1. Country and Sector Background

1. The State of Espírito Santo and the Espírito Santo Biodiversity and Watershed Conservation and Restoration Project area are located in the Atlantic Forest biome, which, due to its exceptional level of species diversity and its vulnerability to continuing threats, is one of the five “hottest biodiversity hotspots” among the world’s top priority conservation areas. Less than 8 percent of its original cover remains; the State of Espírito Santo has approximately 508,000 hectares (ha) of this biome representing 11 percent of the State’s surface area. Most of it is in fragments, inhibiting the movement, dispersion, and “genetic flux” of species, making the survival of adequate populations of species difficult. While clearing and occupation of native Atlantic Forest areas for pastures, crops, and urban settlements has occurred over several centuries, most of the clearing occurred only in the last 40 to 50 years. Importantly, the bulk of Brazil’s population (80 percent), economic activity (70 percent of the country’s GDP), and much of its agriculture (including cattle, sugarcane, coffee, and citrus fruits) is located in the Atlantic Forest.

2. The project focuses on two critical, high-biodiversity watersheds in south-central Espírito Santo: the watersheds of the Jucu and the Santa Maria da Vitória Rivers, comprising 401,000 ha, or 9 percent of the State’s territory. Of particular interest are the mountainous upper parts of the two catchments, which were settled more than a century ago by European immigrants and are still primarily held by smallholder agricultural families. Farming consists of corn, beans, tubers, horticulture, coffee, bananas, fruit trees, planted forest, cattle, and poultry. Farming has led to a reduction of forest cover and fragmentation, encroachment of steep slopes and protected riparian
forest, soil erosion, water pollution, silting of rivers, and pasture degradation. In recent decades, agricultural use of steeper hillsides has decreased, allowing the gradual recovery of many areas (secondary forests). Still, habitat loss and degradation from farming remain significant threats to biodiversity and to the ecological functions of this ecosystem. Riparian corridors are particularly threatened due to their higher suitability for irrigation and their greater accessibility.

3. These two watersheds are unique in the State, and in the Atlantic Forest biome, because they retain more than 40 percent of their original forest cover and represent more than a third of the remaining rainforests in the State. (See Annex 16 for maps and images of the watersheds). The degree of forest cover is even higher in the upper parts of the watersheds, where smallholder agriculture prevails. The watersheds include four public Protected Areas (PAs) (a state park, a biological reserve, and two less strictly protected Areas of Environmental Conservation [APAs]). Despite human pressure, the area still harbors extremely high levels of biodiversity across all categories, and has been identified as containing priority areas for biodiversity conservation within the Central Ecological Corridor of the Atlantic Forest.

4. Beyond habitat for biodiversity, forests provide other environmental services, such as regulation of the hydrological regime (floods and low-flow periods); groundwater recharge; soil conservation; conservation of water quality, including decrease in sedimentation in water bodies; and contributions to local climate. These watersheds are critical in that they provide 95 percent of the drinking water of the Greater Vitória Metropolitan Area (GVMA).

5. Existing market mechanisms have failed to bring about effective conservation of the remnants of this biome, with its globally significant biodiversity, in the face of continuing threats from human occupation, or to increase and restore the connectivity among forest fragments. The adverse impacts of forest deterioration or clearing often do not directly affect those who cause them. As a result, farmers do not take them into consideration when making land use decisions. In Brazil, environmental externalities have traditionally been addressed through legislation. However, as in other states and countries, implementation and enforcement of these ambitious laws have been poor. An increasing awareness of the value of environmental services by those benefiting from their effects or suffering the consequences of their lack, and of the failure of traditional approaches to conserving them, has led to a search for new approaches.

6. Efforts to conserve and restore habitat and natural ecosystem services have also been hampered by the lack of institutional and individual capacity to implement sustainable land management (SLM) and water resource management. Technical assistance and services that could spread knowledge and skills of new land use practices among landholders and producers is limited relative to demand.

**Country Eligibility and Country Drivenness**

7. Brazil ratified the Convention on Biological Diversity on June 13, 1994. The project is in conformity with existing national and state priorities. The project area (that is, the two proposed watersheds) overlaps with Brazil’s national priority areas for biodiversity conservation in the Atlantic Forest, established as a result of studies and national workshops supported under the National Program for Biological Diversity. The project is also consistent with the National Forestry Program, which works in collaboration with productive sectors and civil society to
establish sustainable forestry practices adapted to the ecological, economic, and social conditions of different forest ecosystems while conserving forests and their biodiversity.

8. The selected watersheds are of critical importance to the State because they provide approximately 95 percent of the GVMA water supply while also generating hydroelectricity, and the GVMA is of great importance to the State’s economy because it houses close to half the State’s population of 3.1 million and generates 62 percent of state GDP. Upstream of the GVMA, land use patterns have resulted in severe erosion, substantially increasing silt loads and reducing the quality and timing of water supplies. The project will help implement Brazil’s National Water Resources Management System and Policy, which provides for decentralization of water resources management, and defines the watershed as the territorial unit for the implementation of the policy and corresponding institutional arrangements.

9. The State Government has made forest and watershed conservation and sustainable natural resources use, including biodiversity conservation, one of its central themes. Its Vision 2025 plan includes a 20-year vision for the sustainable development of the highland region, to ensure that socioeconomic growth occurs “along with the preservation of natural resources, such as water and forests.” The State also intends to be a “national reference…for the consistent promotion of sustainable development.”

10. The current government is making serious efforts to build its capacity in environmental management, including water resources management and forest management and conservation. It has launched two important programs to address these (and other) issues: the ongoing World Bank-funded Espírito Santo Water and Coastal Pollution Management (Águas Limpas) Project and the State Sustainable Forest Development Program. In addition, the State participates in the “Ecological Corridors Project” of the Pilot Program to Conserve the Brazilian Rain Forest (PPG7).

11. The Águas Limpas Project focuses the majority of its efforts on expanding the wastewater and water treatment and storage capacity that supplies the GVMA. It also supports the institutional strengthening of the state environmental agency (the State Institute for Environment and Hydrological Resources, Instituto Estadual de Medio Ambiente e Recursos Hídricos, IEMA).

12. The State Sustainable Forest Development Plan focuses primarily on increasing the supply of wood from plantations (for cellulose production) and increased productivity of perennial crops such as rubber, coffee, and palms, but also includes a component to monitor and restore native forest cover, protect critical areas for ecosystem conservation, support Protected Areas, and promote non-timber forest products as a means of sustainable use of native forests.

13. The federally funded Produtores de Água (Water Producers) Project calls for compensating rural producers for reducing erosion through sustainable soil use practices. These and other initiatives make up a wide-ranging state government program aimed at achieving the development strategy established in the 2025 Plan.

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1 In an ongoing analysis of rainy season water turbidity, the Espírito Santo Water Utility (Companhia Espírito Santense de Saneamento, CESAN) has observed a steady increase over the last 11 years.

2. Objectives

14. The Project Development Objective is to support the adoption of sustainable land use practices in two key Atlantic Forest watersheds in Espírito Santo, thereby contributing to higher income for farmers and improved water supplies. Key indicators include:

① Increase in area under sustainable land use practices;

Which will be accomplished in part through the:

② Establishment and implementation of payment mechanisms for watershed conservation; and
③ Increase in areas that adopt Sustainable Land Management (SLM) practices through the implementation of Payment for Environmental Services mechanisms and the participation and capacity building of local actors.

15. The primary target groups are the farmers in the watersheds, IEMA, CESAN, and other government agencies to be strengthened, and the Watershed Committee. The entire population and industries of Vitória’s metropolitan area dependent on reliable water supplies would also benefit, complementing the activities of the Águas Limpas Project.

16. The project is fully in line with the new GEF strategic long-term objectives for biodiversity conservation. It helps catalyze the sustainability of protected areas by helping develop new, sustainable financing sources for the PAs themselves and for agricultural activities in PA buffer zones and corridors (SP1); it aims to mainstream biodiversity conservation in production landscapes by strengthening the policy and regulatory framework (SP4), removing obstacles to the adoption of sustainable land use practices, and fostering new market-based instruments to provide incentives for the conservation of biodiversity goods and services (SP5).

3. Rationale for Bank Involvement

17. The project is partially blended with the Bank-funded Espírito Santo Water and Coastal Pollution Management (Águas Limpas) Project, which aims to secure long-term water supply and water quality in the coastal regions of Espírito Santo. It supports water treatment and sanitation systems for the metropolitan area of Grande Vitória and aims to reach universal (99 percent) water supply and double the capacity to treat domestic effluents in this region. The Águas Limpas Project includes activities to strengthen the state environmental agency (State Secretariat for the Environment and Hydrological Resources, Secretaria de Estado de Meio Ambiente e Recursos Hídricos SEAMA), particularly to enhance its capacity for water resource management and planning, and for monitoring of water quality and availability. This includes building a state-of-the-art information system, and additional capacity for strategic planning, cadastre of water users and their licensing, and acquisition and implementation of the technological information base and geo-referencing resources and enforcement of environmental laws. The new capacity will provide critical support to the implementation of the Florestas para

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3 Sustainable land use means managing land without damaging ecological processes or reducing biological diversity over the long term.
Vida Project, especially the information system on water users, which is a keystone in the establishment of the Payment for Environmental Services (PES) scheme for the two-watersheds, allowing a mechanism for charging water users to be put in place. In addition, some of the activities to be supported include guidelines for river basin plans, a study simulating the economic impacts stemming from charges for water use, a training program for committee members, and studies on the regionalization of outflows.

18. Without the investments that Águas Limpas is making in these areas, development of a PES mechanism under Florestas para Vida would be more difficult and costly. Coordination between the Florestas para Vida and Águas Limpas Projects will thus help both projects achieve their objectives: The PES mechanism to be developed under Florestas para Vida will provide a sustainable long-term mechanism through which CESAN can meet its objective of improving water supplies, while Águas Limpas will provide many of the institutional building blocks needed to develop the mechanism. The two projects also share the same implementation arrangements, with a common governance structure and administrative/financial unit.

19. The project will also coordinate its activities with those of the Ecological Corridors Project, which is part of the Pilot Program to Conserve the Brazilian Rain Forests (PPG7). The Ecological Corridors Project aims to increase the connectivity among remaining fragments of Atlantic rainforests, and Florestas para Vida will intensify Corridor activities in the two watersheds of the project area. To maximize global environmental benefits in biodiversity, the project will prioritize areas within the corridors to implement its activities, especially rehabilitation of degraded lands. The learning network being created by the Ecological Corridors Project will serve as counterpart resources for this proposed Global Environment Facility (GEF) grant. At the same time, this project will develop and test a set of practices and incentives which, upon demonstrated success, could be more widely applied by Ecological Corridors.

20. GEF support is warranted because the project would help (a) conserve globally significant biodiversity, including critically threatened endemic species; (b) protect and enhance biodiversity conservation within the Atlantic Forest Biome; (c) create a long-term financing instrument for biodiversity conservation that could be replicated and serve as a model for other states within the country; and (d) create research links between land use change and environmental services. Even without the GEF increment, the Espírito Santo program would generate global benefits. However, GEF assistance would substantially increase the global benefits generated by the project by (a) assisting and accelerating the development of other funding sources—particularly sources providing sustainable long-term funding flows, (b) helping direct program activities to priority areas for biodiversity conservation and increasing the efficiency of the program, and (c) ensuring the long-term sustainability of environmental services payments in buffer zones of protected areas and biological corridors that connect protected areas in cases where other funding sources are not available or are insufficient.

4. Description

A. Project components (see Table 1 for a matrix of project finances)

1. Strengthening Watershed Management
21. Improving biodiversity conservation and watershed conservation in the Jucu and Santa Maria da Vitória watersheds requires strengthening the participatory institutions responsible for planning and implementing Natural Resources Management strategies in the watersheds, including technical agencies capable of monitoring conditions and developing responses to problems and governance mechanisms that bring stakeholders together in participatory ways to agree on appropriate responses. This requires establishing and/or strengthening the formal institutions that will oversee management of the two watersheds, and providing them with some of the tools they will need to do their work. The main activities of this component will include: (a) establishing and strengthening watershed management committees, (b) prioritizing intervention areas, (c) preparing economic-ecological zoning plans for both watersheds, and (d) developing a communication strategy.

2. Targeted Biodiversity Protection and Protected Area (PA) Management

22. This component will undertake targeted interventions to restore and enhance the protection of critical areas for biodiversity conservation, and support the PAs in the watersheds, including the elaboration of management plans and assisting landowners in the creation of private nature reserves. Among the main activities in this component are: (a) rehabilitating degraded areas; (b) implementing the management plan for Pedra Azul State Park and establishing a PA management committee; (c) developing and implementing new instruments for biodiversity conservation, such as a conservation trust funds; and (d) supporting the implementation of two Ecological Corridors.

3. Integrating Biodiversity in Production Landscapes

23. Sustainable management of landscape mosaics requires a two-pronged approach: (a) measures to remove obstacles to the adoption of land use practices that would be beneficial both to farmers and the environment, such as lack of knowledge or non-availability of inputs; this subcomponent will seek to remove these barriers; and (b) measures to stimulate the adoption of practices that generate positive externalities, particularly in biodiversity conservation and water services protection, but are unattractive to individual land users; this subcomponent will seek to address these tradeoffs by fostering a range of markets for biodiversity goods and services, and in particular by developing pilot Payment for Environmental Services (PES) mechanisms in collaboration with water users (such as CESAN and hydroelectric power producers), mechanisms that will also contribute to PA support.


24. This component will coordinate, manage, and monitor all activities supported under the project and build on the environmental information system being supported through the Águas Limpas Project. The project will establish monitoring and evaluation mechanisms at two distinct levels: (a) a project-level Monitoring and Evaluation (M&E) Framework for the activities covered in the project; and (b) a regional-level Information System covering the two basins intervened by the project. The project-level M&E Framework will track progress in implementation, measure intermediate outcomes, and evaluate project impacts. At the regional level, the project will support the creation of an environmental information system that will allow for the tracking of key variables across various institutions. A communication and dissemination strategy will also be developed and implemented under this component.
Table 1. Project Financing, by Components and Cofinancers (US$ ’000)

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>GEF</th>
<th>GOES</th>
<th>IBRD</th>
<th>Othera</th>
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</tr>
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<td>Amount</td>
<td>%</td>
<td>Amount</td>
<td>%</td>
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<td>(b) Establishing Payments for Environmental Services</td>
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<td>4. Monitoring and Evaluation, and Project Management</td>
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<td>1,683</td>
</tr>
</tbody>
</table>

a. Resources from the Companhia Vale do Rio Doce (VALE) and local labor.

5. Financing

Source: ($m.)
BORROWER/RECIPIENT 4.14
Global Environment Facility (GEF) 4.00
GLOBAL ENVIRONMENT - Associated IBRD Fund 1.68
Local Sources of Borrowing Country 2.18

Total 12.00
6. Implementation

A. Partnership arrangements

25. The project will collaborate with and extend the impact of several programs already underway in the State: the International Bank for Reconstruction and Development (IBRD)-supported Águas Limpas Project, the State Forest Development Plan, the National Water Agency Produtor de Água Project, and the Global Environment Facility (GEF) Ecological Corridors Project. The project will also foster partnerships with several conservation organizations, including those that have been involved in the preparation of the project, and foster sharing experiences with other similar projects underway in Brazil.

26. A strong partnership exists with the privately held Companhia Vale do Rio Doce (VALE), one of the potential buyers of the environmental services generated by the two basins. The state government will also seek partnerships with other private sector agents including small hydroelectric plants and other big users of environmental services produced in the watersheds. Further details of these programs and their interaction with the Águas Limpas Project can be found in Annex 6.

B. Institutional and implementation arrangements

27. The Recipient of the GEF grant is the State Government of Espírito Santo, Brazil. The project will have the oversight of a Steering Committee, which will have consultative and decisionmaking powers. The Steering Committee has been assembled to guarantee effective compliance with the State Government’s rules and regulations and the procedures agreed with the World Bank in order to attain the objectives and expected results. This committee is composed of the heads of the State Secretariat of Development (SEDES), the State Secretariat for the Environment and Hydrological Resources (SEAMA), the State Secretariat for Agriculture, Food, Aquaculture and Fisheries (SEAG), the State Finance Secretariat (SEFAZ), the State Secretariat for Urban Development (SEDURB), and the Espírito Santo Water Utility (CESAN) (see Figure 1). This committee is identical to the one that oversees the World Bank-implemented Águas Limpas Project (Loan IBRD 7248-BR), and whose accumulated experience will greatly benefit the implementation of the Florestas para Vida Project, thus reducing implementation risks. The Committee’s responsibilities will include: (a) approving Annual Operating Plans (POA), (b) supervising project implementation, and (c) suggesting necessary adjustments to the project based on M&E results. The Project Implementation Unit (PIU) will be placed in the State Institute for Environment and Hydrological Resources (IEMA), which will have the collaboration of the State Rural Research, Technical Assistance and Extension Institute (INCAPER).

28. IEMA, with the oversight of the Executive Secretariat of the Steering Committee, will be the Executing Agency for the project. A Project Coordinator will lead the project with the support of: (a) specialists from IEMA Technical Management Units, who will carry out project activities including implementing the M&E system; (b) the staff of the Executive Secretariat for the preparation of the Annual Operating Plans (POA), budget monitoring, procurement, and all project reports as agreed with the Steering Committee and the Bank; and (c) the administrative financial unit of the Águas Limpas Project, which will conduct the overall project financial management, disbursements, and audits.
7. Sustainability

29. Ensuring the long-term sustainability of improved resource management in the two project watersheds is a major objective of the project.

30. **Sustainability of “win-win” land use practices.** An important part of the Sustainable Land Management (SLM) practices supported by the project are expected to be win-win—that is, to be not only environmentally beneficial but also in the farmers’ own interest, so that they will continue to maintain them once the support provided by the project ends. To ensure that this is the case, two measures are being taken. First, Technical Assistance will help farmers adopt practices that are best suited to their conditions and to implement them effectively, thus ensuring that the benefits they derive from them are as high as possible. This is important because practices such as silvopastoral practices and organic farming have the potential to be highly productive if implemented well, but also to be quite marginal if implemented poorly. Second, the short-term payments provided under Component 3A create a risk that farmers will adopt SLM practices solely to receive the payments, with the intention of abandoning the practices once payments end. This has been observed in many prior projects. To reduce this risk, payments will be kept low enough that they do not completely drive the adoption decision, so that farmers will be out of pocket if they ultimately abandon the practices after payments end.

31. **Sustainability of the Payment for Environmental Services (PES) mechanism.** Many previous efforts to induce adoption of land uses that provide significant off-farm benefits failed because they only provided short-term incentives; once the projects and the incentives they provided ended, farmers often reverted to their previous practices. The PES approach avoids this
problem by providing for potentially indefinite payments to farmers who adopt and maintain such practices (with payments always being conditional on compliance with their contracts). The sustainability of the approach thus depends on the sustainability of the PES mechanism. To ensure the sustainability of the PES mechanism developed under Component 3B, which will conserve critical areas for water service production, and by doing so also make a major contribution to biodiversity conservation in the area, the project draws on lessons learned in previous PES projects. These experiences show that well-designed PES mechanisms can be sustainable because they depend on the mutual interests of service users and service providers. Costa Rica’s PES program, for example, has entered into contracts with many different water users who are paying for the program to conserve the watersheds from which they draw their water. Significantly, the earliest of these contracts have all been renewed by the private sector hydropower companies that had signed them, demonstrating the potential sustainability of such contracts. Project interventions that would contribute to achieving sustainability include:

③ Establishing appropriate programs and institutional mechanisms that will operate beyond the end of the project.
③ Establishing appropriate financial mechanisms that will provide continuous payments to environmental service providers for a long time.
③ “Getting the science right” to ensure that payments are made for adoption of land uses that actually deliver the desired land uses, and in areas where their impact is maximized. This requires detailed up-front technical studies, without which it is unlikely that this will happen.
③ Making participation in the mechanism fully voluntary for both service providers and service users, to ensure that it does reflect the interests of each, and incorporating sufficient flexibility (such as provision for periodic renegotiation of contracts) to ensure that it continues to reflect the interests of both parties in light of changing conditions and lessons learned.
③ Monitoring of service delivery will demonstrate to water users the benefits they are receiving, or allow for the mechanism to be adjusted (for example, to support different land use practices, or to re-target payments to other areas), in the event that results fall short.

**Replacibility.** Although Brazil has experimented with a wide range of market-based instruments for conservation, the PES mechanism implemented in this project would be the first application of this instrument. Because the basic situation experienced in the Jucu and Santa Maria da Vitória watersheds is a common one in the country, there is considerable potential for replicating the approach elsewhere. There is also considerable potential for replication of the approach in other countries, both in the region and worldwide, because this is the first attempt to integrate PES into a broader watershed management program, complementing other approaches. Previous projects have either focused solely on PES or solely on other approaches to watershed management.

8. Lessons Learned from Past Operations in the Country/Sector

32. The project lessons are gleaned from very similar projects recently prepared: the São Paulo Ecosystem of Riparian Forests Restoration Project and the Rio de Janeiro Sustainable Integrated
Ecosystem Management in Production Landscapes Project. Lessons learned from the implementation of Integrated Ecosystem Management approaches (“Ecosystem Management: Lessons from Around the World,” International Union for the Conservation of Nature [IUCN]) are also reflected. Finally, inputs and suggestions learned from a series of stakeholder consultations conducted in the region are also included, all of which are fully applicable to the proposed project:

③ Watersheds and micro-watersheds are ideal units for planning and implementation of on-the-ground activities that aim to conserve natural resources and biodiversity.

③ Conservation efforts need to carefully consider who receives the benefits and who bears the costs of conservation activities. Many projects have failed because they asked farmers to bear the costs of activities that benefited others. The economic costs associated with changes in behavior must be fully understood and compensated in order to gain full farmer participation. The project adopts a two-pronged approach, with different measures to support farmers in adopting sustainable land use practices that are in their own best interest, rather than to induce them to adopt practices that primarily benefit others.

③ Farmers do adopt practices that bring them benefits, and when the benefits are sufficiently large, can often overcome considerable obstacles to do so. However, numerous obstacles can slow or impede their ability to adopt even profitable practices. To be successful, projects need to carefully identify the specific obstacles in each particular case. Participatory approaches to project development are much more likely to correctly identify these obstacles and develop appropriate responses. A series of public consultations were held during preparation, and ongoing consultations are planned throughout implementation.

③ Project design should ensure the inclusion of adequate socioeconomic and environmental monitoring activities to provide the necessary basis to quantify externalities, including national and global benefits, and to ensure that the project is contributing to the welfare of participants.

③ Approaches must be flexible to adapt to continually changing situations and conditions. The project, acknowledging inevitable changes beyond its scope to influence or fully mitigate, will provide the primary stakeholders wide latitude in how they implement the activities, while maintaining focus on M&E activities focused on achieving program objectives.

The project also draws on the experience of numerous previous projects that have implemented PES approaches, including Costa Rica Ecomarkets and Mainstreaming Market-based Instruments for Environmental Management, Mexico Environmental Services, and Regional Integrated Silvopastoral Ecosystem Management, and on a best practice paper that also brings in other PES experiences worldwide (Pagiola and Platais 2007). In addition to numerous detailed lessons on PES mechanism design (some of which are noted in Annex 4), the broad lessons of these previous efforts that are applicable to this project include:

③ The specific needs of the service users in the watersheds must be clearly identified.

The project has worked closely with CESAN, the principal water user in the two

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4 Perversely, many of these projects appeared successful when they closed, because farmers did adopt the practices promoted as long as they received project benefits; once the projects ended, however, farmers often reverted to their previous practices.
project watersheds, to identify the specific problems they are currently facing in the upper watersheds, or are threatened by in the future.

③ It is imperative to “get the science right”—to clearly establish which land uses, in which areas, can help generate the specific services needed by the water users, and to quantify these impacts to the extent possible. To ensure this is done well, the project did not attempt to undertake the relevant studies within the tight time and resource constraints of preparation, but will undertake them during implementation.

③ Careful thought has to be given to the institutional arrangements, including governance mechanisms that include all stakeholders, but that also give water users who are paying for conservation considerable authority over how their funding is spent, including the option of terminating the arrangement if they are not receiving the services they need; and payment arrangements that are able to cost-effectively reach and work with local service providers (land users) in the field. These institutional arrangements need to be designed to be flexible and continue operating long after project implementation is completed.

For land uses that generate significant off-farm services (such as water services) to be adopted and maintained over the long term, farmers need to be compensated for the costs they face in doing so (including the opportunity costs of foregone income from their most profitable alternative land use), for as long as the services are wanted—usually, indefinitely. This does not mean indefinite conservation contracts, but contracts that are renewable indefinitely, as long as both parties wish to do so, thus permitting the terms of the contract to be periodically renegotiated in light of changing conditions and lessons learned.

9. Safeguard Policies (including public consultation)

<table>
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<tr>
<th>Safeguard Policies Triggered by the Project</th>
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<tr>
<td>Environmental Assessment (OP/BP 4.01)</td>
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<td>Projects on International Waterways (OP/BP 7.50)</td>
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34. With its planned interventions, the project touches on several safeguards, as listed above. The Project Concept Note classified the project as Category “B” for environmental purposes. The project intends to primarily support the recovery of major environmental functions of the forests, that of maintaining its inherent biodiversity, soil conservation, and hydrological and climate regulation. The project area has been impacted by more than a century of “traditional” human use.

* By supporting the proposed project, the Bank does not intend to prejudice the final determination of the parties' claims on the disputed areas.
35. As far as is known, there are no indigenous populations in the project area. However, there are certain groups within the area of the project that, due to their lifestyles and sociocultural heritage, have acquired customary rights. All documents referring to the project will include clauses that will guarantee appropriate consideration be given to any environmental protection and sociocultural issues, including any physical cultural resources.

36. The project will ensure that any tree planting will be with native species appropriate to the locale, and will avoid the use of pesticide- and herbicide-intensive techniques. The project will support an Integrated Pest Management (IPM) approach, and pesticide use will neither be stimulated nor increased under any new farming model; rather it will be reduced. It is, however, possible that in some cases, even if temporarily, the use of some products of low toxicity and low residual staying power could be used during the first year in which forest species are being introduced. When these circumstances present themselves, the guidelines presented in the Project Operations Manual will be strictly followed. The project does not need a specific chapter on pest management because there are no known issues, and no significant quantities of pesticides are expected to be procured.

37. All project-related documents, contracts, and eventual manuals will include clauses regarding environmental and sociocultural safeguards to ensure adequate consideration of chance encountering of sociocultural resources and/or further issues. The same will apply regarding any and all project or project-related support to activities within Areas of Permanent Protection (APPs).

38. Environmental benefits will be measured by forest- and site-specific indicators, and will include indicators related to improved small-farm management.

39. An Environmental Assessment was prepared and is publicly available at http://www.iema.es.gov.br/.

10. List of Factual Technical Documents

The following documents were generated under project preparation:

Relatório sobre o WorkShop realizado em Santa Maria de Jetibá, em 12 de dezembro de 2005.

Relatório sobre o WorkShop realizado em Domingos Martins, em 13 de dezembro de 2005.

Nota conceitual do projeto submetida à SEAIN e GEF (em português).

Documentos de trabalho contendo o detalhamento dos componentes do projeto.

Convênio de Cooperação Técnica celebrado entre o IEMA e a VALE, que viabilizou a doação das imagens do satélite Ikonos 1m geo-referenciadas.

Carta de Compromisso da VALE que prevê, dentre outras ações, novo imageamento da região, com fotos aéreas, incluindo todos os trabalhos de georreferenciamento.
Convênio celebrado entre o IEMA e a VALE que prevê investimentos de R$ 8.000.000,00 para a recuperação de áreas degradadas.

Convênio celebrado entre o IEMA e o MMA que prevê a realização do ZEE de todo o Estado.

*The following reports were generated under project preparation:*

Base Cartográfica das Bacias (Ikonos 1m).


*Based on the available cartographic base, the following maps were generated:*

01. Mapa de Localização Político Administrativa – Localização das Bacias Hidrográficas dos Rios Santa Maria da Vitória e Jucu (área do Projeto) em relação aos municípios, estado do Espírito Santo e Brasil.

02. Mapas das Bacias Hidrográficas dos Rios Santa Maria da Vitória e Jucu com interface de imagens satélites. Representam na forma de imagens satélites as bacias hidrográficas, área do Projeto.

03. Mapas das Bacias Hidrográficas dos Rios Santa Maria da Vitória e Jucu – (MP 03 e MP 04). Apresenta os seus rios principais e a rede de drenagem. Encontram-se representados separadamente, por bacia.

04. Mapa de Zonas Naturais – (MP05). Apresenta as diversas categorias de zonas naturais representadas na área do Projeto. As zonas naturais são resultantes do cruzamento e análise de
diversas variáveis, a exemplo de clima, temperatura, pluviôsidade, relevo, declividade, solo, dentre outros. Trabalho resultante do Projeto GeoBases do Governo do Estado do Espírito Santo.

05. Mapa de Uso e Ocupação do Solo – (MP06). Apresenta na forma de classes os diversos usos e formas de ocupação encontrados na área objeto do Projeto, com ênfase para os estágios sucessionais da floresta de mata atlântica e seus ecossistemas associados.


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