. This study recognizes the importance of the policy environment and its influence in project performance. A Bank policy statement often changes lending targets, reassesses priorities in the sector, demands recognition of certain activities, and involves the Bank in a new set of policies and institutional reforms. Given the above, this review presents a detailed account of the Forestry Policy Paper, issued in 1978.

The Bank has lent more than $2 billion for forestry, a figure that includes lending for free-standing forestry projects. Several millions have also been invested in forestry components in agriculture and rural development, energy, or other sector projects. The geographic distribution of lending is uneven, and the nature of projects has changed over the last decade. In response to the 1978 policy paper, the Bank has switched its emphasis away from financing industrial forestry projects almost exclusively to financing social or rural development and environmental forestry projects. The pre-1978 interest in financing industries had a lot to do with the perceived role of forests and with the approach to development at that time. This approach was not unique to forestry; in fact, it was the way most development programs were designed. After issuing the policy paper, a major effort was made to finance social or rural development and environmental forestry projects. This change is clearly reflected in Bank allocations and in the way countries responded to the change in policy.

Sector work was expected to strengthen the link between the 1978 policy paper and the lending program. Although this link remained weak until the early 1980s, it has recently become stronger as sector work has become more extensive. Today, every operating region of the Bank is carrying out strategy and policy formulation exercises. Completed work is rich in terms of identification of issues and proposing short- and long-term solutions.

Assessment

The study assesses several dimensions of the Bank's experience in forestry development: project performance, principal determinants of performance, performance of forestry project components, implementation issues, and evaluation of sector work. By considering these dimensions, this study is able to make operationally useful recommendations for projects and policy.

Some important facts stand out from the assessment. First, the overall performance of completed projects is largely satisfactory, although the lending program faces a number of problems. This is not surprising, given that forestry projects take a rather long time to mature and that institutions in the sector are taking an even longer time to develop. As a consequence, goals at the project level are being achieved, but consolidating these first-generation projects has caused some problems.

Second, the problems are mostly sectoral or national in nature, reflecting the strong intersectoral linkages that the forestry sector faces but that are often ignored. These problems are strongest in the area of macroeconomic incentives (e.g., pricing policies, credit), and how they affect land use patterns. Many of the sectoral issues are institutional, financial (forestry development is a long-term investment), and organizational. The solutions to those issues tend, in many cases, to go beyond the boundaries of a single project. For example, the problems with deforestation in Côte d'Ivoire were not solved by increasing the wood supply. In some cases, solutions go beyond the Bank's domain or comparative advantage.

Third, the move toward new-style forestry projects has made the Bank's lending program more complex. One of these is in the area of institutional arrangements, where traditional modes of development organization—which strongly favor traditional sectoral boundaries (e.g., agriculture, livestock, industry, transport, public works)—proved to be no longer convenient or efficient. The new-style projects (e.g., environmental forestry, watershed management) have necessitated new institutional boundaries that go beyond sectors or geopolitical regions. As these institutional changes take time to achieve, tension has grown between the traditional organizational structures and those needed to successfully carry out these operations. Complexity has also increased as a result of the involvement of a very large number of beneficiaries and the addition of a much broader set of development objectives (e.g., growth, income distribution, energy, sustainability) in the sector.

The basic lending parameters have nonetheless remained the same: the same type of supervision reporting, the same types of demands and coefficients, the same disbursement periods, and the like.

Fourth, rural development or social forestry projects and environmental forestry projects have proven difficult to formulate and implement. Projects of this kind tend to accentuate intrinsic sociopolitical and institutional weaknesses and if so, they compromise sustainability in the long term. Some projects, for example, have increased the pressure to change traditional systems of property rights. Experience demonstrates that it would take a long time to change those systems in a sustainable way. In some countries, several systems of property rights affect forestry operations. Also affecting performance are issues such as community participation and the degree to which environmental and equity-related objectives are being achieved. Because of the increasing complexity, much more lead time and funding are needed to prepare a more suitable product.

Social forestry projects have benefited a large number of people. For the rural poor, tree planting has become a unique way to accumulate capital. Women and children have benefited from forestry projects, although the extent of these benefits is not well known. Four significant constraints on directing benefits to women have been reported:

- disputes over property rights in which the resolution of conflicts has not been to the benefit of women;
- limited capacity of local organizations to deal with and represent women's rights;
- complex cultural base and caste structures, which often limit the extent to which women can become economically active; and
- assumptions justifying a large number of technical solutions to existing problems (e.g., preferences over alternative forms of fuels) often do not take women's views and knowledge into account.

The environmental impact of Bank-financed forestry projects has been positive. Environmental benefits result mainly from improving land use and thus diminishing the levels of soil erosion, sedimentation and desertification; rehabilitation of existing low-value lands; stabilization of climatic conditions; and improvements in the ecosystem's capacity to adequately regulate the water cycle and create improved conditions for development; and from enhancing the human environment in general. As regards the control and stabilization of the desertification process, experience shows that actions that go well beyond the forestry sector are required. This is evident in cases in which desertification results, for example, from population pressure, limited carrying capacity of the land in relation to the existing livestock population, inadequate agricultural practices, and the like.

The main determinants of satisfactory performance are similar to those reported for projects in other sectors of the economy: careful project preparation (i.e., realistic goals, use of appropriate technologies, and low or good balance of risk), a favorable marketing structure, management effectiveness, and adequate institutional capacity. What appears to be unique to new-style forestry projects is that they have had too short a time frame for implementation, narrow institutional boundaries, and inadequate systems for assignment of property and use rights.

An in-depth analysis of important project components (e.g., forest management, watershed management, and rehabilitation) carried out for this study shows that some components show unsatisfactory performance regardless of the project. This is the case, for example, with:

- natural forest management;
- monitoring and evaluation; and
- watershed rehabilitation.

These components have become more prominent in the new generation of projects—as emphasis on management and technological change increases—and in some cases, they have become the sole theme of a project. In this regard, the experience with the old-generation projects can be extremely useful in the design and implementation of today's projects.

One striking finding of this review is that implementation problems have not changed much in the last decades. More important, perhaps, is the finding that operational staff has rated social and environmental forestry projects more unfavorably than industrial ones—though not unsatisfactory. The similarities across all forestry operations make the overall assessment of experience with development implementation very robust. Other important findings were that more supervision does not translate necessarily into improved performance; the mismatch between the types of implementation problems faced and the skill composition of missions; and the similarity of ratings among the same type of projects during the last three decades.

The study confirms that poor sector work translates into poor performance at the project and policy levels. The Bank's 1978 policy paper was not meant to replace sector work but to foster it; however, sector work has poorly complemented that policy. In fact, the Bank has implemented forestry projects in several countries without the benefit of sector work. More serious is the lack of natural resource assessment and of monitoring and evaluation which would allow for better management, an improved assessment of development options at the sector and regional level, and a more realistic translation of the 1978 policy paper. Monitoring and evaluation are so weak that post evaluation has become a very difficult exercise.

A brief review of the sector work of other development agencies shows that the lack of sector work in forestry has not been unique to the Bank. Two multi-agency efforts changed this trend in the mid-1980s; i.e., the Tropical Forestry Action Plan and the National Environmental Plan. Both initiatives are fairly recent and it will take some time before they yield the expected results. Limited institutional capacity and lack of political commitment are the key constraints on adequate sector work. This may call for a different approach, whereby the Bank plays a more active role in the design and implementation of studies and sectoral assessments. For this reason, the Bank should consider the creation of a Forestry Assessment Unit (FAU), similar to those for energy, water supply, and irrigation development sectors. Resources for this unit should come from a large array of interested donors.

Implications

The analysis of development performance suggests several preliminary lessons and broader issues:

- forestry projects should undergo careful planning, preparation, and processing and longer time frames should be considered for some types of forestry projects;
- individual projects are not sufficient to address broad sectoral concerns or structural imbalances in borrowers' economies;
- if cooperation and coordination is required between many line agencies in the planning and implementation of a project, an effective mechanism for coordination is crucial;
- monitoring and evaluation is often weak and it does not facilitate supervision and final evaluation;
- land tenure and potential land use conflicts should be thoroughly investigated during project formulation;
- the high ratio of recurrent cost to capital cost is a major problem in sustaining forestry projects at the country level, particularly when pressures exist to reduce public expenditures;
- market analysis and market programs should be an integral part of project preparation;
- pricing policies should adequately reflect the flow and the stock value of the forest;
- the development of zones around remaining forest areas should be a national priority; and
- governments alone do not have nearly enough capacity to single-handedly tackle problems of wood deficits and forest depletion.

Some of the study's general findings have important implications for policy formulation. For example:

- A large number of supervision reports emphasized that most forestry projects are facing very serious financial problems.
- No comprehensive study of the intersectoral linkages has been made, despite the recognition that project performance depends on how macroeconomic policies affect both land use and management of existing forests.
- There is no evidence that forestry sector concerns are systematically incorporated into macroeconomic policy formulation and reform.

The policy paper of 1978 was never implemented to its fullest extent. Probably it could not have been, given the experience with forestry projects at the time and the knowledge of how forest ecology interacts with other biospheres and with human systems. Today, after more than a decade, a new policy is emerging. The central questions within this context are: If a change in policy is needed, what are the principal areas of concern that need to be changed, and why? How can past experience help to shape the new policy and assess where the Bank can be most useful?

These questions cannot be answered just by reviewing experience with projects, components, development implementation, and sector work. Other political and social considerations might influence policy formulation, although experience does offer some important insights, particularly with regard to what subjects need careful attention. In particular, it suggests higher priority should be given to:

- the role of institutions, with particular emphasis on property rights;

- organizational arrangements;
- improving complementary services (e.g., research and extension, marketing);
- recognition of intersectoral and macroeconomic linkages affecting the sector;
- centering operations around land use;
- increasing the capability inside and outside the Bank to assess natural resources; and
- finding new instruments of lending, with special emphasis on financing.

The way each of these dimensions applies to an individual country has to be fleshed out through sector work. Sector work is a vital condition for implementing any policy and it is a vital force in changing the policy.

The study thus has important implications for the Bank's lending in the 1990s. New forms of lending may be needed to address the environmental imperatives and to expand the supply of forest products and properly manage the existing forest resources. Experience suggests that operations in the 1990s should be of the "program" type, rather than discrete project operations. This view should not come as a surprise, since this is becoming a known practice in the Bank. But the success of sector loans will depend on the following:

- a sector policy;
- a comprehensive forest management component;
- a favorable macroeconomic package of policies;
- a major infusion of human capital development; and
- a clear recognition of the interplay between forests, people, and culture.

For the immediate future, the following recommendations may be considered:

1. Condition every project in the sector to conform to a country forestry sector policy.
2. Establish a forestry sector assessment unit to enhance Bank knowledge of natural systems affected by other sectoral interventions.
3. Create new lending instruments for projects that are not immediately or directly productive (e.g., forestry management operations).

Resumen Ejecutivo

Introducción

Esta es la primera evaluación realizada por el Departamento de Evaluación de Operaciones (DEO) sobre la experiencia del Banco en el sector forestal. En ella se examinan tres aspectos: los resultados, en lo relativo al desarrollo de las operaciones financiadas por el Banco, la experiencia en materia de ejecución y los estudios sectoriales. El objetivo es proporcionar bases más sólidas para ayudar a los funcionarios de operaciones y a los encargados de las políticas del Banco a elaborar proyectos y políticas adecuadas. El objetivo más importante para llevar a cabo un estudio de esta índole es la necesidad de evaluar la experiencia del Banco en un sector que es crucial dentro del debate sobre desarrollo y medio ambiente. En vista de que la percepción que se tiene de la función que desempeñan los recursos forestales en el desarrollo ha cambiado, los organismos de financiamiento están realizando esfuerzos para ampliar sus programas de crédito. Es importante examinar la experiencia obtenida y evaluar hasta qué punto se necesita contar con nuevas modalidades y estrategias de financiamiento.

Este estudio también procura efectuar un aporte a la nueva política forestal del Banco. En este momento, en el cual el Banco está modificando dicha política, es necesario tener en cuenta varias consideraciones. En esta evaluación se reconoce la importancia del marco normativo y su influencia en el resultado de los proyectos. Una política sectorial con frecuencia cambia las metas crediticias, reevalúa prioridades en el sector, exige el reconocimiento de ciertas actividades —lo que implica para el Banco un nuevo marco normativo— y establece normas para una reforma institucional. En vista de lo antedicho, en este estudio se presenta un análisis pormenorizado del documento sobre política forestal que se emitió en 1978.

El Banco ha otorgado préstamos para el desarrollo forestal por valor de más de US$2.000 millones, cifra que incluye créditos para proyectos dedicados exclusivamente al sector forestal. También se han invertido varios millones en componentes forestales dentro de proyectos en el sector agropecuario, desarrollo rural, energía y otros. La distribución geográfica de los préstamos es desigual y, en el último decenio, ha cambiado la naturaleza de los proyectos. Como resultado del documento de política de 1978, el Banco cambió el énfasis y pasó del financiamiento, casi exclusivo, de proyectos de desarrollo forestal para el sector industrial a proyectos forestales inmersos en el sector rural, proyectos de corte comunitario o proyectos con fines medio ambientales. El interés demostrado en el financiamiento de proyectos industriales antes de 1978 tenía mucho que ver con la función que se asignaba a los recursos forestales y con el enfoque de desarrollo económico que prevalecía en esa época. Este enfoque no se aplicaba únicamente al sector forestal; de hecho, era la manera en que se elaboraban la mayoría de los programas de desarrollo. Después de emitido el documento de política, se procuró con ahínco financiar proyectos de desarrollo rural de bosques comunitarios o con finalidades ambientales. Este cambio se refleja con claridad en las asignaciones del Banco y en la forma en que los países respondieron al cambio de política.

Se esperaba que los estudios sectoriales fortalecerían los vínculos entre el documento de política de 1978 y el programa de operaciones crediticias. Si bien hasta comienzos de los años ochenta este vínculo fue por lo general débil, en los últimos tiempos se ha fortalecido en la medida que han aumentado los estudios sectoriales. En la actualidad cada oficina regional del Banco trabaja en la formulación de estrategias y políticas forestales. Las estudios terminados son ricos tanto en términos de los problemas planteados como de las soluciones propuestas en el corto y largo plazo.

Evaluación

En el estudio se evalúan varias dimensiones de la experiencia del Banco en desarrollo forestal: impactos de los

proyectos y definición de sus principales determinantes, impactos de algunos componentes de dichos proyectos, cuestiones relacionadas con la ejecución y estudios sectoriales. Al considerar cada una de estas dimensiones posibilita a este estudio a formular recomendaciones útiles desde el punto de vista operativo para proyectos y políticas.

Esta evaluación destaca algunos hechos importantes. En primer lugar, el resultado de los proyectos terminados es satisfactorio en general, pero el programa de operaciones crediticias enfrenta numerosos problemas, lo que no es de sorprender dado que los proyectos forestales tardan mucho en fructificar y las instituciones del sector necesitan aún más tiempo para evolucionar. Como consecuencia de ello, se logran las metas a nivel de proyecto, pero la consolidación de esa primera generación de proyectos ha causado algunos problemas.

En segundo lugar, los problemas son en su mayor parte de índole sectorial o nacional porque en el sector forestal la vinculación intersectorial —a menudo ignorada— es muy pronunciada. Estos problemas son más graves en la esfera de incentivos macroeconómicos (por ejemplo, políticas de precios, de crédito), y en la forma en que afectan a las modalidades de uso de la tierra. Muchos de los problemas sectoriales son institucionales, financieros (el desarrollo forestal es una inversión a largo plazo) y de organización. En muchos casos, las soluciones a estos problemas tienden a ir allende las fronteras de un proyecto concreto. Por ejemplo, los problemas de la deforestación en Côte d'Ivoire no se solucionaron con el aumento de la oferta. En algunos casos, las soluciones van más allá de lo que el Banco puede hacer dentro de su ámbito de acción o de sus ventajas comparativas.

En tercer lugar, la adopción de un nuevo estilo de proyectos forestales ha hecho que el programa de operaciones crediticias del Banco sea más complejo:

- en la esfera de la organización institucional, donde las modalidades tradicionales de los organismos de desarrollo —que favorecen marcadamente los límites sectoriales tradicionales (por ejemplo, agricultura, ganadería, industria, transporte, obras públicas)— demostraron no ser ni convenientes ni eficientes. Los proyectos con un estilo nuevo (por ejemplo, desarrollo forestal con fines ambientales, ordenación de cuencas hidrográficas) hicieron necesaria la imposición de nuevos límites institucionales que van más allá de los sectores o de las regiones geopolíticas. Como lleva tiempo lograr estos cambios institucionales, se ha producido una tensión entre las estructuras orgánicas tradicionales y las que son necesarias para llevar a cabo estas operaciones en forma fructífera;
- como resultado de la participación de un número muy grande de beneficiarios y del aumento de un conjunto mucho más amplio de objetivos de desarrollo (por ejemplo, crecimiento, distribución del ingreso, energía, sostenibilidad).

No obstante, los parámetros básicos para el otorgamiento de créditos han seguido siendo los mismos: el mismo tipo de informes de supervisión, los mismos tipos de demandas y coeficientes, los mismos períodos de desembolso, y demás.

En cuarto lugar, los proyectos forestales de desarrollo rural o de bosques comunitarios y los que tienen fines ambientales han resultado difíciles de formular y de llevar a cabo. Los proyectos de esta índole tienden a acentuar las deficiencias sociopolíticas e institucionales intrínsecas y, cuando lo hacen, ponen en juego la sostenibilidad a largo plazo. Por ejemplo, algunos proyectos han aumentado la presión para cambiar los sistemas tradicionales de derechos de propiedad. La experiencia demuestra que lleva mucho tiempo cambiar esos sistemas de manera sostenible. En algunos países, varios sistemas de derechos de propiedad afectan a las operaciones forestales. También afectan a los resultados cuestiones tales como la participación de la comunidad y el grado en que se logran los objetivos ambientales y los relacionados con la equidad. Debido a la creciente complejidad, se necesita mucho más tiempo de gestación y financiamiento para preparar un producto más adecuado.

Los proyectos de bosques comunitarios han beneficiado a un gran número de personas. Para los pobres de las zonas rurales, la plantación de árboles se ha vuelto una forma muy especial de acumular capital. Las mujeres y los niños se han beneficiado de los proyectos forestales, aunque no se sabe bien en qué medida. Se ha notificado que existen cuatro limitaciones significativas para poder dirigir los beneficios hacia la mujer. En primer lugar, los casos de disputas sobre derechos de propiedad en los que la solución del conflicto no ha favorecido a la mujer. Segundo, la capacidad limitada de las organizaciones locales para abordar y presentar la cuestión de los derechos de la mujer. Tercero, la complejidad de la base cultural y de la estructura de castas con frecuencia limitan la participación económicamente activa de la mujer. Por último, los supuestos que justifican un gran número de soluciones técnicas a los problemas existentes (por ejemplo, las preferencias con respecto a diferentes combustibles) con frecuencia no tienen en cuenta los puntos de vista ni los conocimientos de la mujer.

La resultados en el medio ambiental de los proyectos de desarrollo forestal financiados por el Banco han sido positivas. En su mayor parte los beneficios provienen de un mejor uso de la tierra, lo que produce una disminución de los niveles de erosión del suelo, sedimentación y desertificación; de la rehabilitación de las tierras de bajo valor; de la estabilización de las condiciones climáticas, y de las mejoras en la capacidad de los ecosistemas para regular en forma adecuada el ciclo del agua y crear condiciones más

propicias para el desarrollo; y en general del mejoramiento del entorno humano. En lo que respecta al control y a la estabilización del proceso de desertificación, la experiencia señala que es necesario tomar medidas que abarquen mucho más que el sector forestal. Esto se ve en forma palpable en los casos en que la desertificación se produce, por ejemplo, debido a presiones demográficas, a la limitada capacidad de carga de la tierra en relación con la cantidad de ganado existente y a prácticas agrícolas inadecuadas u otros factores.

Los principales determinantes del desempeño satisfactorio de los proyectos forestales son similares a aquellos proyectos en otros sectores de la economía: preparación cuidadosa de los proyectos (por ejemplo, metas realistas, uso de tecnologías apropiadas y un riesgo bajo o bien equilibrado), estructuras de mercado favorables, gestión eficaz y capacidad institucional suficiente. Lo que parece ser singular en el nuevo estilo de proyectos forestales es que tienen períodos de ejecución muy cortos, límites institucionales estrechos y sistemas inadecuados de asignación de derechos de propiedad y uso.

Este estudio realizó un análisis detallado de ciertos componentes importantes de los proyectos forestales (por ejemplo, ordenación forestal y de cuencas hidrográficas y rehabilitación), que revela que algunos de esos componentes no han arrojado resultados satisfactorios independientemente de los que tenga el proyecto de que se trate. Esto sucede, por ejemplo, con los siguientes componentes.

- gestión de bosques naturales,
- seguimiento y evaluación, y
- rehabilitación de cuencas hidrográficas.

En la nueva generación de proyectos estos componentes se han vuelto más destacados —a medida que se enfatiza la gestión forestal y el cambio tecnológico— y en algunos casos se han transformado en el componente único del proyecto. Al respecto cabe señalar que la experiencia obtenida con los proyectos de la generación anterior puede ser sumamente útil para el diseño y la ejecución de los proyectos de hoy.

Un resultado sorprendente de este estudio es que los problemas de ejecución no han cambiado mucho en los últimos decenios. Tal vez es más importante notar que los funcionarios de operaciones califican en términos más desfavorables, si bien no insatisfactorios, a los proyectos de bosques comunitarios o con fines ambientales. Las similitudes que se advierten entre todas las operaciones del sector forestal hacen que la evaluación global de la experiencia en materia de ejecución sea muy sólida. Se observó, entre otras cosas, que un aumento en los niveles de supervisión no significa necesariamente mejores resultados, que hay una falta de correspondencia entre los tipos de problemas encontrados durante la ejecución y la combinación de recursos humanos y profesionales de aquellos que integran las misiones de supervisión, y que existe una evaluación relativa semejante para el mismo tipo de proyectos durante las tres últimas décadas.

El estudio confirma que si los trabajos sectoriales son deficientes también lo serán los resultados a nivel de proyectos y de políticas. El objetivo del documento de políticas preparado por el Banco en 1978 no fue el de reemplazar los estudios sectoriales sino promoverlos; no obstante, éstos no han complementado debidamente esa política. En la realidad, el Banco ha realizado proyectos forestales en varios países sin el beneficio de los estudios sectoriales. Más grave aún es la falta de una evaluación de el estado de los recursos naturales y de un seguimiento y evaluación que permitan una gestión más acertada, una mejor evaluación de las opciones de desarrollo en el plano sectorial y regional, y una interpretación más realista del documento de política de 1978. El seguimiento y la evaluación son tan insuficientes que la evaluación retrospectiva *(ex-post)* se ha convertido en un ejercicio muy difícil.

Un breve examen de los estudios sectoriales de otros organismos de desarrollo muestra que la falta de dichos estudios no era algo únicamente característico del Banco Mundial. A mediados de la década de 1980 dos actividades, el Plan de Acción Forestal Tropical y el Plan Nacional del Medio Ambiente, en las que intervinieron varias entidades, modificaron esta tendencia. Ambas iniciativas son relativamente recientes y habrá de pasar algún tiempo antes de que produzcan los resultados esperados. La escasa capacidad institucional y la falta de un compromiso político han sido los factores más limites en ejecutar los estudios sectoriales, lo cual puede exigir un enfoque diferente, mediante el cual el Banco desempeñe una función más activa en la realización y la ejecución de estudios y evaluaciones sectoriales. Por este motivo, el Banco debería considerar la creación de una Unidad de Evaluación Forestal (UEF), similar a la existente en materia de energía, abastecimiento de agua y fomento del riego. Los recursos para esta unidad habrían de provenir de una gran variedad de donantes interesados.

Implicaciones

El análisis de los resultados sugiere varias lecciones preliminares y otras cuestiones más amplias, a saber:

- los proyectos forestales deberían ser objeto de una minuciosa planificación, preparación y tramitación y en el caso de algunos de ellos deberían considerarse plazos más largos;
- los proyectos individuales no son suficientes para abordar las amplias inquietudes sectoriales ni los desequilibrios estructurales de la economía;
- si se necesita cooperación y coordinación entre muchos organismos sectoriales en la planificación y la realización

de un proyecto, es crucial contar con un mecanismo eficaz de coordinación;
- el seguimiento y la evaluación son con frecuencia inadecuados, lo cual no facilita la supervisión ni la evaluación final;
- durante la formulación del proyecto deberían investigarse a fondo los conflictos sobre tenencia y posibles usos de la tierra;
- la elevada relación que existe entre los costos ordinarios y los de capital constituye un problema importante para mantener proyectos forestales a nivel de países, en especial cuando existen presiones para que se reduzca el gasto público;
- el análisis y los programas del mercado deberían constituir una parte integral en la preparación de los proyectos;
- las políticas de precios deberían reflejar en forma adecuada el flujo y el valor del acervo forestal;
- el desarrollo de las zonas circundantes a los bosques que quedan debería constituir una prioridad nacional, y
- los gobiernos por sí solos no tienen una capacidad suficiente para abordar los problemas de déficit de madera y de disminución del acervo forestal.

Algunos de los resultados generales del estudio tienen repercusiones importantes para la formulación de políticas. Por ejemplo:
- un gran número de informes de supervisión hacen hincapié en que la mayoría de los proyectos forestales enfrentan problemas financieros muy graves.
- no se ha realizado un estudio integral de las vinculaciones intersectoriales, a pesar de reconocerse que los resultados de los proyectos dependen de la forma en que las políticas macroeconómicas afectan el uso de la tierra y la ordenación de los bosques existentes.
- no existen pruebas de que los intereses del sector forestal se incorporen en forma sistemática a la formulación y la reforma de las políticas macroeconómicas.

Las recomendaciones del documento de política de 1978 nunca se implantaron plenamente, y tal vez no hubiera sido posible hacerlo, dada la experiencia en esa época. Hoy en día, luego de más de una década, está surgiendo una nueva política. Las cuestiones centrales en este contexto son: si se necesita un cambio en la política, ¿cuáles son las esferas que más inquietud suscitan, qué es necesario cambiar, y por qué?, y ¿cómo pueden ayudar las experiencias a configurar la nueva política y determinar dónde el Banco puede ser más útil?

No es posible dar respuesta a estas preguntas con el mero examen de la experiencia en materia de proyectos, componentes, ejecución y estudios sectoriales. Otras consideraciones de índole política y social podrían influir en la formulación de políticas, si bien la experiencia brinda en efecto cierto conocimiento, en especial en lo que respecta a los temas que necesitan atención minuciosa. En particular, la experiencia señala que debería otorgarse mayor prioridad a lo siguiente:
- considerar la función de las instituciones, con énfasis particular en los derechos de propiedad;
- concertar acuerdos organizativos;
- mejorar los servicios complementarios (por ejemplo, investigación, extensión, comercialización);
- reconocer las vinculaciones intersectoriales y macroeconómicas que afectan al sector;
- centrar las operaciones en torno al uso de la tierra;
- aumentar la capacidad dentro y fuera del Banco para evaluar los recursos naturales, y
- hallar nuevos instrumentos crediticios, con especial énfasis en el financiamiento.

La manera en que cada una de estas dimensiones se aplica a un país específico debe entenderse mediante los estudios sectoriales, que son condición indispensable para implantar toda política y una fuerza vital para modificarla.

Por consiguiente, el estudio tiene importantes repercusiones para las operaciones crediticias del Banco en los años noventa. Es posible que se necesiten nuevas formas de financiamiento para abordar las imperiosas cuestiones ambientales, para ampliar la oferta de productos forestales y utilizar en forma adecuada los recursos forestales existentes. Según la experiencia lograda, las operaciones de los años noventa deberían ser del tipo "programa", en lugar de proyectos aislados. No debería sorprender esta idea, ya que se está convirtiendo en una práctica habitual en el Banco (por ejemplo, el préstamo sectorial a Côte d'Ivoire). Pero el éxito de los préstamos sectoriales dependerá de lo siguiente:
- una política sectorial,
- un componente integral de ordenación de bosques,
- políticas macroeconómicas favorables,
- una mayor infusión para el perfeccionamiento del capital humano, y
- un reconocimiento claro de la interdependencia que existe entre los bosques, las personas y la cultura.

En el futuro inmediato se podrían considerar las siguientes recomendaciones:
- preparar cada proyecto del sector de modo que se adecue a la política del sector forestal de un país,
- establecer una unidad de evaluación del sector forestal para profundizar los conocimientos del Banco sobre los sistemas naturales que se ven afectados por otras intervenciones en el sector,
- crear nuevos instrumentos crediticios para proyectos que no sean inmediata o directamente productivos (por ejemplo, operaciones de gestión forestal).

Résumé Analytique

Introduction

Cette étude est le premier bilan de l'expérience de la Banque dans le secteur forestier établi par le Département de l'évaluation rétrospective des opérations (OED). Elle couvre trois domaines : la contribution au développement des opérations financées par la Banque, la façon dont ces opérations ont été exécutées et le travail sectoriel. L'objet de ce bilan est d'instaurer des bases plus solides qui aideront les agents d'exécution et les dirigeants de la Banque dans la conception des projets et la formulation de politiques appropriées. La principale raison d'être de cette étude est la nécessité d'évaluer l'expérience acquise dans un secteur qui occupe une place centrale dans le débat sur le développement et l'environnement. Les conceptions du rôle des forêts dans le développement ayant évolué, les organismes donateurs s'efforcent d'élargir leurs programmes de prêt. Il importe donc d'examiner l'expérience passée et d'évaluer dans quelle mesure de nouveaux modes et de nouvelles stratégies de prêt s'imposent.

La présente étude entend également apporter une contribution à l'élaboration de la nouvelle politique forestière de la Banque. A mesure qu'évoluent les grandes orientations de la Banque, plusieurs considérations doivent être prises en compte. Cette étude reconnaît l'importance de l'action des pouvoirs publics et son influence sur les résultats des projets. Souvent, les déclarations de politique générale de la Banque modifient ses objectifs de prêt, réévaluent ses priorités sectorielles, focalisent l'attention sur certaines activités et amènent la Banque à définir un nouvel ensemble d'actions et de réformes institutionnelles. Compte tenu de ce qui précède, ce bilan présente une analyse détaillée du document de politique forestière publié en 1978.

La Banque a accordé plus de 2 milliards de dollars de prêts au secteur forestier. Ce chiffre comprend les prêts consentis pour des projets purement forestiers, mais plusieurs millions de dollars ont également été investis dans les composantes forestières de projets réalisés dans d'autres secteurs, dont l'agriculture et le développement rural, l'énergie, etc. La répartition géographique des prêts est inégale, et la nature des projets a évolué au cours de la dernière décennie. Suite aux recommandations du document de politique forestière de 1978, la Banque a cessé de financer presque exclusivement des projets de foresterie industrielle pour s'orienter vers des projets de développement social ou rural et des projets de foresterie d'environnement. L'intérêt porté avant 1978 au financement des industries tenait pour beaucoup aux conceptions qu'on avait à l'époque du rôle des forêts et du développement. Ces conceptions n'étaient pas propres au secteur forestier; en fait, c'est la façon dont la plupart des programmes de développement étaient conçus. Après la publication du document de politique forestière, un gros effort a été fait pour financer des projets de développement social ou rural et des projets de foresterie d'environnement. La répartition des prêts de la Banque et la façon dont les pays ont réagi à cette réorientation témoignent de cette évolution.

Le travail sectoriel était censé renforcer le lien entre le document de politique forestière de 1978 et le programme de prêt. Ce lien est resté ténu jusqu'au début des années 80, mais il s'est récemment renforcé à mesure que le travail sectoriel s'élargissait. Aujourd'hui, toutes les régions opérationnelles de la Banque s'emploient à formuler des stratégies et des lignes d'action. Les travaux déjà achevés permettent de mieux cerner les problèmes et proposent des solutions à court et à long terme.

Evaluation

L'étude évalue plusieurs dimensions de l'expérience de la Banque dans le domaine du développement forestier : les résultats des projets, les principaux déterminants des résultats, les résultats des composantes forestières des projets, les problèmes d'exécution et l'évaluation du travail secto-

riel. En évaluant ces dimensions, l'étude peut formuler des recommandations opérationnelles utiles pour les projets et les orientations à adopter.

Plusieurs faits importants ressortent de cette évaluation. Premièrement, le bilan global des projets achevés est dans l'ensemble satisfaisant, encore que le programme de prêt se heurte à un certain nombre de problèmes. Cela n'a rien de surprenant étant donné que les projets forestiers mettent assez longtemps avant de donner des résultats et que les institutions du secteur mettent encore plus de temps à se développer. Par conséquent, si, au niveau des projets, les objectifs sont atteints, la consolidation de ces projets de la première génération présente certaines difficultés.

Deuxièmement, les problèmes sont essentiellement de nature sectorielle ou nationale, ce qui reflète les liaisons étroites existant entre le secteur forestier et les autres secteurs, liaisons qui sont souvent ignorées. C'est dans le domaine des incitations macroéconomiques (politique des prix, crédit) et dans la façon dont ces incitations influent sur les modes d'exploitation des sols que ces problèmes se font le plus sentir. La plupart des problèmes sectoriels sont d'ordre institutionnel, financier (le développement forestier est un investissement à long terme) et organisationnel. Dans bien des cas, les solutions à ces problèmes dépassent le cadre d'un seul projet. Par exemple, les problèmes de déforestation que connaît la Côte d'Ivoire n'ont pas été résolus par un accroissement de l'offre. Parfois, la Banque n'a pas la compétence ni l'avantage comparatif voulu pour les résoudre.

Troisièmement, la réorientation en faveur des projets forestiers "nouveau style" a rendu le programme de prêt de la Banque plus complexe :

- du fait que, sur le plan institutionnel, les modes traditionnels d'organisation du développement qui privilégient le découpage sectoriel traditionnel (par exemple, agriculture, élevage, industrie, transports, travaux publics) n'étaient plus pratiques ni efficaces. Les projets nouveau style (foresterie d'environnement, aménagement de bassins versants) exigent de nouvelles structures institutionnelles qui transcendent les secteurs ou les régions géopolitiques. Comme ces changements institutionnels prennent du temps, les tensions se sont accentuées entre les formes d'organisation traditionnelles et celles qui étaient nécessaires pour mener à bien ces opérations;
- du fait que les bénéficiaires étaient très nombreux et les objectifs de développement beaucoup plus vastes (par exemple, croissance, répartition du revenu, énergie, viabilité).

Les paramètres de base des prêts sont néanmoins restés inchangés : même type de rapports de supervision, même type d'exigences et de coefficients, même périodes de décaissement, etc.

Quatrièmement, les projets de développement rural ou de foresterie sociale et les projets de foresterie d'environnement se sont révélés difficiles à formuler et à exécuter. Les projets de ce type tendent à accentuer les faiblesses sociopolitiques et institutionnelles intrinsèques et, lorsque c'est le cas, ils compromettent la viabilité à long terme. Par exemple, certains projets accentuent les pressions en faveur d'une modification des régimes traditionnels de propriété. Or, l'expérience montre qu'il faut beaucoup de temps pour changer ces régimes de façon durable. Dans certains pays, les régimes de propriété ont des répercussions sur les opérations forestières. La participation des collectivités et le degré de réalisation des objectifs d'environnement et d'équité sont également des facteurs qui influent sur les résultats. Du fait de cette complexité croissante, il faut beaucoup plus de temps et de ressources pour préparer un produit mieux adapté aux besoins.

Les projets de foresterie sociale touchent un grand nombre de bénéficiaires. Pour les pauvres des zones rurales, la plantation d'arbres est devenue un moyen unique de se constituer un capital. Les femmes et les enfants tirent parti des projets de foresterie, bien qu'on ne sache pas exactement dans quelle mesure. Quatre facteurs importants sembleraient limiter l'accès des femmes à ces avantages. Premièrement, les différends relatifs aux droits de propriété ne sont pas réglés en faveur des femmes. Deuxièmement, les organisations locales sont peu à même de défendre les droits de la femme. Troisièmement, le contexte culturel complexe et la structure de caste limitent souvent la participation des femmes à l'activité économique. Enfin, les solutions techniques proposées pour régler les problèmes existants (par exemple, la préférence pour tel ou tel type de combustible) reposent souvent sur des hypothèses qui ne tiennent pas compte des vues ni des connaissances des femmes.

L'impact sur l'environnement des projets forestiers financés par la Banque a été positif. S'ils sont bénéfiques pour l'environnement, c'est surtout parce qu'ils améliorent l'utilisation des sols et, par conséquent, réduisent le degré d'érosion, de sédimentation et de désertification; en outre, ils régénèrent les terres peu fertiles; stabilisent les conditions climatiques; améliorent la capacité des écosystèmes de régulariser le cycle de l'eau et de créer des conditions plus propices au développement; et ils améliorent le cadre de vie en général. Pour ce qui est d'enrayer et de stabiliser le processus de désertification, l'expérience montre que les mesures qui s'imposent dépassent largement le cadre du secteur forestier. C'est particulièrement le cas lorsque la désertification est due, par exemple, à la pression démographique, à une capacité de charge limitée par rapport au cheptel existant, à des pratiques agricoles peu judicieuses, etc.

Pour les projets forestiers comme pour ceux qui sont réalisés dans d'autres secteurs de l'économie, les principaux

déterminants du succès sont les suivants : préparation soigneuse (objectifs réalistes, utilisation de techniques appropriées et faible part ou part acceptable de risques), bonne structure de commercialisation, gestion efficace, et capacité institutionnelle adéquate. Les défauts qui semblent propres aux projets forestiers "nouveau style" sont les suivants : délais d'exécution trop courts, responsabilités institutionnelles trop étroitement définies et systèmes d'attribution des droits de propriété et d'utilisation insuffisants.

Une analyse approfondie des composantes importantes de projets (par exemple, gestion forestière, aménagement et régénération de bassins versants), menée dans le cadre de cette étude, montre que certaines composantes donnent des résultats peu satisfaisants, quel que soit le projet. C'est le cas, par exemple :

- de la gestion des forêts naturelles,
- du suivi et de l'évaluation, et
- de la régénération de bassins versants.

Ces composantes ont pris une place plus importante dans la nouvelle génération de projets à mesure qu'on mettait l'accent sur la gestion et le progrès technologique et, dans certains cas, elles sont devenues le seul pôle du projet. A cet égard, l'expérience acquise avec les anciens projets peut être extrêmement utile à la conception et à l'exécution des projets d'aujourd'hui.

L'une des constatations surprenantes de l'étude est que les problèmes d'exécution n'ont pas beaucoup changé au cours des dernières décennies. Qui plus est, on constate que le personnel des services opérationnels juge les projets de foresterie sociale et d'environnement de façon plus défavorable sans toutefois les juger non satisfaisants. Les similitudes qu'on retrouve dans toutes les opérations forestières renforcent encore l'évaluation globale du degré de réalisation des objectifs de développement. Autre constatation importante, une supervision plus étroite ne se traduit pas nécessairement par de meilleurs résultats; en outre, le profil de compétence des missions envoyées sur le terrain n'est pas adapté au type de problèmes d'exécution rencontrés; enfin, des projets similaires exécutés au cours des trois dernières décennies sont notés de manière similaire.

L'étude confirme qu'un travail sectoriel insuffisant retentit sur les résultats au niveau du projet et de la politique générale. Le document de politique forestière publié par la Banque en 1978 était censé stimuler et non remplacer le travail sectoriel; or, le travail sectoriel a mal étayé cette politique. En fait, la Banque a mis en oeuvre des projets forestiers dans plusieurs pays sans le bénéfice d'un travail sectoriel préalable. Plus grave encore est le manque d'évaluation des ressources naturelles et de suivi et d'évaluation, lesquels permettraient une gestion plus efficace, une meilleure évaluation des perspectives de développement au niveau sectoriel et régional et une application plus réaliste du document de politique forestière de 1978. Le suivi et l'évaluation laissent tant à désirer que l'évaluation ex post est devenue une tâche très difficile.

Il ressort d'un bref examen du travail sectoriel effectué par d'autres organismes de développement que la Banque n'est pas la seule à avoir des carences dans ce domaine. Deux initiatives lancées conjointement par plusieurs institutions ont inversé cette tendance au milieu des années 80, à savoir le Plan d'action forestier tropical et le Plan national pour l'environnement. Ces deux initiatives sont relativement récentes et il faudra attendre un certain temps avant qu'elles donnent les résultats escomptés. Une faible capacité institutionnelle et le manque de volonté politique sont les principales contraintes qui pèsent sur le travail sectoriel. Il y aurait peut-être lieu d'adopter une approche différente qui permettrait à la Banque de jouer un rôle plus actif dans la conception et l'exécution des études et des évaluations sectorielles. C'est pourquoi celle-ci devrait envisager la création d'un service d'évaluation du secteur forestier analogue à ceux qui existent déjà pour les secteurs de l'énergie, de l'alimentation en eau et de l'irrigation. Les ressources dont ce service serait doté devraient provenir d'un large éventail de donateurs intéressés.

Leçons à tirer

L'analyse de la contribution au développement des projets forestiers permet de dégager un certain nombre de leçons préliminaires et de thèmes :

- il conviendrait de planifier et de préparer avec soin les projets forestiers, et d'envisager de plus longs délais d'exécution pour certains types de projets;
- un simple projet ne peut à lui seul remédier aux grands problèmes sectoriels ou aux déséquilibres structurels de l'économie;
- un mécanisme efficace de coordination est indispensable pour assurer la coopération et la coordination entre les divers échelons participant à la planification et à l'exécution d'un projet;
- le suivi et l'évaluation laissent souvent à désirer, ce qui ne facilite pas la supervision, ni l'évaluation finale;
- il conviendrait d'examiner à fond le régime foncier et les différends que peut susciter l'utilisation des sols dès le stade de la formulation du projet;
- le ratio élevé des charges récurrentes aux coûts d'investissement est un obstacle majeur compromettant la viabilité des projets forestiers au niveau national, surtout lorsque des pressions s'exercent en faveur d'une réduction des dépenses publiques;
- l'analyse et les programmes de marché doivent faire partie intégrante de la préparation des projets;
- la politique des prix doit refléter la valeur réelle des forêts en termes de flux et de stock;

- l'aménagement des zones situées autour des forêts résiduelles doit devenir une priorité nationale; et
- les gouvernements n'ont pas, tant s'en faut, des moyens suffisants pour régler tout seuls les problèmes que posent le déficit en bois et la déforestation.

Certaines conclusions générales de l'étude ont des implications importantes pour la politique à adopter. Par exemple :

- Un grand nombre de rapports de supervision ont souligné que la plupart des projets forestiers se heurtaient à de très grosses difficultés financières.
- Aucune étude exhaustive des liaisons intersectorielles n'a été effectuée, bien qu'il soit reconnu que les résultats des projets dépendent des effets qu'ont les politiques macroéconomiques sur l'utilisation des terres et la gestion des forêts existantes.
- Il ne semble pas que les exigences du secteur forestier soient systématiquement prises en compte dans la formulation et la réforme de la politique macroéconomique.

Les recommandations du document de politique forestière de 1978 n'ont jamais été totalement appliquées. Etant donné l'expérience qu'on avait à l'époque, il est probable qu'elles ne pouvaient pas l'être. Aujourd'hui, après plus d'une décennie, de nouvelles orientations se dessinent. Les questions clés sont les suivantes : Si un changement d'orientation est nécessaire, dans quels domaines faut-il faire porter l'action, et pourquoi? Et comment l'expérience acquise peut-elle nous aider à définir ces nouvelles orientations et à évaluer les secteurs où la Banque peut être le plus utile?

Il ne suffit pas de passer en revue les résultats des projets et des composantes de projet, la contribution au développement et le travail sectoriel pour pouvoir répondre à ces questions. D'autres considérations politiques et sociales peuvent influer sur la formulation de ces orientations, encore que l'expérience donne des renseignements importants, surtout sur les questions qui méritent une grande attention. Il semble qu'une plus haute priorité doive être accordée aux points suivants :

- le rôle des institutions, et plus particulièrement les droits de propriété;
- les aspects d'organisation;
- l'amélioration des services complémentaires (par exemple, la recherche et la vulgarisation, la commercialisation);
- la prise en compte des liaisons intersectorielles et macroéconomiques influant sur le secteur forestier;
- le centrage des opérations autour de l'utilisation des sols;
- le renforcement de la capacité d'évaluation des ressources naturelles à l'intérieur et à l'extérieur de la Banque; et
- la recherche de nouveaux instruments de prêt, et plus particulièrement de moyens de financement.

C'est dans le contexte du travail sectoriel qu'on peut le mieux comprendre comment chacune de ces dimensions s'applique à un pays donné. Le travail sectoriel joue un rôle essentiel dans l'exécution des politiques, quelles qu'elles soient, et il joue un rôle vital lorsqu'il faut modifier ces politiques.

L'étude a donc des conséquences importantes pour les prêts de la Banque au cours des années 90. De nouvelles formes de prêt seront peut-être nécessaires pour répondre aux impératifs de l'environnement et pour accroître l'offre de produits forestiers, et gérer comme il convient les ressources forestières existantes. Compte tenu de l'expérience, les opérations menées pendant les années 90 devraient être du type "programme" plutôt que des projets ponctuels. Cette approche n'a rien de surprenant car elle est déjà mise en pratique à la Banque (par exemple, le prêt sectoriel à la Côte d'Ivoire). Cependant, pour que les prêts sectoriels donnent de bons résultats, il faudra :

- une politique sectorielle;
- une composante intégrée de gestion forestière;
- un bon programme d'action macroéconomique;
- un gros effort de valorisation du capital humain; et
- une véritable prise en compte des interactions entre la forêt, l'homme et la culture.

Dans l'immédiat, on peut envisager les recommandations ci-après :

- moduler chaque projet de façon qu'il reflète les grandes orientations du pays dans le secteur forestier;
- créer un service d'évaluation du secteur forestier pour aider la Banque à mieux connaître les systèmes naturels touchés par d'autres interventions sectorielles;
- créer de nouveaux instruments de prêt pour les projets qui ne sont pas immédiatement ni directement productifs (par exemple, les opérations de gestion forestière).

1. Bank Lending, Policy, and Sector Work in Forestry

Introduction

Justification and Objectives

Changes in the world's forests directly affect the economic, social, and environmental conditions of both rural and urban populations. Forests provide an enormous array of useful products and services, ranging from goods for direct household consumption and for industrial users to environmental benefits. In addition, forests in developing countries have particular significance for poor households, especially for women, and deforestation can directly undermine their livelihoods.

Forest resources are being depleted at an alarming rate, and the international debate continues to be infused with widely differing opinions. As a consequence, the development agenda in forestry has become more complex, and reaching a consensus on policies or on sectoral strategies is difficult. This is the result of a change in perception within the Bank and its client countries on how forestry programs can contribute to a sustainable development strategy at the country level. One of these perceptions is that adequate management of natural resources, including forestry, is a basic condition for sustainable development and for satisfying the growing needs of an expanding population. It was to help alleviate some of these conditions that Bank policy in the sector changed in 1978. As a result of this policy change, the Bank has played a crucial role in conceiving forestry development as having a much broader link to the economy and the environment and in incorporating most of these dimensions into a policy dialogue with client countries and other donors.

In the context of this present study, it is opportune to assess the Bank's experience in forestry, given the options and prevailing constraints in the past decade, and to assess how this experience has been incorporated into the lending program. Several elements justify this evaluation study. First, it helps to put into perspective the economic and social significance of forests in development. Second, it provides feedback to guide future policy, procedure, and practice. Third, it complements recent analyses of Bank involvement in agriculture and rural development, energy, land management, and environment.

The study assesses Bank experience through a review of forestry projects and their components (Annex 1), an analysis of implementation issues, and an evaluation of sector work. It makes recommendations for eventual changes in sector policies and proposes new avenues for Bank lending.

Approach Used

The group of projects reviewed here includes all completed operations that are classified by the Bank as free-standing forestry projects.[1] The study also reviews ten projects—also completed—that provide additional insights on issues related to forestry, land use, and institution-building in the forestry sector. The review of sector-related material is an important complement to analyzing project performance, and the sample of sector reports reviewed is fairly large (Annex 2). Although not fully comprehensive, this review identifies the main areas in which some consensus has emerged, in terms of project design and evaluation or in terms of priorities at the institutional and policy levels.

The performance of project components is also assessed. Aggregate results may hide important development performance issues at the project-component level. The review of experience at this conceptual level is valuable for identifying lessons for design and implementation in the future.

1. This report does not review experience with IFC operations.

Information contained in supervision reports of both completed and ongoing operations is reviewed. The linkage between completed and ongoing operations greatly enriches the findings of this study; one of the most important benefits is to provide a check on the relevance of findings from completed operations. In addition, attention to implementation issues will help in designing a lending program for the 1990s. This study identifies the most important issues confronting the forestry sector today. The process of issues identification follows a three-tier evaluation: projects and their components, operational effectiveness, and sector work. Finally, the study proposes elements of a Bank forestry development strategy, making reference to the policy, investment, and institutional reforms that will need to be addressed in any Bank policy statement.

Approaches to Forestry Development

Lending in forestry has developed in several directions to a level of increasing complexity. The program has also developed rapidly, largely in response to a new role of forests in development and to environmental imperatives at country or global levels. Within this context, performance of completed projects has been satisfactory overall, although the program is facing a large number of emerging issues and problems.

Two different approaches have been followed during the last three decades. The first approach—here called "forest first"—consisted of projects (largely industrial forestry projects) that were clearly well-defined in terms of space and institutional arrangements for development implementation. Important lessons should be drawn from these projects, as we now learn what the underlying assumptions were regarding sources of growth and sustainability. With respect to sources of growth (i.e., conditions necessary for capital accumulation), those projects assumed that natural capital (i.e., the forest) was relatively abundant compared with all other forms of capital in the development effort. Scarce forms of capital were financial and physical, as demonstrated by the relative importance of project components. As the forest was perceived to be an abundant and underutilized resource, forest exploitation was expected to have very high economic returns.

In the "forest first" approach, achieving sustainability depends on an agreement on a set of working rules (including economic incentives) to manage and exploit the forest. These rules set the maximum sustainable yield, maximum allowable cut, stumpage values, replanting rates, land clearing methods, and so on. Whether an agreement is reached or not depends on the perceived costs and benefits of alternative rules. The ability to achieve sustainability depends upon the knowledge that planners and developers have of natural laws, as different types of forests, ecological environments, and development methods require different working rules.

This approach reached its limits when new socio-institutional dimensions were brought in to forestry development. Several of the dimensions previously considered "disturbances" of the exploitation and management of forests became central to the new approach. The multiproduct nature of forests and the roles of communities affected by forestry development are two examples of "disturbances" of the stability of the forest first approach.

The need to continue expanding our knowledge about the basic biospheric laws, the real characteristics of the forest resource, and the technical and scientific aspects of a renewable natural system are suggested by the problems encountered in projects. This knowledge was always perceived as a necessary background to sector work, regardless of the actual approach taken to forestry development or an expectation that basic approaches would change.

The second approach—called "forest second"—takes a more social and environmental direction. People are central in this approach, and the task is to identify new forms of capital accumulation and sustainability. Natural, human, and institutional capital are no longer perceived as abundant. In fact, both the planning and design of forestry projects demand an understanding of the role of people in forestry development, in improving the management of natural forests, and in finding the necessary institutional arrangements for growth in the sector.

Sustainability is not just a matter of finding a set of working rules in accordance with basic natural law, but of reconciling those rules with those of the communities involved. Thus, sustainability became dependent on two sets of working rules, which the institutional arrangements would help to reconcile. In public or private lands, reconciling the two sets of working rules has been possible. However, in lands under multiple rights systems or under common property rights systems—apparently the most abundant and environmentally fragile—finding the optimal arrangement for sustainability has not been possible. In fact, in those lands it has been difficult to find a development approach that would enable even the accumulation of capital. Thus, the forest second approach may also be reaching the limits of its operational effectiveness.

This dilemma presents some important challenges to the future of lending for forestry and for environmental projects in general. If it is difficult to find effective institutional arrangements to make the laws of nature compatible with the behavior of individuals or communities and management, then protecting forest resources may become a very complex proposition. Development efforts should not be diminished, but should be bolstered by a better understanding of and a new approach to forestry projects and programs.

Table 1.1: World Bank-Financed Forestry Projects, by Country, 1949–90

Project Name	*Borrower*	*Approval Year*	*Loan/Credit (US$ Millions)*	*Type*[a]
Forestry	Yugoslavia	1949	2.70	I
Forestry	Finland	1949	2.30	I
Chemical Pulp and Newsprint Mills[b]	Chile	1953	20.00	I
Karnaphuli Paper Mill[b]	Bangladesh	1955	4.20	I
Forestry	Zambia	1968	5.30	I
Forestry	Kenya	1969	2.60	I
Jengka Forestry	Malaysia	1970	8.50	I
Forestry	Finland	1972	20.00	I
Forestry I	Madagascar	1974	13.60	I
Forestry	Burma	1974	24.00	I
Antalya Forest Utilization[b]	Turkey	1974	40.00	I
Forestry II	Kenya	1975	20.00	I
Forestry Technical Assistance	India	1975	4.00	I
Forestry I	Tanzania	1976	7.00	I
Industrial Forestry I	Zambia	1977	16.80	I
Smallholder Treefarming & Forestry[b]	Philippines	1977	6.68	S
Hazara Forestry Preinvestment	Pakistan	1977	1.70	I
Forestry	Guyana	1978	10.00	I
Integrated Forestry	Liberia	1978	6.00	I
Forestry Technical Assistance	Niger	1978	4.50	S
Forestry Development	Turkey	1978	86.00	I
Forestry	Côte d'Ivoire	1979	18.00	I
Forestry I	Nigeria	1979	31.00	I
Forestry I	Jamaica	1979	12.00	I
Forestry	Burundi	1979	4.30	S
Forestry II	Burma	1979	35.00	I
Forestry Development	Greece	1979	25.00	I
UP Forestry Development	India	1979	23.00	S
Gujarat Comm. Forestry	India	1979	37.00	S
Afforestation I	Mali	1979	4.50	S
Forestry	Portugal	1980	50.00	I
Integrated Forestry & Livestock	Rwanda	1980	21.00	S
NRDP Wood Energy II[b]	Malawi	1980	13.80	S
Mangrove Forests	Bangladesh	1980	11.00	S
Forestry	Burkina Faso	1980	14.50	S
Forestry I	Nepal	1980	17.00	S
Watershed Management I[b]	Philippines	1980	38.00	E
Kandi Watershed & Area Development[b]	India	1980	30.00	E
Mangoro Forestry II	Madagascar	1981	20.00	I

continued

Lending Program

Trends in Lending Commitments: Projects

The first World Bank loans in forestry went to Finland (US$2.3 million) and to Yugoslavia (US$2.7 million) in 1949. Since then, Bank loans have gone to more than 84 free-standing forestry projects amounting to $2,250 million, the majority since 1978.[2] Table 1.1 lists and categorizes all free-standing forestry projects financed by the Bank since 1949.

Forestry Lending by Regions, 1949 to 1990. Of the 84 free-standing forestry projects financed by the Bank during its history, 81 percent have been in just two regions: 44 percent in Africa and 37 percent in Asia. These projects represent nearly 80 percent of lending amounts as well. The bulk of this lending has taken place since 1979. Before that period, because of a few relatively high-cost projects, EMENA captured the largest share of Bank lending (50 percent). Only six projects totaling $140 million were implemented in the LAC region from 1949 to 1990 (representing only 6 percent of Bank forestry lending).[3] In the next five years, however, the regional composition of lending may significantly

2. The estimates presented here are as of January 1990. This report, while emphasizing free-standing forestry projects, has also included other forest/land use-related projects. Because of several constraints, little is said about forestry components in other agricultural and rural development projects.

3. A LAC regional strategy paper is under preparation. This paper should identify the main reasons for such a low level of lending.

Table 1.1: ***continued***

Project Name	*Borrower*	*Approval Year*	*Loan/Credit (US$ Millions)*	*Type*[a]
Wood Industries I	Burma	1981	32.00	I
Forestry	Senegal	1981	9.30	S
West Bengal Social Forestry	India	1981	29.00	S
Forestry	Cameroon	1982	17.00	I
Forestry II	Niger	1982	10.10	S
Forestry III	Kenya	1982	37.50	S
Sao Hill Forestry Phase II	Tanzania	1982	12.00	I
Forestry	Morocco	1982	27.50	I
Haryana & J.K. Social Forestry	India	1982	33.00	S
Forestry	Haiti	1982	4.00	S
Forestry II	Nepal	1983	18.00	S
Rural Afforestation	Zimbabwe	1983	7.30	S
Quesso Wood Processing[b]	Congo	1983	12.00	I
Forestry I	Sri Lanka	1983	9.00	I
Karnataka Social Forestry	India	1983	27.00	S
Himilayan Watershed Management[b]	India	1983	46.20	E
Rainfed Areas Watershed Dev.[b]	India	1983	31.00	E
Forestry	Benin	1984	5.40	I
Forestry I	Bhutan	1984	5.50	S
Forestry II	Zambia	1984	22.40	I
Wood Industries II	Burma	1984	25.00	I
Kerala Social Forestry	India	1984	31.80	S
Forestry II	Burundi	1985	12.80	S
Forestry II	Côte d'Ivoire	1985	31.30	I
Sabah Forestry	Malaysia	1985	6.50	I
Forestry	China	1985	47.30	I
Forestry II	Bangladesh	1985	28.00	S
National Social Forestry	India	1985	165.00	S
Forestry—Bosnia	Yugoslavia	1985	35.00	I
Agricultural Forestry	Guyana	1985	8.80	I
Forestry II	Nigeria	1986	71.00	S
Wood Energy II	Malawi	1986	16.70	S
Forestry	Ethiopia	1986	45.00	S
Forestry II	Mali	1986	6.30	S
National Forestry Res. & Dev.	Malaysia	1987	9.00	I
Forestry	Tunisia	1987	20.00	S
Minas Gerais Forestry	Brazil	1987	48.50	S
Forestry/Firewood	Uganda	1987	13.00	S
Forestry II	Rwanda	1987	14.10	S
Forestry Inst./Conservation	Indonesia	1988	34.00	E
Forest Management & Conservation	Madagascar	1988	7.00	I
Forestry Resource Management	Ghana	1988	39.40	I
Forestry II	Bhutan	1988	1.06	S
Da Xing An Ling Forestry	China	1988	56.90	I
Forestry Development	Mexico	1989	45.50	S
Hill Community Forestry	Nepal	1989	30.50	S
Forestry Sector Development	Sri Lanka	1989	19.90	S
Forestry & Fisheries Management	Guinea	1989	8.00	E
Forestry II	Morocco	1990	49.00	E
Forestry II	Côte d'Ivoire	1990	80.00	E
Forest Resource Management & Dev.	Zimbabwe	1990	14.50	E
Natural Resource Management	CAR	1990	19.00	E
National Afforestation I	China	1990	300.00	I
Forestry Development	Kenya	1990	19.90	S
Forestry Instit. & Conserv. II	Indonesia	1990	20.00	E
Total			2,485.94	

a. Types of forestry: I = industrial; E = environmental; S = social.
b. Agricultural sector operations examined as part of this study.

change. Table 1.2 summarizes the Bank's forestry projects, breaking them down by region, and equivalent loan amounts, for the periods 1949–78, 1979–90, and for the entire period of Bank involvement in this sector.

The average size of a loan in forestry is relatively small compared with other sectors in Bank lending. The average annual lending operation between 1949 and 1990 in Africa and Asia has been $18 million and $38 million respectively; in EMENA and LAC, it has been $29 million and $24 million for the same period.

Lending by Type of Projects.[4] Evidence shows a marked shift in types of forestry projects and amounts of lending for different types of projects from 1953–78 to 1979–90. Bank lending to the forestry sector before 1978 was predominantly in industrial forestry. In lending to social forestry (nearly US$1,000 million) for the period 1949 to 1990, Asia's and Africa's shares have predominated —nearly 52 percent and 35 percent, or 87 percent together. Of lending to industrial forestry, Africa and Asia together account for nearly 72 percent. Between 1953 and 1978, however, EMENA represented nearly 50 percent of industrial forestry project lending. Table 1.3 summarizes all forestry projects by type (social, industrial, environmental) and further, by region, for the periods 1949–78, 1979–90, and for the entire period of Bank involvement in this sector (1949–90).

If one includes the existing watershed management projects—not considered "free-standing forestry" by the standard classification—there are 11 environmental forestry operations. All of these projects were financed after 1979 and amount to about $370 million. Three of the projects were in India, and one each were in the Philippines, Indonesia, Côte d'Ivoire, Guinea, Zimbabwe and the Central African Republic. All regions have had relatively equal numbers of other projects (such as agriculture, rural development, and energy) with forestry components.

4. The classification of forestry projects into different categories is highly arbitrary in some cases. There are many projects that could be considered in more than one category.

Bank Forestry Policy

Sector Policy before 1978

Up to 1978, the World Bank had no formal, published policy on forestry development. In the two decades before the publication of the policy paper, forestry lending was an insignificant proportion of total Bank lending or of agriculture sector lending. As noted earlier, the 1950s and 1960s saw a style of development that emphasized economic growth, with forestry projects showing a pronounced emphasis on developing forest industries through sawmills, paper mills, and logging equipment. This emphasis reflects assumptions about forestry development that were similar to those held in designing the strategy for other sectors.

Though the approach prior to 1978 was *ad hoc*, a few of its dimensions should be mentioned. First, most projects had simple institutional arrangements: one agency, one factory, and land with well-defined property rights. Second, projects were confined to well-delimited and relatively small geographic areas. This permitted a higher degree of integration, monitoring, and control. Within this context, the *ad hoc* approach was translated into discrete operations with a regional rather than countrywide character. Third, the Bank considered sustainability to be achievable by following a set of "working rules" as to how to exploit the

Table 1.2: World Bank Forestry Lending by Region, 1949–90

	1949–78		*1979–90*		*All Years*	
	Number of Operations	*Lending Commitments (US$ Millions)*	*Number of Operations*	*Lending Commitments (US$ Millions)*	*Number of Operations*	*Lending Commitments (US$ Millions)*
Africa	8	75.8	33	666.9	41	742.7
	(38)	(25)	(45)	(31)	(44)	(30)
Asia	5	47.38	30	1,196.66	35	1,244.04
	(24)	(15)	(41)	(55)	(37)	(50)
EMENA	6	152.7	6	206.5	12	359.2
	(29)	(50)	(8)	(9)	(13)	(14)
LAC	2	30	4	110	6	140
	(10)	(10)	(5)	(5)	(6)	(6)
All Regions	21	305.88	73	2,180.06	94	2,485.94
	(100)	(100)	(100)	(100)	(100)	(100)

Note: Numbers in parentheses represent figures as a percentages of the total.

forest over the short and medium term. These working rules had to do, for example, with the levels of "maximum allowable cut," "sustainable yield," and "stumpage value" of forest resources. Any other rule or intervening factor was assumed to be a disturbance in the system.

Within that context, the *ad hoc* approach meant there were very few interventions to manage the natural environment or to increase the institutional capacity of the countries involved (at least on a large scale).

The Policy Paper of 1978

Reflecting important changes taking place in economic thinking at the time, the 1978 forestry policy paper attempted to shift emphasis away from industrial forestry toward concerns related to the participation of those benefiting from forestry development and to the environmental consequences and trends resulting from development. The policy recognized the significance of ecological benefits, the trends in forest destruction, and the increasing scarcity of the resource.

The paper had four goals: to impart a sense of the importance of forests, as an integral part of both traditional and modern societies; to expand the role of forests in maintaining human well-being and economic systems; and to expand the types of forest programs and projects that would be funded by the Bank. One element of the strategy was the opening of new opportunities to integrate forestry and rural development in light of many sectoral problems (e.g., loss of forest cover, fuelwood deficit) and of foreign exchange earning possibilities and the need to improve environmental conditions.

The paper fostered a broad view of forestry and its role in economic development. Areas suitable for, or even requiring, forestry activities first included areas of desertification due to overgrazing and periodic burning; second, areas of overpopulation and wood shortages leading to degradation of watersheds and/or use of agricultural residues for fuel rather than fertilizer; and third, wood-abundant areas with severe pressures of population or poverty that are being shortsightedly converted to unsustainable agriculture. The promotion of rural development and the raising of rural incomes, particularly of the poor, was stated as the major purpose of Bank forestry projects.

Operational Guidelines on Forestry. Two years before the Bank published its 1978 policy paper, the volume and nature of forestry lending began changing. These projects demonstrated the Bank's adoption of the policy paper's

Table 1.3: World Bank Lending by Type of Forestry, 1949–90

	1949–78		*1979–90*		*All Years*	
	Number of Operations	*Lending Commitments (US$ Millions)*	*Number of Operations*	*Lending Commitments (US$ Millions)*	*Number of Operations*	*Lending Commitments (US$ Millions)*
Social Forestry						
Africa	1	4.50	17	321.10	18	325.60
Asia	1	6.68	15	476.76	16	483.44
EMENA	0	0.00	1	20.00	1	20.00
LAC	0	0.00	3	98.00	3	98.00
Sub-Total	2	11.18	36	915.86	38	927.04
Industrial/Mgmt/ Sawmills/Logging						
Africa	7	71.30	12	224.30	19	295.60
Asia	4	40.70	9	520.70	13	561.40
EMENA	6	152.70	4	137.50	10	290.20
LAC	2	30.00	1	12.00	3	42.00
Sub-Total	19	294.70	26	894.50	45	1,189.20
Environmental/Watershed Mgmt						
Africa	0	0.00	4	121.50	4	121.50
Asia	0	0.00	6	199.20	6	199.20
EMENA	0	0.00	1	49.00	1	49.00
LAC	0	0.00	0	0.00	0	0.00
Sub-Total	0	0.00	11	369.70	11	369.70
Grand Total	21	305.88	73	2,180.06	94	2,485.94

emphases on environmental and protective forestry, on establishing fuelwood plantations in rural areas, and on support for ongoing national forestry programs. A new set of operational guidelines for lending reflected this shift in focus. These guidelines can be summarized in four points:

- A new balance was to be achieved in forest sector funding between industrial projects and rural development and environmental protection projects.
- Rural afforestation and development (raising incomes and productivity of poor farmers) was to be emphasized in Bank forestry lending.
- The ecological considerations of projects, particularly forestry projects, were to be given high priority.
- The strengthening of forestry institutions was to be given high priority as a key to any success in achieving forestry objectives.

Bank Sector Work in Forestry

Prior to the policy paper of 1978, the Bank had conducted only two major pieces of forestry sector work: on industrial development in Indonesia and on forestry in West Africa. Forestry issues, principally industrial forestry issues, were touched upon in a few sector reports for the agriculture or industrial sectors and in a small number of economic reports.

Most of these reviews show striking similarities in the key issues highlighted, as well as the types of actions recommended. Over the decade, some changes in focus and thinking have become evident; issues and recommendations, however, have remained surprisingly the same.

Evolution of Thinking in Sector Work

Although many issues and recommendations in forestry sector work have remained virtually the same during the period under review, there has been an important shift in focus and thinking. Most recent reviews focus more strongly than earlier ones on intersectoral links and on the need for comprehensive land-use planning. They also explain the failure of market mechanisms, and the need to capture more fully economic rents through raising fees and royalties, etc., and to halt the "mining" of the resource. They have also introduced the biological diversity issue and emphasize more strongly recommendations to undertake various conservation activities.

Three important changes have occurred since the mid- and late-1970s. First, earlier sector work emphasized the augmentation of wood supplies, largely through government intensification of management. The view was that there was not so much a shortage of wood resources as a shortage of intensive management. Sector reviews were more likely to recommend government establishment of plantations and even the rehabilitation of state wood-harvesting and processing enterprises. Many natural forest areas were viewed as inefficient use of tree-growing space because of low rates of natural production, and some reports viewed their replacement with fast-growing plantations as the only means to make up the shortfall in wood products. Although more recent sector work may still recommend government establishment of fast-growing plantations, it

Box 1.1: Key Issues in Bank Forestry Sector Reports

- Rapid depletion of the natural forest resource.
- Growing gap in supply and demand of forest products.
- High population growth rate.
- Uncontrolled and destructive logging practices; unsupervised concessions.
- Agricultural encroachment; competition with agriculture sector.
- Growing shortfall in industrial wood products; import costs.
- Growing fuelwood scarcity.
- Waste of comparative advantage in forestry production.
- Environmental degradation associated with loss of forest.
- Lack of financial and technical capacity of governments to handle problem.
- Poor policy and institutional environment to stimulate private investment.
- Poor capture by governments of economic rents from sector (loss to foreign or multinationals).
- Poor fiscal policies; necessity to raise prices, taxes, fees, royalties.
- Lack of incentives to encourage sustainable management and efficient use.
- Inadequacy of market mechanisms to fully capture cost of forest conversion.
- Weak national forestry agencies, especially in sector analysis and planning capabilities and in capacity to monitor and supervise logging.
- Lack of a comprehensive forest inventory.
- Lack of a comprehensive sectoral strategy.
- Lack of land use planning.
- Inadequate organizational structure and legal status of forest agencies.
- Inadequate, outdated legislation.
- Insufficient public focus and investment in the forestry sector.
- Lack of appreciation of the role and importance of the sector.

is more likely to emphasize establishment of a favorable climate for private sector involvement and the expansion of farm forestry. Some reports now even recommend that governments rehabilitate, manage, and utilize existing plantations and even divest themselves of some industrial forestry interests, such as wood-processing plants. Moreover, all reports now are more likely to emphasize the conservation and sustainable management of remaining natural forest areas rather than their conversion to other uses.

Second, the latest sector work has begun to pay greater attention to the links between forestry and conservation of biological diversity, wildlife, and other environmental values. Although even fairly early sector work has some coverage of environmental issues, it tended to focus almost exclusively on the role of forests in soil conservation and water flow accentuation. The latest reports focus attention on these additional environmental issues, important because only these issues begin to truly address the reasons for preserving natural forests. The latest sector work also places more emphasis on actual conservation/environmental activities.

Third, in the 1980s, there was increasing recognition of other types of intersectoral linkages affecting the forestry sector. Sector reports for Ghana, Indonesia, Philippines, and Sudan, for instance, tend to highlight the fragility of the forest resource base and try to encompass the multidimensional character of the forestry sector by bringing together several issues; e.g., land tenure, incentives, technology, forest extension, forest legislation, equity, energy and environmental concerns, and research and training.

2. *Institutional Response and Development Performance*

Institutional Response To Policy Change

As a clear response to the policy statement of 1978, the Bank changed the thrust of its forestry lending program. Several projects under preparation during 1977–78 were redesigned (to increase community participation), elements of the sectoral policy were revised, and the policy dialogue with several of the client countries took a new direction. The second oil shock of 1979 accelerated the need to find new—and renewable—sources of energy to satisfy the demands of both urban and rural populations.

As far as the lending program was concerned, the response was extremely efficient, and lending grew rapidly and exceeded the policy paper's targets. In the five years between 1977 and 1981, lending obligations reached $635 million (exceeding the $500 million target set by the policy paper). Between 1968 and 1978, the Bank financed on average one project per year at an average cost well below $20 million. In the decade following, the Bank financed more than six times the previous record at an average cost that went well over $150 million.

The operational translation of the policy was much narrower than that advocated by the 1978 statement. Most projects became "supply-oriented," having as their principal objective a supply response to an apparent acute shortage of fuelwood. Given the weaknesses of sector work, little was understood either about the composition of such supply or the degree of potential substitution (or complement) among all the potential sources of energy. Often, it was assumed that fuelwood was a "merit want," that local communities—the final beneficiaries of the said operations—needed this merit good, that they would be prepared to supply large quantities of labor (e.g., for planting, maintenance, protection) and manage plantations and natural forests surrounding them, and that they would harvest in an equitable manner (e.g., benefiting those most in need). These assumptions proved inadequate. Operational staff know this and they have responded in a significant way by building into the new generation of social forestry projects several rural energy assessment studies. These studies should elucidate several questions regarding the economics of fuelwood production vis-a-vis other energy sources.

The land use dimensions portrayed by the policy paper were not taken into account until the late 1980s. This was observed by several reports from the Bank's Agricultural Department (AGR), which noted that forestry projects of all types were facing severe problems associated with land use and property rights. These studies began to demonstrate that the use of fuelwood as the "unit of analysis" for social forestry or rural development forestry projects had limitations. AGR issued guidelines for the preparation and design of sector work in forestry and for the analysis of land use-related issues, all recognizing land use as a better unit of analysis for these type of operations.

Other elements in the 1978 policy statement—like rationalizing the demand for fuelwood, and establishing conservation and environmental programs in general—did not become prime candidates for Bank operations. This is evident from both the review of completed operations and the review of Bank operations carried out by AGR in 1986 (see "World Bank Financed Forestry Activity in the Decade 1977–86: A Review of Key Issues and Implications of Past Experience to Future Project Design", AGR, World Bank, December 1986). The inadequate priority given to environmental and forestry management projects may have reflected their low priority at the country level. The establishment by the Bank of the Global Environment Facility (GEF) in 1990 may help in the implementation of forest management projects. At any rate, the review concluded that there was a need to give new emphasis

to some of these forgotten aspects of the 1978 policy paper.

Bank staff were flexible and innovative enough to create the necessary framework for sustained participation by the private sector. The private sector has played a very active role in most projects, although there is still scope for some improvements. Here, one is not only talking about industrial complexes or other traditional forms of private sector participation. In the projects, one sees the participation of small farmers, the landless, women, and children, all benefiting somehow or another from forestry activity. A detailed review of the first-generation social forestry projects demonstrates that the appraisal missions underestimated the potential response by the private sector. However, as soon as that response materialized, Bank staff and government officials involved were ready to mobilize the resources of the project to work with the private sector. In most cases, the response has been very significant.

Not enough priority was given to forestry institutions and sector management (e.g., incentive structure, management, administration and organization of development, public and private sector roles, and community participation). Institutional development is difficult, but efforts to date, as portrayed by the completed operations, appear to be less than desirable. In essence, the Bank underestimated the strain that new-style projects would put on existing institutions at the national and local level. A typical weakness has been the failure to establish an effective economic incentive structure for the forestry sector (including production and management) and with it, the conditions for sustainability and replicability of forestry programs. At the design stage, it was assumed either that an effective incentive structure was in place or that projects would be an adequate vehicle for institutional reforms. Experience shows that projects were not the right instrument to achieve these stated institutional and policy objectives. As a result, most supervision missions reported that management problems ranked highest among all types of problems faced during implementation.

The large number of technical problems faced by most operations suggests that the Bank response, in terms of research and studies, was inappropriate. These technical problems vary, ranging from the choice of tree species to nursery management, and from inadequate fire and pest protection measures to genetic improvement problems. The lack of information and the severe absence of sector work—despite repeated efforts to internally strengthen the Bank in those areas—hampered the performance of many projects and limited the ability of both the countries and the Bank to maximize existing development opportunities. This led to poor management decisions, lack of funding in most cases, and a total inability to tackle some of the structural problems prevailing in the sector at the time.

Overall Performance

Of the 27 completed free-standing forestry projects and an additional six watershed management/land use projects, nearly half sought to establish industrial plantations and increase capacity to develop wood, largely for export, or to reduce trade deficits in forest products. Other important project goals were to determine the viability and technical needs of establishing industrial plantations and wood industries; establish plantations for local fuelwood/building poles and stemming environmental degradation; promote farm forestry or community woodlots and lessen pressure on natural forests; and rehabilitate and improve the management of watersheds. Of the 27 completed free-standing forestry projects reviewed, 74 percent were rated satisfactory by OED (up to end-calendar year 1990). The remainder were judged unsatisfactory. These results are about average for Bank projects over the last three years.

The investment success rate; i.e., the proportion of total costs accounted for by satisfactory projects, is about average as well. Of the completed forestry projects, 76 percent of costs were represented by satisfactory projects. In the group of completed Bank operations, the investment success rate was 74.5 percent.

Given that few forestry projects have been completed, particularly in EMENA and LAC, evaluation of a regional breakdown should be interpreted with caution.[5] Nevertheless, forestry projects in Africa have exhibited about the best performance, with 79 percent of reviewed projects rated satisfactory. Next is EMENA, with three of four projects (75 percent) satisfactory. Forestry projects in Asia have the most discouraging record, with only five of nine projects (56 percent) rated satisfactory.

Institutional Impact

The design and implementation capacity of forestry sector institutions has proven central to the performance of most projects. In most instances, institutional absorptive capacity is weak compared to the development effort intended in each case. This review examined five main elements: the incentive structure (market as well as non-market), management at all levels, organizational arrangements, the role of the public and private sectors, and community participation. The information is not uniform and comprehensive enough to pass judgments on each element. However, important trends are observed in the group of completed operations.

Industrial forestry projects have been designed within the well-defined limits of specific institutions. Because of

5. Three free-standing forestry projects in LAC have been completed. A project completion report exists for only one of these, however.

the nature of these projects, problems with the incentive structure are related more to pricing (e.g., capacity to collect stumpage fees) and trade policies than to property rights or other non-market incentives, that are more typical of social forestry projects. Evaluation experience shows that forestry management components usually performed poorly because of a general disagreement over the rules for managing the country's forests. Industrial projects reveal some weaknesses in sectoral organizational arrangements. Countries with experienced development agencies in the sector had a much higher potential for success. Organizational improvement through expanding the number of expatriates was seldom a sustainable solution. This has been particularly the case of plantation projects in the Africa region. Conflicts regarding public/private sector or community participation are seldom found in industrial plantation projects. However, these projects are clearly hampered by the lack of adequate management at the sector level (e.g., the capacity to plan, monitor, evaluate, and implement). Forestry departments or ministries are clearly at a disadvantage vis-à-vis planning and finance ministries when it comes to investment planning, policy formulation, and institutional development.

Implementation of the new-style projects has put a tremendous strain on local institutions. Of particular importance are the problems created by conflicts over property rights, over expanding organizations at the government level, and over the roles of the public and private sector. The very nature of social forestry programs—where it is expected that most of the population will participate—brings up conflicts over rights as well as over the best form of participation in the long run. For example, the Gujarat and the Uttar Pradesh social forestry projects in India demonstrate the importance of finding an acceptable organizational structure at the local level. This structure has yet to be found, particularly one that will be sustainable in the long term.

Institutional aspects of forestry need more attention; they should be treated earlier in the project cycle, and they should be central to forming forestry policy. As the forestry program goes beyond the confines of industrial projects, the roles played by the five institutional elements delineated above are becoming essential to the success of the lending program.

Sustainability

The review shows that there are many determinants of sustainability, and some go well beyond project boundaries. Important factors include the technical competence of the implementing agency, the extent to which activities are self-financing, the understanding and commitment of the government and other participants to project objectives, the sustainability of environmental inputs (e.g., rain, annual timber production), and the adequacy of the policy environment (e.g., land use or pricing policies). According to PCRs or PPARs from the group of 20 satisfactory projects, four were determined likely to be sustainable, eight projects would be sustainable if certain conditions prevailed, and the sustainability of the remaining eight was not discussed.

The four projects considered likely to be sustainable included two projects to increase industrial productivity and two social forestry projects in India. The technical competence of the timber corporation, the result of considerable strengthening under the project, was considered the key factor in the sustainability of the Burma Forestry II, Pegu Yoma Project, at least over the economic life of the processing facilities. In the Greece Integrated Forestry Development Project, the sectoral strategy and the programs of afforestation, forest village infrastructure, training, and rangeland and plantation research are all expected to provide for long-term improved productivity from Greek forest lands. For instance, the pilot pasture-improvement program, which developed improved practices enthusiastically adopted by grazers, has already decreased dependency on forest area grazing and laid the foundation toward safeguarding both forests and rangelands and safely releasing large areas of land to the forestry sector.

In the India Gujarat Community Forest and the India Uttar Pradesh Social Forestry Projects, the sustainability of both the plantation and seedling distribution programs is good, considering the strong public demand that has grown up around these programs and the capability of the forestry department (FD) to handle them. Moreover, as prices have been acceptable and markets available, the commercial incentive is strong for continued farmer participation. Sustainability of the village woodlot, however, depends mainly on the FD to progressively transfer management to participating beneficiaries.

Of the remaining projects, sustainability was conditional and therefore unclear. For example, the Burundi Forestry I Project was implemented mainly by expatriates throughout the first phase and through half of the second phase. Furthermore, the sales prices of seedlings did not cover the cost of their nursery production, although the selling price and production were coming more in line. According to the PPAR, sustainability of the Mali Forestry Project will depend on the following factors: (1) quality maintenance of existing plantations or the proper ratio of planting to maintenance; (2) the availability of funds, either through full pricing of fuelwood or counterpart financing, to help meet recurrent costs until the value-added of the plantations can be utilized; (3) the resolution of both land tenure and land use conflicts; (4) the correction of institutional imbalances; and (5) the development of wood processing and marketing mechanisms before the high-value wood is ready for harvesting.

Projects with Satisfactory Performance

Achievement of Objectives

A detailed analysis was done of 20 completed operations that have been considered satisfactory at time of completion. Of these, 11 were in Africa, five in Asia, three in EMENA, and one in LAC.[6] All of these projects were approved between 1968 and 1980 and completed between 1974 and 1986. The average project cost was $47.13 million, and total investments in these projects were $942.57 million.

In several satisfactory projects, not only were almost all appraisal targets met or exceeded, but stated project objectives were reached. These included six projects whose overall objectives were to establish industrial plantations or increase capacity to exploit wood, either for export or to reduce trade deficits in wood products. The Burma Forestry I and Forestry II projects substantially increased extraction of teak and export revenues by removing constraints. The Burma Forestry II further conducted species trial-plantations and site preparation experiments that yielded valuable results and established teak plantations in excess of appraisal targets by 38 percent. The Greece Integrated Forestry Development Project also accomplished its objectives of increasing wood production. It successfully established plantations and improved forest management by forming a forest sector strategy, logging training, loans to forest operatives, and developing a successful pilot pasture improvement program. The Zambia Industrial Forestry Project, the third free-standing forestry project ever financed by the Bank, achieved its narrowly-defined objective of planting 8,000 hectares of pine and 8,000 hectares of eucalyptus one year earlier than expected, albeit at double the expected costs.

Two projects to establish plantations for local fuelwood and building poles (and to ease pressure on rapidly dwindling natural forest resources) were also successful. The main objectives were met in the Burundi First Forestry Project: to strengthen the capacity of the forest service to provide basic forestry services, to increase supplies of forest products by establishing plantations to supplant dwindling natural forest resources, and to promote tree planting among the rural population to assist their self-sufficiency in fuelwood.[7] The goals were largely achieved in the Niger First Forestry Project: (1) to improve fuelwood and building pole supplies, especially around urban areas, (2) to prevent further environmental degradation around townships as a result of progressive destruction of natural forest cover, and (3) to strengthen the Forestry Department.

Most other projects successfully satisfied most of the stated objectives. For example, the principal objectives of the India Gujarat Community Forestry Project were to increase the supply of fuelwood and other subsistence products (poles, bamboo, fodder, etc.) in rural areas, create employment opportunities for the rural poor, and stabilize the natural environment. Although appraisal targets for seedling demand were greatly exceeded (30 million planned versus 800 million actually distributed) and brought positive changes to the landscape, the original intent to provide subsistence materials was thwarted because most farmers preferred to sell the trees and continue using home materials for subsistence purposes. Furthermore, villagers did not take a proprietary interest in establishing, maintaining, protecting, or harvesting village woodlots. They thought the individual cost was greater than the benefit and considered the project a government exercise.

Some Indicators of Performance

Most projects rated satisfactory had an ERR of at least 10 percent. Only two of 20 projects for which figures are available had an ERR below 10 percent. Furthermore, most satisfactory projects had ERRs that were equal, above, or only moderately below those estimated at appraisal. The one project with an ERR significantly below that estimated at appraisal still retained an ERR of 27 percent.

Of the satisfactory projects with available figures, six had no discrepancy between the estimated and actual times of completion, two had time underruns, and seven had moderate time overruns (six months to one year, from 15 to 18 percent of estimate). Only four projects had fairly significant time overruns, from 1.5 to 2.6 years (about 26 to 55 percent of estimate). The average time overrun was .65 years (an average 10.7 percent of estimate).

Of 20 satisfactory projects, four had identical estimated and actual project costs, eight had cost overruns, and eight cost underruns. In real dollar amounts, all but three of those with cost over- or underruns had extremely moderate ones. The three projects with large differences between estimated and actual costs all experienced cost underruns. If the Northern Turkey Forestry Project (which experienced an extremely large cost underrun) is excluded, projects averaged cost underruns of about $3 million, an average of about 8 percent.

Determinants of Performance: Historical Trends

The principal determinants of performance in forestry development have changed over the last 20 years. To illustrate

6. This is not necessarily representative of the respective performances of the regions, given that some regions had fewer total projects than others.

7. The pine and eucalyptus plantations were expected to yield about 2.5 million cubic meters of wood over the next three decades, and the 81 nurseries created a market and produced 7 million seedlings for sale in rural areas. The Forest Department received new vehicles, buildings, and training under the project.

these changes, this section focuses on the role of institutions and on the extent to which sustainability has become more difficult to achieve in forestry projects.

As stated earlier, five aspects of *institutional development* have been analyzed for the purposes of evaluating development performance: incentive structure (market and non-market), organization, management, public/private sector roles, and community participation. The degree of influence exercised by each of these aspects in determining performance has drastically changed over the years. The institutional structure—regardless of the quality of its performance—was simpler in the era of industrial forestry projects (see also Chapter 5). Industries were well-defined entities, spatially and managerially, and the institutional response and performance expected from them much easier to define. Market incentives were central to performance, given that international and domestic prices determined the optimal allocation of resources and the overall efficiency of investments. Non-market incentives (e.g., land tenure, property rights) did not play a determinant role in development performance. Similarly, the relationship between the public and the private sector was usually well defined, and the system of inter-institutional arrangements rather straightforward.

As the Bank began lending for new types of projects, the picture changed radically. Social forestry and environmental forestry projects depend much more on complex institutional arrangements. In fact, a major source of conflict and of inadequate development performance is the intrinsic complexity of property rights, land tenure and use, and the lack of understanding of the role played by different actions in the economy. Moreover, the capacity to handle some of those institutional components has shifted. Experience shows that resolution of existing conflicts in the new-style projects requires stronger government participation, with the result that the Bank's relative advantage in conflict resolution has diminished quite substantially.

The Bank has more of a relative advantage in environmental forestry projects. For these projects to perform to expectations, they require a degree of organization that often does not exist in developing countries. For example, planting trees to control erosion and sedimentation and to induce beneficial effects into land use patterns requires that many government agencies work together. This they seldom do, except where development authorities are created for a specific purpose. Environmental interventions often require holistic approaches that are seldom replicable at the project or even at the sector levels.

As regards the *sustainability of forestry development*, the issues are even more complex. The roles played by different forms of capital have changed as the result of the relative scarcity of some of these forms of capital, as well as a change in the ideology behind forestry development.

As social and environmental forestry depend heavily on human, institutional, and cultural capital, sustainability may take longer to achieve. The implications of this phenomenon are many, but it will suffice to mention two of them.

- The time commitment to development projects must go beyond the period of completion. More time is needed to influence forestry development.
- The Bank and other donors must pay attention to alternative forms of disengagement after completion. If sustainability is an important objective or if disengagement from direct development financing is needed, effective participation in the policy dialogue with client countries may still be required.

3. *Issues in Project Performance*

Effects on People

The overall impact of Bank-financed forestry operations on people has been very beneficial. This is demonstrated by those completed operations designed to satisfy the needs of rural communities and low income urban families. It is well known that it is the poor who consume the most fuelwood. Therefore, in principle, tree planting programs should benefit the lower income strata of rural and urban populations.

Experience with the social forestry projects in India (i.e., Gujarat and Uttar Pradesh) provided a set of important lessons, and future community- based programs should benefit from that experience. At the root of their success is their intrinsic ability to help the poor accumulate capital. Tree planting by private farmers and by the landless (near their homesteads) has proven to be one of the most efficient vehicles for capital accumulation by the poor. In some cases, tree planting is more efficient than livestock and aquaculture. Farmers use the trees (assets) as an insurance policy; many of them have already benefited.

Questions have been raised, however, about how much these projects have benefited the poorest of the poor. The information available is not sufficiently comprehensive to reach definite conclusions. However, several audits and completion reports have cast doubts, given the complexities associated with the assignment of property rights and the ways in which land is allocated and used. In several countries, the system of property rights is such that the poorest of the poor benefit least.

Forestry projects have also benefited the urban poor. Several projects in Africa (e.g., Mali) have been designed to increase the supply of fuelwood to urban centers. The principal beneficiaries have been the government (e.g., schools, hospitals, jails, public places), industries (e.g., tobacco, pottery), and private households (for heating and cooking). The extent to which the poor have benefited is not known, but evidence suggests that benefits are substantial.

Effects on Women

At the design stage, most social forestry projects recognize the ways in which forestry activities affect women and children. Clear recognition is given to the time spent gathering fuelwood and to the number of family members engaged full-time in this activity. As natural forest gets depleted, women have to go farther from their households to collect fuelwood. In some cases, they need to spend more than a day to gather enough for their immediate cooking needs. Women and children are also affected when shortages of fuelwood make it necessary to burn agricultural residues and animal dung that otherwise would have been applied to soils. Soil fertility and texture is lost and consequently crop yields decline.

Women are often in charge of the management and harvesting of "minor forest products," which include medicinal plants, herbs, fruits and nuts, edible and industrial oils and resins, and several other high value-added commodities. The depletion of forests is a direct cause of irreversible destruction of these minor forest products. During times of agricultural crises—such as droughts and floods—women and children, particularly landless rural laborers deprived of wage work in crop agriculture, rely heavily on gathering, processing, and marketing of minor forest products to generate cash income.

The most important projects with forestry components requiring attention to women are: social and community forestry, production forestry, watershed development and management, watershed rehabilitation/stabilization, irrigation command area development, integrated rural development, resettlement and trans-migration, and agriculture/livestock with agroforestry components.

Experience documented in impact evaluations of social forestry projects in India shows that projects have faced several major constraints in directing benefits to women. The first relates to property rights over the land. In some

countries, the areas suitable for tree planting are under a regime of multiple property rights. The available land is often of little productive value because if it were, it would have been already allocated to agricultural production. This land is used by the rural community at large, including livestock herders, farmers, women, and children. Moreover, existing evidence shows that the resolution of use and other conflicts over such lands has not been to the benefit of women.

The second of these constraints is the limited capacity of local organizations to deal with and represent women's rights. In one social forestry project, women have formed a very active organization of their own to prevent the destruction of the natural forest surrounding their households. The movement has been to a large extent successful, but official support has been meager. Given the political/administrative structure prevailing at the village level, it has been practically impossible to create more women's organizations. Of particular benefit to women will be the ownership and management of tree nurseries, the formal protection of the adjacent natural forest, and the marketing and distribution of forestry products. For the moment, women have been offered jobs that increase their incorporation into the mainstream workforce.

The third constraint derives from cultural bases and caste structures which often limit the extent to which women can become economically active. Because this phenomenon is widespread, a special effort needs to be mounted whereby women could directly benefit from forestry development.

The fourth constraint concerns the way in which technical problems are addressed. Several assumptions are made during the design phase, for example, about the extent of scarcity (of fuels in general, as well as fuelwood); the burning qualities of alternative fuels; time needed to be allocated to tree planting, watering, silvi-cultural practices, and harvesting; the potential demand and consumption of alternative fuels; the value of shade and forage trees; and the types of animals reared in the villages. Some of these technical problems could be easily solved if women were allowed to participate actively in those projects. Indeed, a lot more could be learned from women than men in addressing the validity of those assumptions. Unfortunately, the decision-making structure of most past projects was such that several mistakes were made regarding tree species, planting and maintenance techniques, and degree of sustainability of forest management practices. The participation of women can clearly enhance economic and social returns.

Some audits have questioned the extent to which women (particularly poor women) have benefited from the forestry projects. During the audit missions of the latest audits of social forestry projects, several women were interviewed. Their responses unequivocally confirm the assertions made earlier: (1) that women do not benefit directly from those projects; (2) that it is overly-optimistic to expect that the "trickle-down effect" (i.e., by just planting more trees) will be sufficient to benefit women and children; and (3) that the flows from surplus to deficit areas, and from high income to low income families, carry very high transaction costs.

Effects on the Environment

Overall, the impact of forestry projects on the environment has been positive. Among the completed operations, there are very few instances in which a negative impact has been noticed. A potentially negative impact was discussed in the audit for Côte d'Ivoire, in which it was stated that new plantations were established in areas of "low-productive natural forests". The audit questioned both the concept and the strategy on the basis that there were important economic and ecological benefits from such a "low productive" ecosystem and that the natural forest ought to be preserved. There was plenty of land in both the project area and the country suitable for plantations and thus, replacing that natural environment with monoculture plantations was thought to be inappropriate.

The main environmental benefits from forestry programs come from several sources. Among these are stabilization of land use and thus, control of further deterioration of the land through soil erosion, sedimentation, and desertification. Another is the rehabilitation of existing low-value lands, such as the millions of hectares of "waste lands" in India and other Asian countries. These lands are often unproductive and tree planting and protection programs can improve their long-term contribution to the economy. A third is the stabilization of climatic conditions (e.g., rainfall, temperature) which, in a few places, has clearly benefited agricultural production. A final benefit is improvement of the ecosystem's capacity to regenerate the water cycle and create better conditions for development, and enhancement of the human environment in general.

The extent to which environmental benefits materialize depends on the nature of the forestry program and how well the projects define their environmental interventions. However, to evaluate the extent and allocation of environmental benefits from forestry projects would require a different composition in the population of evaluated operations.

Effects on Desertification

Most of the Bank-financed forestry projects in Africa have had the aim of controlling or stabilizing desertification. In projects in Burkina Faso, Côte d'Ivoire, Burundi, Mali, Niger, Liberia, Madagascar, and Kenya, tree planting activities are expected to control desertification through protecting soils against aeolic erosion and creating wind

breaks. In addition, when the area covered by plantations is fairly large, as it was in the forestry project in Mali, these projects may also modify micro-climatic conditions, and thus favor the production of food or cash crops.

Experience shows that to control and stabilize the desertification process requires actions that go well beyond the forestry sector. This needs to be recognized to avoid expecting too much from forestry programs. This is particularly the case where desertification is a result of population pressure and inadequate carrying capacity for the existing livestock population, inadequate agricultural practices, and the like. Water management and control—in particular moisture control—is one of the agricultural practices which needs careful attention. Where desertification occurs mostly as a result of climatic change, its control is more difficult and often well beyond the scope of any man-made program.

There are as many causes of desertification as there are cures. Some of these cures are related to the ways in which the land is used, the types of farming systems, land tenure arrangements, and farming practices prevailing at the time. The overall impacts of the forestry projects in controlling the desertification process are not well known at this stage. Information is very sparse, and the research components—whenever included in those operations—have not performed very well. It is important to note, however, that the Bank-financed forestry projects represent just a small part of the countries' efforts to control desertification, so that it is difficult to "attribute" desertification benefits to these projects.

Desertification as a subject of sector work and policy is well known to the Bank. A recent task force on desertification, led by the Environment and the Agriculture Departments, played a very important role in providing the basis for discussions, research, and dissemination. The Africa region has also prepared a major report on the state of desertification in Africa and alternatives for its control. Desertification is a subject that would need a permanent follow-up.

Political Constraints on Implementation

Any long-term program requires a strong commitment at the government and community levels. Forestry is no exception. The political system sets the conditions for arriving at a national consensus on investment strategy in forestry, as well as in other sectors of the economy, the policy framework and sectoral strategies, and the necessary institutional reforms.

On the investment front, most evaluation reports and forestry reviews claim that countries have under-invested in forestry. For a long time, the key assumptions of most programs were that forest resources were abundant and that these resources had only economic and social value in use. The value of free- standing forests was assumed to be near zero, and the opportunity costs of investment rather low. As a consequence, policy-makers at the national level made little effort to allocate adequate resources to the forestry sector.

On the policy front, several borrower countries have not developed their national and sectoral policies. Lack of political commitment has affected several operations. Experience with most completed operations also shows that projects, generally, are not a very effective vehicle for achieving country-wide policy reforms. Given the multisectoral linkages of forestry with the rest of the economy, macroeconomic policies have greatly affected the performance of forestry projects. This influence is stronger in projects that are more exposed to changes in land use policies, in rent-seeking behavior, and in short- and long-term returns.

Finally, with regard to institutional reform, national commitment vitally affects development performance. If the political will is not there, public interventions will be fragmented, forestry sector services will be ineffective, and projects will seldom succeed.

Financial Aspects of Forestry Projects

Completed operations in the forestry sector have faced a large number of financial problems. Their financial earning capacity has evolved toward less and less liquidity. In early projects, designed to exploit existing forest, the large majority of the products were tradeable. As such, project entities had clear potential to generate large amounts of foreign exchange; the most important risks had to do with changes in international markets for forestry products. Other factors constraining the financial viability of forestry operations had to do, for example, with taxation, transfer pricing, and financial strategies at the project level. Despite changes in the international market for forest products, evaluation reports show that most borrowing countries have benefited from those projects. In several cases, however, financial management was not effective enough to maximize the benefits from foreign exchange earnings.

The new-style projects, which focus mainly on domestic markets, have had a different experience. Most of the information available in OED shows that these projects are beset with financial problems and are strongly influenced by fiscal and monetary policies. More specifically, given the local-currency nature of these operations, development effectiveness depends to a great extent on the capacity of governments to fund their recurrent costs. Some of the forestry projects in Africa (e.g., Mali, Niger) that made efforts to supply fuelwood to urban centers were further affected when the government services they benefited did not make

adequate payments. This inability to make social forestry projects "profitable" also reflects policy decisions on cost recovery. In the short term, there are very few activities for which these projects could charge the full cost of operations. On the one hand, the products will be available rather far in the future, and on the other, the large majority of beneficiaries have low incomes.

Supervision reports show that financial problems are equally acute in ongoing projects. This suggests a need for change in financial strategies. The Bank may need to revise its financial instruments, and a change may be called for regarding the skill composition of supervision missions in favor of financial analysts.

Determinants of Satisfactory Performance

Satisfactory projects share several ingredients of success. The relative importance of each ingredient depends on the type of project, and on the economic environment prevailing when it was implemented. Several determinants are well known to decision makers and development practitioners and are not unique to forestry operations. Four areas are emphasized in what follows: preparation and design; marketing structures; management effectiveness; and institutional capacity.

Careful Project Preparation

Realistic goals. The goals of satisfactory projects were usually clear, realistic, consistent with each other and with extant sectoral strategies, and supported by the government. This is the case of the Greece Integrated Forestry Development Project, whose main objective was to save foreign exchange by increasing wood production from lightly-used forests in western and northwestern Greece. Subsidiary objectives—to improve the quality of life in forest villages to retain workers, to introduce mechanized logging and more intensive forest management, and to assist the Directorate General of Forests to prepare a sound, long-term strategy for forest development—all supported the main objective. These project objectives were agreed upon only after considerable discussions with the Government. The Niger First Forestry Project is also a good example of a project that supported an agreed-upon government strategy. The Government's forestry sector strategy had three main objectives: to protect the remaining natural forest from encroachment and overgrazing by livestock; to stabilize sand dunes to prevent further desert encroachment; and to develop a sustained supply of fuelwood, building poles, lumber, shade, fruit, and fodder trees for both rural and urban populations. This forestry project was consistent with and contributed to the first and last of these objectives. The prevention of desert encroachment proved difficult, however, as desertification control required actions that go beyond the forestry sector (e.g., control of the livestock populations).

Use of appropriate technologies. Successful projects usually proceeded on a sound technical basis, relying on technologies already in use or on acceptable, early adoptable technologies. New technologies were substantiated by sound research. Similarly, the Bangladesh Mangrove Afforestation Project can attribute the success of its main component, the afforestation of 100,000 acres with mangrove, to the availability of sound techniques for afforestation. The FD had already established mangrove plantations on 80,000 acres, and FD staff had developed considerable expertise. Although mechanical site preparation was tested in the Burma Forestry II Project, the project chose to use the well-established Taungya system. With this system, plantation establishment costs were lower than anticipated. It had the added benefit of settling landless hill people who otherwise would have continued the practice of shifting cultivation and depleting forest resources at an average of 2 to 3 acres per family per year.[8]

Low or good balance of risk. Successful projects did not rely too heavily on factors beyond project control. They also kept a satisfactory balance of risk so that failure of one component did not undermine overall project success. The Burundi First Forestry Project is a good example of a project with low risk. Its objectives were fairly simple: to strengthen the Forestry Department through training and provision of buildings and vehicles, and to promote tree planting through a rural nursery program. The project was designed to rely little on non-project administrative services or farmers' involuntary support and instead appealed to farmers' self-interest. The Burma Forestry II, East Pegu Yoma Project was principally designed to increase teak and hardwood export revenues and increase the supply of hardwood to the domestic market. Even though priority was given to the extraction of teak and appraisal targets were lowered for both the export of non-teak hardwood and its supply to the domestic market, revenues from teak exports more than compensated for these two shortfalls.

Favorable Marketing Structure

Successful projects made good use of commercial incentives already in place or else developed a market for forest or nursery products. Also important was proper siting of the project for transport and marketing. Although the success of the transport and marketing aspects in the Burundi First Forestry Project cannot be attributed to foresight and good homework in project design, changes made after project implementation resulted in better siting of the

8. Each plantation of 600–800 acres required some 400 workers (200 families). More than 40,000 acres of teak plantation were planted under the project.

nurseries nearer demand. A greater emphasis on information and extension further helped develop a solid market structure for nursery produce.

Management Effectiveness

The difference between a successful and a poor project frequently was the presence of a dedicated, creative, and competent project manager. Technically competent support and technical assistance staff also contributed greatly to project success. Exceptional competence, creativity, and flexibility were displayed by project managers in the Burundi First Forestry and the Burma Forestry II Projects. In the Burundi project, sales to individuals were lower and production costs higher than anticipated in the rural nurseries. In response, the manager—among other things—diversified production away from eucalyptus exclusively to more pine, cypress, multiple-use, and fruit tree species; decreased transport costs to the consumer by creating a greater number of smaller nurseries; and increased the emphasis on information and extension. In Burma Forestry II, when the fully mechanized system of extraction and site preparation proved impractical because of fuel shortages, project management made use of the greater-than-expected availability of elephants to implement an extraction system that proved socio-economically beneficial. Moreover, although appraisal aimed to introduce mechanical felling on a large scale, the use of power saws was discontinued after a short trial period because the use of the cross-cut saw was found to be more economical and socially more acceptable.

Institutional Capacity

Most successful operations were characterized by some degree of autonomy from the implementing agency. Also important was a level of competence equal to the task. The use of a Project Management Unit also proved to be effective. Successful execution of the Zambia Industrial Forestry Project could largely be attributed to the fact that the implementing agency, the Industrial Plantations Division of the Forest Department, was given independent status—including separate accounts—which allowed it to operate on a fully commercial basis. As stated earlier, in the Bangladesh Mangrove Afforestation, institutional competence was a good match for project directives. The FD had considerable experience in establishing the type of plantations undertaken by the projects.

Determinants of Unsatisfactory Performance

The problems of unsatisfactory projects can be traced to a number of key issues that, to some extent, mirror those listed for satisfactory projects. These are discussed below.

Poor Project Design: Too Rapid or Short-Circuited Project Processing

In the Finnish Forest Improvement Project for instance, since the Bank was merely financing an ongoing program, it was decided that there was no need for a project preparation mission and processing went straight from identification to appraisal. Proper preparation might have allowed the Bank to consider more fully the risks and impacts of reduced prices and depressed markets and the environmental issues that arose after Board approval; i.e., the likely ill effects of drainage on the preservation of peat lands and the possible effects of road construction and fertilization on wildlife, lakes, and ponds. A Staff Appraisal Report for the India Madhya Pradesh Technical Assistance Project was never prepared; this project therefore never underwent normal review. The PPAR considered this lack of a report responsible for the project's failure for two principal reasons: (1) the preparation and review of an SAR probably would have forced some design inconsistencies to the surface, and (2) it would have provided implementation staff with more specific terms of reference and understanding of project design.

Unrealistic Assumptions and Inadequate Technical Preparation

The India Kandi Watershed and Area Development Project, as originally conceived, was based on an unrealistic assumption of the potential for dam construction and irrigation development. Fortunately, a feasibility study recommended a substantial shift in project focus. The study revealed that storage and flood attenuation dams with associated irrigation development were economically feasible in only three of eleven watersheds studied. In the India Madhya Pradesh Forestry Technical Assistance Project, the Bank did not adequately consider the risks associated with the lack of consensus and government commitment to strategy. In particular, against recommendations of India's National Commission on Agriculture (NCA), the Bank chose to support the approach of clear-felling existing forests to establish faster-growing plantations, as supported by some technical and administrative staff within GOMP. Furthermore, technicians and sociologists competed for control over the design and implementation of the tribal study. In the end, controversies that developed around the project led to its abandonment by the GOI.

Inadequate Timeframe for Proper Sequencing of Preparation or Components

The India Madhya Pradesh Forestry Technical Assistance Project illustrates how an inadequate time frame for

the proper sequencing of components can greatly contribute to project failure. In this project, the desire to rapidly develop a forest industry led to the abandonment of the sequential approach that should have been adopted. Tree species trials, the testing of nursery techniques (before species proving), the planting of large areas, and a full-scale forest industry feasibility study were carried out concurrently. About 1,400 hectares of plantations, primarily *Pinus caribeae*, were established (with an average survival rate of 36 percent), although nursery and plantation research and trials produced few conclusive results. Appropriate logging techniques were never developed. Nevertheless, a study to address the logistics of logging was carried out. Because both feasibility and logging studies were based on assumptions yet to be proven, the project was unable to utilize either study. Tribal people were hired and trained, in spite of the fact that a satisfactory tribal study was never conducted and follow-up was far from assured. As some components clearly depended on the foundations laid by other components, the most prudent order should have been: (1) species trials and development of clearing techniques, (2) the development of nursery management with small-scale proving of plantation (planting and maintenance) and logging techniques, (3) an interim forecast of different scenarios for industry, (4) a study of the tribal population as related to those scenarios, and (5) a serious feasibility study. This example emphasizes the need to pay more attention to the proper sequencing of project components. This sequencing will, however, depend on project and country circumstances.

Overambitious Objectives, Weak Government Agencies

This was particularly well discussed in the Burkina Faso Forestry Project PCR. This project was designed to help the government to ensure adequate supplies of forest products to rural populations by developing peasant forestry. It was also designed to improve the supply of wood products to urban centers through establishment of new plantations, exploitation of existing plantations, and the pilot administration of 1,000 hectares of natural forests. It was hoped that these activities would begin to address increasing wood shortfalls and environmental degradation occurring around urban centers and rural areas. Although the project did succeed in strengthening the forestry service and teaching staff to apply some useful techniques of natural resource management, including rural forestry and industrial plantations for firewood, it confirmed that the latter technique, in particular, was not economical in Burkina Faso. More important, the PCR concluded that this project had only limited impact on the problem of natural resource degradation. According to the PCR, "Experience acquired over the last decade has shown that only a multisectoral and participatory approach can solve the problem of natural resource degradation in the Sahelian and Sudanian zones of West Africa....Limited as it was to sectoral contributions, the project did not touch on the social and legal problems associated with rural forestry, nor did it deal with the problems of multisectoral and integrated management of sylvo-pastoral areas."

Too Great a Focus on Physical Targets

The PPARs or PCRs of many unsatisfactory projects noted that too much emphasis on achieving the physical targets of appraisal resulted in undermining overall project objectives. This was particularly true in some plantation projects, such as the Madagascar First Mangoro Forestry Project, in which staff concentrated mainly on areas planted as indicators of success and not enough on maintenance activities or monitoring yields. In the Burkina Faso Forestry Project, appraisal targets in the number of seedlings distributed to farmers were met or exceeded, but the impact on increasing wood supplies or decreasing forest depletion was unknown, because there was no monitoring of the survival rate and seedlings' end use. The India Kandi Watershed and Area Development Project experienced particular problems with this issue, largely because of a lack of coordination between several implementing agencies. Individual departments often energetically fulfilled assigned targets without significant consideration of overall project objectives. Moreover, "heavy emphasis was laid on the achievement of economic benefits through production-oriented activities, and the primary objective—to reverse man-made ecological degradation in the area—was to a large extent lost from view." For example, horticultural targets, in crude terms of hectares to be planted, were overachieved, but no citrus orchards were established under rain-fed conditions in the upper watersheds. As another example, the provision of fodder harvested from the upper catchments was essential to the success of the cattle exchange program's objective to substitute staff-feeding for uncontrolled grazing. Yet the FD merely auctioned fodder harvesting rights to the highest bidder. The result was that fodder from the upper catchments rarely found its way to the intended beneficiaries.

Preliminary Lessons and Broader Issues

This chapter demonstrates once again that projects should undergo careful planning, preparation, and processing. No project should be allowed to short-circuit standard procedures or proper and logical sequencing of components in the interest of quick turnarounds. (This is particularly important, given that the Bank anticipates trying to increase

forestry lending significantly.)[9] Longer time frames should be considered for some types of forestry projects.

If cooperation and coordination are required between many line agencies in the planning and implementation of a project, an effective mechanism for coordination is a crucial component. The creation of a Project Management Unit appears to be one effective mechanism, but this requires assessment in each case. Roles and responsibilities should also be clearly spelled out for line agencies, especially in terms of how their functions fit into the achievement of overall project objectives.

Monitoring and evaluation is often weak, but M & E facilitate supervision and final evaluation. Many projects had the objective of reducing depletion rates of natural forests or of increasing supplies of wood products. In projects in which critical statistics were not kept before, during, or after implementation, it was not possible to assess project performance. In particular, the development of a proper system of forest inventory, the monitoring of land use inside and outside of forests, and the survival and end use of distributed seedlings is necessary.

Land tenure and potential land use conflicts should be thoroughly investigated during project formulation. Traditional users should be consulted and compensated,[10] if warranted, before project start-up. Even if conflicts seem unlikely at the time of project preparation, growing populations and scarcity of resources demand that potential conflicts be preempted through construction of an institutional structure to deal with conflicts and reach a consensus among users.

Forestry projects currently are characterized by a high proportion of recurrent costs to total project costs. This ratio is a major problem in countries trying to reduce public expenditures. The amount of recurrent costs that must come from public coffers could be reduced if relative pricing policies were adjusted so that forestry projects were not subsidizing other sectors. A pricing policy that represents the true economic value of forest products should be implemented. Several projects over the past few years have recommended pricing reform. However, these are often not implemented because of political considerations.

Market availability for any wood or forest products should not be assumed. Market analysis and marketing programs should be part of project design.

Pricing policies should adequately reflect the flow and stock value of the forest. Current prices do not accurately value the true economic cost of forest products. Prices should be sufficiently high to create a supply response, yet sufficiently low to avoid increasing the depletion rate of forests. They should also take into account marginal costs; e.g., marginal opportunity costs, external costs, user costs, and disaster costs.

It is questionable whether government (public sector) establishment and management of large-scale hardwood plantations is the most cost-effective means of achieving wood production objectives. The equity and sustainability of this approach also needs to be evaluated. In particular, sustainability may entail wider private sector participation.

It is also questionable whether plantations are very effective in achieving environmental objectives; in particular, in decreasing the depletion rate of natural forests. Establishment of plantations has proven expensive and too slow to offset existing depletion rates. The most effective and rapid interventions to stem further loss of forest areas, such as proper management of existing assets, should be addressed.

The option (opportunity cost) of free-standing natural forests and their multipurpose role should always be considered during project appraisal. The Bank should no longer be associated with the replacement of natural forests with artificial plantations because this approach can rarely be justified economically, socially, or environmentally. The exception may be the establishment of plantations in highly degraded forests and where the plantations may be the only means to protect the remaining intact natural forest. Natural forest management schemes should be developed and should include research and experimentation on indigenous varieties of trees. It should be noted that the technology for managing tropical moist forests is poorly developed throughout the world. This calls for developing realistic goals and aims in forestry management.

The development of zones around remaining forest areas should be a national priority in many countries. In this regard, local populations can play a central and positive role in improving the land, protecting the forests, and implementing desired strategies. Attention should be given to the sustainability of these programs and the equity and adequacy of incomes. Efficient income-support programs may be considered. Zones of intervention should be limited in complex projects, and aims and targets should not be too large and ambitious.

Governments do not have nearly enough capacity (particularly staffing, technical, or financial) to single-handedly tackle many forestry problems, particularly problems of wood deficits and forest depletion. Instead, they need to concentrate on establishing the right environment to induce private production and conservation of wood. Novel approaches, such as contracting out programs

9. Lending pressure has been discussed in one PPAR (Philippines) as a factor in the poor project appraisal process. Poor staff decisions were a factor in another project. Successfully delivering lending operations to the Board rather than the quality and sustainability of projects is discussed as a strong pressure for staff; one perhaps not conducive to excellence in Bank operations.

10. The subject of compensation should be central to Bank policy. Such a policy should clearly state when subsidies or other form of compensation are justified.

(reforestation, afforestation, plantation) or providing incentives for private sector involvement, appear to be necessary. Sound policies on wood pricing, revenue collection, and forest protection will be particularly critical.[11]

Early individual projects are not sufficient to address broad sectoral concerns or structural imbalances in the economy. Sectoral concerns that often come up in later forestry projects are the increase in wood deficits (and frequently concurrent trade deficits) and forest depletion/environmental degradation. Macroeconomic policies greatly affect land use, and as a result, forest assets have already been reduced below optimal size in many Bank countries, and high depletion rates continue. A sectoral or a multisectoral approach that incorporates environmental concerns into sectoral or macroeconomic policy is critical to achieving forestry sector and environmental goals. However, implementation of a sector strategy requires that donor agencies stay in the sector for longer periods of time.

11. This issue was discussed in the PPAR for the Republic of Côte d'Ivoire. The project was part of an ambitious Government reforestation program to address the problems of declining export earnings, the prospect of becoming a net importer of wood, and forest depletion (environmental degradation). The Government sought to address these issues by accelerating the Government plantation program and strengthening the FD. The need for planting was so great, however, that the Government did not have nearly enough capacity to reach targets.

4. Assessment of Sector Work and Project Implementation

Sector Work

The rapid evolution of sectoral objectives and strategies during the last decade is probably unique to the field of forestry development. The outright expansion of the supply for domestic consumption and trade—as the mainstream of forestry development—now has secondary priority. Central to most forestry strategies is the proper management of existing resources, incorporating principles of conservation, sustainability, and protection of biodiversity. This rapid evolution has given a new emphasis to two significant objectives: the environmental and the social aspects of forestry development. Analysis and discussion of the relative importance of these two objectives represents a central dimension in any evaluation process. Focussing on sector work represents the key step in this process.

This section examines how effectively forestry sector work has contributed to the Bank's objectives. Adequate sector work, including both a policy and sector strategy, is a necessary condition for expanding and sustaining lending programs. As noted earlier, projects have often been designed and implemented without the benefit of a broad sectoral understanding or a review of all issues and options. Systematic sector review is the only way to evaluate forestry opportunities and to build up a successful long-term lending program. In many developing countries, the forestry sector is confronted with several constraints that limit the optimal management of forest resources. The nature and quality of sector work is critical in identifying these constraints and in understanding the interactions between socioeconomic factors and the natural resources.

Assessing the merits of sector work is a difficult task, and on this subject, this chapter is far from exhaustive. Two dimensions—completeness and quality of the analysis—are addressed here. Sector work has identified a large number of other issues in the forestry sector, but the relative importance given to these issues in project and policy formulation has been weak.

The 1978 policy paper presented the critical issues and identified strategies for future forestry lending. Whether or not the Bank followed through with enough sector work to implement the strategy well is one measure of completeness. Poor project or component performance can often be traced to poor project design based on insufficient understanding of the sector and of the sector's relationship to the rest of the economy. Sector work should have provided an adequate understanding of these dimensions to facilitate the design of better projects and accomplish sectoral objectives (e.g., conservation, equity).

Sector Work and Policy

One way to assess sector work is by reviewing what the 1978 policy statement established as key priorities. Perhaps the most important of these was the imminent loss (probably in less than 40 years) of remaining tropical forests and the ensuing loss of environmental, social, and economic forest values. The paper suggested three chief reasons for this loss: collection of fuelwood, expansion of agriculture (particularly shifting cultivation), and uncontrolled industrial logging. The Bank had a particular interest in rural afforestation; in the integration of forestry and agricultural development, or agroforestry; in the establishment of fuelwood and other plantations; in environmental protection; in better forest management and control; and in the development of rural forest industries to capture more "value added" from timber extraction. The 1978 paper called for study of the following areas: land use patterns/planning; energy; trade/marketing; wood industry; forest management/supervision; technical, environmental, sociological,

political, institutional, and physical resources; economic accounting; and financing instruments and terms.

Given these concerns, sector work acquired a level of complexity that had never been required to design or to justify industrial forestry projects. For example, the Bank proposed to address the problem of expanding encroachment in the forest by land-hungry rural poor, the major cause of forest depletion. The driving forces behind this encroachment were population growth, inequitable patterns of land ownership that excluded people from better agricultural lands, tenure insecurity, and low levels of technology. Understanding the nature of these issues and how they tend to affect project and sector performance is important. But in fact, proper analysis of these issues requires interdisciplinary teams that have not always been in place.

Adequacy of Sector Work

Countries. Of all the borrowing member countries, only 12 have been the focus of forestry sector (or subsector) reviews. If reviews of special forestry topics in specific countries are added, the number increases to 15. This means that only 10 to 12 percent of Bank member countries have ever received specific and substantive forestry sector work, instead of cursory reviews added to other sectors or tacked on to project preparation activities. The Bank has completed reviews in five African countries out of a total of 45 (11%), in seven Asian countries out of a total of 24 (29%), in one EMENA country out of 28 (4%), and two out of 26 LAC countries (8%).

Eleven additional countries can be added if energy, agriculture, or rural development reviews that contain a forestry component are added. If these other types of qualifying sector reviews are included, the Bank has performed forestry sector work in about 20 percent of its member countries.

Response to the Policy Paper of 1978. Although some individual examples of sector work have been quite comprehensive, sector work as a whole has not really met the challenges of the 1978 policy paper to provide greater knowledge and understanding of certain issues. Although lack of data about *physical resources*, particularly comprehensive forest inventories, was considered one of the prime factors in mismanaging of forests, the Bank has not done well in supporting this activity in its client countries. Even the most recent sector reviews complain of the lack of data as a basis for management. Perhaps even more important, there are no data on rates and causes of deforestation, particularly regarding use patterns of forest resources in each Bank country of concern. The Bank has also done poorly in supporting floral and faunal inventories and in identifying important conservation areas.[12]

12. This activity was specifically mentioned in the 1978 policy paper.

Various *sociological* issues as well have not been adequately studied. In particular, agricultural encroachment caused in part by inequitable land ownership patterns and tenure insecurity was considered one of the main causes of forest depletion in the policy paper, yet neither of these areas is addressed in any significant detail by country sector work or issue papers. The tenure question is at least mentioned in most country forestry sector reviews, but rarely given serious sociological investigation. Only one short issue paper has been written on land tenure,[13] and this is mainly from the perspective of the influences of land tenure on a reforestation/fuelwood program in Pakistan villages.

The 1978 policy paper also addressed forest management and/or supervision as key issues in depletion and degradation of forest resources. Uncontrolled logging and the need to raise concession royalties and stumpage fees and strengthen forestry departments to better supervise concessions and collect revenues are frequently discussed in Bank sector work. However, sector work has never been done by the Bank on the types of incentives and disincentives that would be necessary to ensure concessionaires will manage forest resources sustainably. An Indonesia review is one of the few pieces of Bank sector work to look at the phenomenon[14] a little more comprehensively, bringing in such additional factors as the high opportunity cost of capital and the short duration of concessions. A study of forest revenue systems in Africa is another which attempts to address these issues in a fairly comprehensive way, beginning with the countries of West and Central Africa.[15]

Sector work has added very little to various issues of forest resources management. Management objectives here would include, for example, ensuring continued productivity of forest resources and preserving other desired values or establishing the necessary sociological or institutional framework necessary for implementation. Although knowledge has increased in the last decade about sustainable silvi-cultural or forest management regimes, the Bank has yet to pull together this information to assist member countries in managing their remaining natural forest areas.

Sometimes sector work raises more questions than it answers. This is the case with such issues as the management of "common property resources," land redistribution, and organization of development. In this regard, the Bank has been weak in supporting research to fill in knowledge gaps. This has been compounded by the fact that some of the research projects or components have failed to yield the

13. Cerniz, M.M. "Land Tenure Systems and Social Implications of Forestry Development Programs." World Bank Staff Working Paper, No.452 (Washington, D.C.: World Bank, 1981).

14. The tendency of concessionaires to "mine" the forest resource.

15. This study is attempting to establish stumpage values for different areas, countries, and subregions, and discusses other issues, such as questions concerning the management of concessions and silvi-cultural regimes.

necessary information. This type of knowledge is central to the management functions of forestry departments. As stated earlier, through Bank project experience, appreciation is growing for the importance of managing remaining forest areas,[16] yet much of the Bank's sector work treats this subject in a superficial way.

In all the sector reports reviewed by this study, the institutional and sociological aspects of forest concessions have rarely, if ever, been addressed in Bank sector work. This applies to countries in which forest management strategies depend heavily on the allocation and use of these concessions (e.g. Côte d'Ivoire, Congo). Sector work in Indonesia discusses some of the key dimensions of this problem. Interesting questions would be how concessions are tendered and who the principal beneficiaries are. Would local forest communities do a better job of implementing sustainable silvi-cultural systems?[17]

Finally, Bank forestry sector work has not really addressed the *environmental* issues brought forth in the 1978 policy paper. It is not clear that the Bank has funded research or attempted to pull together information on any of the environmental areas suggested in the paper, much less use the information for project preparation. These areas include:

- increased understanding of the environmental effects of alternative land-use systems in different agroclimatic circumstances;
- the design of forestry projects (plantations, agroforestry, etc.) so that environmental benefits are maximized;
- the best trees or combinations of trees under various ecological conditions; and
- possible environmental effects and measures in forestry projects.

The policy paper mentions *financing instruments and terms* as an important area of Bank interest. However, an issues paper on this topic has never been produced. Moreover, only a regional forestry review for LAC mentions it as a important constraint on further investment in the sector. The policy paper mentions this issue in terms of Bank flexibility for local currency financing and longer grace periods, to allow its member countries to invest in the sector. Analyses of project performance also mention the importance of favorable credit terms to forestry investment by the private sector. An analysis of types and effects of various financing options for forestry activities, both by the Bank and by financing institutions in member countries, is missing in Bank sector work.

Analysis of Projects and Components. The issue of *intersectoral linkages* is beginning to be recognized as a critical determinant of project performance, an issue the Bank has frequently overlooked in country sector work as background to project preparation. Recent Bank sector work in Indonesia and the Philippines, which also addressed other natural resources (agricultural, land, water, fishery) brought up some of the relationships between sectors[18] However, when it comes to investigating the linkages of the various sectors to forestry and ensuring that forestry issues are fully incorporated in Bank country economic work, the Bank could do a much better job.

Marketing issues are seldom studied in great detail. Most of the sector work reviewed in this study shows that some data collection and analysis of global supply and demand for various wood products (particularly fuelwood) has been done. However, the type of marketing information needed to plan projects is usually lacking. Thus, one seldom finds a discussion about industrial markets for private produce, marketing and trade agreements (national and international), likely overseas markets, trade restrictions, price trends, etc. One area of specific importance to project performance is improved analyses (see discussion of GIS below) of supply and demand for particular types of wood products and of transport distances. This type of information is needed to incorporate transport costs and to rationalize siting decisions—two project areas that are particularly weak (OED's special study on agricultural marketing[19] finds similar problem).

Addressing New Issues. Although not mentioned in the policy paper or addressed as an issue in OED reviews of project performance, several "new" issues deserve more focus in sector work. These include the use of Geographic Information Systems (GIS) as a management tool, women in forestry, the ecological roles and importance of natural forests, and reducing demand for wood.

The Bank and its member countries are beginning to take advantage of available Geographic Information Systems (GIS). These systems can give planners and managers spatial information and are potentially powerful management tools. Data can be kept, not only on numbers of hectares of remaining forests, but also on where these forests are located. Data on physical resources, such as soils, climate, land capability, etc., can be overlaid with sociological, institutional, or other types of data; e.g., current land use, forest management regimes, concession areas, etc.

16. In particular, it is being realized that establishment of plantations is slow and expensive compared to the growth rate of shortfalls, and proper management of remaining forest resources will be a key element of any strategy.

17. These communities could then sell the standing timber to timber companies that already have the heavy harvesting equipment.

18. For example, agricultural pricing policies (particularly in relation to wood pricing policies) can have a major effect on the amount of forested lands cleared for agriculture. Population pressures and government policies on intensifying agriculture on existing lands rather than opening up new lands to colonization is another illustration of linkages.

19. World Bank. *Agricultural Marketing: The World Bank's Experience, 1974–1985.* (Washington, D.C., April 1990).

Locations of infrastructure such as energy sources or transport networks can be included in GIS systems. Some GIS software has even been designed to assist in economic analyses; for instance, to calculate transport costs from different sites.

Although *women in forestry* is not a new issue for the Bank, it has yet to be systematically incorporated into country forestry sector work. Not one country or regional forestry sector review examined for this study addressed the issue. Neither was it addressed in project completion or audit reports. This study found one short issues paper on forestry and women and a set of operational guidelines for Bank staff. Much literature is available that makes a convincing case that women are often key actors in the forestry sector throughout the developing world and are frequently most affected by scarcity of wood resources. However, they are frequently ignored both as beneficiaries and as participants. Thus, there needs to be a particular and sustained effort in project design and implementation to involve women.

The forestry sector work reviewed here has not sufficiently recognized the importance of conserving natural forests or of sustainable management. This is due in part to poor sector work in countries with large areas under natural forest. Although the environmental role of forests and trees is frequently cited in Bank sector work, the *ecological roles and importance* of natural forests appear to be underappreciated (e.g. Pakistan, Chile, Morocco). Most forestry sector work beginning in the 1970s states the important environmental functions of forests—retention of soils, preservation of soil quality, and attenuation of water flow. The positive microclimatic effects of forests are mentioned in one or two reports.[20] All of these functions, however, can be performed as well by plantation or other human-constructed forest systems. The preservation of biological diversity and the conservation of wildlife are two functions, discussed in later reports, that are not normally fulfilled by human systems.[21] But there may be more important ecological reasons to preserve and protect a significant portion of natural forest systems. No one knows yet how disruption can affect the structure and functioning of the natural ecosystems over large portions of the earth. Degraded areas that have been abandoned now cover much of the earth; they are generally characterized by pest and weed species of little use to human socioeconomic systems. These kinds of issues require more ecologic expertise and attention than they have been given to date.

There is a curious absence in Bank forestry sector work on the demand side of the wood demand/supply equation. Although most sector work highlights forest depletion as a major issue that the Bank should help its member countries address, the Bank appears to have an almost exclusive focus on increasing supplies rather than *decreasing demand for wood* through increased efficiency, conservation, or substitution. (The one area where this is not true is in the use of wood as an energy source.) Only one early issues paper (1977) discusses the opportunities for conserving wood through preservation of timber and careful building and furniture design. Much more creative research on this issue generally, and on a country-specific basis, could be done for other types of wood products and uses as well.

Relevance and Quality of Analysis

Several weaknesses have been found in the Bank's sector work to date, even in the most recent examples.

- Bank sector work needs to put in the broad context a more rigorous analysis of long-term, intersectoral tradeoffs, linkages, and conflicts.
- In most instances, the lending program in the forestry sector does not appear to issue from completed sector work. The recommendations were not always implemented by Bank operations (see "Development, Environment and External Aid in Nepal", OED Study, forthcoming).
- The changes sought by sector work were often insufficient to resolve issues and provided insufficient guidance for selecting projects to support recommended changes.

In compliance with sector work findings, the Bank lent heavily to develop new lands in Malaysia and Indonesia. In Nepal, in an effort to tackle the land clearing and forest destruction in the Terai, the Bank supported a settlement project. These programs often did not resolve the problems they were designed to solve and sometimes created new ones. Inadequate sector work is not entirely to blame however. There were also occasional discrepancies between the recommendations and the projects supported by the Bank.

In a number of countries, notably Nepal and Sudan, where forest resource degradation has posed a serious threat, sector work clearly recommended changes, but it did not provide operational guidance to address them. As a result, the selection and design of projects involving the development and conservation of forest resources appears *ad hoc*.

20. The important microclimate effects of forests (i.e., their contribution to maintaining the atmospheric balance between O2 and CO2, and in offsetting the effects of rising levels of CO2 through the burning of fossil and wood fuels) has yet to be recognized in Bank work.

21. An appreciation that biological diversity cannot be preserved merely through preserving a few relic natural areas is also missing from Bank work. Not just every species but every population of a species (separated from another population) is likely to be genetically unique. Geographically isolating a population so that genetic mixing with other populations becomes impossible can result in genetic decay of that species and its eventual loss.

Comments on Procedures

The Bank has produced an average of two reports on forestry sector work every year. One of them typically addresses the sector overall for a particular country or region. The other either addresses a specific forestry issue in a specific country or region or it addresses a general forestry issue applicable to all Bank member countries and regions.

Forestry sector work is not yet covered automatically by the Bank as part of country economic work. Forestry sector work completed has been done on an *ad hoc* basis. Only in a few client countries has the Bank ever performed substantive forestry sector work, and most of this work is now outdated.

Bank management has recently decided, however, that environmental issues papers are to be prepared on each member country. All of these should have been completed by late 1989. These papers review environmental problems and recommend general policy and investment strategies to address them. There should be significant overlap between issues and recommendations. However, it remains to be seen how institutionalized this exercise will become.

Moreover, the forestry sector work completed to date has not been prepared in any systematic fashion.[22] As a result, reports vary considerably in the treatment of forestry issues and the organization of the information. An outline by the Economics and Policy Division of the Agriculture and Rural Development Department was prepared in 1985, but its use has not been institutionalized.

Most important, there has not yet been any sort of mechanism to routinely integrate forestry sector work with country economic or other sector work to ensure that intersectoral linkages are considered. Most Bank forestry sector work recognizes the need to address these linkages if problems are to be solved.

A Forestry Assessment Unit (FAU)

A brief review of sector work carried out by other development agencies during the 1970s and early 1980s shows that the lack of sector work in forestry was not unique to the Bank. Two multi-agency efforts have changed this trend, the Tropical Forestry Action Plan and the National Environmental Plan. Both of these initiatives are fairly recent and it will take some time before they yield the expected results.

A key recommendation of most action plans is to improve the supply of human capital in forestry development programs. The aim is to allocate more resources to research, extension, education, and training. On the research agenda, action plans include natural resources assessments, data collection and processing, and technology development and transfer. Although most countries give a high priority to these propositions, the countries' capacity to respond has not been commensurate with the tasks at hand. Limited institutional absorptive capacity and lack of political commitment are the key constraints. This may call for a different approach in which the Bank is expected to play a more active role in the design and implementation of studies and sector assessments. This will benefit the Bank and the borrowing countries alike. For the Bank, adequate sector work represents a necessary condition for the proper design and implementation of sector loans.

The Bank should consider the creation of a Forestry Assessment Unit (FAU). Resources for this unit should come from a large array of interested donors (e.g., UNDP, UNEP, USAID, CIDA, SIDA, GTZ) to secure a sustainable program. The studies that such a unit would carry out will be particularly important to developing countries that have large forest resources or have to engage in substantial forest management schemes with very limited financial and human resources.

Implementation: Issues and Problems

Several reasons justify a look at implementation issues in both completed and ongoing operations. First, a summary of issues and implementation problems sheds light on several aspects of the development process over time. Despite assumptions and forecasts made during appraisal, the test for most development activities comes during implementation. Second, examining these issues helps to establish a continuum in the overall evaluation process, especially by focusing on completed operations. Such a continuum should help in understanding how well supervision activities—including identification, monitoring, problem solving, and evaluation—predict development outcomes. Third, such a review allows a comparison between problems faced by completed operations and those of ongoing operations. In a sense, it is a test of several lessons learned and recommendations from completed operations. An assessment of issues faced by ongoing operations is important for establishing a basis for general findings.

The quantitative analysis presented in this chapter should be considered as only representing a more complex assessment process and should not be taken out of context. In this regard, this section of the chapter does not intend to be comprehensive, and it does not cover every aspect of completed and ongoing operations. OED has embarked on a special study of supervision of Bank operations, which will address the subject in a more systematic way. This chapter presents information from a representative sample

22. It is recognized that the most important forestry issues will vary from country to country, and that the same degree of coverage is not required for every country. However, the lack of guidelines has resulted in important gaps.

of supervision reports; special emphasis is given to reports that explicitly mentioned forestry operations issues and problems. The section gives the status of forestry projects based on ratings by project task managers. The overall status of projects was extracted from supervision forms (Form 590) completed after each mission.[23] Supervision reports for 73 projects were reviewed. From those, 29 were for projects in Asia, 35 in Africa, six in EMENA, and three in LAC. About 32 of these projects are already completed, but supervision ratings were available for only 27.

Ratings of Completed Operations

The average overall status of all 32 completed forestry projects is 1.68; that is, overall, they have had less-than-moderate problems. Compared with an average rating of 1.8 for all Bank projects from 1985 to 1989 and 2.0 for agriculture projects in 1989 (Box 4.1), the rating for forestry projects has been better. (Or the staff has begun to rate projects harder in the later period.)

The average status rating was 1.9 for 15 completed forestry projects in Africa; the average rating in Asia was 1.8 for eight completed projects. EMENA and LAC, which had three and one completed forestry projects, respectively, had ratings of 1.9 and 2.0.

Supervision ratings assigned to a project and its final audit status (satisfactory or unsatisfactory) do not appear to be highly correlated. For instance, the Mangoro Forestry Project in Madagascar encountered moderate problems (ratings of 2) in the initial period, but had no significant problems (a rating of 1) in every supervision mission after the fourth one. However, the project was finally graded as unsatisfactory at the time of the audit. Similarly, the forestry project in Côte d'Ivoire encountered moderate problems and sometimes major ones throughout the period of project implementation. At the time of the audit, however, the project was rated satisfactory. This raises the question of how much one can evaluate development performance—or approximate it—during the supervision process. Perhaps the results presented here are biased because they come from the Form 590 that had only one rating out of many on the project's "development impact." This form has been changed, although the question raised above is still relevant.

In 14 of the 27 completed forestry projects for which supervision ratings were available, the overall status did not improve with time. In fact, projects with moderate-to-major problems remained the same; projects with minor problems turned into projects with moderate to major problems. This could lead to several conclusions: (a) no effort was expended to resolve the problems, (b) the measures taken were not particularly effective, (c) the projects were designed without sufficient information about potential constraints, and/or (d) sufficient information about potential constraints was ignored and a risky project was implemented despite warning signals.

Box 4.1: Overall Status Ratings of Forestry Projects vs All Bank Operations

Bank Average for All Projects (1985 to 1989):		1.8
Bank Average for Agriculture Projects (1989):		2.0
Africa:	Average for all projects	1.8
	Average for agricultural projects	2.1
	Average for forestry projects	1.9
Asia:	Average for all projects	1.7
	Average for agricultural projects	1.9
	Average for forestry projects	1.8
EMENA:	Average for all projects	1.8
	Average for agricultural projects	1.9
	Average for forestry projects	1.9
LAC:	Average for all projects	2.0
	Average for agricultural projects	2.1
	Average for forestry projects	2.0

Ratings of Both Completed and Ongoing Operations

The average status rating of 79 completed and ongoing operations was 1.82. This result shows that the overall ratings of ongoing operations have declined compared with the completed operations. In addition, the status of forestry projects has not improved significantly over the years. The ratings have ranged between 1.5 and 2.2 between 1974 and 1988.

On a regional basis, forestry projects in Asia received the best average status rating (1.8). Africa and EMENA followed, both with ratings of 1.9, and LAC with 2.0.

The study also grouped project ratings by type of forestry operations. Overall status ratings of social forestry projects are best (1.7), followed by industrial forestry projects (1.9), and finally by environmental forestry projects (2.1). The poor overall standing of environmental forestry projects is not a good sign, especially since the Bank is trying to promote environmental forestry projects in its lending to the sector. Careful analysis of the problems unique to each type of operation and region is needed so that effective and pertinent measures can be taken.

23. To achieve statistical consistency, the analysis only included those supervision reports that were issued prior to the change in the ratings procedures.

Major Problems and Issues during Supervision

Findings from completed operations should help greatly in understanding the conditions and constraints facing current and future forestry lending. In fact, after reviewing reports from completed and ongoing projects, it is clear that many problems tend to repeat themselves. Moreover, the frequency distribution of the most important problems facing current projects seems to be the same, with some variability across types of projects.

For the purpose of this presentation, problems are broadly classified as managerial, technical, financial, political, and others. This classification system is not arbitrary; it represents the approach presented in the supervision reports. As the analysis progresses, these categories are broken down to present a more concrete understanding of the nature and extent of the problem. Table 4.1 shows the distribution of the five most common types of supervision problems for forestry operations between 1953 and 1988.

By reviewing the frequency of certain issues, it is clear that managerial, financial, and technical problems are costly to the lending program. This finding has two implications: (1) the type of problem should determine the skill composition of missions, and (2) some areas seem to be difficult to address or difficult for the Bank to resolve. As far as the first implication is concerned, it is now clear that financial analysts—who have minimal input in supervising forestry projects—are needed, especially during project implementation. There may also be a need to provide new financial and lending instruments to forestry development. Given the long-term nature of most forestry projects, these projects are not necessarily good financial propositions for the governments involved (because of very high levels of recurrent cost financing). The other skill that seems in short supply is management. Managerial problems rank at the top of most mature operations. This reflects the overall weakness of forestry sector institutions and their inability to deal with the macroeconomic aspects of forestry development (e.g., sector incentive structure, investment policies, institutional reforms).

The second implication—the resiliency of problems and the Bank's presumed ability to resolve them—raises some important questions. In practice, it may be that there are managerial problems that the Bank is not well-placed to help resolve. Financial and technical problems, however, often come up, and it seems the Bank has, or should have, a relative advantage in resolving these issues. Yet some of

Table 4.1: Types of Problems Cited in Bank Supervision Reports: Completed and Ongoing Forestry Operations, 1953–88

Year	*Managerial*	*Technical*	*Financial*	*Political*	*Organizational*
1953	-	-	-	-	-
1955	-	-	-	-	-
1968	-	-	-	-	-
1969	-	-	-	-	-
1970	-	-	-	-	-
1972	-	-	-	-	-
1973	-	-	-	-	-
1974	1	7	4	-	3
1975	7	8	4	2	7
1976	3	5	-	-	5
1977	12	13	11	-	1
1978	7	2	6	1	2
1979	38	28	38	17	9
1980	26	20	18	6	2
1981	12	13	16	0	2
1982	24	8	27	6	3
1983	34	8	25	3	0
1984	5	2	2	-	1
1985	3	0	10	0	0
1986	0	0	1	0	0
1987	4	0	0	0	0
1988	0	0	0	0	0
Total	176	114	162	35	35
1953–78	30	35	25	3	18
1979–88	146	79	137	32	17

- Not available

these problems were never resolved, regardless of the type of project.

Managerial problems were the most common type confronting forestry projects (about 34 percent). Financial problems followed at about 31 percent. Technical problems were 21 percent and organizational and political problems occurred in 7 percent of the projects.

To examine the frequency of problems over time, the information was broken down by years. Using the 1978 policy paper as the dividing line, it is clear that the second-generation projects face a larger number of problems. Before the policy paper, the majority of implementation problems were technical; after the paper, most problems were managerial. This reflects the complexities brought about by changes in the forestry lending program: from industrial to rural development and environmental forestry projects. Another interesting finding is that financial and technical issues continue to be central to development implementation. Since 1985, financial problems have been more frequent than managerial.

As to the types of forestry projects involved, several interesting patterns emerge. In social forestry projects, nearly 38 percent of the problems were managerial, 33 percent financial, and only 20 percent technical. In environmental forestry projects, about 39 percent of the problems were managerial, 33 percent technical, and 22 percent financial. For industrial forestry projects, both managerial and financial problems were about 31 percent, followed by technical, organizational, and political problems.

Regional patterns are difficult to discern because of differences in sample size. However, managerial problems are foremost in EMENA, Asia, and Africa—about 41 percent for EMENA and 34 percent for Asia and Africa. Financial problems were significant in Africa (35 percent); financial and technical problems were also relatively significant in Asia and EMENA (from 23 to 28 percent). The data available for the one project in LAC[24] showed political problems to be the most serious, followed by financial problems, and finally, managerial problems.

Figure 4.1 illustrates the frequency of five categories of supervision problems, by region, for the period 1953–88. Figures 4.2, 4.3, and 4.4 illustrate the relative proportion of types of supervisory problems for the three major categories of forestry projects, for the years 1953–88.

24. LAC had four forestry projects but only three of these had supervision reports available. A project in Brazil was started in 1987, and so far no major problems have been reported. The Jamaican project is the only one with data to represent problems in this region.

Figure 4.1: Frequency of Supervision Problems, as Cited in Supervision Reports, by Region, 1953–88

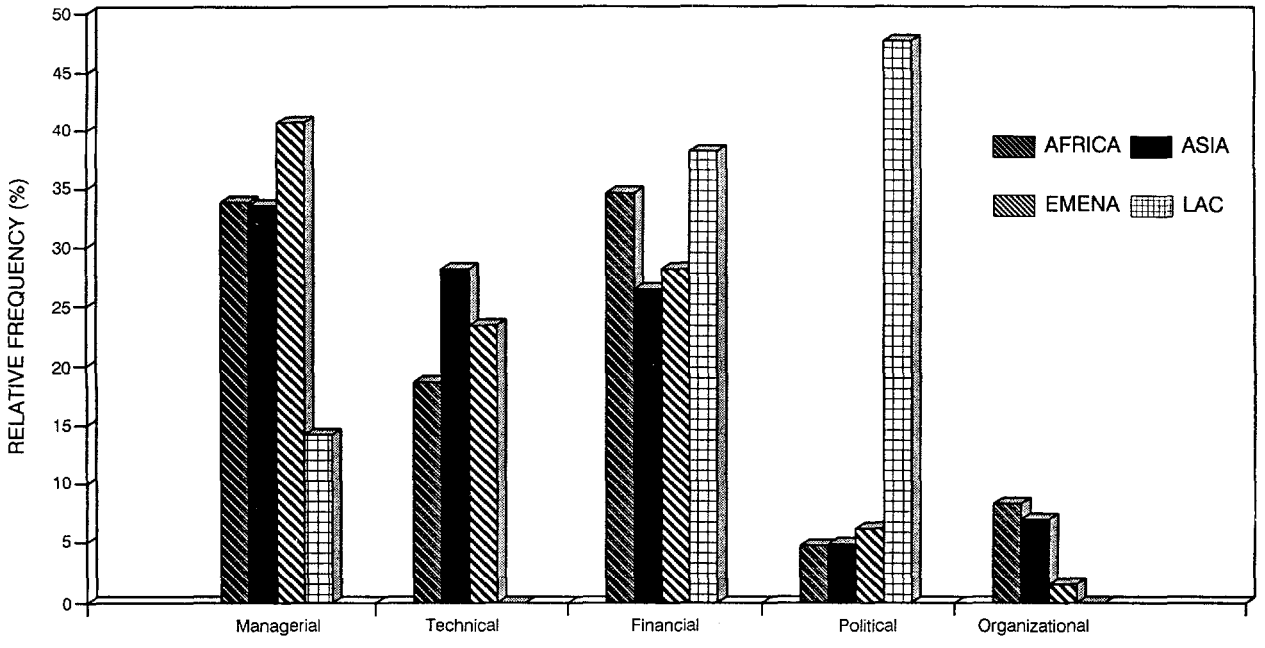


Figure 4.2: Frequency of Supervision Problems: Social Forestry Operations, 1953–88

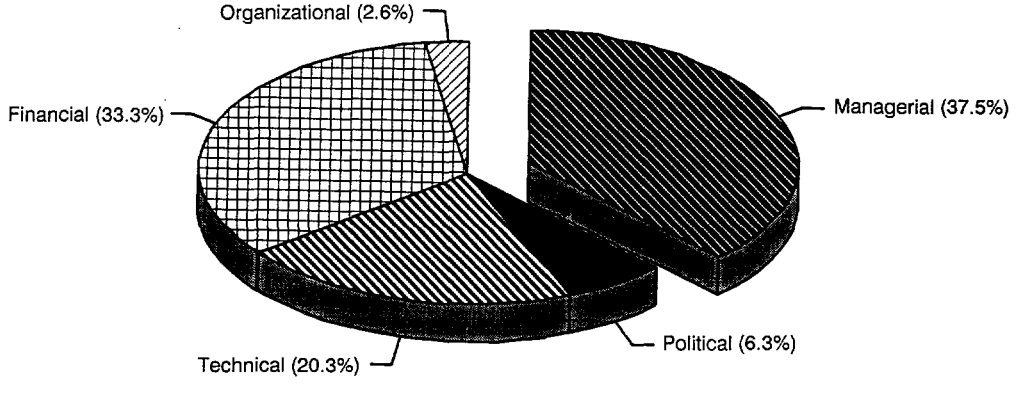


Figure 4.3: Frequency of Supervision Problems: Industrial Forestry Operations, 1953–88

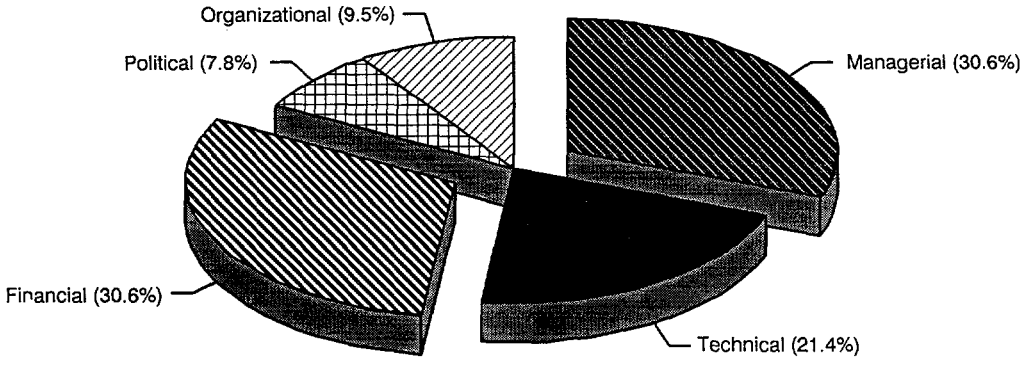
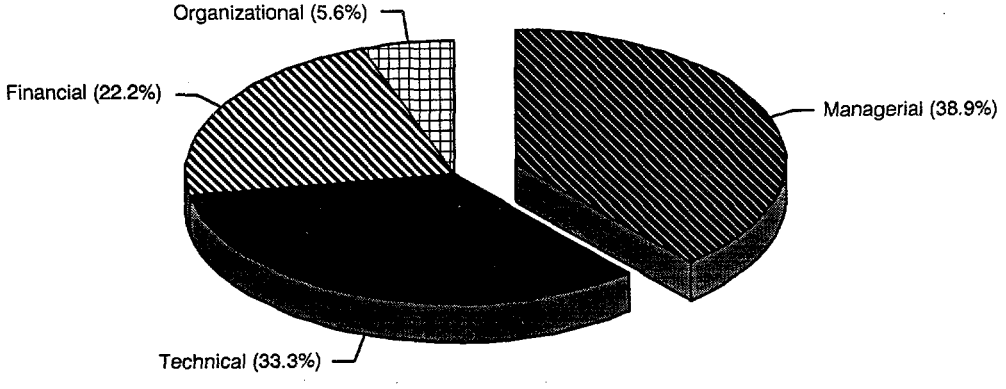


Figure 4.4: Frequency of Supervision Problems: Environmental Forestry Operations, 1953–88



5. *Implications for Bank Lending and Policies*

Project Performance in Context

The influences on forestry operations and their implications for future sector planning can be better elucidated by examining the interplay between sector work and project performance. The Côte d'Ivoire Forestry Project offers a case in point. One of its key goals was to increase the country's annual planting capacity from 1,000 hectares to some 20,000 hectares. In a strict sense, this goal was met and the project was considered successful in the completion report. In the meantime, however, the rate of forest depletion was at least 10 to 20 times higher than the rate of forest planting. In a period of two decades, the country depleted nearly 10 million hectares, even as it strove to reach a twentyfold increase in planting rates. This chapter compares the analytical findings at the project level with those at the sector and implementation levels, and discusses the principal implications for future Bank lending in forestry.

Project Performance and Sector Work

The large majority of forestry projects have been rated satisfactory, but these are mostly first-generation projects, now reaching full maturity levels. It is clear from the audits of Côte d'Ivoire, Mali, and the two social forestry projects in India that these projects will face a new frontier of issues (e.g., marketing, technology, research and extension, and forestry management and protection) for which little acceptable economic and sector work has yet been done. A look at the second generation of forestry projects might show disappointing results, although it is too early to draw definitive conclusions.

Forestry projects are affected by the economic policy environment of the countries in which they are carried out (Box 5.1). Many economic policies (e.g., pricing and effective protection, public finance) have had serious effects on project performance and sustainability through changes in land use and lack of public funds for operation and maintenance. Sector work should help improve the ability to predict changes in performance caused by policies outside the forestry sector itself.

Several issues can only be resolved at the sector or national level. Examples are the allocation of public funds, policies affecting land use, organization of the public and private sector, and property rights and institutional reforms (Box 5.2). Within this context, sector work has provided a limited framework for lending operations; however, there

Box 5.1: Government Policy and Pricing of Forest Resources

In several countries, macro-policies affecting the pricing of forest resources have had considerable impact on the use of these resources. These impacts are created by changing rent-seeking behavior, resulting from a distorted economic incentive structure. In the Philippines and Indonesia, the economic rent from the timber accrues to the miller. There is no incentive to sustain yields by replenishing what is cut, resulting in inevitable depletion of forest resources. The structure of tariffs, taxes, and fees has also adversely affected natural resource management. For instance, in the Philippines, the tariff exemption for imported capital equipment favors mechanized logging; tax advantages for agriculture occupation provides an incentive for upland ranching; and the low level of Government charges for fuelwood extracted from public lands depresses market prices and discourages the use of substitute fuels.

Box 5.2: Land Tenure Policies—Effects on Forecast Resources

Land tenure policy has significantly affected forest resource use in several countries. However, no comprehensive studies have been carried out until very recently. In Nepal, Niger, Sudan, India, and Pakistan, forest land and resources to which people had open access are overused. Because land titles were insecure, lands for agriculture and forestry were exploited too heavily in the newly-settled areas of Nepal, Indonesia, the Philippines, and Brazil. In general, the traditional rainfed small farm sector, which constitutes a large proportion of the rural population in Nepal, Zambia, Cameroon, and Sudan, has not been reached effectively by policies to promote intensive agriculture. All of these factors have worked at cross-purposes with forestry development and conservation in these countries, and they must be addressed to stop the rate of forest degradation.

should be better interaction generally between sector work and forestry lending. This interaction is bound to change as the marginal productivity of capital changes with investments, policies, and institutional reforms (Box 5.3).

In Côte d'Ivoire, the roles of pricing policy, land tenure, and income policies were not adequately considered when the forestry project was set up in 1980. Pricing policies discouraged keeping land under forest, and hence accelerated the expansion of the agricultural frontier. In this context,

Box 5.3: Non-coordination Between Sector Work and Lending—An Example

The case of Nepal illustrates how lack of coordination between sector work and lending can create problems. In the 1970s, the Bank had clearly specified the causes, nature, and scope of forest resource degradation in both the hill and Terai regions. The changes in migration flows, employment, reforestation, and land use in the Terai, as well as the pressures on soil, grazing, and fodder resources in the hills, had been identified and quantified. But the Bank did not mention the wide range of activities being undertaken or proposed to address these issues. Nor did the Bank consider how it might help address these issues on a scale essential for sustainable development. As a result, the Bank, the Government, and other donors were left without an operational framework within which to formulate a lending program.

the export promotion policy of the forestry sector—to increase revenues—became unsustainable. The capital accumulated as a result of forest exploitation was never reinvested in the management and protection of the natural tropical forest. Overall, the solution to the forest sector problem depends on an effective income-growth policy. This is especially true for migrant farmers who have moved south to take advantage of better opportunities.

With governments often unable or unwilling to improve their macro-policies with respect to population, land tenure, land taxes, and resource pricing, it becomes difficult to improve forest resource management strategies. In effect, there is not much interaction between macro-policies and forest development in many of the developing countries. In this regard, the Bank is now playing a much more effective role in relating macroeconomic policies to forestry development. Forestry policies, however, should become part of most sectoral or macro-adjustment programs. The forestry sector has been left out of these programs until now, and the result has been substantial changes in land use in the countryside of many borrowing nations.

Project Performance and Supervision

A comparison of findings on completed operations with findings from supervision reports on operations in progress yields several conclusions. First, as the Bank gets more involved in environmental forestry projects or in projects of a similar nature—such as watershed management—it is vital to reflect upon the types of development implementation issues such programs are bound to face. It is already clear from the limited information reviewed in this report that important managerial and financial problems will be central to the performance of these operations. However, solutions to implementation problems often rest ultimately with the borrowing countries. In many cases, it is not only a matter of relative advantage, but of exclusive advantage and responsibility as well.

Second, evaluation demonstrates that in environmental forestry projects, management forms a major constraint, followed by technical and financial issues. Integration in planning and implementation—an important element for watershed development projects—has often been missing in environmental forestry projects. The line agencies responsible for conceiving and implementing measures to address the problems frequently do not work with each other or with project beneficiaries. Individual line agencies have often undertaken separate agendas according to their priorities. Project management has proven of limited value when it came to coordinating such components as irrigation, livestock, and farm development. These coordination problems are often compounded by lack of adequate funds and a poor participatory framework for beneficiaries.

Technical problems also abound because of a lack of technical staff in key positions, a total absence of resource assessment studies (e.g., non-availability of aerial photos and aerial photo mosaics of a suitable scale for accurate watershed planning), a lack of understanding of appropriate technologies for rainfed areas, and poor field demonstrations. These problems call for a comprehensive assessment and immediate action.

Third, the skills available to support implementation are not equal to the problems faced by the lending program. A brief analysis of skill composition during implementation revealed that foresters form the largest group of specialists (nearly 43 percent) in most projects. They are followed by economists (23 percent) and agronomists or agriculturists (11 percent). Financial analysts, however, form fewer than 10 percent. Another critical problem is the lack of continuity in the supply of these skills. Economists, for instance, do not participate continuously in projects. Thus, the skill composition of project teams needs to be altered.

Fourth, the nature and quality of reporting is deficient in many respects. Two observations need to be made with respect to the new type of supervision reports, introduced in 1985. First, several of these reports do not adequately describe problems or issues that, later on in the PCR, as well as the audit, are the main subject of evaluation. Second, these reports provide little information on other aspects of projects such as performance on disbursement, procurement, compliance with loan conditions, and consultant performance. This has been remedied to some extent by yet another version of the supervision report introduced in 1989. The more recent version includes ratings on procurement progress, training, technical assistance, studies progress, environmental aspects, and overall financial performance.

Fifth, monitoring and evaluation—an effective tool for improved planning and assessment and for providing valuable feedback for research and extension—is deficient in a large number of projects. Natural resource systems are very complex and as projects become more complex and objectives more multi-dimensional, it is imperative that solid and effective monitoring and evaluation units be established at the project and national levels. Recent efforts in this direction in some of the regions should be commended. However, in almost all projects reviewed in this study, monitoring and evaluation units were ineffectual. Important information was not collected, and critical changes in long-term trends in natural resource systems were completely ignored. In the most recent projects, the M & E units were basically input-oriented (e.g., monitoring seed distribution) with no major regard for output or global project outcome. A serious look into this area will require resources and expertise. Forestry projects demand specific skills for evaluation, some of which are in real shortage. This is clearly an area where the Bank has an advantage, if sufficient resources are devoted to these activities. The tendency in the past has been to underestimate the difficulties of staffing M & E project components. Thus, a special assessment of monitoring and evaluation systems in forestry projects may be advisable.

Project Performance, Supervision, and Sector Work

The evaluation reports of several projects suggest that forestry projects (particularly social and environmental forestry projects) have too many development objectives. Though this is not unique to the forestry sector, these projects are often expected, for example, to solve fuelwood crises, to improve incomes and raise the living standards of the poorest of the poor (including women and children), to enhance the environment in multiple ways, to expand exports and replace imports, and so on. There is no doubt that a forestry project can make a contribution to all these problems, but the Bank's forestry program cannot be expected to solve all of them. Unrealistic objectives have set un-realistic expectations for forestry lending, particularly in the areas of social and environmental forestry. This excess —which may be explained by the amount of time that typically elapses between one forestry project and the next—may be the most significant source of failure in the long term.

Another major issue that needs attention is the lack of good economic evaluation and realistic project objectives identified in most of the forestry appraisal reports. It seems that at the identification stage, little concrete information is available on costs and benefits. Overly-optimistic estimates of yields and prices also reflect judgments that prevail in decisions regarding these projects with no comprehensive and mature analysis of the sector.

Most appraisal reports fail to give required attention to this issue; e.g., Mali Forestry Project, Bangladesh Afforestation Project, Côte d'Ivoire Forestry Project, and the Philippines Smallholder and Treefarming Forestry Project. In addition, economic methods and procedures are only partially applied. One interesting manifestation of this problem is the increasing failure to assess the extent to which outputs from these projects are tradeable (e.g., Côte d'Ivoire Forestry Project, Uttar Pradesh/Gujarat Social Forestry Project, Mali Forestry Project, and Malawi Forestry Project). Finally, spatial and intertemporal externalities are seldom taken into account. This is not acceptable in projects prepared or appraised in the 1980s and 1990s. The Bank has produced several guidelines and manuals geared to dealing with the external effects of forestry projects. The problem is perhaps one of training staff involved in the design and implementation of forestry projects and those dealing with sectoral and country policies affecting forestry management, development, and conservation.

Implications for Bank Lending in the 1990s

What do the findings of this review suggest for the future? Several dimensions of this question are suggested by the evaluation results:

- Given the findings from operations, sector work, and policies and the obligations imposed by expanding sectoral lending, what should a forestry project ideally encompass?
- Can the Bank lending program afford to promote the same type of projects financed in the past?
- What conditions are necessary if forestry programs are to become sustainable over the medium and long term?
- Are there indications that the lending program is moving in a new direction?

Based on evaluation results—including lending and policy-related issues—this section presents the basic elements of a lending program and strategy for the 1990s. The two approaches—"forest first" and "forest second" that were elucidated in Chapter 1—have been translated into specific projects, concepts, and practices regarding capital accumulation and sustainability; institutional arrangements; roles of the public, private, and community sectors; and sector management practices. Given our understanding of the limits faced by these two approaches, the next step in increasing Bank involvement should include a series of conditions and components that need to be identified.

Experience with completed operations suggests that forests are not an abundant resource, that communities should get involved in planning, that management and development implementation are important determinants of performance, and that sustainability depends heavily on the nature of the existing incentive system. In addition, decision makers should not assume that past approaches have a high probability of success given (1) the social and the environmental imperatives faced by many developing countries and the world at large, and (2) the current level of lending in the forestry sector.

The frontier of development in the forestry sector is not in technology but in institutional and human/cultural capital. Admittedly, technology and technological progress are important, but the desired kinds of technological changes will not take place without an adequate institutional environment.

Institutional capital in this study implies five elements necessary for capital accumulation and social acceptability:

- an incentive structure (market as well as non-market incentives);
- management (all levels);
- an organizational framework (for planning and development);
- public- and private-sector roles; and
- and community participation.

Future project performance depends critically on our understanding of the linkages with other sectors of the economy. New approaches will require adopting land use as the focus of development, finding an optimal organizational framework, and an effective management system for all types of forest resources and for the sector as a whole.

The incentive structure at the macro-level has become a principal determinant of performance and sustainability of the remaining forest resources. Prices, interest rates, taxes, and subsidies create the environment for those connected economically with these resources. Property rights and tenure systems—as non-market incentives—are also important; they determine the extent to which individuals and communities are prepared to sustainably manage and use the forests, the character of overall economic interests (invest or deplete), and overall attitudes toward forest resources. If resource depletion increases, the probability of irreversible damage also increases. Therefore, macroeconomic policies can have a dramatic effect on conservation or depletion of forest resources.

Human/cultural capital should not be understood simply as development of needed skills through training and education. These elements are clearly important, but much more is needed. An active participation by individuals and communities, through joint management of forest resources, for example, is required very early on in the project cycle. In programs without such participation, project results have been mixed and subsequent participation has not been sustained.

Given the above conditions, forestry sector lending for the 1990s will have to be "program" rather than "project" based. Although traditional projects still have a part to play, the real bulk of the program has to be sector- and country-based. Even where circumstances call for a discreet project, it will be important to have a clear sectoral policy framework and strategy. Thus, forestry program lending will have to be conceived as a long-term engagement, with very well thought-out Bank disengagement terms. Development of the necessary institutional and human/cultural capital will take time. In the future, forestry programs ought not to be conceived as marginal changes to previous programs or as piecemeal activities.

Forestry program lending will need major components to infuse a country's forestry economy with socially acceptable incentives; to develop an organizational structure to make forestry programs valuable in the short and long term; and to establish a basis for participation by governments, individuals, and communities.

Establishing the proper management framework will require major investments in software and hardware, important organizational reforms to strengthen or reform existing public sector agencies, and technical assistance packages tailored to the needs of the sector. Because of the increasing

complexity of forestry projects and programs, the Bank should consider allocating much more lead time and funding to prepare a suitable product.

The nature of the proposed program lending in forestry will also demand a comprehensive aid-coordination effort. *Ad hoc* interventions should be minimized in favor of an agreed-upon countrywide program. This effort will not only require political commitment at all levels and active participation of the governments involved, but an effective and well-crafted information system as well. Success in program lending will depend on the capacity to plan different sector activities. To avoid damaging the resource base and the environment, resource planning, geographic information systems, and monitoring and evaluation must be central to the forestry programs of the 1990s. Implementing these aspects of the program will require strengthening at the national and the Bank level. Neither should the Bank and its borrowers be able to plan major river basin programs or substantial changes in land use without appropriate information and coordination efforts.

Adequate sector work is the most important link in the chain of program lending. Appropriate sector work will enable planners to fill important gaps in information, financial, economic, and social analyses of development alternatives; to identify important institutional reforms; and to establish an adequate policy environment. Given the scarcity of forests and the typical scarcity of linkages between the forestry sector and the rest of the economy in developing countries, options and tradeoffs must be properly assessed. Sector work facilitates developing a consensus on such aspects as technology and research, sequencing of development, private and public sector engagement, donors' participation, long-term financing, and several intertemporal options. Given that forest resources are spatially and ecologically specific, these options must be factored into those spatial and ecological boundaries.

Finally, special emphasis should be given to forest research and education. While the Bank has done too little in the past in these areas, a concerted effort in both is vital for resolving several of the problems identified here.

Program lending may necessitate new lending instruments that will be attuned to the nature of forestry resources and their development. Forestry lending programs should not only be economically acceptable but financially viable. To achieve both objectives, lending agencies may have to establish new financial formulas that will provide incentives to increase the effectiveness of lending and development implementation without compromising the economic viability of the programs. It is now widely accepted that because of the long-term nature of forestry programs alone, lending formulas will have to be changed.

Natural forest and environmental management should be central to program lending. Such components should be of primary importance to the countries containing the forests and to the world at large. There are many forests that are essential for the maintenance of acceptable levels of biodiversity, for the welfare of future generations, and for the benefit of today's generation. This activity may call for the Bank to take an active role in promoting international agreements dealing with management and preservation of forests and the resources within them. An increasing emphasis on forest management—including the active participation of all potential beneficiaries—will inevitably result in more complex projects. As this complexity increases, it will be essential to provide for much more project lead time and funding.

Implications for Policy

The experience with both project and sector work suggests several important new emphases in Bank forestry policy. These are called "new" because many of them were considered in the previous policy paper, but the approach taken there was either too general or the emphases have been ignored in practice.

Major changes have occurred in terms of how the role and importance of the environment in economic development is perceived. These have changed the ways in which forestry policy is formulated, and how such policy changes affect operational effectiveness. A decade ago, there was not the same interest, commitment, or desire to deal with environmental problems. Examples of major indicators of these changes include:

- the recognition that a global link exists between many of our economic actions and how they affect the environment;
- the belief of many policymakers that environmental issues are not isolated from economic development; that on the contrary, unfavorable changes in the natural environment may lead to real long-term declines in economic welfare;
- the increasing understanding of the relationships between man and his biosphere, including effects of droughts, floods, earthquakes, and desertification and all their implications regarding food consumption, health, and human well-being; and
- the major pressure being exerted by organized advocacy groups devoted to the preservation of the planet's biosphere for current and future generations.

Institutional Aspects of Forestry Policies

The Role of Institutions. In the past, Bank strategy and policy have grossly underestimated the role that institutions play in forestry policy. Here, "institutions" encompasses the five elements noted in the previous chapter: incentive structure (market and non-market incentives),

management, organization of development, public and private sector roles, and people's participation in development. In particular, the Bank has underestimated the influence that incentive structure has on forestry project performance. Markets for wood have proven to be rather imperfect, and price fluctuations are more variable than for other commodities. Price changes depend on the availability of wood, the quality of wood, transport costs and arrangements, interstate trade regulations, international terms of trade, industrial technology, urbanization, and many other factors. These aspects were not addressed in the 1978 policy paper, and very few projects took the marketing and incentive side of social and environmental forestry into serious consideration. One reason for this neglect was that developing countries were generally too busy focusing on wood production to concern themselves with marketing. Another reason was a prevailing notion that the scarcity of wood was so acute that any increase in supply would be absorbed by the market. This has proven untrue, particularly because of relatively high transaction costs and the fragility of local market organization, structure, and performance.

In addition, the non-market incentive structure played an even more important role in determining project performance. In many areas of the world, the simultaneous solution to the environmental and fuelwood crises requires a major mobilization of resources into forested areas that are either under common property or under a multiple system of property rights (multiple claims over the land and over the products of that land). In the late 1970s, the Bank underestimated the effects of these ownership arrangements. The result was that lands potentially available for forestry development have proven to be totally inaccessible. The likely assumption was either that the Bank knew how to deal with such systems of property rights, or that governments and local communities would themselves find a suitable solution. Neither has proven true.

In the early days of forestry programs, the role of the public sector was seen as preeminent. In time, the role of the public sector diminished as the Bank turned its attention to the influence of the private sector in forestry development. The time has come now to re-think the respective roles of public and private institutions, as we know much more about their comparative operational advantages visá-vis forestry issues. A new policy must seek to address this issue in a practical way.

The Role of Organizations. No Bank policy statement to date has adequately addressed organizational issues in forestry development. These issues have affected the performance of many projects, particularly those in social/rural development and environmental forestry.

The Bank has also demonstrated little expertise in establishing organizational arrangements that are workable at the local level. Second-generation projects have tended to overtax the ability of local institutions and organizations (e.g., the village, panchayat, kabupaten) to take on responsibilities, an aspect not considered in the past. The implicit assumption was that these organizations not only existed, but were ready to take on forestry programs as well. This assumption proved overly-optimistic. Organizational arrangements in forestry development warrant further investigation. Several alternative concepts have been tried out, including direct public control and management. This has incorporated the assignment to communities of the responsibility for executing and assessing property rights in the project. In other cases, villages have been empowered to carry out these tasks. Recently, the concept of "user groups" has emerged. The theory is that such groups could increase fragmentation of consensus-building at the community level. The most salient aspects of Bank thinking on community participation and the form such participation is to take should be central in drafting a new Bank forestry policy.

Another important organizational feature pertaining to policy formulation concerns the national and local forestry sector agencies. These typically fall under a ministry of forests, forestry department, and so on. Since institution-building was central to the design and implementation of many past projects, the Bank may be now in a better position to take stock of its experience in developing institutions within the public sector. Issues of manpower, socioeconomic planning, and monitoring and evaluation have to be addressed. Forestry policy to date has totally ignored issues related to manpower, despite the fact that several audits indicate that the lack of manpower is adversely affecting sustainability in forestry projects.

Though the 1978 policy paper stated the importance of monitoring and evaluation, the portfolio reveals that the Bank has paid only lip service to this task. Without monitoring and evaluation, it is very difficult to assess performance, to adequately manage projects, and to claim any success in the forestry sector. With regard to forestry, the Bank has very spotty data, for instance, on biomass creation, on actual planting rates and survival rates, on yield and growth, and on socioeconomic variables. As the sector emphasis shifts toward social and environmental forestry, the monitoring of social as well as environmental variables is essential to defining Bank lending strategies and procedures. So far, the economic analysis performed on such projects, on investment alternatives, and on the value of institutional reforms is deficient, largely because of a lack of information about variables that are essential to any acceptable analysis. However, the longer the Bank postpones pursuit of an information framework suitable for monitoring and evaluation, the greater the risk to its lending program. This is a subject of vital importance for Bank policy.

Managing Forestry Development. The 1978 policy paper did emphasize several related to management aspects of forests and the forestry sector.

Management of natural forests, or of forests in general, has been a component of many forestry projects. There were management components in several projects long before 1978. These components were never well defined and their financing was usually left to the government in question. No project document has yet had a comprehensive chapter on managing natural forests, explaining the most important management practices and why, how and when to carry out those practices, what sort of outcome is expected from those practices, and how to monitor effects. Since forestry management components require little or no foreign exchange, the appraisal—and to some extent, the evaluation processes—have paid little attention to their performance. The results are that in several countries, no agreements have yet been reached, for example, on maximum allowable cut, stumpage values, rotations, taxation, afforestation, preservation of wildlife, technology for land clearance, fire protection methods, and management of encroachment. As the world's natural forests are disappearing, leaving management as an afterthought of forestry programs is a source of defeat. Bank policy should have a full chapter on managing forests; it should explain why forest management is important and explain the type of management systems the Bank is prepared to promote and finance.

Genuine forestry management has often been sacrificed because it was assumed that what was needed was to plant trees, and as a consequence of planting trees, several management problems would be resolved. Nothing could be further from the truth. Most of the forestry agencies desperately need economists, financial analysts, management specialists, and other experts perceived to be outside the domain of forestry development. As a result, forestry projects are generally not widely considered in public expenditure and investment reviews, funds are not allocated to the sector, and macroeconomic policies are implemented without consideration of forestry needs. It is imperative that forestry agencies have solid planning and budgeting units. Client countries should be able to identify, prepare, and appraise their projects, as well as carry out necessary sector and policy work. Right now, this his is far from being a reality. Bank forestry policy needs to provide guidelines in these areas.

Public Services for Forestry Development. The policy paper did not fully address the role of public services in the forestry sector; e.g., extension, research, monitoring and evaluation, marketing and distribution, and sector management in general. Perhaps one reason was that the Bank was developing a separate policy in each of those fields, with a central emphasis on agriculture and rural development. However, experience shows that resources need to be allocated to public services if forestry programs are to succeed. This applies in particular to rural development and social and environmental forestry programs.

This need for public services has raised a host of institutional and policy questions. A particular one is whether the forestry sector should have its own extension service. This issue has come up because of the large agricultural extension programs now financed by the Bank almost everywhere. Bank policy has to commit itself on this matter.

"Management of the Commons". One often-overlooked aspect of forestry development is the growing popular consensus that some forests are "commons" of the world. The Amazon and other tropical forests are good examples. Integral to this idea is that related natural resources are held in common property as well, like the wildlife and climate that depend on the conservation and management of these forests. The notion is that these resources may be of interest to more than one group in society, or even to more than one country, or to the world at large. Management of forestry resources in this context was not a major focus of the policy paper. This is perhaps because the relevant concepts do not necessarily fall within the domain of forestry development.

Socioeconomic Aspects of Forestry Policy

Forestry Policy, Sector Work, and the Lending Program. Experience shows that it would be useful to make explicit the fact that a Bank policy statement will never replace the necessary sector work or country socioeconomic work needed to implement the policy. As stated earlier, the policy paper of 1978 was not accompanied by necessary sector work or macroeconomic studies that make a general policy instrumental to the country strategy and to Bank lending targets and procedures. The new policy should set lending conditions that specifically demand increased sector work activities in the countries interested in forestry development. Within this context, the new policy should address the Bank's comparative advantage in different aspects of sector work.

Intersectoral Linkages. In the policy paper, forestry development was seen as isolated from the rest of the economy, a view that was exacerbated by using fuelwood as the unit of account in several projects (an issue discussed in the next section). Forestry programs such as afforestation, plantation establishment, and natural forest management were implemented without considering the impacts of other sectors' policies; e.g., pricing, subsidies, and taxes in agricultural, monetary, fiscal, and trade policies.

The recent increase in emphasis on macroeconomic aspects of forestry development highlights two major gaps:

(1) the relationship between ends and means and (2) the inadequacies of sector policies. Regarding the relationship of ends and means, the old policy paper recognized the importance and magnitude of the environmental and fuelwood crises. However, in several instances, as shown by this study, the means were too small to resolve pervasive macro-problems in borrowers' economies. Forestry policy should recognize that many of the problems faced by forestry operations are not within the domain of forestry, and that policies in other sectors greatly influence the effectiveness of forestry programs.

The new policy may also emphasize the importance of having an adequate sector policy, as a necessary condition for addressing the macroeconomic aspects of forestry development. This is absent in most client countries. As the Bank increases its concentration on "sector lending," a sector policy will be the key to effective design and implementation. Sector policy should announce that in a well-justified number of cases, the Bank may put a moratorium on forestry lending until a policy is put in place. Exceptions to this rule should be operations that are explicitly designed to help the process of policy formulation.

Forestry policy should underscore the importance of introducing environmental concerns into macroeconomic policy. This will not only reinforce recent environmental policy statements, but it will also help to integrate those concerns into the design of structural adjustment lending (SALs), public investment and expenditure reviews (PIERS), and country strategy papers (CSPs).

The "Unit of Account" Dilemma. As stated earlier, the general project response to the 1978 policy paper was mainly to deal with the shortage of fuelwood; the problem was considered to be one of supply. The use of fuelwood as the principal unit of account in forestry lending is a major reason why these projects have not been very effective in solving the energy crisis facing rural areas, particularly within lower-income groups. The real solution to the energy crisis rests not just on the forestry sector, but on a strategy for the entire energy sector (e.g., rural electrification) and agriculture (e.g., use of agricultural residues and dung). In this context, experience suggests that the new policy paper may consider discussing the extent to which fuelwood production is the optimal way to deal with the energy crisis of the rural sector.

If the new trends in lending continue, this review suggests that land use provides a better organizational framework for forestry projects. As such, land use allows a more explicit consideration of the spatial dimensions of forestry projects. This is an area in which intersectoral planning, particularly in agriculture, requires careful attention. Land use as a basis for planning will require the crossing of well-demarcated and old-fashioned institutional frontiers. Sector policies should provide a frame of reference to carry out some of the necessary institutional reforms suggested earlier. Moreover, a sector policy statement should not shy away from announcing the need for major institutional and organizational reforms, and the key role that governments will play in the design and implementation of those reforms.

Financial Aspects of Forestry Development. The financial dimensions of forestry projects are not straightforward and simple. In 1978, it was recognized that forestry projects require a special financing instrument because of their long-term nature and uncertainties with regard to future prices and benefits. In new style forestry projects, most of the financial needs are local-currency intensive; very little foreign exchange is involved. As public sector deficits grew, budget cuts had severe consequences for forestry development. This raises an important policy question: Should the Bank have a special window for financing certain types of forestry projects? The Bank must decide if new instruments and guidelines are needed, and the sector policy should make the final decision clear.

Economic Evaluation: Myths and Realities. The policy paper of 1978 stressed the importance of developing economic evaluation techniques for forestry project analysis. It was widely recognized that these projects needed solid economic analysis and justification. In an era when applying cost-benefit analysis was at its peak, the Bank responded in kind. Several guidelines and manuals on evaluation were written during the last decade, but these have often been ignored. Economic evaluation should receive some attention in the new policy paper, but Bank policy should consider emphasizing the need for training. Priority should be given to training Bank staff rather than doing further research on economic methods and procedures.

Assessing Relative Advantage

The Bank's Relative Advantages

Since the Bank has underestimated the role of institutions, organizations, and policies in issues related to forestry development, there have been instances when the Bank has had to rely completely on the actions of client countries. Changes in land tenure or property rights can be considered as an example. This review found that it is not clear whether the Bank has a relative advantage, compared with institutions in the borrowing country, in promoting or implementing land reforms, assigning property rights, deciding on legal domains, and so on. Bank intervention is equally complex in other areas. Thus, the new policy paper should report on those interventions that the Bank is—and is not—suited to implement, in order to put client countries

on notice. Today's circumstances are different; countries are becoming more fully involved in development project planning and implementation and some do not expect (or indeed allow) direct Bank intervention in certain areas.

Based on the findings of this study, it appears that the Bank's greatest relative advantage lies in the following areas:

- helping establish a sectoral framework that would enable countries to achieve a sustainable development strategy;
- providing the necessary mechanisms to achieve the maximum level of technology transfer across countries;
- encouraging the integration of environmental concerns into macroeconomic policy; and
- providing long-term financing at very low rates.

In terms of investment financing, the Bank should take an integral view of the projects and finance long-term sectoral programs. The length of time per project in the forestry sector will vary depending on country circumstances and on the nature of the forestry problems in question.

Forestry Policy: the Carrot or the Stick

The 1975 policy paper did not focus on rewards (or sanctions) if countries complied (or refused to comply) with the policy framework and strategy. In essence, the paper was relatively neutral, with a small incentive associated with lending (i.e., more money made available). No real conditionality was attached, except to items necessary to successfully implement the projects.

The contemporary economic and political environments for development have changed, and thus, a series of "carrots" and "sticks" should be associated with each part of the Bank's new forestry program. At the least, borrower countries should be aware that the Bank will not lend for forestry development until there is a well-defined and comprehensive sector policy. By the same token, Bank studies on the adequacy of financial instruments and their induced incentives to sustain forestry development will be important. Such studies should pay particular attention to how different modes of financing affect the performance of forestry management and conservation programs.

Annexes

Annex 1: Performance of Project Components

Five components of free-standing forestry projects are analyzed in this chapter: (1) plantation, (2) tree nurseries, (3) farm/community forestry, (4) natural forest management, and (5) watershed rehabilitation or protection. These components usually form the core of free-standing forestry projects. They are components that are considered uniquely "forestry" in nature. Others, such as administration, roads, vehicles/equipment, marketing, or institution-building, are as much a part of other types of projects as of forestry projects.[1]

PCRs and PPARs do not usually assess the performance of individual components, except as they relate to overall project performance. As a result, this review relies on information contained in project files, consultant reports, and other documents available in the Bank. PCRs do, however, review whether component appraisal targets have been met. The tendency is to quantify assessments whenever possible; for example, plantation components are evaluated according to the number of hectares planted as a percentage of appraisal targets. When the financial (and economic) rates of return are dependent upon the activities of one component, the FRR/ERR may be calculated for that component and used to establish the project ERR. Otherwise, an ERR is not calculated for components.

Plantations

Nine of 21 projects with plantation components met or exceeded appraisal targets for hectares planted. Six others reached at least 75 percent of appraisal targets. All other projects, except one unsatisfactory one, reached 65 percent of appraisal targets or higher. Of course, these figures do not necessarily correlate with eventual wood production or with achieving other social, environmental, or economic objectives. To attain those objectives, other widely varying factors[2] would have to be considered.

Key findings in these components may be summarized as follows:

Issues and Problems

- Lack of proper basic trial research before plantation establishment/too large an area planted for a trial basis.
- Poor choice of tree species.
- Overestimation of growth potentials and rates.
- Poor previous knowledge of planting sites/poor choice of sites.
- Land use/land tenure conflicts.
- An emphasis on planting at the expense of maintenance/poor maintenance.
- Inadequate fire-prevention measures/fire damage.
- Damage by disease or insects.
- Poor technology transfer/poor planting stock.
- Underestimation of production costs, especially the difficulty of and cost of site preparation and maintenance of plantations. This was particularly true in projects that attempted to establish plantations in sites of cutover natural forest.
- Overestimation of ultimate prices for products.
- Proximity to markets, infrastructure/transportation costs not properly considered.

1. Tree nursery activities are not always considered a separate component in forestry projects, often being treated as part of either plantation or farm/community forestry components. For clarity of discussion, however, tree nursery problems and issues have been distinguished from those of plantations and farm forestry. Similarly, watershed rehabilitation or protection has been treated as one component, even though it consists of several types of activities; e.g., re-vegetation, livestock management, dam construction, and soil conservation.

2. These factors include seedling survival rates, quality of maintenance and soil conditions, utilization, markets, transportation, sustainability, etc.

- Underestimated importance and difficulties of marketing secondary products (wood produced in clearing, fuelwood, etc.).
- Marketing assumed without an analysis/no eventual market for output.
- Poor contribution toward the achievement of project objectives.

Lessons Learned

- Before large-scale planting begins, the technological soundness of the chosen species mix should be assured. Often this means allowing the trial to run long enough to determine changes in growth rates as the stand ages; or to determine possible disease or pest infestation problems that may not emerge until a certain point in the growth cycle.
- The choice of trees should represent a multi-criteria mix that might include fast growth, fire or pest resistance, quality of wood for industrial uses, fodder potential, income production, and contribution to the preservation of genetic diversity. In this regard, indigenous tree varieties should be given higher priority.
- Marketing analyses, soil surveys, species research, and plantation trials should be conducted during project formulation so that an appropriate species mix is chosen for large-scale planting. Trial plantations should preferably be carried out near the sites of ongoing plantation programs to maximize access to expertise and minimize infrastructure costs. Trials should be kept small.
- Investigating land use and land tenure as part of project preparation is particularly important in plantation projects.
- Sufficient attention should be given to maintaining plantations, particularly during the first few years, even if planting targets suffer. The increased growth rate that results from weeding apparently compensates for the additional costs.[3]
- A fire prevention or fire fighting capability—one that includes providing equipment and designing a fire protection and control program—needs to be established early on. Adequate weeding will probably be an important component. In addition, close monitoring of these programs should be a priority in fire-prone areas to ensure that forestry protection measures are enforced correctly and in a timely manner.
- Lower-cost approaches than clear-felling secondary forests to establish plantations should be explored (reseeding logged-out forests, managing natural forests in a way that allows regeneration of more valuable timber, providing private-sector incentives for reforestation, etc.).
- Greater attention and research are needed on processing and marketing secondary tree species, on thinning, and on secondary products (fuelwood, charcoal) that could increase benefits.
- A careful analysis of the marketing and trade possibilities of potential products should be a part of project formulation.
- Solutions to shortages of energy (fuelwood) and wood products and to environmental degradation often lie beyond the sector and may require a multisectoral approach, modifying basic policies, and increasing private sector participation.

Nurseries

Issues and Problems

- Too early, over-ambitious nursery establishment and production targets in advance of sufficient growth in demand and nursery experience.
- Inappropriate location of nurseries.
- Poor sales of seedlings to individuals versus communes, and total sales lower than expected.
- Production cost of seedlings may be in excess of selling price.
- High production costs with extensive use of machinery and mechanical sprinkling equipment.
- Seedlings of poor quality or otherwise unsuitable for the conditions in which they were to be planted.
- Failure to take adequate measures to prevent disease, identify potential disease problems, or even to eliminate a disease once identified.
- Lack of extension and monitoring of survival and end use (See also Farm/Community Forestry, below).
- Lack of a proper policy environment. (See also Farm/Community Forestry, below).

Lessons Learned

- A large-scale, nationwide nursery program should not be carried out until a pilot program has been instituted to iron out design flaws, particularly in a country in which retail nurseries are a new concept and where the FD has had no prior experience.
- The location of nurseries should be based on a thorough supply and demand analysis identifying wood deficit areas and accessibility of sites, etc. A good approach is to establish nurseries on a temporary basis until farmer response is sufficient to justify upgrading to permanent status.

3. The high cost of fertilization, on the other hand, appears justified only if the treatment is used as a substitute for later weeding, permitting quicker crown closure and associated weed suppression.

- To cut transport costs for rural consumers, it is more desirable to have numerous small nurseries than a few large ones.
- A diversified nursery production with more species and types of trees will increase demand.
- Production costs will be decreased by shifting from purely potted stock to more than half bare-rootstock in nurseries (also a by-product of diversification).
- Good lines of communication with rural communities through good information and extension (also facilitated by having a large number of smaller nurseries) is an effective marketing strategy and allows nurseries to respond rapidly to changes in species preference.
- Seedlings should be sold rather than given away. Although farmers are quite willing to pay for seedlings, they are more selective than anticipated (see diversification of species, above).
- A rural nursery program is an appropriate effort to make rural populations self-sufficient in fuelwood by making seedlings available at affordable prices.
- High costs of production may be addressed through greater use of labor and increases in production volume.
- Nurseries should not be set up without establishing extension to advise farmers on planting and tending techniques, planting distance, planting seasons, protective activities, etc.
- Nurseries should not be set up before implementing a supportive policy environment; they cannot be economically viable without incentives for planting trees. Attention should be paid to controlling and protecting natural forests, to adequate producer prices for wood products, and to a strong revenue collection system.

Farm/Community Forestry

Issues and Problems

- Low survival rates of seedlings sold to communal woodlots.
- Many village woodlots are in wretched condition, primarily for lack of maintenance. Past programs for the establishment of village woodlots have been largely unsuccessful, for lack of interest on the part of the local population.
- Responsibility for implementation, maintenance, and operation of local authority (district, town council) plantations has remained with the FD, despite project intentions.
- Companies that entered into marketing agreements[4] with smallholder tree farmers lacked experience and were often unable to honor these agreements.
- Most of the project beneficiaries were not smallholder or subsistence farmers, as envisaged at appraisal.
- Production costs were underestimated because costs for labor or transport were not factored in. Subloans did not include a provision for these expenses, and farmers were prevented from responding to temporary surges in demand.
- Yields were overestimated. Knowledge of the trees under project conditions was scant, but component funding took place before research findings were available.
- Limited interest because of a lack of information and extension services.
- Limited interest due to the lack of incentives. Farmers had no incentives to plant trees because of low prices for fuelwood and the availability of free wood in the virtually uncontrolled and unprotected natural forests. Raising stumpage rates alone would not help until the collection of revenues in forest areas could be enforced.
- Monitoring and reporting on the use of seedlings distributed, their survival rate, the maintenance treatment given, and the protection given against fire and livestock encroachment has been inadequate.

Lessons Learned

- Studies indicate that rural forestry development should be based on total participation by the rural population (family tree plantations) rather than on community plantations, and the "top down" approach should be avoided.
- An approach that encourages smallholders to grow trees by providing them with seedlings, extension services, market guarantees for their product, and provision of credit remains viable and is worthy of public sector support. However, a rigorous approach should be used in evaluating the long-term viability, and commitment, of private companies that might provide markets for smallholder produce.
- More attention should be paid to ensure that project activities are achieving socioeconomic as well as physical objectives. The use of financing criteria or special financing arrangements to smallholder or subsistence farmers might need to be used.
- Even for family farms, labor and transportation costs should be studied and factored in, if appropriate, and provision made in the subloans for these expenses.
- The technical packages promoted in farm forestry should be well-researched.
- There is a crucial need for more attractive and adapted technical packages for rural forestry and a more participatory and multisectoral approach. The technical package should be appropriate for the conditions under which they are to be used (e.g., soil conditions, management).

4. A marketing agreement is a guarantee to buy a product when it becomes available for sale, perhaps at a fixed price.

- Extension is an important part of farm forestry; where private extension is weak, alternative government extension services should be arranged.
- Farm forestry programs should not be attempted without prior implementation of a supportive policy environment. Supplying farmers with subsidized seedlings is not enough. Attention should be paid to controlling and protecting natural forests, adequate producer prices for wood products, and a strong revenue collection system.
- More attention needs to be put into project design and supervision to monitor the survival and end use of distributed seedlings.
- Techniques for making use of trees in cultivated areas should be considered as tools for intensifying production systems. This intensification can be achieved only in conjunction with a management plan for village lands that has been conceived and carried out with the participation of the local populations. Such land use plans should be comprehensive, with particular emphasis on all the social and legal problems posed by the utilization of trees in production systems.
- Moreover, future rural forestry should include a comprehensive approach to integrate forestry, agriculture, and pastoralism (agro-sylvo-pastoralism).

Natural Forest Management

Issues and Problems

- Most completed operations have included a forest management component. Contrary to expectations, the large majority of these components have failed to yield the desired results. Most objectives are not attained and often there is misunderstanding about what management of forestry really means.
- Lack and inadequate preparation of work plan for the natural forests, weak updating of these plans, and inadequate recognition in those plans for environmental and benefit sharing concerns.
- Most forestry management instruments advocated were not used or turned out to be rather inadequate for the original objectives. In many instances, the Bank does not properly evaluate the merits of those instruments.
- At best, countries have formulated a forest management strategy, but invariably that strategy is never put in place. One way to deal with this issue may be by increasing the number of years the Bank is involved in the projects. Five years is minimal in comparison to the optimal time horizon of several components.
- As new-style forestry projects become more central to Bank lending, it is imperative to define clearly the scope of forestry management tasks, to draw upon the most recent experience, and to understand the principal determinants of performance.
- Key determinants of performance are institutional and human capital related. On the institutional side, forest management components or projects require important institutional reforms that governments have been reluctant to implement. In some cases, this is justified by the fact that many of the proposed changes are not politically acceptable in the short term.
- Forest management practices are seldom monitored during implementation and never evaluated in detail. The unsuccessful performance of these components should call for a very serious review before lending proceeds in this area.
- Research on techniques for the treatment of natural stands failed because of the lack of technical assistance.
- Delays in implementation on account of a lack of technical knowledge in managing tropical forest.
- Lack of experience of forestry staff with this type of component.

Lessons Learned

- The experience has not been sufficiently satisfactory to indiscriminately replicate this type of component. Given the urgent need to manage existing forest resources, it will be important to get a clear commitment from the government so that the necessary steps to proper implementation are taken.
- Good management work plans require comprehensive resource assessment studies, including ground survey work. Government commitment is essential.
- Experience shows that in implementing management-related tasks, in defining and implementing the necessary instruments (including institutional reforms) and in assessing the optimal pace during implementation, the government has the absolute and relative comparative advantage. More training may be needed at the national and local level.
- Efforts must continue on improved management of fires and on techniques for the recovery, care, and exploitation of natural forests. Concerns should go beyond the production of wood to encompass pasture management and conservation of flora and fauna.
- There is a need for greater understanding of natural forests to enable sound forest management. This may not significantly increase production, given the magnitude of need, but it will significantly affect environmental protection.

Watershed Rehabilitation or Protection

Issues and Problems

- Attainment of project objectives—to reverse manmade ecological degradation of watersheds in order to protect affected agricultural lands from flooding and erosion—suffered because of lack of attention to the proper sequencing of activities (in particular, grazing management and re-vegetation) and the short time frame.
- Lack of an institutional framework, particularly during the "campaign phase," as all participating agencies have their own priorities and agendas in watershed development.
- Once the "campaign phase" is over, the maintenance rehabilitation activity does not receive budgetary and staffing recognition.
- Success of this component was highly dependent on the cooperation of local farmers; this cooperation was not substantially achieved.
- Trees planted in the watersheds suffered high mortality.
- Vegetative methods and contour hedging used in some areas were found to be less costly and just as effective for *in-situ* moisture conservation as the more expensive block leveling and bench terracing that were largely implemented by the project.
- Lack of methodology to measure true objectives.

Lessons Learned

- If a watershed area is undergoing multiple uses that may affect re-vegetation, components to control or manage these uses should be implemented prior to attempts to re-vegetate.
- It should be assumed, unless there is preponderant evidence to the contrary, that the most ecologically appropriate, technically sound, and economically viable approach to flood attenuation is through watershed rehabilitation, without intervening dam storage of water. According to the PCR, "Since watershed stabilization has to be achieved to such an extent that siltation rates of the reservoirs are reduced to economically acceptable levels, it follows that the torrential, sediment-prone nature of floods would already have been moderated so substantially through rehabilitation that little room is left for justifying additional flood attenuation through dams."
- In watershed areas with ongoing land use, substantial emphasis should be placed on extension, information, and public relations with local farmers in order to elicit the required cooperation.
- Maintenance activities should be adequately planned and implemented in 7 watershed projects; costs in terms of both magnitude and duration should be realistically estimated.

Annex 2: Forestry Development Sector—Component Descriptions

Administration:	Operating costs involved in running a project, e.g., salaries, travel, supplies, and maintenance.
Roads:	Road construction and maintenance.
Vehicles/Equipment:	Purchase and maintenance of vehicles (cars, jeeps, tractors, etc.), equipment, and project machinery.
Buildings:	Acquiring land, construction and maintenance of buildings and housing.
Nursery/Seedling:	Nursery establishment or improvement, seedling production and distribution, and seedling improvement.
Afforestation:	Planting trees in unforested areas, especially on roadside, waste land, village lands, and in agricultural fields (strip plantings/wind breaks).
Institutional:	Policy planning and development of project implementation capabilities including design, extension, monitoring and evaluation; expenses and support provided to strengthen forestry departments and allied units, planning and monitoring capabilities, and forestry colleges/universities.
Plantations:	Establishment of forest plantations, particularly for industrial use, such as for production of fiber pulp, board, polyvinyl resin, and other products.
Sawmills:	Mill construction, maintenance, and rehabilitation costs.
Logging/Transport:	Construction of logging roads, log extraction, and transport to the mill.
Forest management:	Development and implementation of plans to protect, enrich, manipulate, extract products, and otherwise use natural or plantation forest resources.
Marketing:	Studies of product demand, prices, supply of credit, export assistance, etc.
Environment protection:	Erosion and flood control, conservation education in soil and forest, watershed management, park establishment and management.
Woodlot/Fuelwood:	Tree planting for fuelwood in woodlot, small village plantations, or private farms.
Reforestation:	The replacement of trees in cutover forest areas.
Farm Forestry:	Planting trees on private and community lands.
Stoves:	Distribution of stoves to the poor to enable energy-efficient cooking.

Natural Forest Management:	The protection, conservation, and/or manipulation of relatively pristine forest areas for scientific research, biodiversity preservation, or sustained-yield forest production.
Research/Studies:	The performance of investigations or controlled experiments to obtain information for project or program action.
Technical assistance, training:	Provision of improved technologies and technical expertise.
Forestry operations:	Forest maintenance activities, such as forest protection, fire-prevention, forest improvement, fertilization, etc.
Contingency:	Funds for odd activities or expenses overlooked in original project design.
Miscellaneous:	All other costs that cannot be classified under any of the above categories and those that are not directly related to forestry, such as livestock, horticulture, land development, irrigation, pasture improvement, drainage, and taxes.

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