

SCAPES Leader with Associates Cooperative Agreement

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Eastern Cordillera Real Landscape

Annual report

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for

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Acronyms

ACT	Amazon Conservation Team
ACTO	Amazon Cooperation Treaty Organization
AFIWNP	Alto Fragua – IndiWasi National Park
ALA	Local Water Authority
APECT	Tabaconas Association of Ecological Producers
APROCASSI	San Ignacio Association of Small Coffee Growers
AVINA	Fundación AVINA - Latin American Platform on Climate
BNDES	Brazilian National Development Bank
CAF	Andean Development Corporation
CAN	Andean Community of Nations
CARE Peru	CARE Peru is an Associate to SCAPES program in ECR
CC	Climate Change
CENFROCAFE	Coffee Growers Cooperative
CIAT	International Center for Tropical Agriculture
CIIFEN	El Niño Phenomenon International Research Center
CIPDER	Inter-institutional Consortium for Regional Development (Cajamarca)
CONDESAN	Consortium for the Sustainable Development of the Andean Ecoregion
ConSOC	IDB Civil Society Consulting Group
CORPOAMAZONIA	Regional Office of the Minister of the Environment for the Amazon Region of Colombia
CRiSTAL	Community-based Risk Screening Tool – Adaptation and Livelihoods
CPO	Colombia Program Office
CVCA	Climate Vulnerability and Capacity Analysis
DRA	Regional Agriculture Direction
ECR	Eastern Cordillera Real
ELAN	Ecosystems and Livelihoods Adaptation Network
EMAPAST	Empresa de Agua Potable del Puyo
EU	European Union
GBIF	Global Biodiversity Information Facility
GIS	Geographic Information System
GIZ	German Society for International Cooperation
GORE Cajamarca	Cajamarca Regional Government
GRIDE	Regional Disaster Risk Reduction and Environment Steering Committee (Cajamarca)
GRUFIDES	Training and Intervention Group for Sustainable Development
HCV	High Conservation Value
IDB	Inter-American Development Bank
IIED	International Institute for Environment and Development
IIRSA	Initiative for Regional Infrastructure Integration in South America
INICAM	Institute of Municipal Investigation and Training
InVEST	Integrated Valuation of Ecosystem Services and Tradeoffs
IPCC	Intergovernmental Panel on Climate Change
IUCN	International Union for Conservation of Nature
JSNTN	Headquarters of the Tabaconas-Namballe National Sanctuary
LAI	Living Amazon Initiative
MAE	Ministry of the Environment of Ecuador
MCLCP	Provincial Roundtable to Combat Poverty
MEPSI	Environmental Provincial Municipality of San Ignacio

MINAM	Peru's Ministry of the Environment
MOU	Memorandum of Understanding
NGO	Non-Governmental Organization
NP	National Park
PA	Protected Area
PES	Payments for Ecosystem Services
PPO	Peru Program Office
REDD	Reduced Emissions from Deforestation and Degradation
REDPARQUES	Latin American Network for Technical Cooperation for National Parks, Other Protected Areas and Wild Flora and Fauna
RENAMA	Regional Administration of Natural Resources and the Environment (Cajamarca)
SCAPES	Sustainable Conservation Approaches in Priority Ecosystems
SEA	Strategic Environmental Assessment
SENAGUA	National Water Secretariat (Ecuador)
SENAMHI	National Service of Meteorology and Hydrology Information
SLBC	Sangay-Llanguanates Biological Corridor
SNTN	Tabaconas–Namballe National Sanctuary
UK	United Kingdom of Great Britain and Northern Ireland
TNC	The Nature Conservancy
US	United States of America
USAID	United States Agency for International Development
WWF	World Wildlife Fund

Amazon
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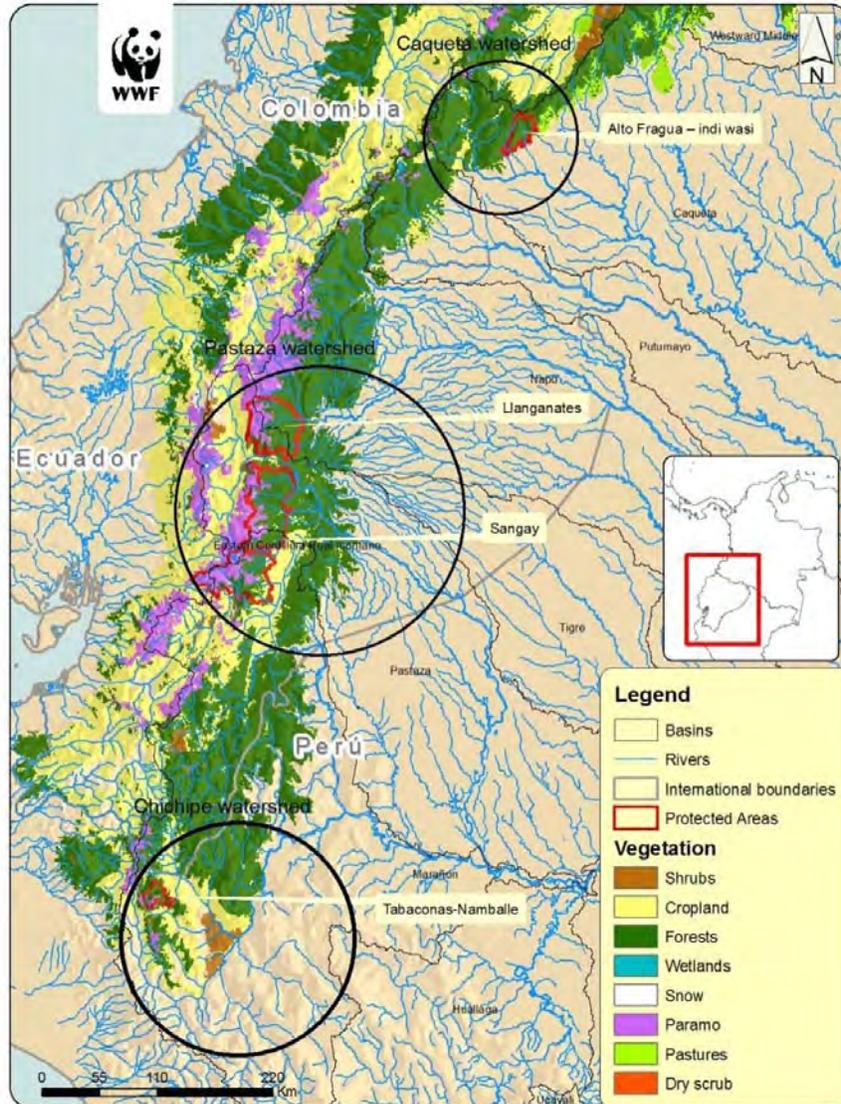
I. Summary of Activity Status and Progress*a. Introduction:*

At the crossroads of the Amazon, Andes and Pacific, the Eastern Cordillera Real (ECR) spans more than nine million hectares of the western arc of the Amazon basin, from southern Colombia to the Huancabamba depression in northern Peru (see Map 1), and gives rise to the greatest biological diversity in South America. The goal of this SCAPES program is to maintain the ecological resilience of three select mountain and lowland forest landscapes of the Eastern Cordillera Real (ECR); namely, the Alto Fragua Indi Wasi National Park in Colombia, the Sangay-Llanganates Biological Corridor in Ecuador and the Tabaconas Namballe Sanctuary in Peru. We aim to strengthen the capacity of communities, local, regional, and national institutions, and policies to respond to the impacts of major threats to biodiversity such as unsustainable agricultural and forestry practices, extensive ranching and infrastructure development, which are compounded by increasing climate variability and climate change, and thereby protect livelihoods, ecosystem services and biodiversity values within the landscape.

To achieve this goal, we employ conservation strategies that combine strengthening a policy and institutional framework that influences the drivers of environmental change with adaptation options that target ecosystems and seek to reduce the compounding impacts of climate hazards on local biodiversity and livelihoods. Our conservation strategies aim to address indirect threats such as the lack of integration of environmental considerations in governmental development policies, limited control and law enforcement related to natural resources and protected areas, and limited capacity to prevent, manage and mitigate impacts of environmental change and reduce ecosystem and community vulnerability.

WWF's conservation actions on the ground at these three sites are magnified by policy work at the national and regional level. Actions in Objectives 1 and 2 target local institutions and stakeholders to develop and implement conservation and adaptation strategies that promote a mosaic of land uses where fragmentation is minimized and connectivity is maximized. Objectives 3 and 4 target policy and institutional interventions at regional, national and international scales to ensure that climate-smart considerations are included in national development policy frameworks. Finally, Objective 5 focuses on the sharing of conservation and climate adaptation lessons across the SCAPES landscapes and beyond.

Progress made during the first two years of implementation of the project strengthened the cooperation with local stakeholders in the three focal areas of the ECR, and allowed new developments in the formulation and implementation of new conservation initiatives linked to these landscapes. Thanks to the intensive capacity building processes carried out in the three countries, the number of local stakeholders engaged in conservation planning exercises and in the identification of adaptive measures for the protected areas and surrounding landscapes increased dramatically during the second year of the project. For this reason, most of the activities programmed for FY12 were of a more practical nature, focusing on landscape management plans aimed at improving habitats for local biodiversity, and increased collaboration with environmental authorities for improved management of protected areas.



Map 1: Program Areas in the Eastern Cordillera Real

Work with small farmers in Colombia and Peru, seeking to reduce human pressure on the buffer zones of the focal protected areas, continued during the third year of implementation. This approach has increased the sense of belonging of local communities to their homelands, and this ensures future development of conservation actions.

The results of our policy work are limited compared to the rest of our achievements. However, we made important progress in securing the endorsement of the CAN for a virtual forum on climate adaptation facilitated jointly by CONDESAN.

b. Highlights:

- Climate vulnerability assessment methodology and analyses completed for the Chinchipe watershed in Peru. The results of the analyses have been validated by local institutional stakeholders (the Municipal Environmental Committee and managers of the SNTN) and will be used for the development of regional adaptation plans.

- Modeling of ecosystem services with the Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST) methodology carried out for the SLBC. Once biodiversity values are included to the results, the report will be used to help in the process of helping to update the management plan for the corridor.
- Increased participation of small farmers in the adoption of sustainable agricultural systems around the AFIWNP. The engagement of 40 families in these activities is reducing their toll on local biodiversity increasing the support to conservation actions led by staff of the protected area.
- More than 100 people trained during 12 workshops organized by WWF and National Parks around the AFIWNP to identify climate risks and prevent their impact through the development of sustainable agricultural practices including landscape management tools aimed at increasing forest connectivity.
- An assessment of the process of inclusion of climate change issues in the strategic environmental assessments in the Andean – Amazon piedmont of Colombia was completed, including a review of the strategic environmental assessment for the proposed Pasto – Mocoa highway and specific recommendations to integrate adaptation measures among the actions proposed to remediate expected impacts of this infrastructure development.
- A virtual forum on climate change in the Andean – Amazon region convened in April 2012 in collaboration with CAN and CONDESAN; 92 participants from nine different countries debated a set of questions based on the guidelines for a regional adaptation strategy for the Eastern Cordillera Real. The proceedings of the virtual forum will be used as the basis for national workshops in the three countries aimed at promoting adaptation plans centered on conservation areas.

c. Challenges:

- Since the beginning of implementation of the project, a good deal of interest on the Andean – Amazon slopes has awakened among institutional stakeholders, and this represents new opportunities and challenges for SCAPES. It is clear that the integration of different approaches to the sustainable development of this region is necessary, and this calls for negotiation and dialogue among institutions, governments, and communities. WWF is acknowledged as an important player in the region that can help to facilitate these dialogues, but we are still far from having aligned the interests, often disparate, of so many actors.
- The implementation of adaptive actions as part of the management plans of the focal protected areas is also a challenge for several reasons. First, we need to ensure that the results of our technical analyses to identify priority sites for conservation in the buffer zones of these PAs are included in the portfolios of the environmental authorities, helping them to prioritize actions for the protection of key elements of the larger landscape. Second, the adjustment of management plans is a process that includes negotiation at different levels within the environmental authorities responsible for the management of the protected areas, and this requires work beyond the geographical scope of the SCAPES field teams. And third, the engagement of local stakeholders around the PAs is critical to the success of the implementation of the management plans,

and although we have made important progress building local capacity and commitment, a lot of additional work is still necessary to ensure that the new approaches to landscape management in the region are going to take hold.

- At the local level, the challenges for WWF Peru have been immense since the original project structure and very low operating budget have not allowed for WWF presence in the area, making it difficult to have a relationship with local stakeholders. We have tried to compensate this deficiency by obtaining the support of the CARE staff member assigned to this area, which has worked well but has not been sufficient. At the present moment we are evaluating whether we have the resources to provide a different solution.

d. Adaptive Management in Action (including M&E):

WWF standards for program and project management are designed to allow for adaptive management throughout the life of a project. Members of the teams from Peru, Ecuador and Colombia have met once every year, have maintained an active communication by e-mail, and have held bimonthly conference calls in which major adjustments to the intervention logic of the project have been discussed as demonstrated in the revised results chains included in the work plans for the second and third year of the project.

During the entire project execution, many changes have been proposed for activities in response to what has happened and lessons learned along the way. Changes must always be well thought out and executed with care, since this may entirely eliminate some activities and/or generate new ones. Either way the generated changes have not been significant, but are intended to support and reflect the present political and social conditions in the project implementation context.

The SCAPES project did not originally contemplate downscaling climate vulnerability analyses in Peru, but we considered it necessary to engage in this exercise. In a similar vein, we are supporting the updating of the SNTN Master Plan with some of the workshops that the environmental authority needs to convene to continue with the process and to include the recommendations that incorporate climate change adaptation measures in this management document.

e. Activity Status:

Activity Number	Activity Title	Status
Objective 1: Ensure protection and management of key landscapes and ecosystem services to reduce vulnerability to climate change.		
1.1	Downscale climate vulnerability analyses after identifying and testing new variables to be included in the analyses.	<i>On track</i>
1.2	Quantify and value ecosystem services in the region under current and future land use and climate scenarios.	<i>On track</i>
1.3	Identify and delimit new conservation areas.	<i>Mixed performance</i>
1.4	Incorporate climate adaptation measures in the management plans of existing protected areas.	<i>On track</i>

Activity Number	Activity Title	Status
1.5	Participatory design and implementation of management plans for the region that incorporate actions to maintain resiliency of forest ecosystems likely to be affected by climate change.	<i>On track:</i> Since the end of FY11, we merged these two activities into a single one under the original heading of 1.6.
1.6	Increase the adaptive capacity of local communities in the buffer zones of the Alto Fragua NP (Colombia) and the Tabaconas-Namballe Sanctuary (Peru).	
Objective 2: Build local knowledge and capacity needed to respond proactively in the face of climate change.		
2.1	Disseminating technical information from the 2008 WWF/ Fundación Natura climate change vulnerability assessment.	<i>On track</i>
2.2	Train local leaders, with leadership from CARE, in the Cajamarca Department of Peru to design and implement specific adaptation measures to mitigate the local effects of climate change on communities.	<i>On track</i>
2.3	Participatory design of specific community based adaptation measures, through the application of the Climate Vulnerability and Capacity Analysis (CVCA) tool.	<i>On track</i>
2.4	Train national parks officers and community leaders from the target protected areas to assess and monitor local vulnerability of climate change and the impact adaptation measures can have in coping with climate change.	<i>On track</i>
2.5	Work with local environmental authorities to adjust and implement management plans for protected areas and indigenous territories.	<i>On track</i>
2.6	Build capacity for collective action for river basin management in light of climate change based on participatory planning processes and use of legal and policy tools.	<i>On track</i>
2.7	Design, print and distribute materials based on vulnerability assessments to regional environmental authorities, municipalities, indigenous authorities, local schools, NGOs, and media.	<i>Mixed performance</i>
2.8	Participate in a cross-site visit to the Coastal East Africa region.	<i>On track</i>
Objective 3: Develop principles and criteria with national governmental agencies and economic sectors to address drivers of environmental change.		
3.1	Integrate adaptation measures into the development of national policies including the implementation of the Decade Environmental Plan of Colombia, the development of the chapter on Biodiversity and Climate Change for Colombia, and the construction of the Ecuadorian national climate change strategy.	<i>On track</i>
3.2	Develop and strengthen planning tools for economic sectors.	<i>Mixed performance</i> Since the end of FY11, we merged these two activities into a single one under the heading of 4.5.
3.3	Facilitate the adoption of a shared vision through the translation of technical information on climate change vulnerability and related impacts on environmental services to make it accessible to local stakeholders for decision making purposes and facilitate its inclusion in national regulations and policy framework to guide economic development in the different countries.	<i>On track</i>
Objective 4: Orient economic development in the western arc of the Amazon toward the adoption of sound governance systems and the maintenance of ecosystem resilience to environmental change.		

Activity Number	Activity Title	Status
4.1	Build strong alliances with regional organizations such as CAN, the Amazonian Cooperation Treaty Organization (ACTO), and the Andean Development Corporation (CAF and Inter-American Development Bank (IDB), aimed at reducing the synergistic effects of agriculture, infrastructure development, and climate change.	<i>On track</i>
4.2	Support implementation of policy recommendations for the 2006 – 2010 Climate Change Agenda of the CAN.	<i>On track</i>
4.3	Working in collaboration with CARE, develop and disseminate a bi-national environmental education strategy along the border of Ecuador and Peru, incorporating specific measures of adaptation to climate change.	<i>Cancelled since the end of FY11</i>
4.4	Advocate the adoption of precautionary principles regarding climate change into design and implementation of economic development projects in the western arc of the Amazon.	<i>On track</i> This activity was merged with 3.2 in FY11
4.5	Advocate adoption of a shared vision of adaptation to environmental change in the western arc of the Amazon by national governments, international NGOs and multilateral agencies.	<i>Merged into 4.4 in FY11.</i>
Objective 5: Promote learning and sharing for improved biodiversity conservation and climate change adaptation across SCAPES landscapes and beyond.		
5.1	Develop and pilot a climate change adaptation toolbox for practitioners.	<i>Completed</i>
5.2	Participate in a review of adaptation monitoring.	<i>Completed</i>
5.3	Contribute to the Ecosystems and Livelihoods Adaptation Network.	<i>Completed</i>
5.4	Improve integration of ecosystems and livelihoods approaches to adaptation.	<i>On track</i>
5.5	Integrate climate change adaptation in to the WWF Standards.	<i>Completed</i>
5.6	Fifth International Conference on Community-based Adaptation to Climate Change.	<i>Delayed</i>
5.7	Produce WWF SCAPES communications materials.	<i>Completed</i>
5.8	Develop an online site for communicating and sharing across WWF's SCAPES partners.	<i>Cancelled</i>

II. Detailed Description of Progress on Site-Based or Policy Initiatives

a. Key short- and long-term program objectives for the site

The overall goal of the project is to maintain the resilience of the ECR mountain and lowland forest ecosystems and to preserve their biodiversity values in the face of climate change. The project helps local institutions and stakeholders develop and implement adaptation strategies that promote a mosaic of land uses where fragmentation is minimized and connectivity is maximized, integrates ecosystem aspects into community adaptation plans and builds capacity for proactive adaptation, and targets policy and institutional interventions at regional, national and international scales to ensure climate change considerations are included in national development policy frameworks.

b. Summary of progress for site

After three years of implementation of the project, we have laid out a solid foundation for biodiversity conservation in and around the focal areas. To date, we have completed most of the technical analyses necessary to assess the vulnerability of target ecosystems to climate change, and to identify priority areas for conservation in support of regional systems of protected areas. We also have increased local capacity to ensure informed participation of

community leaders in planning processes regarding access to and management of their territories, and have helped to improve conservation interventions of institutional stakeholders through the continued provision of technical assistance to the environmental authorities in the development of adaptation plans.

c. Activity description

Objective 1: Ensure protection and management of key landscapes and ecosystem services to reduce vulnerability to climate change.

The development of climate vulnerability assessments for the focal areas of the project has allowed the local SCAPES teams to effectively participate in local, national and regional processes aimed at developing adaptation plans and strategies and to support local stakeholders with technical inputs. The results of InVEST analyses have proven to be useful inputs for local prioritization of conservation actions in the Andean-Amazon piedmont of Colombia by the environmental authorities; CORPOAMAZONIA and National Parks have taken into account the spatial models of environmental services to plan conservation interventions aimed at protecting the water sources of urban centers and restoring degraded mountain ecosystems, and we expect a similar positive reaction in Ecuador in the near future, which illustrates the potential for application of technical analyses in decision making purposes.

Long-term conservation actions in the focal areas of the project and throughout the rest of the ECR require a thorough consideration of the expected future distribution of selected organisms and ecosystems. Although our progress in this direction has been slow, preliminary results are helping to determine future conservation scenarios for the region. The production of specific recommendations on climate change adaptation to the managers of PAs in the ECR has provided valuable technical advisory for the adjustment of the management plans increasing their capacity to seek for proactive responses to the new challenges posed by climate variation. Local communities throughout the ECR largely depend on the natural resource base for their survival, and therefore their impact on biodiversity can be significant in some regions. This pressure reduces ecosystem resilience to large-scale transformational forces including those derived from climate change, and increases the vulnerability of human populations to further environmental degradation. Therefore, progress made in developing alternative, environmentally friendly practices is improving local livelihoods and reducing their pressure on the natural resource base.

Activity 1.1: Downscale climate vulnerability analyses after identifying and testing new variables to be included in the analyses. *On track.*

During the reporting period, we completed the design of an ecosystems-based methodology to assess vulnerability to climate change for the Chinchipe River watershed in the San Ignacio Province of Peru, validated the methodology with local stakeholders, and completed the analyses. The report of this analysis (Annex 1.1.1) was presented to the local government with a comprehensive local vision of the province. We expect that local development plans for the Province will include specific actions aimed at reducing vulnerability based on the results of our analysis.

The adjustment of preliminary vulnerability analysis results using primary hydrological information in Colombia, which had been planned for the second year of implementation,

was postponed due to the limited availability to the necessary equipment to collect this information. With additional support from WWF UK and Municipalities around the AFIWNP, National Park authorities are in the process of establishing a hydro-meteorological station along the Fragua Chorroso watershed to collect this primary information. In April 2012, WWF and National Parks adjusted the Flowing Forward methodology for vulnerability assessment to implement a pilot in the AFIWNP (Annex 1.1.2). The methodology was tested and validated and will be used by National Parks as part of their monitoring toolkit.

Activity 1.2: Quantify and value ecosystem services in the region under current and future land use and climate scenarios. *On track.*

Modeling ecosystem services for the upper Pastaza watershed using the InVEST tier 1 tools allowed the establishment of baseline information for sedimentation and water availability. Information processed to date (with a resolution of 30 m per cell) includes slopes, water flows, evapotranspiration/respiration balance, sedimentation, and water production (Annex 1.2.1). This information will be used to improve future monitoring of ecosystem services and will be fed into decision support systems for the Sangay-Llanganates biological corridor.

A deforestation time series analysis was also carried out for the 2000 to 2008 period. These maps will also serve for the adjustment of the management plan for the corridor. Once biodiversity variables are included in the model, we will be able to identify priority areas for conservation and reforestation in the face of future climate variation within the SLBC.

Activity 1.3: Identify and delimit new conservation areas. *Mixed performance.*

During the reporting period we completed the design of a methodology to identify climate refugia (Annex 1.3.1), selected preliminary lists of target species for analyses and developed tests of climate niche modeling. Our lists include 56 species of birds and 29 mammals either belonging to any of the categories of threat (CR, EN and VU) according to the IUCN's updated Red List, or with some evidence of population decline according to recent published records. Analyses carried out to date for the whole ECR include current species richness (based on the selected taxa, e.g. Fig. 2), expected temperature changes under different climate scenarios as a proxy for exposure, and expected distribution changes as a proxy for sensitivity (e.g. Fig. 3). The identification of climate refuges, to be completed during the last quarter of FY12, will result from individual overlays of sensitivity vs. exposure for each species and a combined expected distribution under new climate scenarios.

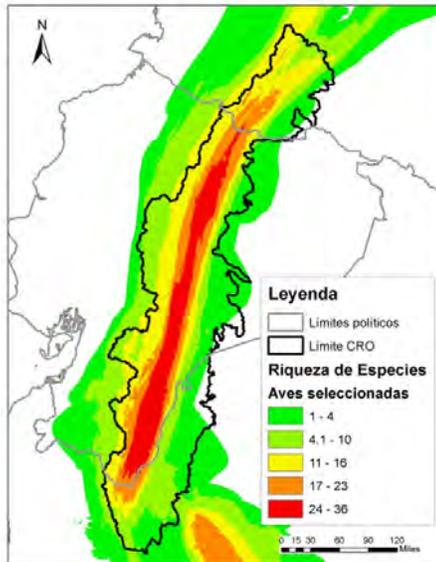


Figure 2. Current richness of birds of special concern in the ECR

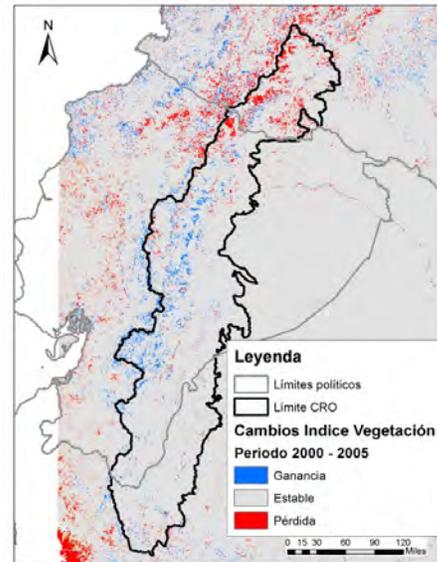


Figure 3. Changes in vegetation cover as a proxy for sensitivity

WWF had planned a workshop in collaboration with National Parks and the regional environmental authorities, to be convened in October 2011 and aimed to identify priority areas for conservation for the upper Caquetá watershed in Colombia. However, the design of the methodology to carry out the analyses of secondary information on biodiversity targets took longer than expected, and this activity had to be postponed to the first half of 2012. During the reporting period, we convened two workshops with local farmers of the San Pedro River basin, in which we conducted a participatory exercise to identify and delimit conservation areas within their properties as part of the conservation planning exercise for the buffer zone of the AFIWNP (see Annex 1.3.2).

Activity 1.4: Incorporate climate adaptation measures in the management plans of existing protected areas. *On track*

During the reporting period, WWF and National Parks updated the checklist of priority actions to update the management plan of the AFIWNP (Annex 1.4.1). At the same time, WWF facilitated the adoption of these recommendations through working sessions with field staff of the protected area aimed at validating the results of the vulnerability assessment. We expect that by the end of the fiscal year, a new version of the management plan, incorporating specific measures to address climate change will be approved by the environmental authority.

In Ecuador, we compiled and collated biophysical information for the SLBC corridor and its area of influence including cartography, vegetation cover for 1990, 2000 and 2008, soils, slopes, landscape units, precipitation, temperatures, deforestation and location of forest remnants. Most of the information collated to date is at a 1:50,000 scale and therefore adequate for the purpose of updating the definition of conservation targets and biophysical indicators in the management plan of the corridor (Annex 1.4.2).

WWF Peru is facilitating the process of updating the management plan for the SNTN. A consultant was hired by the Sanctuary to lead the process and to integrate the

recommendations made by WWF during the second year of implementation of the Project. This will ensure the adoption of specific measures to address issues related to climate variation. In addition, during the reporting period we convened a workshop in Lima with representatives from the SNTN, SERNANP and GIZ, aimed at the formulation of an agenda to integrate the management plan for the protected area into the adaptation plan for the San Ignacio Province (Annex 1.4.3). The implementation of this agenda is expected to be completed toward the end of the second quarter of FY13.

Activity 1.5. Participatory design and implementation of management plans for the region that incorporate actions to maintain resiliency of forest ecosystems likely to be affected by climate change. *On track.*

Merged into Activity 1.6 in the work plan for FY12.

Activity 1.6. Increase the adaptive capacity of local communities in the buffer zones of the Alto Fragua NP (Colombia) and the Tabaconas-Namballe Sanctuary (Peru). *On track.*

Following up with the capacity building exercises initiated in the buffer zone of the AFIWNP in Colombia, during the reporting period we convened one workshop with local farmers to train them in basic aspects of project development using specific examples of ideas to improve farm production and maintain the natural resource base (Annex 1.6.1). Ten additional families were engaged to develop participatory farm development planning in the San Pedro River basin as a way to reduce the expansion of the agricultural frontier in the buffer zone of the AFIWNP, which means that by the end of the third year of implementation, 40 families are engaged in the development of sustainable agricultural practices, thus reducing their toll on local biodiversity. Among the improvements in the local production systems established during FY12 are:

- Eight nurseries to produce cocoa seedlings (with a capacity of 700 seedlings/nursery)
- 10 agroforestry plots (approximately 1 ha per plot) combining cocoa and plantains.
- Five fish ponds
- 10 chicken coops
- Three cow sheds
- Nine vegetable gardens

These improvements benefit 116 people (84 men and 32 women) who are actively engaged in a collective process to monitor the reduction of their families' footprint on the local resource base (Annex 1.6.3).

To ensure the reforestation of 4 ha of degraded habitat in the buffer zone of the SNTN, WWF Peru is working with APROCASSI to produce the seedling bank that will be used. Target beneficiaries for this activity and the specific areas to be reforested were identified during this period. WWF's work with APROCASSI will include the implementation of four pilot adaptation projects in which local farmers can learn alternative systems to ensure future production on their lands (Annex 1.6.4). The first action is the installation, during the last quarter of FY12, of drip irrigation systems to optimize water efficiency in the coffee groves.

Objective 2: Build local knowledge and capacity needed to respond proactively in the face of climate variability.

The dissemination of the results of the vulnerability analysis for the ECR carried out in 2008 by WWF and Fundación Natura, has permitted a dialogue with institutional stakeholders aimed at the future development of regional adaptation measures that include a comprehensive analysis of major threats and pressures affecting conservation targets in the focal areas. The application of the CVCA protocol is an important component of the program that ensures the development of adaptation measures that respond to the local needs as perceived by stakeholders with an adequate gender perspective.

Local response to the exercises aimed at increasing local capacity to deal with the identification of adaptation needs and to design specific measures to fulfill them has been considerable and this will ensure the identification of the issues most important for different groups of local stakeholders. The development of monitoring protocols promoted by the SCAPES teams in Colombia and Ecuador are important achievements that are providing the environmental authorities the tools necessary to track environmental changes and follow up on specific actions designed to prevent and mitigate negative impacts of environmental changes.

Some of the activities originally planned for SCAPES in the ECR have been adjusted to respond to unexpected changes of the institutional settings in the region. Given the increased importance of developing adaptation plans for governmental institutions, and trying to avoid unnecessary duplications, instead of developing these plans independently, we are seeking to integrate our work with other initiatives whenever it is feasible. One of the most important capacities of the SCAPES team in the ECR is the development of training exercises that respond to local contexts, empowering local stakeholders for the autonomous design of conservation actions. The development of training to fill local gaps is important given the limited available knowledge on climate change throughout the ECR.

Activity 2.1. Disseminating technical information from the 2008 WWF/Fundación Natura climate change vulnerability assessment. *On track*

In the work plan for FY11, we included an activity to launch the guidelines for adaptation in the ECR with the CAN. This activity was postponed as convening a regional meeting with the expected impact has been a difficult process. This situation was finally solved with a virtual regional forum on climate change adaptation (see activity 4.5 below).

Activity 2.2: Train local leaders, with leadership from CARE, in the Cajamarca Department of Peru to design and implement specific adaptation measures to mitigate the local effects of climate change on communities. *On track.*

During the third year of the project we signed a Memorandum of Understanding with local partners who are the direct project beneficiaries. APROCASSI is an association with over 400 coffee growers, which also maintains a certified coffee production, and with whom we are currently implementing the necessary activities to establish pilots for adaptation measures for coffee agroforestry systems. As part of the collaborative work with APROCASSI, WWF Peru and CARE are promoting local management of the coffee groves using the phenologic calendar developed during the first two years of implementation of the project. This management scheme, coupled with technological innovations (see activity 1.6 above) is

aimed at helping communities to develop adaptation measures in response to specific problems identified at the local level.

This year WWF Peru and CARE convened a workshop in San Ignacio in January 2012 aimed at developing local capacities for climate change adaptation. This exercise also included topics concerning public policies at all levels and integration of topics in local development plans. Twenty-five people participated in the exercise, including representatives from the climate change technical group of the San Ignacio Province and the municipal environmental committee. The participants, working with the facilitation of a consultant, developed five training modules (Annex 2.2.1), now available for replication in future trainings throughout the region, facilitated by local stakeholders. The success of this exercise will be demonstrated if, at the end of the project, the Province has implemented a Climate Change Adaptation Plan, which is a process that is being promoted and led by CARE Peru.

In Ecuador, continuing with the implementation of the water monitoring scheme initiated in 2011 in collaboration with SENAGUA, local universities and Zonal centers, we generated water quality indices for the 47 monitoring stations in the upper and middle portions of the Pastaza basin. Each of the different institutional partners participating in the process (local universities and zonal centers of SENAGUA) have continued providing information for the 47 monitoring stations located in the upper and middle portions of the watershed. Field data are being processed and analyzed by a specialist, and the results are being used to populate the Pastaza basin GEODATABASE. This information is instrumental for the development of local adaptation plans regarding the maintenance of future ecosystem services such as water quality and hydrological regulation, and will contribute to the conservation of forest cover in the corridor.

Activity 2.3: Design community-based adaptation measures, through participatory processes in the application of the CVCA tool by CARE and the introduction of adaptation to climate change aspects within ongoing development interventions (through CRiSTAL tool). *On track.*

In preparation for an official presentation of the results of the CVCA to government officers in the Province, WWF Peru and CARE considered it necessary to promote the establishment of the Municipal Environmental Committee (CAM) during the meetings held by the field team in their periodical visits to the area. The creation of this committee was endorsed by means of a municipal ordinance that ordains its structure and bylaws (Annex 2.3.1). This entity is responsible for the establishment of the Climate Change Technical Group of the San Ignacio Province, which will be in charge of the development of a climate change strategy for the province.

Activity 2.4: Train national parks officers and community leaders from the target protected areas to assess and monitor local vulnerability of climate change and the impact adaptation measures can have in coping with climate change. *On track.*

In Ecuador, Fundación Natura is leading the second phase of the water quality monitoring system for the Pastaza basin. Under this coordination, each of the different institutional partners participating in the process (local universities and zonal centers of SENAGUA) have continued providing information for the 47 monitoring stations located in the upper and middle portions of the watershed. Field data are being processed and analyzed by a specialist and the results are being used to populate the Pastaza basin GEODATABASE. This

information is instrumental for the development of local adaptation plans regarding the maintenance of future ecosystem services such as water quality and hydrological regulation.

Activity 2.5: Working with local environmental authorities in the San Ignacio province of Peru, we will adjust and implement the climate change adaptation plans at the local scale for the buffer zones of the Tabaconas-Namballe Sanctuary. *On track.*

In preparation for an official presentation of the results of the CVCA to government officers in the Province, WWF Peru and CARE considered it necessary to facilitate the establishment of the Municipal Environmental Committee (CAM). The creation of this committee was endorsed by means of a municipal ordinance that ordains its structure and bylaws (see Annex 8). This entity established the Climate Change Technical Group of the San Ignacio Province, and led a participatory exercise to formulate a climate change adaptation plan that was approved at the regional level and pending of approval at the national level. This instrument will guide local governments and the civil society in their search of alternatives to maintain living standards in a changing environment and will surely result in landscape management efforts favoring the conservation of ecological attributes in and around the SNTN.

Activity 2.6: Build capacity for collective action for river basin management in light of climate change based on participatory planning processes and use of legal and policy tools. *On track.*

In earlier reports, we informed that the MAE had hired a consultant to develop a climate change vulnerability assessment for the Pastaza basin, and that work done under SCAPES for the participatory formulation of adaptation plans for the middle and lower portions of the Pastaza watershed was conditional to the completion of that consultancy. However, in January 2012 it was decided that the vulnerability assessment will be carried out by staff of the Ministry. WWF is providing data for these analyses and is coordinating with the MAE for future development of the local adaptation plans.

During the reporting period, WWF, working in collaboration with staff of the AFIWNP convened a training workshop for community leaders focusing on mechanisms of participation and methodologies for collective action adjusted to the local context of the upper Caquetá. This activity is expected to strengthen the capacity of local leaders to integrate the different components of the capacity building processes carried out under SCAPES.

Following up on the capacity building plan formulated with the manager of the AFIWNP, during the reporting period we carried out 12 workshops in which 328 people from the buffer zone of the protected area (108 women and 220 men) were trained on basic aspects of climate change, vulnerability and adaptation.

Activity 2.7: Design, print and distribute materials based on vulnerability assessments to regional environmental authorities, municipalities, indigenous authorities, local schools, NGOs, and media. *Mixed performance.*

WWF Colombia hired a consultant to design and test educational materials on climate change aimed at community leaders, farmers and grassroots organizations. A draft of an educational booklet on climate change vulnerability and adaptation was designed and tested and final adjustments are in progress before printing and publication (Annex 2.7.1). This material will

be disseminated at local schools in the three focal areas of the project, and additional distribution will be coordinated with municipalities and environmental authorities to ensure that the target audiences are properly reached. The SCAPES teams will also target specific recipients of the publication in the workshops planned for other activities of the FY13 work plan.

Objective 3: Develop principles and criteria with national governmental agencies and economic sectors to address drivers of environmental change.

Adaptation and conservation strategies developed by the SCAPES teams in the ECR can only have a regional impact insofar as they can be integrated into wider agendas, such as those led by the national governments. To date, our work has been shared with local governments, and to some extent it has been acknowledged in national working groups. We need to increase our efforts to engage governmental agencies and companies in discussions regarding the need to reduce the ecological footprint of development projects and economic endeavors increase the legacy of SCAPES in the eastern arc of the Amazon.

Activity 3.1: Integrate the ECR adaptation experiences into the development of national policies including the implementation of the Decade Environmental Plan of Colombia, the construction of the Ecuadorian national climate change strategy, and the national communications on climate change to the Intergovernmental Panel on Climate Change (IPCC). *On track.*

Completed during FY11.

Activity 3.2: Develop and strengthen planning tools for economic sectors, including a policy proposal for the inclusion of climate change vulnerability criteria in the strategic environmental assessments, the early warning systems and the compensation schemes of infrastructure, mining and agriculture sectors. *Mixed performance.*

Merged with Activity 4.4 at the end of FY11.

Activity 3.3: Facilitate the adoption of a shared vision through the translation of technical information on climate change vulnerability and related impacts on environmental services to make it accessible to local stakeholders for decision making purposes and facilitate its inclusion in national regulations and policy framework to guide economic development in the different countries. *On track*

In FY11, Fundación Natura participated in the formulation and implementation of the Ecuadorian Climate Agenda. This activity was a participatory exercise led by the MAE, convening a large group of organizations to debate different components of the climate agenda. The foci of Fundación Natura's participation were biodiversity, energy and policy.

The formulation of the agenda was completed during the reporting period, but implementation is pending until the MAE completes the final adjustments to the latest draft produced. However, for the purposes of the SCAPES project, this sub-activity can be considered completed.

Objective 4: Orient economic development in the western arc of the Amazon towards the adoption of sound governance systems and the maintenance of ecosystem resilience to environmental change.

In order to reduce the compounding impacts of large-scale development projects on regional biodiversity, sectoral policy work is of the utmost importance. For this reason, progress made in the development of early warning systems will greatly increase our chances of influencing economic sectors to avoid further erosion of regional biodiversity and ecosystem integrity. One big challenge for the implementation of the program is to engage regional institutional stakeholders seeking to integrate efforts on issues of common interest and mobilize national and international resources for the successful implementation of conservation and adaptation strategies. Engaging the CAN to support the guidelines for a regional adaptation strategy not only follows up on previous work led by WWF but also allowed us to build upon the results of local work developed under SCAPES. Progress made to date on advocating the adoption of precautionary principles is still limited but existing databases on development projects maintained by WWF and Fundación Natura will be key to facilitate policy interventions aimed at engaging different economic sectors in an integrated discussion on their environmental impact.

Activity 4.1: Build strong alliances with regional organizations such as CAN, ACTO, CAF and IDB, aimed at reducing the synergistic effects of agriculture, infrastructure development, and climate change. *On track.*

In recognition of the progress made by the WWF program offices in Peru and Colombia in the ECR over the past eight years, including the implementation of the SCAPES project, the so called Andean–Amazon Piedmont priority block of the Living Amazon Initiative led by WWF was chosen as one of the main focal areas for the development of work related with protected areas and indigenous territories. During the reporting period, representatives from these program offices and the recently created program office in Ecuador met in Lima to draft a conservation blueprint for a trinational landscape which includes a substantial proportion of the area covered by SCAPES (Annex 4.1.1). The situational analysis for this landscape is largely based on the conceptual framework developed for SCAPES, and therefore, this new initiative can be seen as an outgrowth of the project aimed at developing actions to reduce the synergistic effects of agriculture, infrastructure development and climate change.

Activity 4.2: Support implementation of policy recommendations for the 2006 – 2010 Climate Change Agenda of the CAN. *Mixed performance.*

Having signed an MOU with CAN during FY10, WWF continues to maintain contact with the CAN Secretary General to inform them about SCAPES program progress and other initiatives related to biodiversity conservation and climate adaptation. While through SCAPES we are clearly supportive of the policy recommendations of the 2006-2010 climate agenda of the CAN, in FY11 we have not had direct opportunity to influence the national government of the three countries for the implementation of specific actions of this agenda.

However, during the reporting period WWF Colombia signed a memorandum of understanding with CONDESAN (Consortium for the Sustainable Development of the Andean Region) to facilitate a virtual forum on climate change adaptation in the tropical Andes (see Activity 4.5 below).

Activity 4.3: Working in collaboration with CARE, develop and disseminate a bi-national environmental education strategy along the border of Ecuador and Peru, incorporating specific measures of adaptation to climate change. *Cancelled.*

Activity 4.4: Advocate the adoption of precautionary principles regarding climate change into design and implementation of economic development projects in the western arc of the Amazon. *On track.*

During the reporting period we hired a consultant to conduct an assessment of the ongoing process of inclusion of climate change issues in the strategic environmental assessments currently led by the Ministry of the Environment. The consultancy included a review of the strategic environmental assessment for the proposed Pasto – Mocoa highway and specific recommendations to integrate adaptation measures among the actions proposed to remediate expected impacts of this infrastructure development (Annex 4.4.1).

Activity 4.5: Advocate the adoption of a shared vision of adaptation to environmental change in the western arc of the Amazon through the negotiation of a MOU among key institutional stakeholders including national governments, international NGOs and multilateral agencies. *On track.*

Within the framework of the MOU signed between CAN and WWF Colombia, CAN has agreed to jointly convene a regional forum on climate change adaptation, on the condition that the geographic scope include Bolivia, given that this country belongs to the Andean Community of Nations. We agreed considering that this geographic expansion will strengthen the ongoing development of climate change adaptation initiatives within the Living Amazon Initiative led by WWF (supported with matching funds). The forum took place in April 2012, and 92 participants from nine different countries (88% from Peru, Ecuador and Colombia) debated a set of questions raised by the moderators, which in turn were based on the guidelines for a regional adaptation strategy for the Eastern Cordillera Real produced during the earlier project funded by the EU, and on a supplementary policy document compiling recent progress made by Bolivia, Peru, Ecuador and Venezuela on climate adaptation. The proceedings of the virtual forum (Annex 4.5.1) will be used as the basis for national fora in the three countries, to be scheduled during the first half of FY13.

Objective 5: Promote learning and sharing for improved biodiversity conservation and climate change adaptation across SCAPES landscapes and beyond.

Activity 5.1: Develop and pilot a climate change adaptation toolbox for practitioners. *Completed.*

With separate WWF-UK and WWF-US funding, the WWF Network Climate Adaptation Team has launched an on-line adaptation toolbox for the WWF Network. While still in development and beta testing, the toolbox aims to help conservation practitioners to navigate the bewildering array of adaptation tools and select the most appropriate tools for their job in hand. The toolbox includes sections on background on climate impacts; critical components of “Good Adaptation”; how to integrate adaptation into conservation work; methods and process; scoping and stakeholder analysis; stakeholder participation; assessing vulnerability; developing an adaptation strategy; monitoring and adaptive management; adaptation financing and fundraising; partnerships; enabling tools for good adaptation; and glossary of terms. Through SCAPES, we will continue to contribute content for best practices and

lessons learned from our work in the three landscapes and this is a great resource for our teams to directly seek information from across our network. At this time, it is not expected that the online adaptation toolbox will become a public site.

Activity 5.2: Participate in a review of adaptation monitoring. *Completed.*

Along with other WWF-US colleagues, SCAPES staff participated in the April Africa Biodiversity Collaborative Group monitoring discussions and the July adaptation toolbox development workshop, with support from the USAID-supported Biodiversity Analysis and Technical Support (BATS) program. Through these conversations and sharing, we are staying abreast of the latest in adaptation methods, tools, and activities and challenges that colleagues are facing in adaptation monitoring principles and guidelines. We will bring this learning into our own SCAPES adaptation planning and into the SCAPES Partners adaptation learning initiative.

Activity 5.3: Contribute to the Ecosystems and Livelihoods Adaptation Network. *Completed.*

The Ecosystems and Livelihoods Adaptation Network (ELAN) – a partnership of WWF, CARE, IIED and IUCN – was not successful in its efforts to raise the second phase of funding. We did contribute learning into the first phase of the partnership and ELAN partners continue to work together informally to advance ELAN goals.

Activity 5.4: Improve integration of ecosystems and livelihoods approaches to adaptation. *On track*

In FY12, WWF-US has continued to bring together our climate-smart WWF Project and Program Management Standards and the Flowing Forward Vulnerability Assessment methodology. Our adaptation team continues to advance our vulnerability assessment and planning methodologies and adaptation mainstreaming, bringing new skills to staff across our Network and testing our methods in our landscapes. In consultation with CARE, we are integrating people and livelihoods into our ecosystem approaches. We expect the next iteration of guidance in FY13.

Activity 5.5: Integrate climate change adaptation in to the WWF Standards. *Completed*

This activity was completed and reported on in FY11.

Activity 5.6: Fifth International Conference on Community-based Adaptation to Climate Change. *Delayed.*

We did not send SCAPES staff to participate in the Community based Adaptation conference in Vietnam in April 2012 due to availability of the appropriate staff. WWF did send several staff from across our Network including from the Eastern Himalayas and the Amazon. We do anticipate sending SCAPES staff next year to share our experiences and learn from our other WWF colleagues and partners.

Activity 5.7: Produce WWF SCAPES communications materials. *Completed.*

This activity was completed and reported on in FY11.

Activity 5.8: Develop an online site for communicating and sharing across WWF's SCAPES partners. *Cancelled.*

WWF assessed the role of an online platform to help communication across our landscapes. After consulting with teams, it was clear that a new platform would not be successful. With a WWF International intranet, a new WWF-US intranet site in beta testing and several existing adaptation platforms, our teams did not feel that an additional platform outside those they already visit was something they had time to contribute to. So we will continue to communicate and share our lessons and successes through channels our teams do use.

III. Lessons Learned

- The process of convening the regional virtual forum on climate change adaptation was more difficult and took longer than expected, as it required a good deal of negotiation for alliances and working agreements to reconcile the purpose of this activity with the agendas of partner organizations. We learned that before scheduling this kind of activities, it is necessary to negotiate a broader agenda that ensures the cooperation needed.
- During the first three years of implementation in Peru, we realized that it is not possible to manage a project of this nature from afar, and that assigning a person to supervise work carried out in the field is a mistake since it is necessary to provide technical assistance to local organizations that often lack knowledge on how to manage cooperation funds and who require support.
- During the second and third year of implementation we had to make several adjustments of our timetable to the speed of local processes in the focal areas. Planning exercises involving other organizations (e.g. National Parks, Ministries, Municipalities, etc.) not always meet our schedules and we must accommodate to their own rhythms and agendas. This has been evident in the process of integrating climate change adaptation measures in the management plan of the focal protected areas, as in spite of our efforts to provide technical support and specific recommendations, progress is still limited.

IV. Next Steps and Priorities

- Complete the InVEST analyses for the SLBC, including biodiversity variables, and disseminate results among the municipalities and environmental authorities promoting their use for conservation planning.
- Disseminate the results of the analyses to identify climate refuges among environmental authorities and other governmental agencies to promote their inclusion in existing networks of conservation areas.
- At least one local agreement for biodiversity conservation is developed in or around climate refuges.

- Facilitate the integration of climate change adaptation measures in the management of the SLBC with participatory formulation of adaptation projects to be submitted to donors.
- Validation of the local adaptation plan for the San Ignacio Province with the Regional Government and the Ministry of Environment.
- Print and disseminate introductory booklet on climate change and adaptation and other educational materials based on results obtained by SCAPES in and around the focal areas.

V. Photos

These will be posted directly to USAID's Flickr site.

VI. Annexes (in Spanish)

- Annex 1.1.1 Preliminary CC vulnerability assessment for the Chinchipe River Basin
- Annex 1.1.2 Proposal of adjustment of the Flowing Forward methodology for application in Colombian National Parks
- Annex 1.2.1 InVEST analyses for the upper Pastaza watershed
- Annex 1.3.1 Methodology for the identification of climate refugia
- Annex 1.3.2 Proceedings of the conservation areas workshop for the buffer zone of the AFIWNP
- Annex 1.4.1 Checklist of priority actions to update the management plan of AFIWNP
- Annex 1.4.2 Biophysical information updated for the management plan of the SLBC
- Annex 1.4.3 Proceedings of Lima workshop for the formulation of an agenda to update the management plan for the SNTN
- Annex 1.6.1 Proceedings of the project formulation workshop
- Annex 1.6.2 Farm Monitoring plan for the buffer zone of the AFIWNP
- Annex 1.6.3 Sustainable agricultural systems in the buffer zone of the AFIWNP
- Annex 1.6.4 Agroforestry systems as adaptation measures in the San Ignacio Province
- Annex 2.2.1 CC Training Modules used in San Ignacio
- Annex 2.3.1 Municipal Ordinance to establish the CAM
- Annex 2.7.1 Educational materials for CC adaptation training
- Annex 4.1.1 Proceedings of the conservation planning meeting for the Andean - Amazon Block of the LAI
- Annex 4.4.1 Integrating Climate Change into SEAs for the Andean - Amazon Piedmont
- Annex 4.5.1 Proceedings virtual forum on CC adaptation in the Andean – Amazon