USAID
FROM THE AMERICAN PEOPLE

FOREST CARBON, MARKETS AND COMMUNITIES (FCMC) PROGRAM

KEY FINDINGS AND OPPORTUNITIES FOR REDD+ IN ECUADOR: AN ABBREVIATED SUMMARY OF THE COMPREHENSIVE REPORT ON THE INTEGRATED ASSESSMENT OF REDD+ IN ECUADOR

JANUARY 2012
This publication was produced for review by the United States Agency for International Development. It was prepared by Tetra Tech ARD.

This publication was produced for review by the United States Agency for International Development by Tetra Tech ARD, through a Task Order under the Prosperity, Livelihoods, and Conserving Ecosystems (PLACE) Indefinite Quantity Contract Core Task Order (USAID Contract No. EPP-I-00-06-00008-00, Order Number AID-OAA-TO-11-00022).

This report was prepared by:
Tetra Tech ARD
159 Bank Street, Suite 300
Burlington, Vermont 05401 USA
Telephone: (802) 658-3890
Fax: (802) 658-4247
E-Mail: ard@ardinc.com

Tetra Tech ARD Contacts:
Matthew Sommerville, Project Technical Manager
159 Bank Street, Suite 300
P.O. Box 1397
Burlington, VT 05402
Tel: (802) 658-3890
Email: Matt.Sommerville@tetratech.com

Team Leader:
- Ms. Patricia Caffrey, Social and Environmental Soundness Expert, Tetra Tech ARD

Team Members:
- Mr. Gabriel Thoumi, CFA, Finance and Carbon Markets Lead, Terra Global Capital, FCMC
- Mr. Frank Hajek, Low Emission Development Strategies Expert, Nature Services Peru
- Mr. Manuel Peralvo, Measurement, Reporting and Verification Expert, CONDESAN
- Mr. Robert Hofstede, In-Country Expert, Independent Consultant

Supported by:
- Mr. Scott Hajost, Chief of Party, Tetra Tech ARD, FCMC
- Dr. Paula J. Williams, Social and Environmental Soundness Task Lead, Tetra Tech ARD, FCMC
- Dr. Marc Steininger, Measurement, Reporting and Verification Lead, Conservation International, FCMC
- Dr. Tim Killeen, Low Emission Development Strategies Task Lead, Conservation International, FCMC
- Ms. Ani Zamgochian, Operations Manager, Tetra Tech ARD, FCMC

COVER PHOTO:
Photo by Frank Hajek

FOREST CARBON, MARKETS AND COMMUNITIES (FCMC) PROGRAM

KEY FINDINGS AND OPPORTUNITIES FOR REDD+ IN ECUADOR: AN ABBREVIATED SUMMARY OF THE COMPREHENSIVE REPORT ON THE INTEGRATED ASSESSMENT OF REDD+ IN ECUADOR

JANUARY 2012

TABLE OF CONTENTS

1.0 INTRODUCTION

The Government of Ecuador (GoE) has taken important steps to demonstrate commitment to issues related to conserving forests and forest carbon in general, and more specifically, the various existing and potential opportunities to engage in what is known as reduced emissions from deforestation and forest degradation (REDD+).[1]

The GoE has initiated several concrete steps towards developing a solid National REDD+ Program. These measures will contribute to building a solid foundation for future actions. Unlike many other countries, Ecuador began work on REDD+ issues prior to receiving multilateral support. Subsequently, in 2011, the GoE's first proposal to the United Nations Collaborative Program on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (UN-REDD) program was approved. Additional support was given by other donors, most notably *Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH* (GIZ) and *Kreditanstalt für Wiederaufbau* (KfW). In addition, Ecuador has made significant progress in adapting the REDD+ Social and Environmental Standards to the national context. Their experience with previously implemented forest conservation interventions can offer lessons for the National REDD+ Program, including from a number of early experiences for the voluntary market, the *Socio Bosque* Program (SBP), and watershed payment for ecosystem services programs.

In late 2011, the United States Agency for International Development (USAID)/Ecuador decided to become a more active partner with the GoE in the REDD+ Readiness process. To this end, the Mission commissioned a comprehensive Integrated REDD+ Assessment (hereafter called "The Assessment") to identify priority areas where USAID support could be most effective. The Assessment was conducted by a team of experts in issues related to REDD+, from both the United States and from Ecuador. The Assessment focused on the areas of social and environmental soundness (SES); finance and carbon markets (FCM); measurement, reporting and verification (MRV), and low emissions development strategies (LEDS). The goal of the Assessment was to conduct a comprehensive and objective assessment of REDD+ readiness activities in Ecuador and identify opportunities for USAID support.

What follows is a summary of this comprehensive assessment. The entire assessment report will be available in the near future. In this abbreviated report:

1. Section 2.0 discusses the overarching policy requirements and institutional issues that could contribute to a well-functioning REDD+ process in Ecuador;
2. Section 3.0 discusses issues related to social and environmental soundness (SES);
3. Section 4.0 discusses issues related to finance and carbon markets (FCM);
4. Section 5.0 discusses issues related to measurement, reporting and verification (MRV);
5. Section 6.0 discusses issues related to low emissions development strategies (LEDS); and
6. Section 7.0 presents a summary of the assessment findings and opportunities.

[1] Using forests as a climate change mitigation strategy can include: buying and selling forest carbon credits in the voluntary market; the potential to participate in any programs or opportunities that come out of the international negotiations around REDD+; and participating in a potential market for forest carbon credits driven by either domestic, regional, or international restrictions on carbon emissions. In this document, all of the above-described methods for exchanging forest conservation for some sort of compensation will be referred to as REDD+.

2.0 POLICY AND INSTITUTIONAL ISSUES

Ecuador has made progress in preparing for the implementation of a national REDD+ Program, and has demonstrated a national commitment to effective implementation through its progress on REDD+ Social and Environmental Standards, as well as efforts at forest conservation interventions like the SBP and watershed programs. Nevertheless, several priority policy and institutional issues must be addressed to pave the way for a successful National REDD+ Program, including the following needs:

- Increased clarity on the definition of who owns the benefits from carbon sequestration services and how these services are exchanged either through a services agreement or purchase agreement. Interpretations of the relevant Article of Ecuador's new Constitution (Article 74) vary on this point.
- Stronger guidance on land use planning. There are inconsistencies and contradictions among different land planning strategies, both at scales (national/regional/local) and across sectors, which may lead to counterproductive forest conservation and REDD+ results.
- Increased application of the national forest governance model (application of Forestry and Natural Areas and Wildlife Conservation Law).
- Effective coordination among government agencies, vertically and horizontally, that influence drivers of deforestation in the environment and development sectors.

2.1 POLICY AND INSTITUTIONAL FINDINGS

The development of the National REDD+ Program is led by the Ecuadoran Ministry of the Environment (MAE), specifically the Department for Mitigation within the Climate Change Undersecretary. Key government policies on Climate Change and REDD+ (National Strategy for Climate Change, National Plans for Mitigation and Adaptation, and the National REDD+ Program) are in process and are projected to be completed by early 2012. Apart from a multi-sectoral REDD+ working group that includes representatives from 11 different central government bodies, MAE is in charge of all REDD+-related activities. No other central government agency has the capacity or resources at this point in time to engage in REDD+. This may be a missed opportunity, as effective REDD+ programming requires the integration of agriculture, water, local governance, central planning, finance, and other government functions. The Secretaries for Climate Change and Natural Patrimony are working side-by-side in MAE, enabling synergy among programs and recent investments made to support the development of the REDD+ program and strengthen forest governance. These efforts are important. It is too early to tell if outcomes will support and sustain a robust National REDD+ Program. While the management of greenhouse gas (GHG) inventories falls under MAE, clear inter-sectorial responsibilities have not been defined.

Forest governance is currently weak and widespread non-compliance in the protection and management of forests threatens to undermine long-term REDD+ programming. The *Codigo Ambiental* [Environmental Code] is now in preparation and its application should improve the legal framework for regulating all environmental policy, including the management of environmental services. Based on the new Code, existing laws (forest, biodiversity, and water) will likely need to be revised and (hopefully) will strengthen coordinated efforts to apply the laws and regulations in support of biodiversity and forest conservation. The Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP) is in charge of implementing productive reforestation and afforestation activities at the national level, as well as agroforestry through the Proforestal Program (to be included in the new Forest Production Undersecretary). MAGAP also has the power to regulate and reorganize land tenure in Ecuador through the Undersecretary of Lands and Agrarian Reform (in areas that are not part of the State Forestry heritage). During 2010, Proforestal received formal criticism from the presidency about their

efficiency and several readjustments to their competences were proposed. One change was to bring reforestation activities aiming at watershed protection under the establishment of an Undersecretary for Forest Production at MAGAP (October 2011), to absorb Proforestal. Meanwhile, there are an ongoing evaluation and likely continuing adjustments of competencies within the forest sector among MAGAP, MAE, and National Secretary of Water (SENAGUA), which challenge effective implementation of reforestation policies.

The GoE information management systems are poorly integrated or coordinated. Although the *Consejo Nacional de Información Geoespacial* [National Council of Geoinformatics] (CONAGE) is an integral part of the *Sistema Nacional de Información* [National Information System] managed by the National Secretary for Planning and Development (SENPLADES), there are gaps in implementation. While each sector should develop information systems linked to CONAGE, this development has not occurred and sectoral information systems (*Sistema Nacional de Geográfica y Agropecuaria* [SIGAGRO], *Sistema Nacional de Información y Gestión de Tierras rurales e Infraestructura Tecnológica* [SIGTIERRAS], and *Sistema de Información Ambiental*, among others) continue to work independently.

The passage of the *Código orgánico de organización territorial y descentralización* (COOTAD) Law (2010) gives *Gobiernos Autónomos Descentralizados* [decentralized governments] (GADs) more autonomy. In 2011, all GADs needed to develop their *Planes de Desarrollo y Ordenamiento Territorial* [development and land use plans] (PDOTs), developed through participatory land use planning processes. A *Consejo de Competencias*, representing different government bodies, was been created to clarify authorities where overlap exists between levels of governments. Recent *Consejo* decisions have clarified that GADs may receive direct international cooperation and they have authority over local water management. COOTAD creates space for collaboration between GADs. Northern provinces are analyzing a regional REDD+ initiative under a "*mancomunidad*" [Association of Local Governments] in Sucumbíos. In the South, the *Federacion Interprovincial de CentrosShuar*, led by Shuar elected leadership, are organized to participate in forest conservation efforts.

All sectoral policies should be linked to *Plan Nacional para el Buen Vivir* (implemented by SENPLADES). SENPLADES is also in charge of planning and impact analysis around national strategic projects. Presently, the strategic projects include energy (hydroelectric), mining, and oil. They have not yet been integrated with locally developed plans and national land use configurations. Despite these positive efforts on land use planning, it is premature to assess whether they will eliminate overlapping uses and strengthen the conservation of existing intact, healthy forests.

Support to the improvement of cross-sectoral collaboration and alignment of policy and planning on REDD+ within the government is key to its future success. Table 1 provides an overview of current involvement of the various donors and their relationship with counterparts.

Table 1: REDD+ Investment

Type	Ecuador Counterpart	Themes	Date	US $ Estimate
UN-REDD	Ministry of Environment	SES co-benefits, governance	2012–2013	$4 million
KfW	Ministry of Environment, *Corporación Financiera Nacional del Ecuador*	National trust fund, MRV, and SFM for SBP	2011–Present	$15 million
GIZ	Ministry of Environment	Many themes	2010–2013	$15 million
FAO	Ministry of Environment, SENPLADES, UN-REDD, GEF-UNDP, MICA	Sustainable forest management		$2 million
European Union	PYMES, Yasuni/Manu, Biodiversity, Cordillera Condor, Euro Clima			$20 million
Carbon Markets	Mindo Cloud Forest, PROFAFOR, Face the Future, others	REDD+, ARR	Ongoing	$4 million
			TOTAL	$60 million

Given this complexity in the institutional involvement in REDD+ in Ecuador, support may be provided for the GoE and other collaborators to:

- Create a context for REDD+ that benefits from an integrated national climate change approach and effective forest protection and management;
- Support the integration of the National Climate Change Strategy (mitigation and adaptation) and the forest governance model;
- Create coherence among administrative levels and sectors in support of REDD+ programming and assist in the development of land planning strategies; and
- Develop REDD+ capacity within different sectors and at different levels of government.

Other opportunities for support in addressing policy and institutional issues related to REDD+ are described in the following subsections.

2.1.1 Land Use, Tenure, and Carbon Property Rights

Land use and tenure may hinder the success of REDD+ programming, particularly if future land use and rights to carbon benefits are defined based on current land use and tenure practices, which may not be ideal for encouraging forest conservation. Private property ownership is based on earlier land reform efforts (Agrarian and Colonization Law, 1964 and 1973) that promote productive use of the land and are thus a driver for converting forested land into agriculture. Deforestation has traditionally served as the very instrument to claim and obtain legal title. People tend to think that "unworked land is nobody's land" so deforestation remains a common practice as a manner of claiming land or protecting land from being claimed by others. Specifically in the coastal plains, illegal land traffickers organize and pay invaders to clear forest, and negotiate land titles that are subsequently being sold. Current configurations of land tenure systems have limited applicability for forest carbon initiatives because they are smaller than the targeted scale, based on relatively small land management units, and often do not correspond to the forest governance traditions of indigenous groups. The legal possibility exists for a collective land ownership and management configuration that consolidates large groupings of indigenous lands called a *Circunscripción Territorial Indígena* (CTI), but none have been established to date. Where these groupings are possible, they may facilitate cost-effective REDD+ programming. The new configuration could lend itself to legal consolidation of leadership and rights over territorial lands and strengthen natural resource management while improving wellbeing through the development of locally defined investment plans.

Article 74 of the Constitution states: "Persons, communities, peoples and nationalities shall have the right to benefit from the environment and the natural wealth enabling them to good way of living. Environmental services shall not be subject to appropriation; their production, delivery, uses and exploitation shall be regulated by the State," which implies that Government will play a major role in regulating REDD+. However, it is not clear how benefits will accrue to REDD+ participants or if there is a relationship between land tenure/ownership and carbon property rights. For example, a constraint for ensuring gender equity of benefit distribution is that it is customary for men to own and inherit land in rural Ecuador, particularly in the Amazon. Although women are legally allowed to own and inherit land, it is generally not practiced, which would put women at a disadvantage if carbon rights are related to land rights.

The experience of SBP, especially the local distribution of incentives to protect forests, should be used to inform the design of the National REDD+ Program. Valuable lessons can be learned regarding level of payment including per capita compensation, equity of benefit distribution, outcomes, and incentive effectiveness in conserving forests, as well as necessary capacity and costs to carry out independent performance-based monitoring, evaluation, and reporting. While the program is not a "REDD+ activity," it could be modified to either support or complement the National REDD+ Program.

2.1.2 Finance and Carbon Markets

There is minimal engagement by donors on forest carbon issues with financial agencies and institutions. The GoE's prevailing approach to supporting the development of a National REDD+ Program is to leverage donations for forest carbon as a means for conserving forests vs. establishing forest carbon market-based

funding for forest conservation. To date, more consideration has been put into how REDD+ may function as an incentive for forest conservation (and environmental and social co-benefits) than how it may function as a financial instrument.

The MAE, with support from KfW, is establishing a national trust fund for REDD+. How the trust fund will be governed and operated is currently being defined. It is envisioned that the fund will be designed with a variety of guidelines and requirements to be able to accept funding from international donations as well as from private and voluntary sources. National financial oversight agencies (The Ministry of Finance and the *Servicio de Rentas Internas* [National Internal Revenue Service] [SRI]) are not yet participating in the development of a coordinated forest carbon value chain. The Ministry of Finance does participate in the Inter-institutional Climate Change Working Group; however, national standards for monitoring and finance of carbon have not yet been developed. No regulatory authority for financial instruments related to carbon finance has been established or assigned. To facilitate vertical integration in terms of forest carbon fiscal planning and management within the public sector, the Code of Public Finance links GAD development plans and budgets to the national land use plan.

2.2 POLICY OPPORTUNITIES

The policy and institutional framework for REDD+ programming in Ecuador holds promise for future success as long as some of the key gaps are addressed effectively. At this point in the REDD+ readiness phase, numerous opportunities exist for building a solid foundation for an effective, efficient, and equitable National REDD+ Program. The following opportunities have been identified:

2.2.1 Alignment of GoE Planning, Collaboration, and Policy

Cross-sectoral adjustment is a primary requirement to deal with the main drivers of deforestation, to promote sustainable alternatives (LEDS), and make a national REDD+ program effective. As a result, opportunities exist to:

- Improve cross-sectoral collaboration and align policy and planning to support and promote the National REDD+ Program within government.
- Conduct an analysis of different levels of authority, policy, and plans among government departments and levels in land use planning; application of the Forestry Law, Hydrocarbon Law, and Mining Law; and infrastructure development.
- Create coherence among levels and sectors in support of REDD+ programming and assist in the development of land planning strategies. For example, support the development of a Strategic Environmental and Social Assessment (SESA) process that can be applied to ensure that large-scale development projects prevent and mitigate negative environmental and social impacts on forested areas. Well-applied SESAs can reinforce best practices regarding effective application of free, prior and informed consent (FPIC) and maintenance of ecosystem integrity. Enable integrated and coordinated support to the National REDD+ Program by developing REDD+ capacity within different sectors and at different levels of government (GADs).
- Strengthen the role of SENPLADES to improve coordination across agencies and align with the planning process.
- Support the integration of the National Climate Change Strategy and the forest governance model.

2.2.2 Definition of Carbon Rights

Carbon rights must be clarified and defined. This definition may be associated with monitoring the outcome of MAE's effort to address the lack of clarity in Article 74 of the Constitution to ensure that it is adequately addressed in the legal and regulatory frameworks for forest carbon. There is a specific need for increased clarity on the definition of who owns the benefits from carbon sequestration services and how these services are exchanged either through a services agreement or purchase agreement.

2.2.3 National REDD+ Program Informed by Practice

Given the diversity of potential opportunities for REDD+ projects in Ecuador, there is a need to collect experience from existing REDD+ programming while supporting the development, evaluation, and documentation of pilot REDD+ initiatives using different management models, with different governance structures and various stakeholders. Such piloting will result in a menu of options and tools (conservation, forest management, agroforestry, and restoration) in different ecosystems (especially underrepresented ecosystems, like Andean forests, paramo, mangroves, wetlands, and swamp forest). In particular, stakeholder engagement is an important process to track and develop further. For example, work should consider documenting:

- If and how indigenous land governance systems achieve FPIC;
- How participants can apply local MRV to enhance biodiversity conservation; and
- How participation and distribution of socio-economic co-benefits can be improved to produce beneficial and equitable outcomes.

3.0 SOCIAL AND ENVIRONMENTAL SOUNDNESS (SES)

3.1 SES FINDINGS

Ecuador has a very solid base of experience, via the SBP and initial voluntary REDD+ projects, for understanding and addressing potential social and environmental soundness issues in preparation for a National REDD+ Program. The MAE leads the national-level REDD+ Social and Environmental Standards with support from Conservation International, CARE, and the Climate, Community & Biodiversity Alliance (CCBA). In late 2009, an initial phase verified interest and conditions to implement this initiative. The second started in June 2010 and runs to March 2012. Plans exist for a new phase of activities. The REDD+ Social and Environmental Standards aim to build support for the government-led National REDD+ Program and contribute to human rights, poverty alleviation, and biodiversity conservation.

National interpretation of the REDD+ Social and Environmental Standards indicators was recently completed after a multi-stakeholder participatory process, which began with a series of training workshops for indigenous and local communities and organizations on climate change, REDD+, UN-REDD, and the Social and Environmental aspects of REDD+. A subsequent series of workshops adapted general REDD+ SES language to accommodate to national circumstances, such as the national constitution and legal framework, the *Plan Nacional para Buen Vivir*, as well as traditional rights, rights related to FPIC, and decision-making processes of indigenous and local peoples. Indicators were consolidated by the facilitating team, shared directly and through a public blog for feedback. Finally, two more workshops were held to revise for legal coherence and work toward a final version. A National Standards Committee, representing different stakeholders, was created during this process and approved the national interpretation of the standards. The six community representatives, especially the indigenous representatives, expressed how difficult it has been for them to travel and attend so many meetings in Quito and their concerns about adequately representing diverse and disperse populations.

3.2 SES OPPORTUNITIES

The following opportunities hold significant promise for catalyzing the development of a socially and environmentally sound National REDD+ Program.

3.2.1 Safeguards, Standards, and Monitoring

Much can be done to improve the definition, application, and use of indictors for monitoring and reporting particularly at the project level. This work may be best accomplished as part of the SBP, or as a REDD+-specific endeavor. However, if the work is done institutionally, specific actions that would be helpful include:

- Develop and test practical indicators, aligned with National Standard indicators, along with monitoring processes that can be applied and interpreted by REDD+ participants/community members at the local level;
- Develop and adapt practical community-based methodologies for assessing and monitoring biodiversity; socio-economic aspects of how REDD+-related resources are managed and used; and monitor financial indicators, also at the participant/community-level, to improve transparency and accountability;

- Support the representation, participation, and training of potential REDD+ participants in the development and application of national REDD+ standards and processes to improve the relevance and practicality of measuring project/community-level indicators and their alignment to the National Social and Environmental Standards; and
- Strengthen capacity to address gender in REDD+ programming within local contexts, by incorporating gender responsive criteria and related indicators, including through compilation and analysis of sex- and age-disaggregated data.

3.2.2 Environmental and Biodiversity Issues

Opportunities for addressing the significant gaps that remain in understanding and addressing environmental and biodiversity concerns, particularly in the context of preparing for REDD+, are to:

- Support research on drivers of deforestation and infringement on protected areas (national, local, and private) and develop strategies to address them (other programs, such as SilvaCarbon, are also contributing to this effort);
- Identify and support replication and scaling up of promising practices in local ecosystem conservation support of REDD+;
- Use existing data and support local research institutions to understand and identify ecosystem services and biodiversity values to plan REDD+ activities; and
- Assist the National REDD+ Program in supporting the *Direccion de Biodiversidad* [Undersecretary of Natural Patrimony] and other protected area agencies (non-governmental organizations [NGOs], GADs, *Fondo Ambiental Nacional* [National Fund for the Environment] [FAN], etc.) at local levels to develop a systematic vision of protected areas and biodiversity conservation.

3.2.3 Stakeholder Analysis and Engagement

Stakeholder engagement in the development of REDD+ in Ecuador is strong, but the strategic inclusion of under-represented stakeholders (i.e., by ethnicity, gender, and age groups) would go a long way to ensuring broad and sustainable success. Opportunities to improve inclusion and participation include:

- Support the development of REDD+ capacity within under-represented groups (particularly women, youth, disadvantaged communities, producer's groups, civil society community-based representation, and GADs) and their participation in the development of the National REDD+ Program;
- Strengthen capacity (operative, representation, and decision making) of local community representatives (indigenous, Afro-Ecuadorian, *montubio*, and *mestizo* groups); and
- Involve other key government sectors (such as planning, finance, agriculture, economic development, and local government) in the development of the National REDD+ Program.

3.2.4 Rights, Benefits, and Distribution

Given that forest governance is improving and the GoE is undergoing national land use planning, it is an opportune time to strengthen policies and processes to ensure that REDD+ participants' rights are upheld and benefits are distributed equitably. The GoE should be encouraged and supported to clarify REDD+ participants' rights to land, territories, natural resources, and carbon at the national and local levels. Specific opportunities include:

- Develop alternative models of local governance (CTIs, GADs, communal forests, etc.) and methodologies for sharing/using benefits and monitoring local impact while improving participatory processes and capacity within communities;
- Promote development of investment plans based on life plans for organized indigenous groups and support improvement of these plans by clear indicators and monitoring;

- Support progressive titling processes that will empower disadvantaged groups (land insecure, women, youth, indigenous, and Afro-Colombian) living within forested areas that hold promise for future REDD+ programming to consolidate their land, forest, and/or carbon rights;
- Support pilot experiences for benefit distribution (i.e., the development of a methodology to evaluate local-scale institutional mechanisms that structure the distribution of and access to benefits derived from forest conservation and management activities);
- Promote active participation of private sector in investment and implementation; and
- Support platforms for exchange of experiences among different REDD+ related initiatives.

4.0 FINANCE AND CARBON MARKETS (FCM)

At this point, it is unclear what type of market-based opportunities will be available in the future for forest carbon. More importantly, it will be up to the GoE to decide how they want to engage in any market-based domestic and/or international market schemes. However, both fund-based and market-based pay-for-performance forest carbon programs will require institutional preparation. Therefore, the following findings warrant consideration:

4.1 FCM FINDINGS

The Government of Ecuador's institutions contain the core competencies to create and engage in a functioning forest carbon trust fund and market at a national scale if properly structured along international finance best practices guidelines. Ecuador has experience complying with standard best practices in fund management. The well-known trust funds, the *Fondo para la Protección del Agua* (FONAG) and FAN, have applied internationally accepted best practices, such as conducting annual external and internal third-party financial audits, establishing independent Boards of Directors, and applying financial ethical standards in their operating documents. Investment-grade financial architecture should be developed as a foundational element of the forest carbon trust fund to compete efficiently and effectively for forest carbon finance or transact their offsets in the capital markets. The GoE can promote transparency, liquidity, and assurance of contract completion with all REDD+ activities being real, measurable, and verifiable; available for audit; insured; secured; preferred; and transacted at fair value.

4.1.1 Financial Policy, Legal, and Institutional Issues

Observed gaps regarding financial policy and legal and institutional issues in Ecuador include the absence of a clear, legal definition of a forest carbon offset as a service agreement supporting an underlying offset financial instrument and comparative analysis of economic and financial drivers of deforestation and degradation.

4.1.2 International Finance Best Practices

International financial best practices are available globally for REDD+ activities. These best practices include quarterly financial audits and application of professionally drafted investment policy statements (IPS) and guidance documents that describe how institutions can manage their funds in an ethical and efficient manner. The GoE could structure the forest carbon trust fund management, funds dispersal, supervision, audit, and performance reporting functions to mitigate potential conflicts of interest, improve performance, and provide long-term competitive risk-adjusted rates of return.

4.1.3 Seeking Legal Clarity

Formal GoE guidance on whether offsets are transacted as service agreements with an underlying offset financial instrument or as purchase agreements, and how to calculate appropriate MRV costs per offset throughout the life of a project have not been developed. If an offset's legal qualities are known at the time of transaction, it is possible to set aside sufficient funds per offset for MRV for the life of the project. Appropriate securities laws could be applied, providing a risk mitigation tool to improve regulatory and financial oversight.

4.1.4 Comparative Analysis of Economic and Financial Drivers of Deforestation and Degradation

Ecuador could benefit from a country-wide systematic analysis of opportunity costs of deforestation and degradation drivers and their relation to domestic use of fiber and timber stocks. Ecuador has not conducted a systematic analysis of tax incentive mechanisms for domestic plantation timber and fiber stock suppliers in lieu of further degrading Ecuador's natural forests.

4.2 FCM OPPORTUNITIES

4.2.1 Focus Support to Promote an Enabling Environment for Carbon Finance

- Support project design to align with international financial best practices within investment-grade financial architecture. Require projects to conduct life-of-project feasibility studies for all carbon activities with scope and scale clearly defined and aligned with capacity.
- Develop definitions of international finance best practices for Ecuador REDD+ activities.
- Support the development of Ecuador's MRV regime to function within investment-grade financial architecture including fungible, jurisdictional nested REDD+ initiative accounting with projects converted to jurisdictional systems without decreasing value to stakeholders.
- Support the development of REDD+ national registries so that issuance of offsets is devolved to the rights holder who created the emission reduction with proper recourse if the rights holder does not perform. This would incorporate the work other donors are doing with MRV systems.

4.2.2 Develop Detailed Financial Arrangements

- Support the development of detailed financial arrangements, including enhanced access to secure banking services of forest dependent economies so as to decrease the role of the informal and illegal economies and their intermediaries. This will enhance opportunities for small-medium enterprises to engage in Ecuador REDD+ activities.
- Support financial modeling for all REDD+ activities based on both reliable carbon estimates and accurate carbon development and project implementation budgets.

4.2.3 Promote Secure Long-Term Investment in Ecuador's REDD+ Industry

- Support the development of an Ecuador forest carbon risk management toolkit and instruments to mitigate default risk while providing assurance of contract completion.

4.2.4 Standardize Regulatory Activities/Contracts to Reduce Transaction Costs

- Support the use of standardized legal contracts that ensure offsets devolve to the rights holder who created the emission reduction and funds flow to project proponents based on specific activities and benefit sharing mechanisms.
- Support the use of REDD+ service contracts that define forest carbon offsets transactions performed on a specific property including a performance guarantee with sanctions for non-performance that do not include loss of title.
- Support the implementation of regulatory activities so that ideally, the complete carbon and financial audit process takes no more than 90 days.

4.2.5 Catalyzing Additional Funding Sources

- Improve access to working capital and seed capital funds to catalyze private sector funding, providing loans to projects and programs at commercial rates.
- Support application of currently available credit enhancements for REDD+ activities.

5.0 MONITORING, REPORTING, VERIFICATON (MRV)

There are numerous challenges for monitoring carbon emissions from deforestation. For example, persistent cloud cover in certain areas has created a gap of 30 percent in the coverage of optical satellite data used for the most recent national forest cover and change estimate, the Historical Deforestation Map (MDH) project, which has affected the calculation of the historical deforestation rate. Extreme variations in topography and land use and land cover mosaics within a single satellite image require the use of appropriate mapping strategies to generate accurate representation of land use and land cover patterns. The complexity of agricultural and silvopastoral landscapes, especially in the Amazon region, require careful planning of a sampling approach that ensures representative estimates of carbon storage in such landscapes and possibly the integration of field and remote sensing techniques (e.g., light detection and ranging [LIDAR]) to generate accurate estimations of carbon contents. The extension and intensity of forest degradation are not well characterized; probably most of forest use regimes causing degradation cannot be adequately monitored using remote sensing.

Ecuador has a persistent gap in terms of the organization of an appropriate institutional framework for monitoring in the environmental sector in general, and particularly in the land use, agriculture, and forestry sectors. Data on carbon contents and land use and cover changer (LUCC) dynamics in forest ecosystems are fragmented and not readily available at the national and sub-national levels. Multiple organizations in the government and civil society have generated information at multiple scales using different and not necessarily compatible conceptual and methodological approaches. However, the landscape of activities related to MRV is changing rapidly. Different initiatives and projects are implementing forest carbon monitoring activities partly in preparation for an eventual REDD+ mechanism, but also in the context of monitoring needs in wider processes.

5.1 MRV FINDINGS

5.1.1 The Institutional Framework

The institutional framework for REDD+ and its accompanying MRV systems is in a state of definition and change. At the national level, the National Climate Change Strategy will serve as the umbrella for the National REDD+ Program. The National REDD+ Program identifies two existing initiatives as the basis for the MRV system in the forestry sector. The first one is the *Evaluación Naciónal Forestal* [National Forest Inventory] (ENF), a project that is executed in the Undersecretary of Natural Patrimony and the Food and Agriculture Organization of the United Nations (FAO) with the goal of characterizing forest resources at the national level, including carbon contents in forests. The second one is the MDH project, which is in charge of estimating deforestation rates for the periods 1990–2000 and 2000–2008 at the national level. These two initiatives will be complemented by the Reference Scenario of Emissions from Deforestation and should lead to a MRV compliance grade GHG monitoring system. The GHG monitoring system under the National REDD+ Strategy is planned to be directly linked to the Forest Information System, defined under the new model of forest governance that is being developed by the National Forest Department (DNF).

5.1.2 Key Developments in MRV

In addition to the ENF and the MDH initiatives, the GoE is also implementing a National Ecosystem Map which will eventually be linked to the process of characterization of carbon contents associated to different territorial strata. Also, SBP has a substantial monitoring component that has the goal of verifying compliance in terms of preserving forest (and paramo) land cover. Outside the GoE, several project-level initiatives in the voluntary carbon market and other REDD+-related initiatives have implemented baseline and other MRV

activities normally under a combination of the Verified Carbon Standard (VCS) and Climate, Community & Biodiversity (CCB) standards. These actors are particularly interested in the implementation of a National Registry System that integrates standards for adaptation and mitigation activities. Other NGOs and research centers have been working on activities that can be relevant to an integrated MRV system, such as the promotion of community-based environmental monitoring and land use planning and ecosystem monitoring under integrated watershed management schemes (e.g., FONAG). Even though support for MRV is part of planned and ongoing activities implemented by cooperation agencies and projects working in support of REDD+ (e.g., UN-REDD, KfW), the development of a comprehensive MRV system that works at multiple scales and across sectors is nascent.

52 MRV OPPORTUNITIES

5.2.1 Communication, Coordination, and Participation

There are a number of important actors–public and private, central and local, national and international–with experience and assets, which, if coordinated effectively, can improve the development and application of MRV systems in Ecuador. The development of effective communication, coordination, and participation on MRV in Ecuador will require efforts to:

- Support spaces for coordination between GoE agencies in the development of Intergovernmental Panel on Climate Change (IPCC) GPG-compliant carbon monitoring protocols in the Agriculture, Forest, and other Land Uses (AFOLU) sector. The most urgent need identified is to create specific coordination mechanisms between MAGAP and MAE to integrate the quantification of carbon stocks in agricultural and silvopastoral landscapes into the REDD+ MRV system. This work would support the work planned by SilvaCarbon.
- Support the creation of a working group to discuss scale-sensitive standards for mapping LUCC dynamics, quantify carbon stocks, and estimate carbon emissions and removals associated with changes in forest area or carbon density in areas of forest that remain as forest. It is important to engage existing institutional spaces such as CONAGE in the discussion to promote the institutionalization of standards.
- Work with GADs in the development of collaboration schemes for the integration of MRV activities in their planning process.
- Promote the systematization of monitoring experiences at local, sub-national, and national scales, including community-based social and environmental monitoring and the generation of appropriate communication strategies to guarantee access to this information by a wide set of actors.
- Promote the participation of a wide set of actors in the definition of key terms related to REDD+. These terms include, but are not limited to, the definitions for different land use and land cover types (including forest), deforestation, afforestation, reforestation, and forest degradation.
- Improve coordination mechanisms among donors and implementing organizations supporting MRV activities to promote complementary work plans across themes and scales.

5.2.2 Research and Development

Progress made at local to national levels in the implementation of MRV activities have led to two types of needs. The first one represents information needs that have been deemed as necessary but have not been implemented due to barriers in financial resources or human capital. The second need is the development of procedures and tools to establish an MRV system. In both cases, the opportunities for intervention identified below prioritize working across scales and integrating actors in different sectors. Specific opportunities for research and development related to MRV include:

- Support comparative analyses between methodological standards in use at local and national levels (e.g., VCS, United Nations Framework Convention on Climate Change [UNFCCC]) to monitor carbon emissions from LUCC dynamics. Similar work needs to be done for social and environmental monitoring standards, using as a basis work in progress in SES and monitoring activities in SBP.

- Support the characterization of the status of land tenure in critical forest areas from the perspective of avoiding emissions from deforestation. These include, but are not limited to, indigenous lands, private and municipal reserves, areas belonging to the *Patrimonio des Áreas Naturales del Estado* (PANE), and forest patrimony located in forest ecosystems.
- Promote applied research on the potential of information and communication technologies to facilitate social and environmental monitoring activities at local, sub-national, and national scales.
- Support continuous access to a wide set of commercial and non-commercial sources of satellite imagery acquired by optical and active sensors, including data clearinghouse mechanisms that provide access to satellite imagery processed using standardized methodologies.
- Complement field efforts of the ENF in the characterization of carbon contents in critical areas, including the evaluation of methods based on LIDAR to generate accurate carbon content baselines in ecosystems with high-carbon contents and high deforestation threats, and in agricultural and silvopastoral mosaics. This work needs to be coordinated with SilvaCarbon.
- Support the generation of data regarding current MRV costs in activities at local to national scales, including the development of potential cost scenarios under different modes of implementation of a REDD+ mechanism.
- Explore implications of different methodological alternatives for setting emission reference levels in terms of data requirements, LUCC scenarios, uncertainty, and financial implications.
- If not done by other donors, there is a need for systematic comparative analyses of methodological alternatives to monitor deforestation using low spatial resolution/high temporal resolution optical sensors (e.g., Moderate Resolution Imaging Spectroradiometer [MODIS]), including the assessment of the ability of such sensors to capture adequately fine-scale LUCC patterns.
- Support continuing activities to improve the land use and land cover benchmark map to be used by Ecuador as starting point to report GHG emissions in the AFOLU sector.
- Support the development of a methodological platform that allows the analysis of proximate and underlying causes of LUCC dynamics at multiple scales, including the assessment of opportunity costs of forest conservation.
- Support applied research activities aimed at the development of deforestation and forest degradation monitoring platforms using active sensors (Synthetic Aperture RADAR [SAR]) and the comparison of thematic coherence with LUCC data derived from optical imagery within the context of distinct environmental and socioeconomic conditions found across the country.

5.2.3 Capacity Building

Capacity-building opportunities are related to short-term needs arising from ongoing MRV activities and the longer-term needs of specialized personnel associated with the implementation of a robust MRV system. In this context, out-of-the-box training activities could help fill short-term needs; however, other mechanisms should be explored to fulfill more specific capacity building demands including training programs tailored to specific MRV needs and participation in graduate programs by local researchers working in the implementation of MRV activities. In this context, the following opportunities have been identified:

- Promote the development and implementation of a training toolbox to create local-level monitoring capacities, including field methods, data management and reporting. This could incorporate the use of information and communication technology to improve the systematization and communication of the results of local-level monitoring.
- Support the development of a capacity-building package customized to the specific challenges that GADs face in the implementation of environmental planning in their territorial jurisdictions.
- Promote the establishment of spaces for collaboration between local and United States-based researchers to solve specific research needs. One strategy could be to link national and international universities (e.g., shared study programs) to provide opportunities for local researchers in MRV topics and establish the appropriate mechanisms for trainees to apply their skills in the country.

- Promote training of local technical personnel on database design, management, and customization to facilitate the integration of social and environmental datasets.
- Promote spaces to share experiences with teams implementing MRV activities in other countries in the Andean region and abroad. A high-priority topic in the agenda could be sharing experiences on community-based monitoring implemented in the region.
- Promote the enhancement of links to existing international platforms and groups working in MRV such as the Group on Earth Observations (GEO), the Global Observation of Forest and Land Cover Dynamics (GOFC-GOLD) panel, and SilvaCarbon.

As mentioned previously, the United Stated Government (USG) is making a significant effort to strengthen the global architecture around MRV for REDD+, and build the technical capacity to carry out MRV. In Ecuador, USG funded involvement in MRV issues should be coordinated with actions implemented by the SilvaCarbon program, the ICAA2 and NetZero/Amazonas Andinas regional programs (NZD), the IAA with the USFS and future programs funded by the Mission. Table 2 illustrates MRV areas in which each of these actors are currently engaged and highlights potential duplication as well as areas that may need additional donor involvement.

Table 2: Engagement in MRV Areas

MRV Area	KfW	GiZ	UN-REDD	SilvaCarbon	NZD	ICAA2
Communication, Coordination, Participation						
Inter-Agency Cooperation						
Standards						
Support to GADs						+
Community-Based MRV		+			+	
Data gathering and management		+			+	+
Research and Development						
Access to Imagery				+		
Land Tenure Characterization						
Use of Active Sensors	+					
Carbon Contents Characterization		+	+		+	+
Emission Reference Levels	+	+	+			
LUCC Drivers		+				
Monitoring Methodologies and Platforms		+	+		+	
Capacity Building						
General Training in MRV Activities				+		
Specific Training		+			+	+
Link to Existing MRV Platforms		+		+		

6.0 LOW EMISSIONS DEVELOPMENT STRATEGIES (LEDS)

6.1 LEDS FINDINGS

The GoE has embarked on an ambitious redesign of the national legal framework and political structure, starting with the new Constitution of 2008, which is being followed by the promulgation of important new laws, regulatory frameworks, and participatory processes. Of special relevance to LEDS is Article 306 of the Constitution, which mandates the State's obligation for promoting environmentally responsible exports. This specifically includes those that generate employment and added value, particularly by small and intermediate producers or from the artisan sector. This article can be interpreted as encouraging economic activities with lower carbon emissions, because of the emphasis on small-scale producers, who are largely settled on long-established production landscapes where increases in productivity per hectare automatically lead to net relative decreases in GHG emissions. Understanding the medium-term (20-year) strategic intent of the *Plan Nacional para el Buen Vivir* is important as it will establish the regulatory framework and market philosophies that will create (or impede) the creation of an enabling environment that will foster LEDS in Ecuador. The GoE Code of Production has clear reference and creates space for incentives for green economy and technology transfer. Much remains to be done to foster incentives and improve technology in productive sectors, both public and private.

The process to identify and implement a land use-based LEDS begins with understanding the GHG profiles of different land use activities, so that those with positive or neutral carbon intensities can be fostered, while those with large emission profiles can be made more efficient or otherwise modified (or abandoned). Ecuador is currently finalizing its 2nd National Communication to the UNFCCC, which reports on GHG emissions by economic sector and GHG type. The assessment team found that the most apparent needs for improving capacity to carry out GHG inventories include:

- Develop a strategy to institutionalize the inventory;
- Train and hire long-term personnel;
- Implement procedures to adequately archive information;
- Develop and implement quality assurance and compliance processes; and
- Encourage sustainable systems and organization.

6.2 LEDS OPPORTUNITIES

6.2.1 Strategic Framing of LEDS Discussions with the Public Sector

LEDS is still a new concept in most countries, including Ecuador. There is a need to frame LEDS better in communications with the public and within the GoE. The GoE should build in more direct linkeges between the National Glocal Climate Change strategy, and the economic development plans developed by SENPLADES. Specific needs include supporting the development of:

- A communication strategy to insert LEDS adequately into policy discussions. A clear link can be made between LEDS and the "New Industries" (as described in the *Plan Nacional para el Buen Vivir*) that is

envisioned to become the main source of Ecuadoran wealth in 15–20 years' time. The foundation of this message could be that the "New Industries"must not destroy Ecuador's biodiversity, which in many regards will be one of Ecuador's most important resources for a secure future.

- Policy options and business models in Ecuador that embrace LEDS can be linked to REDD+ interventions as part of an integrated approach to land use that reduces poverty and adds value to agricultural production. These policies and investment options should incorporate criteria that recognize the geographic and cultural differences that define Ecuador's regions.

6.2.2 Strengthening GHG Inventory

As referenced in the MRV section, the compilation of emissions data from the many different types of land use activities is a monumental task. The national GHG inventory processes provide an opportunity to create a system for collecting, processing, and validating information about land cover and land use activity from different economic and social sectors. A continuous and consistent GHG monitoring system that ensures continuity over the medium- to long-term, supported by staff with the technical skills required to train and interact with decentralized government authorities, is needed. The SilvaCarbon team visited Ecuador prior to the Assessment and suggested the following technical assistance and tools for the GHG inventory system:

- Use Environmental Protection Agency Template Tools to develop and document key category analysis;
- Assess suitability of data sources, such as land cover, land use, climate and soils, using a questionnaire developed by ICF (an international consulting company);
- Assess institutional capacity and potential for providing assistance for improving data; and
- Provide assistance in using tools for reporting on the AFOLU section of the GHG inventory.

6.2.3 Sustainable Intensification through Agroforestry and Technology

Opportunities exist to support sustainable intensification, particularly for cocoa and coffee, for both small holder and commercial plantations in Ecuador. Carbon positive strategies for coffee and cocoa include optimizing planting densities to maximize yield, introducing genetic varieties that improve yield and quality; agronomic techniques that increase litter and soil carbon; shade tree management to increase biomass; local organic fertilizer production; and post-harvest management to improve quality, add value, and reduce waste. It is already an active area for government, bilateral cooperation, and private investment; there are supportive social and environmental circumstances for further growth. Experiences with the USAID Ecuador Local Business Development Program (PRODEL) lay a solid technical and institutional foundation for further USAID engagement in this area. Further investment in agroforestry activities could be to:

- Strengthen pro-agroforestry policy through the *Comite Interinstitucional de Cambio Climatico* (engaging other Ministries from the productive sectors).
- Support the MAGAP's extension program (*Escuelas del Campo*) that implement an educational program linked with social networks to promote sustainable options at the local level.
- Promote the adoption of private sector voluntary certification schemes to accelerate the adoption of best practices that span the economic, environmental, and social dimension of sustainability.
- Support efforts to improve and intensify beef cattle production that is linked with agroforestry or forest conservation as part of an integrated REDD+ and LEDS approach to land use.
- Support the improvement of shrimp aquaculture technology and link this with efforts to restore mangrove swamps using an integrated REDD+ and LEDS approach for "blue carbon."
- Support efforts to increase productivity of plantation crops, such as oil palm and sugar cane, using advanced agronomic practices and genetic stocks as a means to increase productivity without expanding its spatial footprint.

6.2.4 Socially Inclusive Value Chains

Across different value chains, there are opportunities to engage in LEDS-related work. For example, there are opportunities to:

- Support small-holder producers to engage more productively along value chains.
- Develop processing capacity for agroforestry commodities in order to add value and facilitate access to the capital and technology.
- Conduct value chain analysis that identifies opportunities for social inclusion and the best ways to engage and benefit poorer community members, women, and youth at different points along the value chain.
- Explore the development of binding forest and ecosystem conservation agreements with land owners that receive agroforestry development support. This has already been piloted with communities in the Mejia municipality, in the watershed of the San Pedro River. In exchange for investment in water irrigation infrastructure, they have agreed to conserve highland forests areas of their community.
- Explore regulatory and market frameworks that create incentives for plantation companies and processing mills to increase the sourcing of production from out-growers, particularly small farmers.
- Support the optimization of fertilizer use in the agricultural sector (especially the banana, palm oil, and sugar cane industries), which seems to be a high-impact area for LEDS. This work could also include an assessment of the national fertilizer value chain studying where it is sourced from and what subsidies or taxes are present, etc.
- Encourage MAGAP and MAE to share information systematically and carry out joint planning in order to maximize synergies between agriculture/agroforestry and forest/ecosystem conservation objectives. Strengthening coordination between the two ministries is essential in order to optimize the value of agroforestry as a LEDS/REDD+ tool.

6.2.5 Catalyzing Microfinance Directed at Ecosystem-Based-Adaptation and Agroforestry LEDS

The role of microfinance to catalyze broad social participation in LEDS should be further explored. The Microfinance Strategy for the Sustainable Use of Land and Adaptation to Climate Change supported by the new *Ley de Economía Solidaria y Popular* [Popular Economic Solidarity Law], overseen by the *Ministerio Coordinador de Desarrollo Social* [Ministry for the Coordination of Social Development] and implemented through a Micro-Finance Program is in the early stage of development and serves as an interesting model from which to learn further. Specific aspects to be further studied include:

- How can microfinance approaches complement or give continuity to grant- or donor-funded LEDS activities?
- Development of the specific financial criteria needed for LEDS or ecosystem microcredits (for example, in terms of time horizon, community vs. individual collateral, etc.).
- Develop strategies and materials to assist with capacity building of microfinance institution staff of these new product and its criteria.
- Explore how REDD+ initiatives can support the development of microfinance schemes linked to LEDS.
- How should these new microcredits be accompanied by natural resource/ecosystem management/agroforestry technical expertise?
- Microfinance capacity building with smallholders, indigenous people, and other potential rural beneficiaries, especially with regard to innovative use of microfinance in LEDS.

7.0 CONCLUSIONS

The gaps and opportunities outlined in this report should be considered in the development of the National REDD+ Program. Some will be relatively easy to build on or remedy. Other priority policy and institutional issues are more complex and must be addressed early on to pave the way for a successful National REDD+ Program, including the needs to: define carbon rights; resolve inconsistencies and contradictions among different land planning strategies across scales (national/regional/local) as well as sectors (environment, forest, water, agriculture, infrastructure); improve application of the forest governance model; and facilitate more effective coordination among government agencies that influence drivers of deforestation (environment and development sectors).

Although the policy and legal framework required for enabling REDD+ is (for the most part) in place, the challenges of effective application remain. For this reason, the REDD+ readiness phase lends itself to learning and perfecting application through the implementation of demonstration or pilot initiatives. Supporting and learning from demonstration projects that are designed to respond effectively to the diversity of circumstances and address a variety of challenges will go a long way to ensure that the National REDD+ Program is practical, effective, and (ultimately) successful. These initiatives, where possible, should integrate the various components of REDD+ (SES, MRV, FCM, and LEDS).

In sum, this Assessment identified the following opportunities that appear to be critical for further development of REED+ in Ecuador. The Assessment team acknowledges, however, that the GoE has a very complicated task of matching the resources and the interests of the various donors with the priorities of Ecuador and available GoE funds. Therefore, the following summary of priorities is only a tool for further discussion of this topic.

7.1 SOCIAL AND ENVIRONMENTAL SOUNDNESS

7.1.1 Safeguards, Standards, and Monitoring

- Improve the definition, application, and use of social and environmental indictors for monitoring and reporting, particularly at the project level;
- Develop and test practical indicators, aligned with National Standard indicators;
- Develop and adapt community-based methodologies for assessing and monitoring biodiversity and socio-economic aspects of REDD+ activities;
- Train REDD+ participants in their use; and
- Strengthen capacity to address gender in REDD+ programming.

7.1.2 Environmental and Biodiversity Issues

- Conduct research to understand the drivers of deforestation and infringement on protected areas and develop strategies to address them;
- Use existing data and support local research institutions to understand and identify ecosystem services and biodiversity values to plan REDD+ activities; and
- Support the *Direccion de Biodiversidad* and other protected area agencies at local levels to develop a systematic vision of protected areas and biodiversity conservation within REDD+.

7.1.3 Stakeholder Analysis and Engagement

- Support the strategic inclusion of under-represented stakeholders (i.e., by ethnicity, gender, and age groups) in the development of the National REDD+ Program; and

- Develop REDD+ capacity (operative, representation, decision making) within under-represented groups (e.g., women, youth, disadvantaged communities, producer groups, civil society community-based representation, and local governments).

7.1.4 Rights, Benefits, and Distribution

- Support the GoE to clarify REDD+ participants' rights to land, territories, natural resources, and carbon at the national and local levels;
- Develop alternative models of local governance (CTIs, decentralized government, communal forests, etc.) and methodologies for benefit sharing and monitoring local impact while improving participatory processes and capacity within communities; and
- Incorporate progressive titling processes that empower disadvantaged groups and pilot experiences for benefit distribution.

7.2 FINANCE AND CARBON MARKETS

7.2.1 Direct Funding and Technical Support to Develop an Enabling Environment for Carbon Finance

- Design projects with specific standard operating procedures that fit into international financial best practices and based on life-of-project feasibility;
- Incorporate features in the REDD+ national registries that address devolution of offsets to the rights holder who created the emission reduction, supported by legal templates regarding carbon rights;
- Implement financial modeling for both public and private sector non-market- and market-based forest carbon project activities based on reliable carbon estimates, accurate carbon development, and project implementation budgets;
- Develop a forest carbon risk management toolkit and instruments to mitigate default risk while providing assurance of contract completion for institutions, investors, and individuals; and
- Develop and test a financial risk mitigation tool that can provide guidance to communities who want to develop carbon offset projects.

7.3 MONITORING, REPORTING AND VERIFICATION

7.3.1 Communication, Coordination, and Participation

- Strengthen coordination among GoE agencies and assist them in the development of carbon monitoring protocols in the agriculture and land use sector, including the creation of specific coordination mechanisms between environment and agriculture ministries to integrate the quantification of carbon stocks in agricultural and silvopastoral landscapes into the MRV system;
- Support integration of MRV activities and the development of standards in planning, monitoring, and communication processes among multiple actors (donors, GoE, local governments, and communities) across themes and scales; and
- Assist local governments to face the specific challenges related to environmental planning in their territorial jurisdictions.

7.3.2 Research and Development Needs

- Conduct comparative analyses between methodological standards in use at local and national levels to monitor carbon emissions from land use;
- Characterize the status of land tenure in critical forest areas;
- Evaluate the potential use of LIDAR methods to create accurate carbon baselines;

- Develop guidance on MRV costs at local to national scales and under different REDD+ implementation scenarios;
- Explore methodological alternatives for setting emission reference levels;
- Support research to characterize proximate and underlying causes of LUCC dynamics at multiple scales; and
- Support applied research activities aimed at developing deforestation monitoring platforms that use active sensors and can be compared with land use data derived from optical imagery.

7.3.3 Capacity Building

- Develop and implement a training toolbox to create local-level monitoring capacities, which includes field methods, data management, and reporting inputs;
- Support learning and technology exchanges internationally for national, regional and local technical staff and develop capabilities on database design and management; and
- Create opportunities for links to existing international platforms and groups working in MRV, such as GEO, the GOFC-GOLD panel, and SilvaCarbon.

7.4 LOW EMISSION DEVELOPMENT STRATEGIES

7.4.1 Capacity Building

- Support the development of a continuous and consistent GHG monitoring system;
- Improve technology transfer via extension programs targeted at small-holders; and
- Improve the ability to measure and monitor the carbon stocks and flows associated with land use, particularly soil carbon.

7.4.2 Sustainable Intensification and Socially Inclusive Value Chains

- Promote the integration of REDD+ initiatives with LEDS approaches to land use as a mechanism to implement ecosystem based adaptation;
- Promote sustainable intensification of cocoa and coffee small-holder and commercial plantations in Ecuador.
- Improve the value chain by developing processing capacity for agroforestry commodities combined with facilitating access to the necessary capital and technology;
- Explore the role of microfinance to catalyze broad social participation; and
- Support multiple organizations, possibly across sectors, to develop LEDS opportunities that tap into both public finance (for example, redirecting agricultural subsidies to subsidize ecosystem services) and private finance streams to develop new economic activities.

In sum, much work is being done related to REDD+, and much remains to be done. REDD+ in Ecuador has just begun to take root and it is an opportune time for Ecuador to tap into the potential for using REDD+ as a tool to accomplish more sustainable, and more equitable, management of its valuable natural forest-based resources. USAID is already in discussions about how the two governments can collaborate to achieve this goal.

U.S. Agency for International Development
1300 Pennsylvania Avenue, NW
Washington, DC 20523
Tel: (202) 712-0000
Fax: (202) 216-3524
www.usaid.gov