Section I - Basic Information

A. Basic Project Data

Country: LATIN AMERICA  Project ID: P072979
Project: Integrated Silvopastoral Approaches to Ecosystem Management  Task
Team Leader: Paola Agostini
Appraisal Date: November 26, 2001  IBRD Amount ($m):
Board Date: April 8, 2002  IDA Amount ($m):
Managing Unit: LCSER  Sector: VM - Natural Resources Management
Lending Instrument: Specific Investment Loan (SIL)  Status: Lending

I.A.2. Project Objectives:
The main development objective of this innovative pilot project is to demonstrate and measure the improvements in eco-systems functioning, global environmental benefits, and local socio-economic gains of the introduction of silvopastoral systems in degraded pasture lands in Colombia, Costa Rica and Nicaragua. Silvo-pastoral systems consist of complex arrays of planted trees, shrubs and grass species, used for multiple purposes, such as cattle grazing and browsing, live fences and windbreaks to reduce wind and water erosion, shade for crops and livestock, climbers for vine crops, and construction and fuel wood. They serve also as an effective "pump" by capturing mineral nutrients from deeper soil layers to produce vegetation, which, in time, and in the form of litter, is reverted back to minerals in top soil layers (see Annex 10 for a detailed description). More specifically, the project aims to assess incentive systems for environmental services and measure, at farm and community level, the benefits provided by an integrated ecosystems approach to the improvement of degraded pasture land in the form of:

(a) local environmental benefits through reduction in erosion and improvement in soil and water quality with increased production, income and employment in rural areas. The experience gained would be directly relevant to an estimated 40 million hectare of degraded pasture land in the three countries. Indirectly the project would be expected to reduce pressure on the agricultural frontier;

(b) global environmental benefits, through improved biodiversity and carbon sequestration services, protecting some of the world’s most valuable eco-systems and reducing the risk of climate change;

(c) information on farmers reaction to the payment of environmental services and experiences in the management of incentives required to produce global environmental benefits; and

(d) comprehensive guidelines for sector and environmental policies in terms of land use, environmental services and socio-economic development provided by the introduction of silvopastoral systems to rehabilitate degraded pastures.

For GEF, this pilot activity would provide guidance for future funding, on the definition of policy requirements for optimizing environmental
services in livestock production and mitigation measures in an area for which operational programs have not yet been developed. The documentation of experience gained, good practices, and dissemination of lessons learned and know-how are also an integral outcome of the project. This would lead to greater awareness of the potential gains to be made in terms of environmental services provided by integrated ecosystem management.

I.A.3. Project Description:
Components:

Ecosystems enhancement and Capacity building.
Ecosystem Enhancement. To establish demonstration sites totalling at least 3,500 ha improved silvopastoral systems, which would provide a variety on ecological services in an area of 35,000 ha.
Capacity building: (i) Technically assist stakeholders, strengthen local organisations and (ii) produce and disseminate communications on integrated ecosystem management and in the implementation of sustainable livestock production systems.

Monitoring and Evaluation of Ecological Services.
Obtain improved information and understanding of the potential of intensified silvopastoral systems in providing global ecological services and local socio economic benefits.

Ecoservices payments.
Gain experience on beneficiaries response to incentives for farm’s investments in biodiversity conservation and land use changes to produce global environmental benefits.

Policy formulation and Outreach. Prepare policy guidelines for sustainable intensification of livestock production and specific recommendations for sector and environmental policies in terms incentive regimes, land use and land tenure procedures and environmental services.

Project management.
Strengthen the administrative and organisation of the collaborating institutions.

I.A.4. Project Location: (Geographic location, information about the key environmental and social characteristics of the area and population likely to be affected, and proximity to any protected areas, or sites or critical natural habitats, or any other culturally or socially sensitive areas.)
The project will work in Colombia in the Quindio Region, in Central Nicaragua (Matigua-Rio Blanco) and in Costa Rica in the Region of La Esparza.
The population affected are “colonos” that have legal title to their land. There are no indigenous people in the area.
The criteria used to select the project areas are:

- Focus on zones where cattle production is one of the predominant economic activities and which are distant of the forest frontier.
- Focus on zones at some distance of fragile and endangered ecosystems (corridors). In the case of Costa Rica, the particular technology used in the selected watersheds of Esparza, about 50 km away from the national park of Monteverde, would be completely unsuitable for the montane climate.
of that park, and the "ecological" distance would prevent the "moral hazard" effect there.

B. Check Environmental Classification: B (Partial Assessment)
Comments: The project would have highly beneficial impacts upon the environment, supporting improved natural resource management and biodiversity conservation. The project complies fully with the objectives of OP 4.36 Forestry, namely, "to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty, and encourage economic development."

There is no major adverse environmental impacts expected as a result of this project. Minor environmental impacts might be expected from some on-the-ground investments.
The Category B is designed to be entirely positive from an environmental standpoint, particularly by promoting conservation and sustainable use of biodiversity.

C. Safeguard Policies Triggered
Policy Applicability
Environmental Assessment (OP/BP/GP 4.01) Yes
Forestry (OP/GP 4.36) No
Natural Habitats (OP/BP 4.04) No
Safety of Dams (OP/BP 4.37) No
Pest Management (OP 4.09) No
Involuntary Resettlement (OP/BP 4.12) No
Indigenous Peoples (OD 4.20) No
Cultural Property (OP 4.11) No
Projects in Disputed Territories (OP/BP/GP 7.60)* No
Projects in International Waterways (OP/BP/GP 7.50) No

*By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas

Section II - Key Safeguard Issues and Their Management
D. Summary of Key Safeguard Issues. Please fill in all relevant questions. If information is not available, describe steps to be taken to obtain necessary data.

II.D.1a. Describe any safeguard issues and impacts associated with the proposed project. Identify and describe any potential large scale, significant and/or irreversible impacts.
- Social assessment has been completed with full participation of all stakeholders.
- No resettlement will take place under project.
- No indigenous people will be affected.

Deforestation increases as a result of the carbon incentive on improved pastures and silvopastoral systems.

There is the risk that farmers response to the economic incentives, increases deforestation by clearing additional land for silvopastoral systems. This would be one of the key parameters to be tested in this project. Preliminary research data by CATIE in three pilot farms in Costa Rica show that pasture intensification leads to a decrease of unimproved pastures and a significant increase of secondary forest. This evidences that intensification leads to abandonment of conventional raising methods.
on native pastures and therefore reforestation.

Table 7. Land use changes, productivity and incremental carbon in livestock farms in Costa Rica

<table>
<thead>
<tr>
<th>Farm</th>
<th>1996</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetal cover</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Native pasture</td>
<td>49</td>
<td>22</td>
</tr>
<tr>
<td>Improved pasture</td>
<td>1</td>
<td>13</td>
</tr>
<tr>
<td>Fodder bank</td>
<td>1</td>
<td>9</td>
</tr>
<tr>
<td>Secondary forest</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>Stocking rate</td>
<td>0.67</td>
<td>1.34</td>
</tr>
<tr>
<td>Milk, l/yr.</td>
<td>8,610</td>
<td>16,917</td>
</tr>
<tr>
<td>Incremental C, tons</td>
<td>1,738</td>
<td>2,765</td>
</tr>
</tbody>
</table>


For the operationalisation of the compensation scheme it is important to address the "moral hazard" of farmers clearing forest for silvopastures to claim compensation for environmental services. The following criteria for the selection of the particular watersheds to further limit the possibility of ranch encroachment in forest areas have been applied:

- Focus on zones where cattle production is one of the predominant economic activities and which are distant of the forest frontier.
- Focus on zones at some distance of fragile and endangered ecosystems (corridors). In the case of Costa Rica, the particular technology used in the selected watersheds of Esparza, about 50 km away from the national park of Monteverde, would be completely unsuitable for the montane climate of that park, and the "ecological" distance would prevent the "moral hazard" effect there.
- Preference would be given to small or medium size farmers (in terms of capital).
- Focus on those areas, where there is a strong presence of an organized group of farmers or community, and where the group has expressed a strong will to participate, to use peer pressure.

Include in the contract for payment of environmental services a provision that indicates that no deforestation will take place on a farmer’s land during contract period.

II.D.1b. Describe any potential cumulative impacts due to application of more than one safeguard policy or due to multiple project component.

II.D.1c Describe any potential long term impacts due to anticipated future activities in the project area.

II.D.2 In light of 1, describe the proposed treatment of alternatives (if required)

II.D.3. Describe arrangement for the borrower to address safeguard issues
II.D.4. Identify the key stakeholders and describe the mechanisms for consultation and disclosure on safeguard policies, with an emphasis on potentially affected people.

This project is being prepared under a strong participatory approach. See Annex 8. The different stakeholders have been actively involved. The project preparation planning process included a number of stakeholder activities that were carried out starting from 1999.

In May 1999, LEAD, CATIE and Servicios Internacionales para el Desarrollo Empresarial (SIDE), organized a seminar in Costa Rica aimed at entrepreneurs and the scientific community. The seminar "Livestock Intensification in Central America: Environmental and Economical Benefits" focused on sharing information and identify strategies and policies for the development of a sustainable livestock production including the market of environmental services.

On March 13, 2000, a workshop was organized in Plains VA, USA on Bird Conservation In Livestock Grazing Systems. This workshop, which included livestock grazing technicians and ranchers with experience in silvopastoral systems, and biologists with experience in community ecology, confirmed the feasibility of changing extensive grazing systems into alternative silvopastures, and provided the ecological basis for establishing a monitoring framework.

Two workshops were held to specifically elaborate the project documentation. The first, to develop the concepts was held in workshop in Costa Rica from July 10-14, 2000. This involved the GEF focal points and the proposed implementing agencies of the three countries selected for this project (NITLAPAN, CATIE and CIPAV), FAO/LEAD and WB staff, and a representative of the American Bird Conservancy (ABC). In a participatory fashion, details on the project were discussed and agreed upon, including the environmental impacts of the proposed technology, criteria for selection of the sites, methodologies for measuring and certifying the two ecological services, socio economic evaluation, criteria and payment levels for the two main ecological services, funding of the initial on-farm investments, administration of the project, management of the financial mechanisms to pay for the eco-Services, and detailed budgets and timetable. As an indicator of government commitment to contribute to and learn from the project, each of the three governments agreed to participate in their country’s respective Steering Committee during this initial workshop. Subsequent to this workshop, a series of meetings and consultations with the governments took place throughout project preparation. The second workshop, held in Rome from November 13-15, 2000 with the implementing agencies and the partners (LEAD, ABC), assessed requirements in the light of the shift from a medium to a regular size project, revised implementation arrangements, finalized the budgets and integrated the analysis of water quality in the project.

During the social assessment a survey and many interviews and focus groups were carried out in the three countries, to discuss and agree with the farmers on the project objectives and components, and to find out with them the best implementation mechanisms.

An electronic-conference was organized by LEAD in October/November 2001 to discuss with the scientific community, NGOs, Policy makers, the
potencial of Silvo-pastoral sistems to generate environmental benefits. The conference attracted a very wide participation.

Public Involvement During Implementation

Public involvement throughout the project was ensured by stakeholder participation, information dissemination and consultation during the preparation. The executing agencies would be responsible for ensuring public involvement, dissemination and consultation in each country. The regional and global information dissemination and consultation would be the responsibility of LEAD’s Spanish Speaking Platform and the Virtual Research and Development Centre.

Stakeholder participation: The project would be implemented in close consultation with all stakeholders. The participation strategy includes workshops and meetings at different stages of the project, with the local farmer’s organizations, agricultural and environmental scientists and government environmental organizations. At early stages of the project, these workshops would be orientated to involve community participation and to increase environmental awareness. Further into implementation, local institutions in collaboration with farmer organizations, would hold regular meetings to evaluate the environmental and socio-economic impacts of the project. A series of training courses for farmers would also be carried out locally to introduce farmers to the new production technologies and research methodologies.

Information Dissemination: Information from this project would be widely available. The results would be published in a series of publications targeted to several audiences, including: manuals for farmers, and peer-reviewed scientific journals; reports and extension materials for different end users, including policy makers. The LEAD’s Spanish Speaking Platform would facilitate the information sharing through its network of institutions in the region. Together with the Virtual Research and Development Centre, would provide the means for conventional and electronic publications and would incorporate the results of the project within the Livestock and Environment Toolbox (an electronic decision support tool for policy makers). LEAD would also include the results of this project within its "Livestock-Environment in the Policy Dialogue" program which aims to the creation of a core group of specialists to mainstream livestock and environment policies, the organization of training/workshops for policy makers and the participation in policy formulation missions in developing countries. Moreover, the Steering Committees would be important channels for internalizing project lessons learned into government policies and programs.

CATIE would contribute to the dissemination of the project’s results with its active outreach and training programs and its close relations to many research and academic institutions in the region. The CATIE educational program began in Turrialba in 1946. Consequently, its postgraduate educational experience spans more than 50 years. CATIE’s has Master and Doctorate programs and organizes training events corresponding to three structures: courses, workshops, seminars and technical meetings. Project findings would be incorporated into its educational programs.

E. Safeguards Classification. Category is determined by the highest impact in any policy. Or on basis of cumulative impacts from multiple safeguards. Whenever an individual safeguard policy is triggered the provisions of
that policy apply.

[X] S1. - Significant, cumulative and/or reversible impacts; or
significant technical and institutional risks in management of one or more
safeguard areas
[S] S2. - One or more safeguard policies are triggered, but effects are
limited in their impact and are technically and institutionally manageable
[ ] S3. - No safeguard issues
[ ] SF. - Financial intermediary projects, social development funds,
community driven development or similar projects which require a safeguard
framework or programmatic approach to address safeguard issues.

F. Disclosure Requirements
Environmental Assessment/Analysis/Management
Plan: Expected Actual
Date of receipt by the Bank
Date of "in-country" disclosure
Date of submission to InfoShop
Date of distributing the Exec. Summary of the EA to the ED
(For category A projects)
Resettlement Action Plan/Framework: Expected Actual
Date of receipt by the Bank
Date of "in-country" disclosure
Date of submission to InfoShop
Indigenous Peoples Development Plan/Framework: Expected Actual
Date of receipt by the Bank
Date of "in-country" disclosure
Date of submission to InfoShop
Pest Management Plan: Expected Actual
Date of receipt by the Bank
Date of "in-country" disclosure
Date of submission to InfoShop
Dam Safety Management Plan: Expected Actual
Date of receipt by the Bank
Date of "in-country" disclosure
Date of submission to InfoShop

If in-country disclosure of any of the above documents is not expected,
please explain why.

Signed and submitted by Name Date
Task Team Leader: Paola Agostini 11/20/2001
Project Safeguards Specialists 1:
Project Safeguards Specialists 2:
Project Safeguards Specialists 3:
Approved by: Name Date
Regional Safeguards Coordinator: Juan D. Quintero 11/21/2001
Sector Manager/Director: John Redwood 11/26/2001

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