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# Net Zero Deforestation Zones

## Final Project Report



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**NZDZ –  
NET ZERO  
DEFORESTATION ZONES**

Reducing Land-use Emissions  
in Amazon Forests (ReLEAF)

**Final Project Report**  
OCTOBER 2011 – SEPTEMBER 2014

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# LIST OF ACRONYMS

ACAMAFRUT	Cocoa Association of Caquetá (Asociación de Cacaoteros del Caquetá)
ACCA	Asociación para la Conservación de la Cuenca Amazónica
AFIMAD	Brazil Nut Association (Asociación Forestal Indígena Madre de Dios)
AGROIDEAS	Programa de inversiones de la Dirección Regional de Agricultura
AIDER	Asociación para la Investigación y el Desarrollo Integral
ASOHECA	Association of Rubber Growers and Reforesters of Caqueta (Asociación de Reforestadores y Cultivadores de Caucho del Caquetá)
BMP	Best Management Practices
CIAT	International Center for Tropical Agriculture (Centro Internacional de Agricultura Tropical)
CONDESAN	Consortio para el Desarrollo Sostenible de la Ecorregión Andina
CORPOAMAZONIA	Corporación para el Desarrollo del Sur de la Amazonia
COKIWA	Comunidad Kichwa of Wamaní
DBH	Diameter at Breast Height
DIRCETUR	Dirección Regional de Comercio Exterior y Turismo
DGFFS	Dirección General Forestal y de Fauna Silvestre
EA	Environmental Assessment
Ecolex	Corporación de Gestión y Derecho Ambiental
FENAMAD	Federación Nativa del Rio Madre de Dios y Afluentes
FIP	Forest Investment Program
FN	Fundación Natura
FY	Fiscal Year
GHG	Greenhouse Gases
GOREMAD	Regional Government of Madre de Dios (Gobierno Regional de Madre de Dios)
GDS	Gerencia de Desarrollo Social del Gobierno Regional de Madre de Dios
GIZ	Gesellschaft für Internationale Zusammenarbeit
GGGI	Green Growth Institute
ICAA	Initiative for Conservation in the Andean Amazon
IP	Indigenous Peoples
ICA	Instituto Colombiano Agropecuario
IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales
IGAC	Instituto Geográfico Agustín Codazzi (Colombia)
ISU	ICAA Support Unit
MAE	Environmental Ministry Ecuador (Ministerio de Ambiente)
MDD	Madre de Dios
MINAM	Ministerio de Ambiente del Perú
MINCETUR	Ministerio de Comercio Exterior y Turismo
MADS	Ministerio del Ambiente y Desarrollo Sostenible de Colombia
MAGAP	Ministerio de Agricultura, Ganadería, Acuacultura y Pesca
MSAR	Madre de Dios Environmental Services and REDD+ Roundtable
MRV	Monitoring Reporting and Verification
NRM	Natural Resource Management
NTFP	Non-Timber Forest Product
NZDZ	Net Zero Deforestation Zones
PLAR	Policy, Law, Agreement or Regulation

PNBS	Bahuaja Sonene National Park
RA	Rainforest Alliance
REDD+	Reducing Emissions from Deforestation and Forest Degradation plus conservation
ReLEAF	Reducing Land-use Emissions in Amazon Forests
RIA	REDD+ Indígena Amazónico
SAN	Sustainable Agriculture Network
SERFOR	Servicio Forestal del Peru
SINCHI	Instituto Amazónico de Investigaciones Científicas
SIS	Safeguards Information System
SLM	Sustainable Land Management
SOM	Soil Organic Matter
TFA	Tropical Forest Alliance
TNC	The Nature Conservancy
UNAD	National Open University
USAID	US Agency for International Development
VCS	Verified Carbon Standard
WWF	World Wildlife Fund

# 1 EXECUTIVE SUMMARY

## *Overview*

The Rainforest Alliance and its partners are pleased to present this final report for the Net Zero Deforestation Zones (NZDZ) project, “Reducing Land-use Emissions in Amazon Forests (ReLEAF)”. NZDZ activities were carried out in Colombia with partner Fundación Natura (FN); in Ecuador, with partners Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN) and Corporación Gestión y Derecho Ambiental (ECOLEX); and in Peru, with partner Asociación para la Investigación y el Desarrollo Integral (AIDER). This report covers the life of the project from 1 October 2011 – 29 September 2014. Achievements during FY14 are given particular attention as they reflect consolidation of advances reported previously.

Our vision was that as a result of NZDZ, *farmers and members of indigenous forest communities will significantly contribute to region-wide efforts in the Andean Amazon to achieve net zero deforestation* through sustainably managing their agriculture and forest lands and benefitting from emerging government programs and private-sector finance that rewards these actors for the climate services their sustainably-managed lands provide.

The goal of NZDZ was *reducing deforestation, forest degradation and Greenhouse Gas (GHG) emissions and enhancing forest carbon stocks in pilot sites within Colombia, Ecuador and Peru* through enabling farming and forest- dependent communities to benefit from and contribute to actions that conserve forests, reverse degradation processes and enhance carbon stocks.

## *Achievements*

NZDZ established innovative, landscape scale pilot projects in deforestation-risk landscapes that are emblematic of broader regional and national deforestation dynamics. In so doing, the project sought to ground the concept of “net zero deforestation zones” in practice, through demonstrating how landscape-scale rural development could maximize conservation of natural forests, restore degraded areas, sustainably enhance agricultural productivity as a means to get out in front of future ecosystem destruction, and generate significant economic incentives for land users – all while enhancing collaboration between governments, businesses and communities active in these landscapes. As a result of pilot establishment and implementation, the project:

- **Delivered over 49,000 tCO<sub>2</sub>e reductions or removals** over its lifetime by designing and implementing sustainable livelihoods alternatives to conserve and restore forests. Ongoing implementation of these alternatives is projected to reduce or remove **over 1,373,000 tCO<sub>2</sub>e over a 20-year timeframe**.
- **Improved management of 41,307 ha** of degraded pastureland and highly-threatened, mosaic agriculture and forest-dominated native community landscapes.
- **Enhanced livelihoods of 586 rural producers and indigenous community members**, by facilitating access to incentives programs to reward them for sustainable land management and through enhancing the profitability of their forest conservation, sustainable forest management, reforestation, ranching, and agroforestry management actions.
- **Strengthened the capacities of over 3,800 participants from ranching and native communities and key stakeholders** from local to national governments to reduce deforestation and enhance carbon stocks through sustainable land management, and engage in emerging REDD+ frameworks.
- Created conditions for replicating low-emissions land management at scale throughout the Andean Amazon by **supporting community, municipal, regional and national government agencies in the design of nearly a dozen new PLARs** ranging from inter-institutional agreements to regulations and incentives programs for sustainable land management.

- **Facilitated implementation of three new programs** to incentivize forest conservation, sustainable palm fruit extraction and commercial reforestation.
- Generated and piloted 18 REDD+ tools; developed over 40 products, disseminating over 50,000 copies of these to stakeholders to raise awareness and facilitate application of project experiences; and delivered over 21,000 person-hours of training to key stakeholders on REDD+, climate change and sustainable land management (SLM) topics.

NZDZ aligned project activities – like technical assistance on Best Management Practices (BMPs), Monitoring, Reporting and Verification (MRV), capacity building and policy engagement – to foster an integrated landscape model. Through execution project activities, NZDZ demonstrated that:

- Models for sustainable land management that are locally-tailored and integrated are a viable means to reduce deforestation and enhance forest carbon stocks;
- These models should contribute substantively to increasing producer or community revenues; and,
- Emerging REDD+ priority activities and corresponding government investment can be operationalized in project landscapes.

#### *Challenges and adaptive management*

NZDZ implemented an adaptive management approach in order to navigate challenges and safeguard project implementation and accompanying benefits to project stakeholders. Examples of these challenges and our adaptive management efforts include:

- **Insecurity in Sucumbíos and Caquetá:** In Ecuador, we adapted to security issues by changing landscapes from Sucumbíos to Napo province. In Colombia, we shifted work areas and beneficiaries within municipalities in Caquetá. When NZDZ was unable to access beneficiary communities due to strikes or other security issues, we advanced on MRV and/or stakeholder engagement in local capital cities. Nonetheless, security conditions in Caquetá greatly challenged project implementation.
- **Budget reduction:** The reduction of \$305,036 USD in April, 2014 came at a critical stage of consolidating field implementation, particularly in Caquetá. The project adapted by safeguarding core activities, resources for producer capacity building activities, and some inputs for establishing the pilot model, while some activities under Objectives 2 (MRV) and Objectives 3 (policy frameworks) – activities less likely to change producer land-management practices – were curtailed.
- **Government delays in REDD+ and SLM program design/development:** Unavoidable government delays impeded NZDZ project implementation. These included approval processes related to the Ministry of Agriculture, Livestock, Aquaculture and Fisheries' (MAGAP) commercial reforestation incentives program in Ecuador; piloting of the Safeguards Information System (SIS) indicators in the field in Ecuador; safeguards design in Madre de Dios, Peru; and, engagement in REDD+ strategy development in all three project countries. NZDZ adjusted its implementation timelines and, where appropriate, identified other opportunities to engage in low-emissions, SLM programs or policies in support of beneficiary communities.

#### *Key achievements*

In **Caquetá, Colombia**, NZDZ worked to encourage the Municipality of Doncello to structure incentives that would result in forest conservation. Together with other actors, NZDZ secured an increase in a tax exemption program for forest conservation from 10% to 50%. NZDZ then worked with producers and the municipal government to raise awareness of (and build demand for) the program and provided technical assistance to facilitate verification processes. As of September, 2014, over 60 ranchers accessed the mechanism, representing a significant cost-savings to

producers, economic benefits to over 200 members of ranching families and additional tax revenues to the municipality for recovering late tax payments. The program has the potential to stimulate forest conservation on over 85,000 ha and result in economic benefits for approximately 1,000 ranching and farming families in the municipality.

In **Napo, Ecuador**, NZDZ leveraged its pilot model in Wamaní to adapt MAGAP's ambitious national-scale Incentives Program for Commercial Reforestation. These adaptations enabled its implementation in the Ecuadorian Amazon. Based on the conditions in Wamaní, NZDZ identified appropriate planting design characteristics, viable native tree species and techniques to integrate common agroforestry crops such as naranjilla (*solanum quitoensis*) and guayusa (*ilex guayusa*) into reforestation plots. NZDZ facilitated reforestation in accordance with the program in 10 ha within the community. The community aims to build on this success to reforest up to 300 hectares, representing leveraged financing of approximately 1.8 million USD from the government of Ecuador, and up to 2.4 million dollars in future income from timber sales.

In **Madre de Dios, Peru**, NZDZ designed and operationalized an integrated management strategy in the community of Tres Islas that combined sustainable management, value-added processing, financing and access to markets for a blend of timber and non-timber forest products present in the community. As a result, the communities' annual profit is projected at roughly 115,700 USD/yr<sup>1</sup>, from a combination of sustainable harvesting and/or processing of the palm fruits of aguaje, ungurahui, Brazil nut and low-intensity timber extraction. New employment opportunities are also expected to be created. These sustainable livelihoods activities serve as attractive alternatives to local deforestation drivers such as illegal logging and agricultural expansion.

#### *Knowledge management*

**Key conclusions** include:

- The theory-of-change approach that guided pilot project design and implementation ensured that NZDZ intervention models responded to local realities, threats and opportunities. This, combined with ongoing adaptive management, maximized impacts from pilot project implementation.
- Building policy frameworks that incentivized sustainable land management and facilitating creation of diversified community enterprises and sales of goods produced from individuals and communities benefitted farmers and members of indigenous forest communities. Thus, those who committed to enhancing forest carbon stocks and avoiding deforestation within their land benefitted from the broader efforts to enable REDD+ and net-zero deforestation – in a way that fit their needs and priorities.

**Lessons learned** from NZDZ include:

- Net-zero deforestation or REDD+ activities must first and foremost represent significant, viable economic incentives to communities. Start-up costs to communities should be limited and/or subsidized/incentivized early on and benefits should be realized in the near term, i.e., in a few years. For example, the MAGAP commercial reforestation program in Napo has minimal entry costs to the community and represents roughly 1.8 million USD in government investment. In Madre de Dios, Tres Islas has already harvested palm fruits and has begun to reap economic benefits. In Infierno, sustainable timber harvesting is expected to yield approximately 20,000 USD in annual profit.
- Value-added processing may enable sustainable production to compete with deforestation drivers like illegal logging or agricultural expansion. For example, if timber produced under the MAGAP program is sold as standing wood, the estimated price/ha is 8,000 USD. If sold

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<sup>1</sup> Rainforest Alliance internal data.

as sawn timber (which requires investment in infrastructure and management and technical capacity building) the estimated price/ha is: 35,000 USD – over 400% higher.

**Future challenges** can be grouped broadly into the following issues: i) maintaining and consolidating delivery of government incentives programs in beneficiary communities; ii) changes in community or local governance structures jeopardizing local commitment to implementation of project interventions; and iii) securing favorable purchasing commitments in communities where value chain work is still incipient.

**Opportunities to replicate and scale up** NZDZ project accomplishments include: i) informing REDD+ strategy development and/or “early mover” implementation; ii) leverage private sector investments to promote diversified, integrated management; and iii) defining what and how to implement new ‘zero deforestation’ supply chain and government commitments, i.e. through the Tropical Forest Alliance (TFA).

## 2 OVERALL PROJECT DESCRIPTION

The Rainforest Alliance in partnership with Fundación Natura (FN) in Colombia, Consorcio para el Desarrollo Sostenible de la Ecorregión Andina (CONDESAN), Corporación Gestión y Derecho Ambiental (ECOLEX) in Ecuador, and the Asociación para la Investigación y el Desarrollo Integral (AIDER) in Peru, are pleased to present this final report for the Net Zero Deforestation Zones (NZDZ) project, “Reducing Land-use Emissions in Amazon Forests (ReLEAF)”. While this report covers the life of the project period from 1 October 2011 – 29 September 2014, achievements under FY14 are given particular attention as they reflect consolidation of advances reported previously.

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NZDZ aimed to achieve the goal of *reducing deforestation, forest degradation and GHG emissions and enhancing forest carbon stocks in pilot sites within Peru, Ecuador and Colombia* through enabling farming and forest-dependent communities to benefit from and contribute to actions that conserve forests, revert degradation processes and enhance carbon stocks. Project activities were aligned under three interrelated objectives:

- Objective 1: Farmers, foresters, local and regional land managers and government agencies reduce deforestation and mitigate climate change by adopting and implementing sustainable forest and land management.
- Objective 2: Community-based forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to MRV of GHG emissions, reductions and removals.
- Objective 3: Stakeholder and institutional capacity is built for regional and national REDD+ systems that reward sustainable land management as a scalable platform to combat deforestation and climate change.

These objectives were closely interrelated by design to maximize impact and sustainability through working in priority landscapes to demonstrate best practices on the ground (Objective 1), quantifying the climate impacts of those practices (Objective 2), and engaging policymakers and the private sector to recognize and include these accomplishments in emerging REDD+ roundtables, other government incentive programs, and zero-deforestation value chains (Objective 3).

# 3 GEOGRAPHIC CONTEXT

## Caquetá Landscape

Project activities in the Department of Caquetá focused on the western region, including the rural zones of the municipalities of Florencia, El Doncello and El Paujil, which are bounded by the municipalities of Morelia, Puerto Rico and Montañita. Deforestation in this area is driven primarily by expansion of the agricultural frontier due to poorly managed conventional production systems, principally extensive cattle ranching that degrades soil and forage resources from year to year. Project interventions in Caquetá prioritized restoration and reforestation of lower-altitude regions of a broad “degradation belt” that transects the department. These areas have already suffered extensive deforestation and have been largely converted to unsustainable ranching activities. Thus, by reverting degradation processes, we aimed to impact broader degradation and deforestation dynamics within this landscape. Primary beneficiaries were local cattle ranching families and agricultural functionaries within municipal authorities. Key project stakeholders and allies in the project included: CORPOAMAZONIA, the regional authority responsible for natural resource management; the University of the Amazonia; the Colombian Agropecuario Institute (ICA); and local ranching associations.

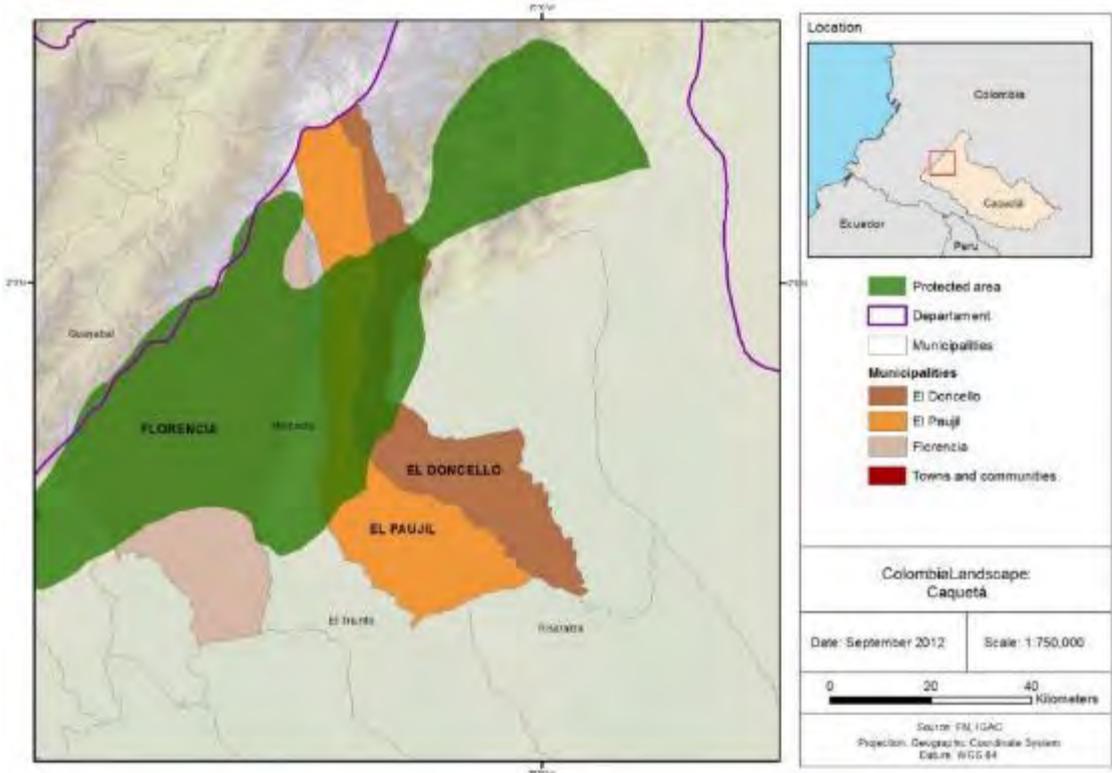


Figure 1: NZDZ project landscape in Caquetá, Colombia

## Napo Landscape

The NZDZ project implemented activities in the community of Wamaní located in the newly established parish of Hatun Sumaco, in the Canton of Archidona in Napo Province. The parish is located in the Sumaco Napo-Galeras National Park buffer zones, the Sumaco Protected Forest,

and the Sumaco Biosphere Reserve. In this landscape, deforestation and degradation processes are driven by a range of factors including agricultural frontier expansion, primarily related to naranjilla (*Solanum sp.*) production, lack of capacity or market opportunities to implement sustainable management practices for forest and non-timber forest products, and illegal logging. Project interventions were designed to address these threats through interrelated activities to improve integrated land use planning and pursue income-enhancing opportunities through: i) providing training and technical assistance to implement sustainable naranjilla production practices and: ii) facilitating access to the MAGAP reforestation incentives program. The community of Wamani was the project’s primary beneficiary. Key project stakeholders and allies included: MAGAP; the multistakeholder Naranjilla Roundtable; the Parish of Hatun Sumaku; the provincial government of Napo; and the Ministry of Environment.

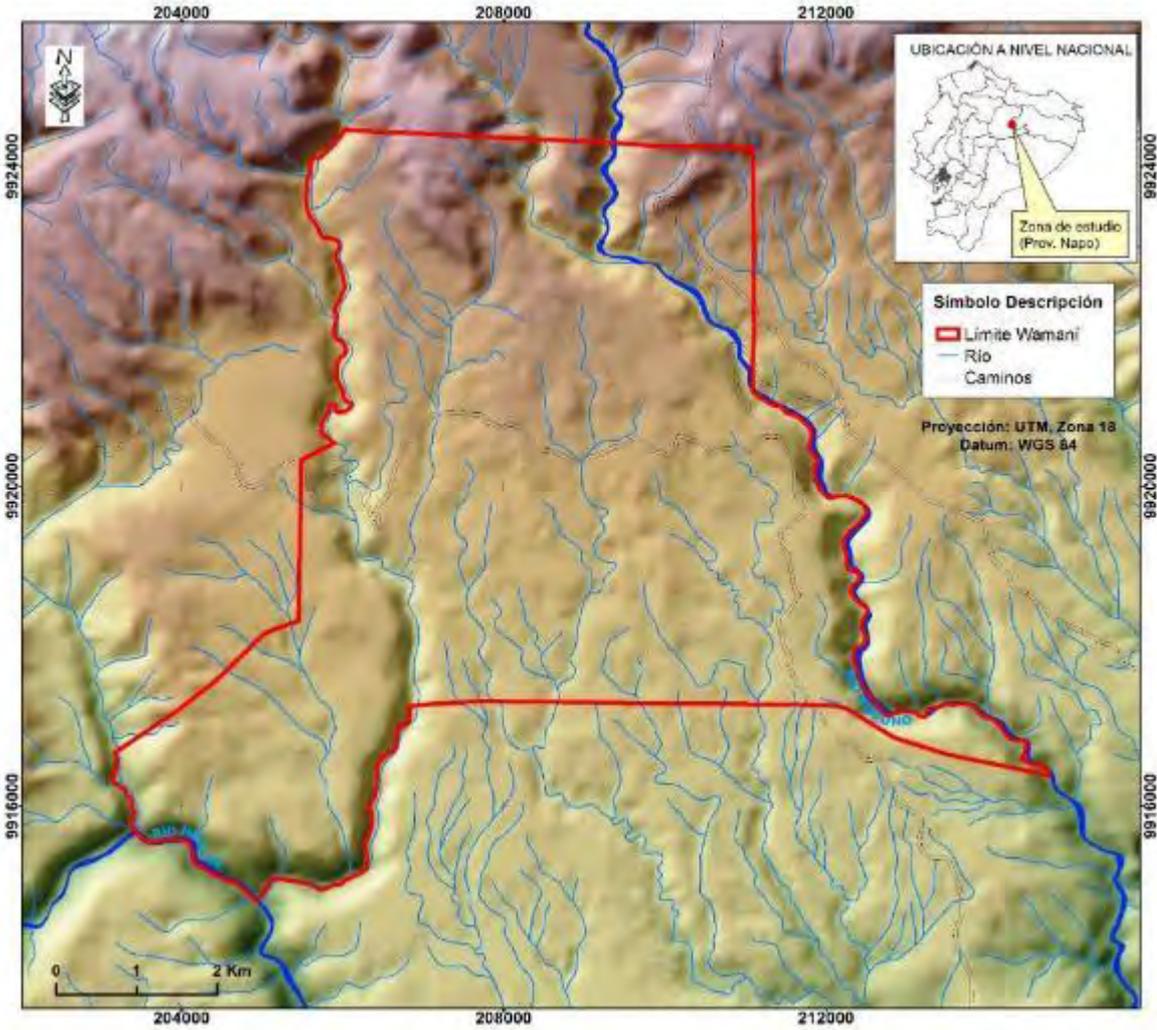


Figure 2: NZDZ project landscape in Napo, Ecuador

### Madre de Dios Landscape

The Tambopata province in the Madre de Dios region includes several indigenous communities located along the Tambopata River and its tributaries. The two communities where NZDZ piloted activities were Tres Islas (approximately 120 families and 32,000 ha) and Infierno (with 9,500 ha and approximately 180 families). Deforestation and degradation in the two communities are driven by expansion of the agricultural frontier, illegal timber extraction and encroachment for artisanal gold mining, amongst others. Project interventions addressed these threats through introducing improved timber and non-timber forest management practices; delivering technical assistance, training and other capacity building to implement such practices; and facilitating access to finance and value-added processing for non-timber forest products (NTFP). Project activities were closely coordinated with ICAA II interventions to leverage ICAA’s focus on enhancing communal management and land use planning in both communities. The project’s primary beneficiaries included the roughly 300 families living within the two communities. Key project stakeholders and allies included: AFIMAD and FENAMAD, regional indigenous organizations; the regional government of Madre de Dios; local buyers and development bank representatives; and the MDD Environmental Services and REDD+ Roundtable.

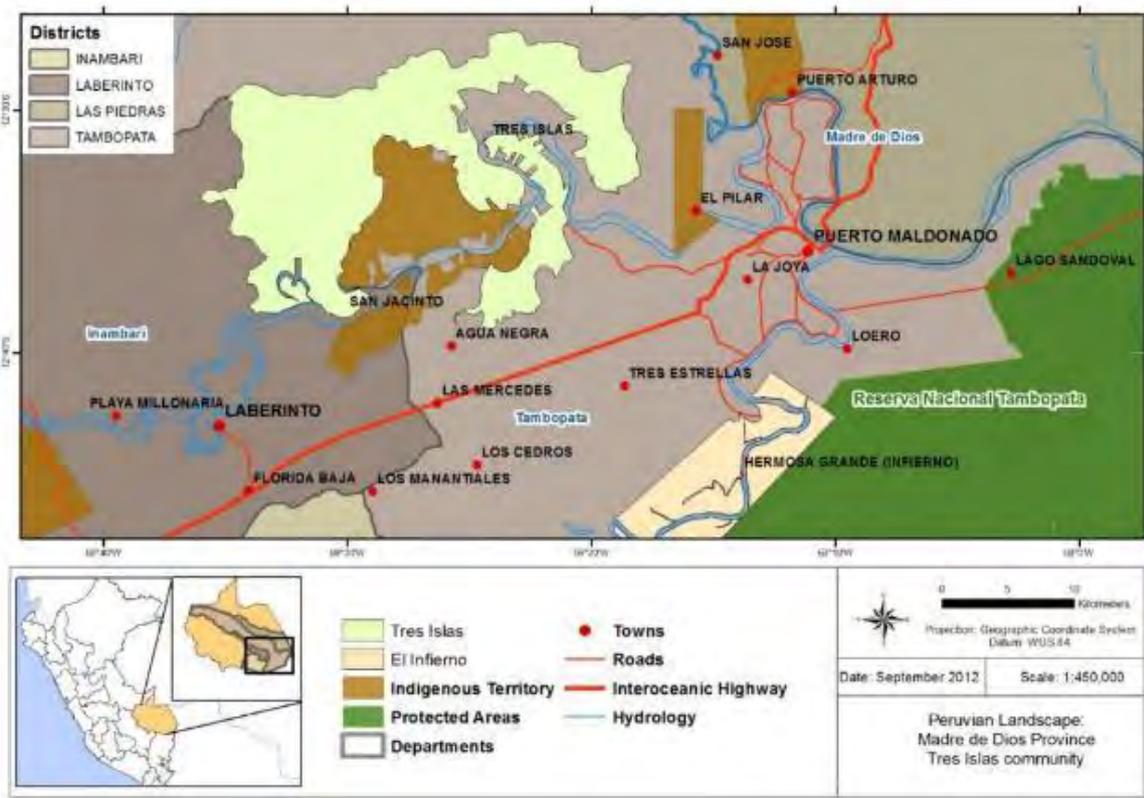


Figure 3: NZDZ project landscape in MDD, Peru

# 4 OPERATING CONTEXT AND CROSS-CUTTING THEMES

## 4.1 Operating Context

### 4.1.1 FY 2014 and Life of Project Challenges and Adaptive Management

In this section, the primary challenges faced and opportunities presented during the life of the project are identified, with emphasis on the most salient life of project challenges as well as those that occurred during the last six months of the project (April - September 2014). Steps taken to adaptively manage the project in light of these follow.

#### Regional

- Project start-up was delayed due to extended coordinations required to launch the project between the USG and host-country governments, coupled with a protracted timeline for USAID-approval of NZDZ contract and sub-grantee templates. The latter resulted in cash-flow shortages within local partners and led to delays in hiring of some partner project staff. In Ecuador and Peru, the Rainforest Alliance generated early momentum through implementing activities partner work could build upon, and in Colombia we programmed field visits and support to FN to facilitate a rapid transition to implementation once funds were received.
- Staff changes occurred throughout the course of the project. This included the departure of the project's original finance manager, the REDD+ advisor, and staff turnover within partner organizations FN and AIDER. In response, we accelerated the onboarding process for new staff and conducted training for new partner project staff.
- Changes in government administrations and community leadership resulted in the need to establish new relationships and orient new stakeholders to the project. In Peru, the unanticipated illness of the president of Tres Islas affected the governance of the community, leading to a restructuring of power that involved a constantly changing community board (the ungurahui committee changed its membership and structure three times). In order to advance activities, we met with the Board regularly and were in constant communication with key leaders. Administration changes in Ecuador resulted in the dismissal of many high-level functionaries, leading to some delays in executing policy-oriented work as we needed to re-establish sound working relationships with new hires, and navigate changing priorities within the ministries.
- The budget reduction in FY14 Q3 resulted in a reduction of activities and constrained resources in all project landscapes. In Caquetá, the impacts of the reduction created tension between field staff and some project beneficiaries. Specifically, the budget reduction limited NZDZ's ability to develop and disseminate materials and supplies needed to consolidate implementation of elements of the pilot models in some farms; staff were unable to deliver the full amount of some key materials (e.g. fencing and seedlings) that had been previously committed to all ranchers. As a result, maintaining the credibility of the project amongst these producers, keeping them motivated, and ensuring the continuity and sustainability of the project beyond its end date was a key challenge. In order to encourage continued activities, FN prioritized commitments for beneficiaries in the action areas (e.g. obtain seedlings for the municipality of Doncello, set up community nurseries and re-invest in capacity building throughout the last months of the project), and building coordination with other key actors in the zone so they can continue to support project activities into the future.

- Effectively integrating local actors in a participatory manner and ensuring the long-term sustainability of monitoring activities is a common challenge for REDD+ and climate change mitigation initiatives. In NZDZ landscapes, while information generated through a monitoring system was seen as beneficial, for example to inform management decisions, a balance was needed between the level of technical detail and relevance for local communities. NZDZ tackled this challenge by aligning MRV approaches with existing communal systems for territorial control and/or data collection for production-oriented management activities. In the community of Infierno, NZDZ monitoring protocols contribute to their REDD+ project, however other pilot landscapes do not share such a strong linkage to MRV and carbon revenues. In its absence, other communities may not continue to implement monitoring protocols into the future.

### Colombia

- Security and safety issues were a constant challenge. Caquetá has the highest presence of FARC guerrillas in Colombia and they had an active presence within the project landscape. Persistent agrarian strikes in the municipalities further hindered the implementation of project activities and the collection of field data, especially during the last six months of the project. We have continuously monitored security issues and taken adaptive management measures as necessary: at several stages in the project farm sites were relocated from higher-risk areas to lower-risk ones. When access to the field was limited, we also prioritized work under objectives 2 and 3 that did not require field implementation.

### Ecuador

- Among the most important challenges was the need to change the project landscape from Sucumbíos to Napo and subsequently adapt project activities to Napo's socio-environmental dynamics (e.g. language, indigenous peoples). During 2012, security conditions in Sucumbíos deteriorated so severely that it was not viable to implement our project model. After conducting thorough assessments of the possible alternatives to continue work in Sucumbíos, extensive consultations with local and national stakeholders, including NGOs and donor agencies active in the region, and through consistent communication with USAID, we determined the most appropriate alternative was to exit Sucumbíos and implement NZDZ activities in Napo, which was judged to be a more stable and secure province. Our strategy to recover from delays in project implementation due to the landscape change was to complement ongoing initiatives promoted by different institutions at the provincial and national level and within the community of Wamaní. For instance, we aligned activities with the German Federal Enterprise for International Cooperation (GIZ) and other actors to strengthen the naranjilla roundtable and collaborated with MAGAP's incentives program.
- The implementation of forest plantations and mixed agroforestry systems within the Wamaní community was one of the most critical activities during the last phase of the project. Yet, it also brought challenges as the MAGAP reforestation program generated a list of species that were not native to most of the upper reaches of the Ecuadorian Amazon and their use within plantation systems in Napo was unknown. NZDZ consulted with experts and stakeholders and identified the most suitable species as Laurel and Chuncho (*Cordia alliodora* and *Cedrelinga catenaeformis*), in order to maximize the success of plantation establishment and minimize negative impacts to biodiversity.
- Changing the culture of the community of Wamaní to foster an ethos of dedicated land management in just over a year has been challenging. To address this, NZDZ invested

heavily in awareness raising, training and technical assistance and plans to provide continuity to awareness-raising and training work under the ICAA II project in FY15, as well as further strengthening alliances with Mesa de Naranjilla actors to provide additional capacity building support.

- USAID’s departure from Ecuador in 2014 impeded efficient coordination between the NZDZ project, MAE and the UN-REDD+ team. NZDZ has concluded the safeguards-related work products developed at MAE and UN-REDD+’s request and their technical staff are utilizing these to inform the design of their SIS. Yet, these staffers have been hesitant to publically acknowledge NZDZ’s contribution to this work. This is likely due to their desire to avoid getting in a conflict with higher-level staff in their Ministries and maintain a low-profile, and has impeded us from securing their ‘official’ endorsement of these products.
- Related to USAID’s departure, the Ecuadorian authorities have rejected Rainforest Alliance’s request for value-added tax recovery associated with the NZDZ project in Ecuador, on the justification that Rainforest Alliance was implementing USAID projects without an active bilateral agreement. We have appealed repeatedly to the authority, SETECI, to change their decision, however they have held the same line. We are in discussions with USAID to define how best to resolve this situation.

### Peru

- In Tres Islas, Peru, one constant challenge was achieving greater coordination between the committees driving production activities and the Tres Islas Board to ensure confidence and transparency in these management activities. To address this, we developed an approach and accompanying agreements to define the procedures for controlling and monitoring activities related to communal territory areas and the sustainable use of timber and non-timber resources. The community can now plan appropriately for levels of commercialization of palm oil and Brazil nut products, ensure compliance with defined the parameters for product quality, cleanliness and competitive pricing/cost containment. This process also helped ensure a sustainable, continuous supply of palm fruits (e.g. aguaje and ungurahui) for processing of pulp, ice cream and other products at the community plant.

## **4.2 Cross-cutting themes**

### **4.2.1 Collaboration Achievements**

#### ***4.2.1.1 Local, regional and national Governments***

Throughout the life of the project, NZDZ engaged with government counterparts from the municipal to the national scale to enhance their understanding of the value of the NZDZ project model to their broader development programs and objectives. Where appropriate, we developed strategic alliances with government agencies to support the design and/or roll out of government programs for REDD+ and sustainable land management. Examples of this engagement follow.

### *Colombia*

- NZDZ strengthened benefits to producers of a tax exemption program for conservation, and facilitating its implementation, together with the Municipality of Doncello.
- In August, 2014 the project model was shared for consideration in a study commissioned by the governments of Norway and Germany entitled “*REM Colombia: A feasibility study on payments based on results of REDD+ emissions reductions*”. The

study is an input for the Ministries of Environment and Agriculture in their design of REDD+ Early Movers (REM) interventions and funding priorities.

- In September 2014, NZDZ socialized project experiences in a roundtable created for the Fundación Alisos (Alliance for sustainability) called “Amazonas 2030”. We included our experience on Sustainable Production Systems and Net Zero Deforestation as part of the National Development Plan 2015-2018. Participating institutions included the Ministry of Environment, Housing and Territorial Development, the National Planning Department, indigenous communities, communities of Caquetá, Putumayo, Amazonas, Guaviare Guainía, WWF, TNC, FN, and Avina.

#### *Ecuador:*

- NZDZ engaged with the Ministry of Environment (MAE) to advance the SIS development process, through supporting the conceptual design and development of protocols for field monitoring of safeguards indicators. Moreover, we engaged with MAE to advance REDD+ development in Ecuador through engagement in the REDD+ Roundtable, in Technical Advisory Committees for safeguards and benefits sharing mechanisms, and through providing advisory to strengthen the design of the REDD+ Registry.
- The project coordinated with MAGAP to facilitate the adaptation of the Commercial Reforestation Incentives program.
- Staff finalized several agreements to safeguard the continuity of project activities implemented under NZDZ as well as ICAA II. These include:
  - Signing an MOU with the new Hatun Sumaku parish leadership to strengthen collaboration on integrated land management, organizational strengthening and sustainable livelihoods activities with Parish leadership. The agreement was signed on August, 5<sup>th</sup>, 2014.
  - Securing an MOU with the State University of the Amazon, to support implementation of the commercial reforestation incentives program in the Community of Wamaní. The agreement was signed on August 6<sup>th</sup>, 2014, and sustains coordination to support MAGAP in adapting its reforestation program to indigenous amazon contexts.

#### *Peru*

- NZDZ coordinated with the Ministry of the Environment (MINAM), the Forestry Service (SERFOR), Madre de Dios Environmental Services and REDD+ Roundtable (MSAR) and many others to support awareness raising to indigenous community leaders on the understanding of the new forestry and wildlife law, to prepare them in advance of the public consultation.
- NZDZ promoted the creation of a finance group within SERFOR’s *Mesa de Dialogo and Concertación Forestal* to promote sustainable forest management in MDD. In this group, a series of meetings and workshops with financial institutions (e.g. Agrobanco, Agroideas, Procompite, Cofide, Cajas Rurales, Root Capital, etc), as well as forest producers was held to create loan packages that consider the characteristics and conditions of forest products in the region. These packages would facilitate greater access to finance to replicate NZDZ project interventions.
- Alliances with MINCETUR and DIRCETUR in Peru ensured the participation of NZDZ project producers at national trade shows. In August 2014, we participated with these institutions at the "Expo Amazon" and "Food Expo" trade shows. This type of activity helped improve the capacities of Brazil nut (oil and snacks) producers and improved their sales.

- NZDZ met with key stakeholders to share experiences and lessons learned in implementing climate change education curriculum within the community of Infierno and adapting education to local contexts. Specifically, we met with staff from the Bahuaja Sonene National Park (PNBS), as well as the President of the PNBS management committee, the head of Environmental Education at the Tambopata National Reserve, and the Education Director of the Regional Government of Madre de Dios. During these meetings, we shared lessons learned and impacts achieved and further discussed ways in which this work could be managed by the Education Department to help inform the Diagnostic of Regional Environmental Education. A training will be held for 35 teachers in Mazuco using the curriculum, with engagement from PNBS to help with dissemination.

#### **4.2.1.2 NGOs and Institutions**

##### *Colombia*

- In April and May of 2014, the NZDZ team in Colombia held several meetings with NGOs and institutions in Bogota and Caquetá to share experiences implementing the cattle model and discuss possible synergies for aligning this model with initiatives and studies being carried out by the respective NGOs such as The Nature Conservancy. Moreover, we held meetings with the Green Growth Institute (GGGI), an organization which advises the Government of Colombia on sustainable natural resource management issues, to identify key elements of the NZDZ sustainable livestock model and how to potentially scale up these practices to the national level.
- In May 2014, WWF and Fundación Natura, in coordination with the Ministry of Environment and Sustainable Development, created a roundtable for the formulation of strategies around sustainable supply chains. The roundtable articulated national policies and projects for the Amazon region that aimed to mainstream resources from international cooperation. In conjunction with this Ministry, WWF, national parks, GGGI and Earth Innovation Institute, FN launched a meeting for the socialization of the concept notes developed on sustainable production systems for the Colombian Amazon.

##### *Ecuador*

- The UN-REDD+ program and NZDZ facilitated a training workshop in May 2014 in Tena on forests, climate change and REDD+.

##### *Peru*

- We improved our collaboration with CANDOR in order to strengthen the Brazil nut supply chain. Inclusion of Tres Islas in this partnership was one of the main objectives of this partnership, which has been secured.

#### **4.2.2 MRV results**

The methodologies developed for carbon MRV in the three project landscapes combined satellite image analysis and participatory validation of this analysis in the field. We conducted the following analyses in order to determine carbon fluxes within each landscape: i) identification of land uses, and ii) estimation of the carbon content of each identified land use. Then we carried out steps required to create an MRV system, which are: 1) defining project activities, 2) measuring carbon content, 3) estimating baselines, 4) developing experimental designs and 5) monitoring over time.

**In Colombia, the process for establishing the NZDZ MRV system included:**

- 1 Through a preliminary diagnostic of 200 farms, the use of participatory tools and the finalization of selection criteria, NZDZ narrowed down the pilot farm locations and selected 27 farms in Doncello (10 farms), Paujil (10 farms) and Florencia (7 farms). These were characterized by pasture (1179 ha), primary forest (381 ha), and secondary forest (5 ha).
- 2 NZDZ determined that pastures, primary forests and secondary forests are the most representative land uses of the landscape. For the forest stratification, the project applied Holdridge's approach, which was adapted to contexts in Colombia by IDEAM. With the support and input of the farmers, we performed participatory mapping for each farm. NZDZ obtained the geographical coordinates of the farms using GPS and digitized these landscapes with ArcGis in order to calculate the surface of the different uses identified. On some farms, NZDZ used satellite imagery and cartographic reference information. In instances where there was no cartographic geographic information, Google Earth was used.
- 3 The project established six randomly selected plots in the primary forests of farms in Doncello, Paujil and Florence. Two plots of land were selected for each municipality. For pasture and secondary forest strata, we did not create plots because of logistical difficulties and strikes in the region. The design of the parcels drew from the standards applied by IDEAM in Colombia. The temporary forest parcels consisted of rectangular plots of 0.04 ha, measuring 20 x 20 m, and all the trees measured had a diameter greater than 10 cm DBH. The project was limited in its ability to gather field data due to the farmer strikes, which made it difficult to obtain the intensity of sampling required to generate representative information. Accordingly, NZDZ complemented the information gathered in the field with secondary information.
- 4 To estimate the carbon content of the forest stratum, NZDZ calculated aboveground and belowground biomass using allometric equations presented in the literature developed from the direct method (destructive) for similar biomes. To calibrate the quality of information generated, we used two allometric equations (from Alvarez et al. and Brown et al.). To estimate the carbon present in the secondary forest and pasture strata, we used secondary information on carbon content (tC/ha) and carbon fixation rates (tC/ha/year) from sites that have similar ecological characteristics. The carbon content was estimated based on the area of forest, pastures and secondary forests of the 27 pilot farms. Thus, in 381 hectares of tropical forest, a total of 47,939 (tC) is stored. The 1179 hectares of pasture land, consisting of monoculture agriculture systems (*Brachiaria brizantha*), silvopastoral systems (*Brachiaria brizantha* + trees), and degraded pastures, stores 180.435 (tC), 153.311 (tC) and 25.473 (tC), respectively. Annual carbon sequestration potential for the silvopastoral system is 1537.7 (tC / ha / year), 1294.8 (tC / ha / year), for improved pastures and 47.16 (tC / ha / year) for degraded pastures. This demonstrates that implementing NZDZ strategies such as: i) intensification of livestock activities that allow critical areas - like forests - to regenerate naturally, ii) increases in tree cover in pastoral areas through the establishment of trees scattered in paddocks, and iii) establishment of live fences, can increase carbon stocks on farms in Caquetá.

## In Ecuador, the process for establishing the NZDZ MRV system included:

- 1 NZDZ performed a stratification of the distribution of forest and non-forest areas within the territory of the Kichwa Wamaní community. The mapping of forest cover and land use was performed through visual interpretation of orthophotos published by MAGAP. The orthophotos were acquired in 2010 and have a nominal resolution of 15 cm. The interpretation was calibrated and validated with GPS points and digital photographs acquired in the field.

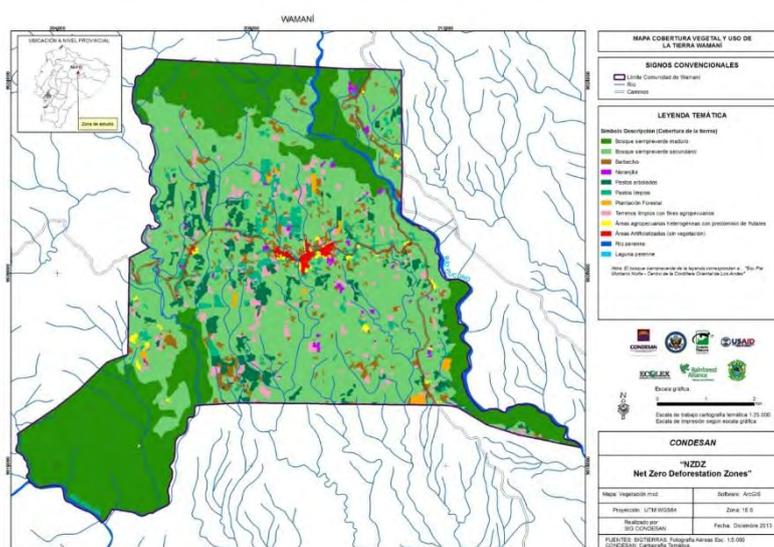


Figure 4: Strata in Wamaní

- 2 NZDZ established 40 plots: 10 in mature forests, 10 in secondary forests, 10 in wooded pastures, 6 in forest plantations and 4 in agricultural systems (agroforestry). The design of the plots drew from elements of the standards applied by the National Forest Assessment implemented by MAE. The plots established in forests were 20 x 40m and those outside forest areas (e.g. woody grasses) were 20 x 20m. NZDZ took measurements of different types of trees (<10 cm DBH> 10 cm DBH and > 20 cm DBH) in different sub-units of the plots, measured the necromass (fine and coarse debris) and identified the taxonomy of the trees.
- 3 The estimation of aboveground and belowground biomass was obtained using allometric equations published in the literature for similar ecosystems. All of the field information was systematized in a database following standards for managing information on permanent forest plots. The implementation of the protocol in the field included the participation of local people in the brigades (e.g. final location of the field plots).
- 4 In the sampled plots, NZDZ identified 185 species belonging to 92 genera. The high variation in composition within the plots suggests the need to implement a larger area per plot, to optimize the capture of micro-scale variations.
- 5 The structure of the forests by diameter classes, according to these plots, is dominated by large trees (i.e. > 50 cm DBH) both in terms of their contributions of biomass and canopy structure composition. This tells us that differences in the structure and composition between mature forests, secondary forests and plantation forests must be considered when promoting sustainable forest management practices and forest restoration patterns for different purposes.

## In Peru, the process for establishing the NZDZ MRV system included:

1. Forest stratification was performed using classification of Landsat 5 satellite images. Forty-nine plots were erected within the five different forest types identified. Measurements were taken for all of the vegetation that had a DBH equal to or greater than 5 cm. Later, allometric equations were applied for estimating carbon within aboveground and belowground biomass for each stratum of the forest. This process allowed NZDZ to calculate the carbon content of

all of the forest area within the community of Infierno and the ecotourism concession for the reservoir of aboveground and belowground biomass, which we calculated to be a total of 4,728,870.64 tnCO<sub>2</sub>-e in an area of 8,615.15 hectares.

2. The NZDZ project team helped the community complete an estimate of the carbon content within systems that had been deforested because of changes in land use. NZDZ included a participatory component within this system. At present, the community of Infierno has a participatory system that includes i) analysis of deforestation and field monitoring of changes in land use, and control/monitoring of their territory; ii) estimating increases or decreases in carbon stocks, and iii) estimating GHG emissions that result from changes in lands use.

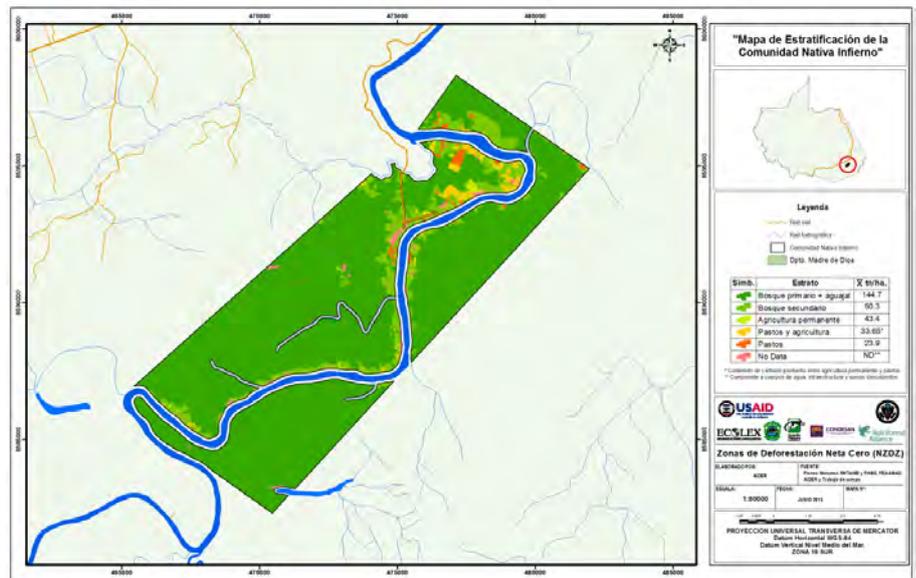


Figure 5: Strata in Infierno

3. We determined which post-deforestation strata existed by processing orthophotos from the time period of 2010-2011, maps developed through speaking with community members in a participatory process (also known as "talking maps"), and through the results of community surveys. A visual interpretation was developed for the types of deforestation and forest types in the areas of the community using a scale of 1/10,000 or less. We developed another map with the participation of forest custodians, community board members, and indigenous community leaders. Both maps were compared and then a field validation was performed.
4. The project identified the principle crops cultivated in the community as: fruit grown in an agroforestry system, papaya, and plantain. From these systems, NZDZ selected strata that represented a change from forest to a different land use, and then took a random sample representing 20 families. Through surveys NZDZ recorded data from each family on crop type, area designated for cultivation, area with secondary forests and with primary forests.
5. NZDZ established 33 sample plots: 6 in pastures, 7 in agroforestry, 6 in papaya, 6 in plantain and 8 in young secondary forest areas. The sample design used to estimate biomass is the optimal stratified sampling method, and the sampling unit consisted of temporary circular and nested plots with radiuses of 5, 16, and 30 meters in the agroforestry, papaya and plantain strata.
6. The estimation of aboveground and belowground biomass was performed using allometric equations published in the literature for these crops and species. In order to estimate the carbon content in post-deforestation strata, we sampled 498.9 ha of this type of strata and found that there is a total of 88,757 tCO<sub>2</sub>-e stored. With regards to the fruit and agroforestry strata, although they represent a smaller area, they store greater amounts of carbon per hectare (65

tC and 64 tC respectively). Young secondary forests make up the largest strata and they contain 61 tC/ ha.

The advantage of this landscape in comparison to Ecuador and Colombia is that the indigenous community of Infierno already conducted a previous study to analyze the carbon content of the forested areas within the community. This enabled them to build to implement a more sophisticated MRV system.

### **4.2.3 Science, Technology, Innovation and partnerships**

Scientific and technological advancements, innovative approaches to conservation and reducing deforestation, and functional partnership building are key issues that – where appropriate – were integrated into NZDZ's design and implementation. NZDZ also capitalized on opportunities that emerged throughout the life of the project to embed a focus on science, technology, innovation and partnerships into its operating model. The following sections present illustrative cases of how NZDZ addressed these themes. Additional details on these can be found in Sections 4.2.1 *Collaboration Achievements*; 4.2.2 *MRV Results* and/or in 6, *FY14 and Life of Project Achievements*.

#### **4.2.3.1 Science and Technology**

Several achievements under NZDZ Objective 2: *Community-based forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to MRV of GHG emissions and removals*, demonstrate how the project has contributed to scientific and technological advances to support reducing emissions from deforestation and degradation in the Andean Amazon. Examples include:

In the Napo, Ecuador landscape and under the leadership of partner CONDESAN, NZDZ:

- Conducted a taxonomic analysis of plant species diversity in Wamaní, one of the first studies of its kind conducted in the region to our knowledge. The study yielded valuable data to inform NRM decision making. Findings included: i) identification of approximately 345 species from 65 families; ii) the dominance of copal (*Protium nodulosum*) in the community; iii) approximately 20 plant species used locally for medicinal/productive/cultural or other uses; iv) secondary forests have tremendous cultural and social value as many of the species most frequently used by the community are found there; v) there are opportunities to enable forest regeneration through usage of Laurel (*Cordia Alliodora*) and Pigüe (*Piptocoma discolor*) in degraded pasturelands.
- Completed a carbon stock baseline for Wamaní that included analysis of above and below-ground biomass, as well as deadwood. Combined with the taxonomic analysis, data enable enhanced analysis of the state of conservation within Wamaní based on species composition and structure of different strata. CONDESAN hopes to integrate the plots within its long-term monitoring programs.
- Developed a land use and land cover map for Wamaní. Twelve land cover types were defined, of which 82% pertain to primary and secondary forests; 8% to pasture land; and 4% to agriculture. A challenge was accurately differentiating between smallholder mosaic agroforestry lands and other degraded land cover types (i.e. young secondary forests, degraded lands, etc.). Nonetheless, the data provides insights on the relationships between production activities and different successional states and local deforestation/degradation dynamics - these types of causal relationships require further research.
- Evaluated soil health and fertility in primary forest, forest plantation and pasture strata within Wamaní. The evaluation was conducted in order to generate technical recommendations to

enhance the probability of success of the implementation of MAGAP's Commercial Reforestation Incentives Program. Findings included: i) presence of high concentration of soil organic matter (SOM); ii) high nitrogen content – which is favorable for plantation establishment; iii) low concentrations of phosphorus and potassium, as well as various micronutrients. As a result of these analyses, initial technical recommendations were made to guide the implementation and monitoring of the MAGAP program. These include: establishing communal composts adjacent to the plantation areas to maintain sufficient SOM levels, and combining within the plantations species of different successional stages and/or deciduous and evergreen species, also to enhance SOM.

In the Madre de Dios, Peru landscape, NZDZ:

- Developed a participatory MRV system that includes: i) deforestation analyses; ii) participatory field monitoring that includes assessments of land cover change and territorial control/vigilance activities; iii) determination of carbon stock enhancements; and iv) GHG emissions associated with land use change.
- Building on the MRV system, a post-deforestation carbon baseline has been established, which identifies five strata generated through common land-uses (fruit trees; agriculture; agroforestry; young secondary forest; pasture). Sampling was conducted on 436.4 ha in these strata to evaluate carbon stocks: results indicate that 83,202.4 tCO<sub>2</sub>-e are stored in these strata. Of these, the fruit tree and agroforestry strata demonstrate greatest carbon storage levels, at 65 and 64 tC/ha, respectively. Young secondary forest, the strata with greatest land cover, contains 61 tC/ha.

In the Caquetá, Colombia landscape, NZDZ:

- Used two different allometric equations (from Alvarez et al. and Brown et al.) to estimate the carbon content of the forest stratum and calculate aboveground and subterranean biomass – this is significant because it is the only landscape in which two different approaches were used to ensure the validity of the findings.

The studies and methodologies generated by the NZDZ project enhance scientific understanding of the impacts of land-management dynamics on forest cover, deforestation, ecosystem health and biodiversity in the project landscapes. Most importantly, project scientific and technological advances were directly integrated into the design and management of NZDZ field-based intervention models, enabling the project to use the best available science to inform its sustainable agriculture and forestry implementation models, as well as tailor the project's MRV approach to suit local conditions and community needs. For example: in Napo, soil analyses inform technical assistance interventions designed to improve delivery of the MAGAP commercial reforestation incentives program.

#### **4.2.3.2 Innovation**

NZDZ created demonstration pilots in deforestation-risk landscapes that are emblematic of broader regional and national deforestation dynamics, as a means to generate early-stage learning and experience on how to design, implement and scale up the concept of 'net zero deforestation zones' in the Andean Amazon. This required innovating new landscape-scale models for avoided deforestation and carbon stock enhancement, and new tools to assess the climate change impacts of sustainable production activities, amongst others. Specific examples of how these new landscape-scale models incorporated innovation into their design and implementation include:

- Designing locally-appropriate, sustainable best management practices to address critical issues in naranjilla production and management, including on issues such as agrochemical use and farmer safety, soil fertility, and rotation ages, and achieving recognition and endorsement of these practices within the Naranjilla Roundtable (Napo, Ecuador).

- Adapting the MAGAP commercial reforestation incentives program to ensure its feasibility amongst indigenous communities in the Amazon. Adaptations included: integration with agroforestry production; application of the taungya system; selection of locally viable native species and reduced plantation density (Napo, Ecuador).
- Creating a new value chain for the community of Tres Islas, by bringing to market the palm fruits such as aguaje (Madre de Dios, Peru).
- Proposing actions, including the establishment of a network of storage tanks, to regional authorities as a means to facilitate access by smallholder dairy producers to Colombia's milk quality incentives program (Caquetá, Colombia).

In addition to innovating in order to support project objectives, the Rainforest Alliance has integrated lessons learned from these innovations into its own institutional approach to low-emissions rural development in the Andean Amazon, and shared findings and recommendations on its project experience with other key stakeholders in the region to explore how to apply project innovations more broadly.

#### **4.2.3.3 Partnerships**

NZDZ built functional partnerships in all project landscapes in order to maximize impact, leverage additional resources, and enhance the sustainability of project interventions by ensuring that other local actors are invested in the lasting success of NZDZ interventions. Examples include:

- In Ecuador, NZDZ facilitated arrangements between the Ministry of Agriculture, the community of Wamaní, and the State University of the Amazon to pilot and implement a new reforestation incentives program. The public-academic-community partnership represents an innovative arrangement to support conservation and livelihoods objectives as well as implementation of the new national-scale program.
- In Colombia, NZDZ facilitated an alliance with the Colombian Agricultural Institute (Instituto Colombiano Agropecuario-ICA) to conduct joint field visits and training in forest conservation and best management practices in sustainable cattle ranching and associated economic incentives that exist for farmers in the Caquetá region.
- At the regional level, NZDZ collaborated with USGS and USFS through the SilvaCarbon program. These agencies participated in NZDZ technical workshops, such as an initial MRV workshop to standardize our approach in the three countries. We have also supported SilvaCarbon through participating in the GEO-GFOI meetings (The Group on Earth Observation-GEO). These meetings aim to strengthen the capacities of participating countries by transferring information and knowledge to partners in Latin America, and in this context they invited NZDZ to share our experience implementing local participatory carbon monitoring systems in Ecuador, Colombia and Peru.
- In the Napo and Madre de Dios landscapes, NZDZ consortia members aim to consolidate these partnerships in the future through implementation of the ICAA II Sustainable Landscapes consortium project, in which RA, AIDER and ECOLEX are partners.

#### 4.2.4 Improved Policy Frameworks

NZDZ actively sought out opportunities to substantively inform the design and/or implementation of REDD+, sustainable forestry and/or agricultural management policies, programs and laws in order to support REDD+ and/or ‘net-zero-deforestation’ objectives. In landscapes where REDD+ and related climate change mitigation policy frameworks were at more incipient stages, NZDZ built stakeholder and institutional capacity to understand and engage in climate change and REDD+ issues, as a precursor to policy/program design inputs. Examples include:

- In the Municipality of Doncello, NZDZ facilitated producer access to **Agreement 0012**, a local adaptation of a national-scale property tax exemption of 10% for ranchers who establish forest conservation areas, create buffer zones around waterways and reforest around water sources. The program was designed to address growing water scarcity and soil degradation problems resulting from the expansion of unsustainable, extensive ranching. These were critical challenges facing the municipality, yet due to a lack of awareness of the law and verification procedures, prior to NZDZ no producers had applied it. Through NZDZ socialization workshops and technical support to field verification activities, over 60 ranchers have accessed the mechanism. Moreover, in alliance with other key local stakeholders, NZDZ convinced the Municipality of Doncello to increase the tax exemption from 10% to 50%. The application of this mechanism has the potential to stimulate forest conservation and avoided deforestation on over 85,000 ha and enhance economic benefits to roughly 1,000 farming families in the municipality.
- In Ecuador, NZDZ provided diverse technical support to facilitate the implementation of the nascent **MAGAP Incentives Program for Commercial Reforestation**, a 300,000 million dollar program that aims to reforest over 120,000 hectares of degraded land from 2013-2018 by establishing plantations of high-demand timber species with smallholders and local communities. NZDZ developed technical specifications to enable successful implementation of the program in indigenous communities in the Amazon. Then, the project worked with the State University of the Amazon to secure their certification as an approved technical assistance provider, and facilitated agreements between the University, MAGAP and the community of Wamaní to pilot the program. NZDZ then supported MAGAP to develop a proposed Executive Decree defining MAGAP’s functions in the regulation and management of the Incentives Program; this competency was recently transferred from MAE to MAGAP and MAGAP required advisory to formalize their jurisdiction over the program within Ecuadorian law. Last, in collaboration with Wamaní and its forestry working group, NZDZ planted 10 hectares in accordance with the technical specifications. In total, the community aims to reforest 300 hectares. Through the commercial incentives program, Wamaní is projected to access roughly 1.8 million USD in financing through 2018 to implement this integrated approach to restore forest cover, diversify livelihoods and conserve biodiversity.
- In Peru, NZDZ provided technical inputs and facilitated the approval of **Ministerial Resolution N° 0162-2014-MINAGRI, the terms of reference for management of palm fruit**. The management and harvesting of palm fruit represents a significant livelihoods strategy for many indigenous communities. For example, in the community of Tres Islas, sales of ungurahui and aguaje can generate up to 18,000 USD in annual profit. In spite of these opportunities, there were no regulations governing the management and extraction of palm fruit at the national level. To address this challenge, NZDZ applied the best management practices for palm fruit harvesting and processing it developed for the Tres Islas community to guide the Madre de Dios Regional Forestry Authority in designing regulations for palm fruit harvesting. Then, together with the Peru Bosques project, NZDZ facilitated dialogue and consultation amongst government officials and specialists in NTFP issues in the Amazon

provinces of Madre de Dios, Ucayali, Loreto and San Martin, as well as with the national forest authority, to validate the regulations. In April, 2014, the regulations were approved. In addition to enabling the community of Tres Islas to harvest and sell palm fruit, in Madre de Dios this landmark legislation will enable thousands of families to benefit from the fruits of their forests on over 130,000 hectares.

- In Ecuador and Peru, NZDZ supported the advancement of **REDD+ SIS**, through an integrated capacity building, advisory and field piloting approach. Examples of how this was achieved include:
  - Supported MAE in the design of a safeguard information system and defined safeguard indicators that should be applied to REDD+ projects.
  - Worked with COKIWA (the Kichwa Community of Wamaní) to define protocols and processes for implementing the requirements of Ecuador's REDD+ SIS at a local scale. The results of this work will be further taken into account in the safeguards process to be followed by REDD+ projects developed in the country.
  - Provided technical support to MSAR in Peru on safeguards, with a particular focus on alignment between RIA and safeguards.
  - Supported FENAMAD in the discussion and understanding of safeguards, and encouraged the participation of indigenous communities in the MSAR.
  - Completed "*Elements for the interpretation and reporting of non-permanence and leakage safeguards (f and g): perspectives for Ecuador*"- a discussion paper prepared at the request of MAE and the UN-REDD+ Program that offers best practices in Cancun safeguards interpretation to support Ecuador in framing how it aims to address and reports against these safeguards in its SIS.
  - Secured financing via USAID's ICAA ISU small grants program to advance the development of a participatory approach for community-based monitoring and REDD+ project development, through the use of a participatory tool for REDD+ project development co-designed by the Rainforest Alliance. The project will be implemented in native communities in MDD and in collaboration with FENAMAD, MINAM and other key stakeholders.

#### 4.2.5 Increased Gender Awareness

Gender issues were integrated into project implementation and considered in training, technical assistance, organizational strengthening and policy engagement activities. We encouraged and supported the inclusion of women in discussions and decision-making processes concerning the management and use of forest resources. Women also participated in training events and NZDZ provided advance access to information to facilitate their understanding of the technical contexts of these trainings and to foster effective participation. In Peru, women were also encouraged to participate in the respective Brazil nut, palm fruit and timber management committees within their communities and have taken on important positions within these committees.

Other examples of how NZDZ integrated gender into its interventions include:

- Integrating gender criteria into pilot farm site selection in the community of Wamaní; three of the pilot farms are managed or co-managed by women in the community;
- In Tres Islas, over 30% of new employment opportunities generated by palm fruit extraction and harvesting are for women community members;
- In Caquetá, NZDZ worked with producers to identify opportunities to support gender mainstreaming in local cattle management systems, identifying tree nursery management and milking as two potential opportunities to align women's labor priorities with farm management needs.

- In Ecuador and Peru, NZDZ efforts to promote design of safeguards information systems has ancillary benefits on supporting gender equity, as such considerations are built into the requirements of the UNFCCC Cancun safeguards.

A case study of project achievements on gender equity issues can be seen in the community of Infierno, where the community has embraced and accepted the participation of women within timber harvesting and forestry activities. Women are now engaging in training, are part of the timber harvesting committee, and are involved in activities related to forestry and harvesting. One important development is that a group of women, with support from their husbands, has begun producing charcoal made from the remnants/ waste generated from carpentry activities. Although this is a small-scale endeavor, the marketing and commercialization of this charcoal has nonetheless helped to generate additional financial resources for the women and their families.

One challenge associated with integrating strategies to address gender issues and promote the effective participation of women in decision making and other community activities is the need to ensure that such strategies and changes are culturally sensitive and do not generate internal family conflicts that may not be readily visible to outside practitioners and non-community members. As such, NZDZ project staff were careful to not force new situations/ changes without seeking first obtaining input and approval from all community members.

These experiences demonstrate the progress NZDZ has made towards increasing the level of involvement and participation of women in sustainable land management activities that reduce emissions. It is anticipated that these advances are also improving the perception that men have, within their communities, regarding the role of women in economic activities.

#### **4.2.6 Increased Indigenous Peoples' Participation**

NZDZ prioritized enhancing the participation of indigenous peoples' (IP) in project landscapes in Napo and Madre de Dios, where indigenous communities were the primary beneficiaries of the project.

In Ecuador, accomplishments include:

*Facilitating access to government incentives programs and other support for low-emissions, sustainable land management*

- The Kichwa Community of Wamaní (COKIWA) is one of the first indigenous communities in Ecuador to access the new MAGAP Commercial Reforestation program (see section 4.2.4 for more details)
- Through a collaborative effort with the Naranjilla Roundtable, pilot farmers within Wamaní are working to implement BMPs for sustainable, 'clean naranjilla' production, based on the principles and criteria of the SAN Standard, as well as those of the government program AGROCALIDAD. Upon implementation, COKIWA hopes to receive a verification of compliance with the AGROCALIDAD, which should facilitate the community receiving access to preferential prices and markets for their 'clean naranjilla' products.
- COKIWA was a pilot community for defining protocols and processes for implementation of the requirements of Ecuador's REDD+ SIS at a local scale. This experience helps ensure that possibilities and necessities for indigenous communities to be able to report into Ecuador's SIS are taken into adequate consideration. In turn, we hope that this facilitates their access to and engagement in REDD+ implementation, and corresponding funding and technical assistance.

*Training to enable effective participation in REDD+ and climate change frameworks*

- Throughout the life of the project, NZDZ trained COKIWA representatives through a series of events in order to improve their understanding of and engagement in various REDD+ related

processes, including in the SIS piloting conducted within Wamaní, on implementation of the MRV protocol, and various conceptual issues on the relationship between sustainable land management, reforestation, conservation and climate change mitigation – both within the framework of the Naranjilla Roundtable and through more practical field trainings. At present, there are few very REDD+ activities or field projects under design or implementation in Ecuador at the local scale. The continuous training of COKIWA, in combination with design and implementation of several key pillars of REDD+ implementation in the community (i.e. activity definition, safeguards, MRV), has helped prepare and position COKIWA to participate and benefit from REDD+ early implementation.

In Peru, accomplishments include:

*Key advances in design of REDD+ project in native community of Infierno:*

- In this community, the project has contributed to building the communal agreements and management mechanisms needed to support the community's viable, effective and sustainable participation in the MRV process. This was done through multiple meetings, workshops and small-group sessions to define and design the most appropriate way to implement participatory MRV and advance a REDD+ project in the community.

*Training to enable effective participation in REDD+ and climate change frameworks:*

- The NZDZ project conducted trainings and workshops for indigenous leaders to help improve their understanding of safeguards, REDD+ and climate change. As a result, indigenous leaders from Madre de Dios are better able to participate in national-wide discussions concerning REDD and in the National REDD+ Roundtable (Mesa REDD Nacional).

*Technical support to MSAR on safeguards, with a particular focus on alignment between RIA and safeguards*

- The project supported FENAMAD in the discussion and understanding of safeguards, and encouraged the participation of indigenous peoples within the MSAR, and the framing of discussions from the indigenous perspective rather than solely that of the government.
- Provided technical input and support to FENAMAD for the conceptualization of the *REDD+ Indígena Amazónico* initiative (RIA). We helped to ensure that the point of view of indigenous organizations in Peru (e.g. their reactions to REDD+) was well represented. We facilitated an extensive meeting with all communities in Madre de Dios during which we explained the complexities of REDD+ and RIA and suggested steps for moving forward with the development of RIA at a regional level.
- In Madre de Dios, we are supporting AFIMAD in achieving Fairtrade certification (FLO) for the commercialization of Brazil nut, to be held by Candela. This incentive is very important because it will serve to strengthen community management capabilities and give AFIMAD institutional sustainability in the short and medium term. AFIMAD is a multi-community organization founded to support the production and marketing of community forests. The community of Tres Islas is the founder of this association.

## 5 ENVIRONMENTAL COMPLIANCE

Our Environmental Assessment (EA) covers implementation of both the ICAA II and NZDZ projects. In Colombia, the EA concluded that:

*“Since the activities in the Colombia landscape under NZDZ will focus on reforestation activities and silvopastoral systems on existing areas of pasture they are not addressed in the context of the EA. Since these activities will likely lead to a net positive environmental impact by recovering forests and increasing biodiversity and suitable wildlife habitat, they do not fit under any of the categories of the positive determination”.* (Page 5 of EA)

As a result, the scope of our reporting against the EA is limited to work in the Napo and MDD landscapes.

The EA identified a set of eight activities that could potentially result in negative impacts during project implementation. The following is a summary of mitigation measures taken by NZDZ and/or ICAA II to reduce the risk of occurrence and/or mitigate the potential impacts of these activities.

In addition to this narrative summary, in spring, 2014 together with the USAID Regional Environmental Officer at that time (Jason Girard), a site visit was conducted to review the status and efficacy of mitigation measures taken by the projects. Although a formal written summary was not received, we received a verbal positive and favorable review of our progress against implementation of the EA.

**Impact 1:** Aguaje harvesting and management can disrupt nesting sites, diminish fruit availability to wildlife and impact this sensitive wetland ecosystem. Best management practices are in development.

Mitigation measures taken: Safeguards were incorporated into Aguaje management plans to ensure the provision of fruits for fauna and sufficient space for nesting areas.

**Impact 2:** Impacts of harvesting of new, to be identified, forest products are unknown until the product assessed.

Mitigation measures taken: In Ecuador, NZDZ identified huayusa as a potential new NTFP to integrate into the Amazon adaptations made to the MAGAP Commercial Reforestation Incentives Program. This work will be continued under ICAA II; SIGA’s *Ficha Ambiental* for huayusa will be completed. If we go forward with integrating huayusa into MAGAP implementation under ICAA II we will review and adapt the existing BMP manual developed by the RUNA, a huayusa business operating in the area. A market assessment for huayusa was carried out under ICAA II.

**Impact 3:** Harvesting and extraction of even small parcels of timber stands on steeply inclined slopes, such as those found in the Sucumbios project area, bring with it impacts to soil, watersheds and biodiversity.

Mitigation measures taken: In Ecuador, an agroforestry model for accessing the MAGAP incentives program was designed using the guidance in the USAID/LAC Environmental Issues and Best Practices for the Forestry Sector, as well as the principles and criteria of the FSC Standard.

**Impact 4:** Economically successful commercial reforestation can motivate conversion of standing forest into plantations which will decrease biodiversity.

Mitigation measures taken: Plantation management plans, based on the guidance of FSC criteria #10, are being incorporated in the agroforestry model in Ecuador. Moreover, the model promoted by MAGAP prohibits conversion of standing forest into plantations by design.

**Impact 5:** Unmitigated impacts on biodiversity and the environment when best management practices are not sustained by local farmers and foresters beyond the life of the project.

Mitigation measures taken: In Ecuador, BMP guides were developed for naranjilla, agroforestry plantations and tree nurseries and we trained local land managers and authorities in their use. In MDD, NZDZ provided ongoing training and technical support to local land managers and production committees to implement BMP guides developed for sustainable palm fruit management and low-impact timber harvesting. Moreover, NZDZ trained MDD forest custodians to supervise forestry activities and natural resource management within their communities, to facilitate implementation of the established management plans and corresponding BMPs.

**Impact 6:** Unmitigated impacts on biodiversity and the environment when best management practices are not sustained by local farmers and foresters beyond the life of the project.

Mitigation measures taken: In MDD, we focused technical assistance on ensuring compliance with FSC controlled wood certification and informal diagnostics were completed to inform design of training interventions. In Ecuador, we carried out initial diagnostics of best management practices, based on the SAN Standard, in the seven project pilot farms and are programming technical assistance under ICAA II in accordance with these diagnostics.

**Impact 7:** Project activities cumulatively impact already overwhelmed environmental governance institutions.

Mitigation measures taken: This impact is not relevant in Napo due to our focus on communities instead of individual landowners as was envisioned in Sucumbios. In MDD, under ICAA II we have been working with forestry authorities and communities to facilitate local and independent compliance with the current regulations, and will continue to do so.

**Impact 8:** Transformation of standing forest to more lucrative albeit more sustainable practices, such as silvopastoral management.

Mitigation measures taken: We signed agreements with farm owners in Napo and communities in MDD. Participatory community and farms maps were also developed in Ecuador and Peru, which present and quantify dedicated land uses over time.

# 6 FY 2014 AND LIFE OF PROJECT ACHIEVEMENTS

## 6.1 Tri-national level

Tri-national lines of work integrated project interventions under a common regional framework, facilitated knowledge-transfer at the regional level and enhanced NZDZ's efforts to insert localized low-emissions, sustainable land management models into emerging REDD+ and climate change policy and program frameworks. Tri-national achievements were specifically oriented to complement MRV and policy engagement work in each project country.

### *MRV*

- NZDZ developed a set of tools and reports on participatory carbon monitoring for each of the landscapes. The project established three protocols that define the methodologies for measurement and quantification of carbon content. NZDZ also established baselines which helped inform the implementation of fieldwork activities, as well as the intervention models according to the particularities of each of the pilot areas.
- Building on this, NZDZ completed a lessons learned document exploring key successes and challenges in implementing MRV during the course of the project. One lesson learned included the need to understand localized monitoring efforts and their critical role in verifying the accuracy of monitoring data at broader spatial scales. Another was in identifying some of the challenges that participatory MRV design brings, such as difficulties articulating the value of MRV protocols to community members as a tool for informing land-management decisions. This document provides an opportunity to evaluate NZDZ approaches across each country and can be used as a tool for others aiming to implement similar approaches in communities with mosaic land uses.

### *Policy engagement*

NZDZ completed six topical policy briefs designed to raise awareness, elevate levels of discourse and facilitate integrating project experiences into regional and national policy and programs and multi stakeholder platforms. The briefs were customized for use by stakeholders and dialogue spaces in all three project countries. They include:

1. "*Sustainable Amazon Ranching in Caquetá, Colombia: Advances, challenges and opportunities to upscale*": The analysis highlighted how sustainable ranching models can be customized to suit the local realities of smallholder dairy producers in Caquetá, and underscores several opportunities to upscale and replicate a locally-tailored sustainable ranching model throughout Caquetá.
2. "*Elements for the interpretation and reporting of non-permanence and leakage safeguards (f and g): perspectives for Ecuador*": The discussion paper – prepared at the request of MAE and the UN-REDD+ Program – offered best practice in Cancún safeguards interpretation to support Ecuador in framing how it aims to address and report against these safeguards in its SIS. In particular, it suggested how through investing in sustainable alternative livelihoods activities to achieve REDD+ objectives – such as those being implemented in the community of Wamaní – risks of displacement and non-permanence can be reduced and monitored.
3. "*An integrated model for land management that increases incomes and the viability of climate change mitigation*": This brief analyzed NZDZ's Peru model for implementing sustainable production activities through providing training to communities, helping them

- organize themselves better and supporting the implementation of best management practices, and made recommendations to support taking this model to scale.
4. *"Inspiring Action Through Education"*: A white paper which discussed how climate change education is supporting community engagement in sustainable forest management and REDD+ in Madre de Dios, Peru.
  5. *"Opportunities and challenges in the development of a safeguards information system in the region of Madre de Dios"*: a policy brief for local stakeholders that are part of the MSAR that informed them of the implications of following the REDD+ SES approach to develop their regional safeguards information system, and presented recommended next steps to orient MSAR activities.
  6. *"Scaling up landscape approaches to REDD+ through climate change mitigation policies and programs"*: This synthesis publication aggregated findings from other policy briefs and project interventions to highlight lessons learned from the creation of Net Zero Deforestation pilot projects in Colombia, Ecuador, and Peru as they relate to the design and implementation of REDD+, forestry and agricultural programs for sustainable, low-emissions development in the Andean Amazon.

## 6.2 Caquetá Landscape, Colombia

In FY14, NZDZ operationalized a set of strategies for sustainable ranching, through providing dedicated training and technical assistance, promoting incentives for conservation, and enhancing coordination with other actors to support implementation of best management practices to reduce emissions, enhance forest cover, and improve local livelihoods on over 3,000 hectares in the municipalities of El Doncello, Paujil and Florencia. We achieved this through designing implementation plans in a participatory manner, conducting training and technical assistance for producers, and recommending practices that help farmers maintain a sustainably managed ranching system. Moreover, we evaluated projected project impacts in terms of reducing degradation and enhancing forest carbon stocks through establishing the project baseline for the period of 2011- 2013. This baseline will serve to track future progress towards reducing emissions through implementing sustainable ranching systems that restore degraded landscapes and enhance carbon stocks in the region. On the economic incentives front, the project focused its attention on disseminating information about the Municipality of Doncello's tax incentive and facilitating producer access to the incentive. It also enhanced awareness of the project model amongst key stakeholders including CORPOMAZONIA, national government agencies, and businesses and NGO actors in order to build collaboration agendas to continue implementation of the ranching model and position the model for investment under early REDD+ funding provided under the REM program, which is being implemented in Colombia. NZDZ also worked to inform design of the new "Vision Amazonia", which is focused on promoting sustainable production chains in the Amazon, particularly in the livestock regions of Caquetá and Guaviare.

### 6.2.1 Goal 1: Local and regional land managers, communities and government agencies contribute to net zero deforestation and mitigate climate change by adopting and implementing sustainable forest and land management

Accomplishments include:

1. Early project capacity building achievements in Caquetá helped to lay the foundation for continued engagement and training with stakeholders throughout the project. These early successes included training 35 professionals in 2012 from local and regional institutions on the basis of good farming practices embodied by the SAN standard, and training over

- 500 producers, farm leaders and municipal technicians in 2013 and 2014 on climate-smart ranching practices, based on the SAN Standard and SAN Climate Module.
2. Building on the SAN Standard, in FY14 we provided technical assistance to support implementation of plans to enable BMP adoption and reduced degradation on over 3,000 hectares of farmland in the region. These plans define the steps and recommended practices farmers should implement in order to achieve their sustainable management system.
  3. NZDZ conducted a training workshop for the local academic community about climate change and its impacts, the role of forests in the global carbon cycle and its potential to mitigate climate change. NZDZ adapted the same framework curriculum used in Madre de Dios to the Colombian context, and delivered the training to help reinforce the understanding of the role of low-emissions, sustainable ranching management in mitigating climate change and conserving forests.
  4. In alignment with priorities established in implementation plans, throughout FY14, we provided technical assistance to each rancher to support the implementation of this plan. For example, we trained over 90 local ranchers in production of organic fertilizers, pest management and animal health issues. We enhanced farmer capacities on establishing nurseries, seedlings management and beds for seed germination. Building local competencies in these topics strengthened producer abilities to implement their land management plans.
  5. In July, in coordination with Brazilian institution IMAFLORA and the National Open University (UNAD) the project delivered a virtual experience-exchange for over 20 producers, farm leaders and municipal technicians on the situation of livestock in Brazil and the challenges to transforming these systems. The training reinforced other sustainable ranching training events by providing ranchers with an understanding of the opportunities and challenges to implementing sustainable ranching in Brazil, and reinforcing the linkage between ranching activities on Caquetá's forest and water resources as well as ranching's contribution to global climate change.
  6. Reinforcing this training and technical assistance, NZDZ strengthened local nurseries and provisioned these with a variety of tree seedlings to use in producer reforestation efforts and delivered seedlings to producers, together with other key inputs such as fencing to support establishment of rotational grazing systems. These inputs contributed to establishment of model pilots and implementation of producer action plans.

### **6.2.2 Goal 2: A participatory forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to monitoring, reporting and verification of greenhouse gas emissions and removals**

Accomplishments include:

1. NZDZ finalized the protocol for monitoring and measuring carbon impacts, and utilized it to establish the project baseline of project interventions in aboveground biomass and soils. The protocol includes important criteria for the development of a forest monitoring system, such as instructions on i) stratifying the project area, ii) choosing plot sizes and number of samples, iii) evaluating carbon pools, aboveground biomass measurement, and carbon stock calculation, and iv) calculating the conversion of carbon to CO<sub>2</sub> equivalent. In addition, we established the baseline for aerial biomass and soil carbon stock to estimate carbon impacts of project interventions within 11 pilot farms spanning a total area of 587.945 hectares. Of this total area, project activities (e.g. sustainable forest/farm management) occur on 286.42 hectares, the landscape characteristics of which are as follows: Forests (81.49 hectares), Pastures (201.63 hectares) and Secondary forests (3.3

hectares). The baseline covers 328.84 hectares of the project area and is the foundation against which the efficacy of sustainable ranching management interventions to revert degradation tendencies and enhance regional forest cover is measured over time.

2. NZDZ calculated the impact of project activities based on baseline data collected from 11 pilot farms. Project activities within these pilots included installing 55.05 hectares of fencing around farms to prevent cattle from entering surrounding forests, establishing 33.92 hectares of forest plantations on degraded lands using native species and 15.76 hectares of scattered native trees in pastures, and 7.34 hectares of passive restoration. Rotational grazing was developed in an area of 164.1 hectares by dividing paddocks with electric fences or barbed wire, and improved feeding practices for dairy cattle were implemented using mixed fodder banks in an area of 7.15 hectares of pasture. Secondary forests were also included.
3. We quantified the NZDZ project benefits in terms of their carbon sequestration potential. For this, we focused on expected impacts in terms of tons of CO<sub>2</sub> after three years of project implementation and 17 years of capitalization. 180,557 tons of CO<sub>2</sub> equivalent are projected to be sequestered during the life of the project in the Caquetá landscape. The project's average potential mitigation equals 25.14 tCO<sub>2</sub>e / ha / year for a project area of 328.84 ha.

### **6.2.3 Goal 3: Promote lessons learned and key strategies of project activities through capacity building and support to national and regional REDD+ strategy development**

Accomplishments include:

1. Engagement in the design and establishment of the Climate Change Node for the Amazon Region (Nodo de Cambio Climático para la region amazonica) throughout FY13 and FY14. We participated in the Node's inception workshop, and were encouraged by MADS to contribute to setting the work agenda for this nascent regional forum which is charged with identifying REDD+ and climate change priorities and articulating its agenda with Colombia's national-level REDD+ work program.
2. In FY14, NZDZ staff supported the organization of and presented in *Code REDD+ Talks: Colombia*, a discussion focused on aligning public and private sector interests in REDD+ which was attended by approximately 80 people, including representatives from national and international institutions. We presented the NZDZ sustainable agriculture and cattle approach from multiple perspectives – including from that of an engaged indigenous community leader from Infierno in Peru, project practitioner, and involved government representatives – and how, through NZDZ, the USG and project implementers are advancing a landscape approach to sustainable practices within commodity value chains while simultaneously working towards net zero deforestation landscapes, and supporting REDD+ at production unit and jurisdictional level.
3. NZDZ project experiences were included in the “*REM: Colombia Feasibility Study on payments based on results of REDD+ emissions reductions*” study, which was commissioned by the Governments of Norway and Germany. The Colombian government, especially the Ministries of Environment and Agriculture, will use this study to help shape policies around REDD+ implementation.
4. The NZDZ project provided valuable experiences to the construction of public policies for the sustainable development of the Amazon and the reduction of deforestation. We were included as part of the panel of institutions to contribute to a national policy for the creation of sustainable supply chains in the Amazon region. Within the framework of this roundtable, livestock has been included as one of the cornerstones because it is one of the biggest drivers of deforestation in Colombia. In June the government started to prioritize

the supply chains to be included in the proposal for the national Government initiative "Vision Amazonia," which includes livestock in the municipalities of Caquetá and Guaviare.

5. In FY13, NZDZ worked with others to advocate for increasing Doncello's tax incentive from a 10% to a 50% reduction in taxes for those who implement activities to conserve and protect watersheds and forests on their land. In FY14, NZDZ hosted socialization workshops with producers to understand criteria required for applying for the incentive, and supported the municipality of Doncello in verifying compliance. As of September 2014, over 60 farming families have applied for this tax reduction. NZDZ also explored engaging CORPOAMAZONIA, the regional government authority responsible for natural resource management, to explore replicating this agreement at the department level.
6. NZDZ explored how the smallholder producers the project engages with can benefit from market-driven initiatives for improved productivity. NZDZ analyzed the barriers to smallholder access of a Colombian milk quality incentives program faced by these producers. Building on that analysis, we proposed to local authorities that a network of storage tanks be supported in order to aggregate smallholder production and maintain freshness and quality conditions required for them to be able to access the program. It is hoped that this work could be prioritized in some of the future planned investment in rural development infrastructure in the region.

### **6.3 Napo Landscape, Ecuador**

In FY14, NZDZ catalyzed the design and implementation of sustainable agroforestry and commercial forestry systems, by means of the MAGAP incentive program. NZDZ assisted the community of Wamaní to identify appropriate sites for plot establishment, adapt the reforestation program to suit the realities of the community and integrate naranjilla production, established a technical working group comprised of youth leaders to manage plot establishment, and facilitated reforesting 10 hectares in the community in accordance with the program requirements. With the support of the Naranjilla Roundtable NZDZ also developed strategies to promote sustainable, low-emissions management of naranjilla on roughly 30 hectares of naranjilla production lands in the community, conducted diagnostics and provided training and technical assistance to support pilot farmers in implementing these best practices. NZDZ completed its project baseline and monitoring approach, to evaluate the impacts of these new land management interventions over time, and completed a taxonomic analysis to evaluate the relationship between land strata and biodiversity. Project interventions will restore degraded lands to productive secondary forests and reduce deforestation due to extended naranjilla rotation cycles. NZDZ quantified the climate benefits of MAGAP interventions and anticipates reducing up to 11,730 tCO<sub>2</sub> equivalent over a 20 year implementation period. Last, NZDZ expanded our collaboration with the Sub-secretariat of Climate Change and UN-REDD+ Program to leverage the pilot model in Wamaní to support the design of Ecuador's REDD+ SIS through providing a framework for addressing and respecting safeguards in the implementation of REDD+ projects locally. In so doing, lessons learned from the project model in Wamaní were integrated into a key element of Ecuador's national REDD+ framework.

#### **6.3.1 Goal 1: Local and regional land managers, communities and government agencies contribute to net zero deforestation and mitigate climate change by adopting and implementing sustainable forest and land management**

Accomplishments include:

1. A successful transition of the project to the Napo landscape, which was initiated with the securing the buy-in of the COKIWA to implement project activities. Building on this, NZDZ secured MAE's accreditation to train indigenous communities in REDD+ issues and six staff and partners, including the vice-president of Wamaní, were trained in MAE's methodology for capacity building in climate change and REDD+ with the use of materials developed by the MAE. Building Wamaní's capacity to self-train on REDD+ issues was a critical precursor for engaging in subsequent REDD+ interventions developed this year.
2. NZDZ successfully advocated that MAGAP incorporate agroforestry systems as part of the focus on the incentive program for forest plantations in indigenous communities. The project prepared a proposal to implement the "Taungya agroforestry system" as a pilot area of NZDZ intervention. Laurel and chuncho (*Cordia alliodora* and *Cedrelinga catenaeformis*) are the forest species installed on these systems. This agroforestry system seeks to establish tree species and agricultural crops that are compatible, to maximize economic benefits and minimize labor inputs. Naranjilla is the agricultural crop selected for Wamaní, as it is a short-medium cycle crop that will fosters maintenance activities required for plantation care, and is a primary economic activity in the COKIWA and throughout Napo.
3. NZDZ staff supported the formation of the Forestry and Environment Technical Community Group, consisting of 3 men and 3 women. This was done in collaboration with COKIWA which presented a proposal to lead the establishment of plantations to help the community benefit from the MAGAP incentive program. This group, under the technical advisory of the Rainforest Alliance and Universidad Estatal Amazónica (State University of the Amazon), is facilitating implementation of the MAGAP program in Wamaní. This alliance moves the community closer towards securing a contract between COKIWA and MAGAP for implementation of the incentives program.
4. The Forestry and Environment Technical Community Group participated in four technical training sessions focused on establishing forest nurseries and plantations. For these trainings, the NZDZ team developed a capacity-building toolkit based on SAN and FSC principles adapted to Wamaní context. This toolkit consists of the following:
  - i) A guide to establishing naranjilla production on demonstration plots within the community, based on best agricultural practices embodied by the SAN standards.
  - ii) A guide for assessing compliance with the SAN standards in the implementation of good agricultural practices.
  - iii) A descriptive manual for the production of seedlings within the Wamaní forest nursery.
  - iv) A manual for establishing forest plantations that incorporate the technical criteria for the implementation of the MAGAP reforestation incentive program.
5. In September, 10 hectares of laurel were planted within Wamaní, in accordance with MAGAP program guidelines. The Technical Forest and Environmental Group of the community led the planting effort.
6. With NZDZ support, the Kichwa community developed an integrated management plan for forest conservation and natural resource use. The plan sets out the medium-term priorities for conservation and development within the community and key lines of action include implementation of the MAGAP reforestation program, strengthening M&E capacities within the community and basic organizational strengthening, and implementation of sustainable agricultural activities. The plan was developed with the community and approved by its leadership – indicative of the community's commitment to executing sustainable, low-emissions land management after the life of the NZDZ project.

### **6.3.2 Goal 2: A participatory forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to monitoring, reporting and verification of greenhouse gas emissions and removals**

Accomplishments include:

1. In the months that followed the transition from Sucumbíos to Napo, several key technical activities were achieved which laid the foundation for establishing a participatory forest monitoring system. This included quantifying the NZDZ project benefits in terms of their carbon sequestration potential, and conducting a taxonomic analysis for a variety of tree species, which helped identify important patterns in the relationship between biodiversity and carbon in Wamaní and served as a basis for recommendations for use and management of native forests and existing production systems.
2. Building on these analyses, NZDZ finalized the methodology to establish an MRV baseline for the Wamaní community. The project characterized carbon content within heterogeneous, mosaic, multiple-use landscapes. This methodology lays the foundation for an ongoing process of generating information about sustainable land management activities in order to respond to the changing and specific needs of forest management on a local scale. For example, the baseline results explicitly highlight the importance of incorporating temporal and spatially dynamic cycles of mature and secondary forest management and agroforestry systems in order to better characterize carbon flows and other benefits in complex forest landscapes. The resulting mosaic of land use is, in itself, a representative management unit of existing landscapes in various parts of the Andean Amazon.
3. NZDZ strengthened local capacity in forest monitoring activities by engaging community members in baseline development. Specifically, we directly involved a group of 16 people from the community (14 men and 2 women) and indirectly 32 farm owners (28 men and 4 women) in activities focused on gathering information from farms. This group is also working on other land management processes (e.g. commercial forestry plantations) that are expected to support the development of a locally appropriate forest information management strategy. This strategy would reinforce the M&E priorities identified by the community of Wamaní under their integrated management plan, as well as potentially support localized monitoring requirements under emerging REDD+ frameworks.

### **6.3.3 Goal 3: Promote lessons learned and key strategies of project activities through capacity building and support to national and regional REDD+ strategy development**

Accomplishments include:

1. Over life of project NZDZ consistently engaged with MAE to support REDD+ strategy development in Ecuador. NZDZ provided advisory through the national REDD+ roundtable, technical advisory committees on specific REDD+ topics, and provided continuous revisions of several REDD+ planning documents. NZDZ also co-facilitated a regional experience-exchange workshop on SIS development in Lima, in October, 2013 alongside government officials from Acre, Brazil, Colombia, Costa Rica, Ecuador, Mexico, Guatemala, Honduras, Chile, Paraguay, and Peru.
2. In June, 49 individuals from 14 institutions were trained on the subject of forests, climate change, and REDD+ in Ecuador. Workshop attendees were mostly members from the Wamaní community, including local technicians trained in forest monitoring and others who are part of the GADS (decentralized autonomous governments), as well as employees from MAGAP and GIZ. This training also facilitated the effective participation of the community of Wamaní in local safeguards development work.

3. NZDZ built on this advisory and training to shape the contents of Ecuador's SIS and support the country through – at MAE's request – developing a methodology for the validation of indicators for a local Safeguards Implementation System (SIS) in Ecuador. As part of this work, NZDZ produced recommendations for the methodological guidelines for reporting on safeguards and provided a framework for addressing and respecting safeguards within the implementation of REDD+ projects at a local level. Specific recommendations include the need for more robust indicators, with less redundancy, that can be linked to the REDD+ project lifecycle to support continuous monitoring and adaptive management.
4. Building on these conceptual recommendations, NZDZ developed a set of tools for reporting on safeguards locally, culminating in a proposed template for presenting safeguards information at the project-level. This work is helping MAE to ensure that their conceptual approach to safeguards and the protocols they are developing to facilitate implementation at the local level reflect local needs, realities and opportunities. This, in the long run, will strengthen implementation of their safeguards information system, by making it more feasible for beneficiaries to comply.
5. NZDZ contributed to the implementation of the MAGAP Incentives Program for Commercial Reforestation (see 4.2.4) at a national scale, by – at MAGAP's request - reviewing and analyzing modifications to the Ecuadorian forest legislation concerning commercial forest plantations. As a result, we developed a proposed Executive Decree defining MAGAP's functions in the regulation and management of the Incentives Program; this competency was recently transferred from MAE to MAGAP and MAGAP required advisory to formalize their jurisdiction over the program within Ecuadorian law. The Decree covers issues of regulation, management, promotion, development and planning for forest plantations and their sustainable management for commercial purposes, as these are established in the Forestry and Conservation of Natural Areas and Wildlife Act.

## **6.4 Madre de Dios Landscape, Peru**

In FY14, NZDZ implemented sustainable forest and NTFP management as integrated strategies to avoid deforestation by providing sustainable economic alternatives (including products such as timber, Brazil nut, ungurahui, aguaje). We achieved this through implementing an integrated model in native communities built on: i) strengthening community organizational capacities; ii) implementing best management practices, iii) promoting the diversification of the use of forest resources, iv) increasing the value added of forest products, and v) improving financing conditions and marketing. These key elements were the fundamental part of our strategy to generate more income from the forest, which helps conserve communal forests and decreases the threats of deforestation and degradation. In the community of Infierno, NZDZ produced the MRV analysis required to evaluate the impacts of these practices on deforestation dynamics over time. The project estimated and quantified the carbon impacts of project interventions by completing a post-deforestation biomass inventory – with the participation of local landowners – and calculating carbon content per land-use strata, establishing a project baseline for the period 2011-2013. Last, in FY14 NZDZ leveraged a USAID ISU small grant to ground the projects prior work in safeguards in practice and further strengthen the alignment of the NZDZ project model with RIA, REDD+ objectives and integrated sustainable land management. This small grant complements NZDZ's political incidence strategy in the region, and will support consolidation and sustainability of the NZDZ project experience amongst several pilot native communities, in coordination with FENAMAD and other actors.

#### **6.4.1 Goal 1: Local and regional land managers, communities and government agencies contribute to net zero deforestation and mitigate climate change by adopting and implementing sustainable forest and land management**

Accomplishments include:

1. Project staff successfully engaged the CCNN of Tres Islas to incorporate and adopt a holistic approach to community forest management (including products such as wood, Brazil nut, aguaje, ungurahui, etc.). Self-organizing, implementing best practices, diversifying the use of forest resources, increasing the value-added forest products and improving financing conditions and marketing were key activities that were developed with the community as part of the strategy to generate more income from the forest, thereby incentivizing forest conservation and reducing pressures degrade/deforest valuable forest resources. Specific examples of how this model was approach was operationalized in the NZDZ community of Tres Islas, and its results, follow.
2. Due to technical assistance and training on directional felling, and other sustainable forest management practices, the community of Tres Islas achieved a 5% increase in yields from its timber harvesting.
3. To support value-added processing and local income diversification based on sustainable timber extraction, NZDZ developed a basic module for carpentry product processing and marketing of school furniture, furniture and children's games, through utilizing leftovers from sawn wood. This enhances the efficiency of timber extraction activities by optimizing use of as much wood as possible; the community is creating products out of material that would otherwise be wasted.
4. NZDZ completed a series of tests to evaluate which palm fruit extraction techniques work best to harvest and process aguaje pulp and ungurahui oils within the community of Tres Islas. This first pilot for producing aguaje within the community generated 150kg of pulp which resulted in \$500 in sales. This money is being re-invested into the community to support the maintenance of the production plant.
5. Combined, the integrated management approach is projected to significantly enhance incomes for the community: annual production volumes are projected at: 80,937.00 kg of aguaje, 68,368.00 kg of ungurahui, 214,000.00 kg of Brazil nut and 649.33 m3 of timber. Factoring in production costs, this represents well over 100,000 USD of annual profit to the community – including the costs of community labor.
6. Through these interventions gender mainstreaming within production activities in the community of Tres Islas was enhanced: 20% of those harvesting fruits for the production of aguaje and ungurahui are women, and 70% of those working to process the fruits are women. This has implications for the value of NTFP production as a strategy to promote gender equity within emerging REDD+ frameworks, as gender is a critical issue within the Cancun Safeguards.
7. Tres Islas has begun to produce various value-added products, such as oil and nut snacks. These were disseminated in the "Expoamazónica" tradeshow: 795.00 soles worth of revenue was generated from the sale of these products. NZDZ also facilitated connections with American Company called, HandCraft, which promotes the sale of artisan crafts and designs. Further, we connected with the Universidad Pontificia Católica del Perú and Takiwasi Laboratories and are in discussions about selling these products (e.g. ungurahui oil and nut snacks) to them. This market-linkage work will be taken forward under ICAA II, and it is our hope that these early demonstrations and successes of Tres Islas in selling value-added products, coupled with access to consistent demand for them through building

local, national and international markets, will provide sufficient economic incentives for them to maintain these sustainable production activities in the long term.

8. In Infierno, NZDZ provided ongoing technical assistance to the timber management committee that was established by the project in prior years, supporting them in the harvesting of their first species in accordance with their approved management plan, and providing guidance and advice on best sawmilling practices. The community has secured several contracts with local businesses for processing and sales of their wood.
9. Also in Infierno, NZDZ consolidated several processes that led to improved forest governance within the community. Thus, in the month of September, the rules for the Infierno Timber Committee were established, which set commitments and obligations for loggers within the community that must be agreed on and acted upon for the year's harvest. Through this, members of the community board and timber producers learned about the community's Forest Management Plan (FMP) and the intensity of extraction within extraction areas. This promotes accountability and transparency of forest management activities within the community.
10. As a result of the above interventions, timber producers in Infierno began to use appropriate guidance on timber transportation, to fill out the formats for timber transportation themselves, and to take control of the volume to market, all of which allowed them to gain better prices for their timber and ensured the products count with required supporting documentation (e.g. log list, guides for forest transportation). Similar to Tres Islas, NZDZ aims to carry timber management work in Infierno forward under ICAA II to further consolidate and strengthen this new sustainable production alternative in the community.

#### **6.4.2 Goal 2: A participatory forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to monitoring, reporting and verification of greenhouse gas emissions and removals**

Accomplishments include:

1. Forest custodians of Infierno learned how to use and report carbon monitoring data in accordance with the simplified formats developed for the community. The community validated these formats as part of the design and implementation of a participatory MRV system. This exercise is a cornerstone for ensuring there is an adequate system in place to manage and report carbon-monitoring information.
2. NZDZ defined the baseline for establishing a participatory MRV system for the community of Infierno. We determined both forest and post-deforestation strata, with secondary forests and pastures occupying the largest area. The strata considered in the post-deforestation baseline were the following: permanent agriculture (plantain and papaya), pasture, secondary forest, orchards and agroforestry. Defining these layers enabled NZDZ to ensure adequate monitoring of GHG emissions resulting from land use change within the community. The area being monitored for emissions spans an area of 10,650 ha, which has the carbon sequestration potential of 4,937,390.47 tCO<sub>2</sub>-e.
3. The participatory MRV approach taken by NZDZ has allowed the community to have a system of control and surveillance over their forests which will help protect against the pressures for land use change that may exist in the community.
4. NZDZ classified each land use activity that occurred in the Infierno community in 2013. Community forest custodians assisted with this work and participated in the field validation of the classifications. Through this classification, NZDZ assessed land use changes that have occurred in the community since 2011 (baseline) through 2013. During this period, net emissions of 38,532.69 t / CO<sub>2</sub>-e are reported, with an annual emission of 19,266.35 tons / CO<sub>2</sub>-e. The emissions reported for this period (2011 - 2013) came from the deforestation of primary and secondary forests, fueled by papaya cultivation and

expansion. Since we have integrated fruit trees within the agricultural production, however, specifically through setting up 10.5 ha of forest and agroforestry plantations, these systems are now contributing positively to the flow of CO<sub>2</sub>-e.

#### **6.4.3 Goal 3: Promote lessons learned and key strategies of project activities through capacity building and support to national and regional REDD+ strategy development**

1. In April, 2014, NZDZ facilitated a regional workshop on financing opportunities for the forestry sector, carried out in collaboration with the Department of Forestry and Wildlife. During the workshop, a critical roadmap to facilitate financing (AGROBANCO, AGROIDEAS, PROCOMPITE, ROOT CAPITAL, and others) to grassroots organizations that are a part of the Forest Coalition Roundtable in Madre de Dios. As a result of this event, AGROBANCO extended coverage of their Product financial-Program 14, to finance Brazil nut activities and include indigenous communities. The Tres Islas community prioritized applying for this program in order to start process of managing financial capital for the 2015 harvest season.
2. The NZDZ project experience in the community of Infierno was systematized, as was the design and implementation of a participatory MRV system. This will allow the project to share the lessons learned and applied during its development with key local actors, to facilitate knowledge transfer and replication.
3. NZDZ built upon previous safeguards capacity building and technical assistance accomplishments in FY14 through:
  - Convening an array of strategy sessions and planning meetings with relevant actors on safeguards at a national and regional level, including CI, WWF, MINAM, GDS, SPDA, REDD+ SES, AFIMAD, and others, to establish a common agenda for addressing safeguards within the MDD region;
  - Providing technical assistance to the Gerencia de Desarrollo Social to reactivate the Safeguards commission of the Bureau of Environmental Services and REDD+ in Madre de Dios-MSAR that was static for a year due to the political situation and limited interest by GOREMAD in REDD+. We helped facilitate the development of an updated version of the safeguards commission work plan, and in partnership with the MINAM and DAR conducted a training for fifteen officials of the regional Social and Natural Resources Development Authority, and members of civil society, on REDD+ concepts, safeguards, and development status of the national safeguards system; and
  - Providing technical assistance to representatives of FENAMAD and ECA-Amarakaeri to clarify and review concepts on climate change, REDD+, safeguards and REDD+ SES standards.
4. In June of 2014, RA secured a small grant from the USAID ICAA-ISU small grants program, to carry forward work on defining safeguards, developing REDD+ strategies, and operationalizing RIA principles, together with several native communities in Madre de Dios and FENAMAD. This will help further build upon and consolidate NZDZ's political incidence strategy, and further demonstrate how the integrated model promoted by NZDZ can be scaled up through its alignment with forthcoming REDD+ investments in the region.

# 7 PROJECT KNOWLEDGE MANAGEMENT

## 7.1 Conclusions

NZDZ set out to establish innovative, landscape scale pilot projects that would reduce deforestation, forest degradation and greenhouse gas (GHG) emissions and enhance forest carbon stocks. Overall, NZDZ's vision was to enable farmers and members of indigenous forest communities to significantly contribute to region-wide efforts in the Andean Amazon to achieve net zero deforestation through sustainably managing their agriculture and forest lands and benefitting from emerging government programs and private-sector finance that rewards these actors for the climate services their sustainably managed lands provide. This section identifies several key conclusions related to NZDZ's progress against this overall goal and vision.

### Key findings and progress against overall goal

Key findings and conclusions include:

1. The theory-of-change approach that guided pilot project design and implementation ensured that NZDZ intervention models responded to local realities, threats and opportunities. This, combined with ongoing adaptive management, maximized impact from pilot project implementation.
2. Adaptive management efforts contributed to navigating critical challenges that threatened project success, including:
  - a. Insecure conditions that precipitated a landscape change from Sucumbíos to Napo, in Ecuador, and hindered implementation in Caquetá over the life of the project;
  - b. Budget reductions limiting delivery of resources at a critical stage of consolidating field implementation models, particularly in Caquetá; and
  - c. Longer-than-anticipated government strategy development timelines and other unanticipated delays in REDD+ strategy formulation at the national and subnational levels, curtailing opportunities for NZDZ to directly insert project models and lessons learned into REDD+ strategy development, amongst others.

In spite of these challenges, NZDZ operationalized pilots in all project landscapes and, as described in *Section 9 – Targets and Achievements*, exceeded 8 of 9 LOP indicator targets.

3. NZDZ demonstrated that locally-tailored, integrated, sustainable land management models can be a viable means to reduce deforestation and enhance forest carbon stocks. For example:
  - a. Implementation of a sustainable ranching model prioritizing conservation of forest parcels, reforestation of waterways, enhancing stocking densities, improving animal health and increasing quality and consistency of milk production in Caquetá, Colombia, is projected to yield over 180,000 in tco2 equivalent emissions reductions/removals over the course of a 20 year period.
  - b. Implementation of an integrated landscape model based on forest conservation, commercial reforestation using native species and sustainable management of naranjilla in Napo, Ecuador, is projected to yield over 11,700 in tco2 equivalent emissions reductions/removals over the course of a 20 year period.
  - c. Implementation of an integrated management model based on implementation of best management practices, organizational strengthening, diversified production of timber and NTFPs, access to financing and value-added processing in Madre de Dios is projected to yield over 1.1 million in tco2 equivalent emissions reductions/removals over the course of a 20 year period in the community of Infierno.

4. NZDZ demonstrated that – in addition to their climate benefits – these models may also contribute substantively to increasing producer or community revenues. For example, in the community of Tres Islas, over 115,000 USD in annual profit is projected from implementing sustainable management and value-added processing of timber and NTFP products.
5. NZDZ models, in a general sense, are aligned with emerging “REDD+ priority activities” that will be the focus of government investment in the coming years. Colombia, Ecuador and Peru will need to detail subnational strategies and implementation plans to channel funding for REDD+ implementation. In some cases, the NZDZ project models may help lay the groundwork for this detailed implementation planning by demonstrating the technical specifications required to successfully implement integrated community forest management – for example in native communities (Peru) or sustainable intensification of ranching (Colombia); related technical assistance and financing requirements, and market access opportunities.
6. NZDZ leveraged project field experiences to show how forestry sector policies and programs can have a significant positive impact on sustainability, REDD+ and climate change mitigation outcomes, even when these programs are not specifically designed for REDD+. In Ecuador, NZDZ’s adaptations of the MAGAP commercial reforestation incentives program to facilitate its implementation in the Amazon enhances the probability of successful implementation in Amazonian indigenous communities. This, in turn, may increase investment of the approximately 300 million dollar program in Amazon regions. Program implementation will enhance forest carbon stocks, increase revenues to local communities and support safeguards objectives by promoting the planting of native species – all desired REDD+ outcomes. In Peru, the approval of regulations governing the management and harvesting of palm fruits offers a new income opportunity for native communities and economic incentive for forest conservation – key ‘co-benefits’ of REDD+.

#### *Tangible impacts towards achieving long-term vision*

As a result of establishing pilot project models and through other achievements, NZDZ has laid the foundation for achieving its long-term vision:

In **Caquetá**, roughly 400 ranchers have begun a transition to a sustainable, low-emissions ranching model that addresses unsustainable, extensive ranching practices that are a primary deforestation and land degradation driver in the department. More than 60 ranchers in Doncello were rewarded for their good practices through accessing a government program for forest conservation, with the potential to reach hundreds more.

In **Napo**, the Kichwa community of Wamaní developed an integrated management plan for forest conservation and natural resource use, and is implementing best management practices to transition naranjilla cultivation – a key deforestation driver in the community and region of Napo – to more integrated, sustainable production that reduces deforestation and GHG emissions. They are further diversifying local livelihoods through implementing the MAGAP commercial reforestation incentives program. The community is projected to receive nearly 1.8 MM USD in financing to support implementation of the MAGAP program in the coming years, and over 8,000 USD/ha from future timber sales (COKIWA plans to plant 300 ha). Through engagement in the Naranjilla Roundtable, work is underway to support the community in sales of differentiated, ‘clean naranjilla’ products and facilitate access to buyers of such products – this work will be taken forward under ICAA II and in collaboration with key stakeholders such as AGROCALIDAD, the Provincial Government of Napo, and others.

In **Madre de Dios**, the native communities of Infierno and Tres Islas are implementing integrated management models to combat illegal logging, agricultural expansion and artisanal gold mining –

key deforestation drivers in their community and the region. Tres Islas is already benefitting from the approval of government regulations for harvesting of palm fruits; having generated its first sales of the product. Moreover, the community is poised to leverage additional financing to expand NTFP production and upscale value-added processing. In Infierno, operationalizing a timber management committee and sustainable forest management plan is projected to deliver over 24,000 USD in annual profit. Activities in Infierno contribute to the community's REDD+ project, which will directly finance the community for its avoided deforestation achievements.

Through **building policy frameworks** that incentivize avoided deforestation and carbon stock enhancements, and **facilitating creation of diversified community enterprises and sales of goods** produced from producers and communities who have committed to enhancing forest carbon stocks and avoiding deforestation in their lands, NZDZ demonstrated how farmers and members of indigenous forest communities can benefit from broader efforts to support REDD+ and net-zero deforestation in a way that aligns with their own needs and opportunities.

## 7.2 Lessons learned

NZDZ was designed to generate early experience and test different approaches to establishing “net zero deforestation zones”. Given the experimental approach inherent to pilot project creation, as well as the project's focus on the innovative thematic area of ‘net zero deforestation’, NZDZ has yielded many lessons learned, several of which are systematized and shared here.

### *Program design*

1. **A 4 or 5 year lifespan should enable future pilot initiatives to complete a more robust ‘hypothesis testing’ of their intervention models, especially in demonstration pilots with a heavy field-based component.** NZDZ focused the majority of resources on working with producer groups and indigenous communities to: i) identify the best interventions to reduce emissions and provide sufficient economic incentives to make interventions self-sustaining; ii) design integrated land-use plans and action plans/management plans based on these; iii) improve local organizational and technical capacity – when necessary – to implement these plans; and iv) deliver technical assistance to ensure effective implementation. To be successful, we had to secure the buy-in, commitment and ownership of our project beneficiaries throughout all these phases – a process that takes significant time and forces us to work within the rhythm and processes of the communities. The overall project lifetime of 3 years – factoring in start-up delays due to contractual processes and a quarter of winding down activities as part of the project close out – made for a tight implementation schedule. In future pilots that prioritize field-level interventions, additional years would support further consolidation of models and enable more rigorous evaluation of the successes and limitations of them.
2. **Conducting pilots in security-risk conditions jeopardizes implementation of field-based activities.** Field pilot activities by nature involve great complexity and risk because they seek to find new, better solutions to difficult conservation and development challenges. Implementing these pilots in areas with insufficient security conditions to ensure a consistent, stable field presence by the project added additional complexity and jeopardized the team's ability to implement project models. In Sucumbíos, the presence and influence of organized crime within beneficiary communities forced NZDZ to change landscapes and implement in Napo, which resulted in a year of lost resources and time. In Caquetá, NZDZ was forced to change beneficiaries as FARC presence shifted, and was challenged by ongoing restrictions in travel to the region, frequent strikes that delayed implementation, and other difficulties in accessing beneficiaries. While there is great value in prescribing regions of work through government consultation and identification of deforestation hotspots – important factors in the

AmaZONAS Andinas APS – if heavy field work is expected, implementing partners should select geographies that have limited or no security risks.

3. **Operationalizing the theory-of-change (TOC) approach facilitated integration of project interventions and maximized impact.** NZDZ did not just create project conceptual models and results chains for the design phase, but through periodic strategy sessions and annual workplan development, consistently utilized these TOC as a benchmark to evaluate success and adapt our interventions. This helped instill a common vision amongst the project team and ensure that project interventions were consistently oriented towards tackling the primary threats to project objectives in the landscapes. A strong M&E team and sufficient resources for internal planning and capacity building around TOC (i.e. staff travel, workshops, professional development) help enable effective operationalization of the TOC approach.

*Project Objectives - Objective 1: Farmers, foresters, local and regional land managers and government agencies reduce deforestation and mitigate climate change by adopting and implementing sustainable forest and land management.*

1. Net-zero deforestation or REDD+ activities must first and foremost represent significant, viable economic incentives to communities. Start-up costs to communities should be limited and/or subsidized, and benefits should be realized within several years. Implementation of the MAGAP commercial reforestation program in Napo has minimal costs to the community and represents roughly 1.8 million USD in government investment. In Madre de Dios, Tres Islas is already harvesting aguaje and ungurahui and reaping economic benefits. In Infierno, sustainable timber harvesting will yield approximately 20,000 in annual profit. Delivering these incentives within the project's 3 year lifetime was important to demonstrating to communities in the short-term that their investment in transitioning to sustainable land management has real economic benefits.
2. Value-added processing may enable sustainable production to compete with deforestation drivers like illegal logging or agricultural expansion. If timber produced under the MAGAP program is sold as standing wood, estimated price/ha is 8,000 USD. If sold as sawn wood (which requires investment in infrastructure and management and technical capacity building) estimated price/ha is: 35,000 USD – over 400% higher. In Madre de Dios, transformation of Brazil nut from peeled nuts to Brazil nut oil conservatively yields a 200% increase in income, however similar barriers to finance, technical and management capacity, etc. exist as in the MAGAP example.

*Project Objectives - Objective 2: Community-based forest monitoring system is established whereby forest and agricultural communities with forested lands can achieve and contribute to monitoring, reporting and verification of greenhouse gas emissions and removals.*

1. REDD+ monitoring systems should prioritize alignment with existing or desired monitoring protocols that evaluate quality of implementation of sustainable management activities and/or community monitoring and vigilance processes. This will enhance probability of long-term execution and cost-effectiveness.
2. Community monitoring and MRV does not need to be as rigorous under REDD+ government programs as it would under voluntary carbon projects. These governments will implement their own subnational or national MRV programs. Thus, localized monitoring efforts are important to verify accuracy of monitoring data at broader spatial scales, however they do not need to be overly detailed.

*Project Objectives - Objective 3: Stakeholder and institutional capacity is built for regional and national REDD+ systems that reward sustainable land management as a scalable platform to combat deforestation and climate change.*

1. Integrating climate change and REDD+ as transversal themes within existing capacity building programs and/or multi-stakeholder dialogue fora may be more efficient and effective than creating stand-alone spaces for these issues because it:
  - a. Contributes to avoiding workshop/dialogue fatigue amongst key stakeholders;
  - b. Helps participants more organically ‘connect the dots’ and understand the relationships between their existing management activities or policy agenda for i.e. forest management, naranjilla production, brazil nut harvesting, ranching, and climate change issues; and
  - c. Focuses additional resources on strengthening pre-existing natural resource management spaces and/or training processes, as well as the governance and management competencies of the actors involved in these. At a local scale, there is often high overlap between actors who participate in multi-stakeholder governance bodies, so the same actors may well participant in i.e. the Forestry Roundtable or Naranjilla Roundtable as in a new ‘REDD+ roundtable’.
2. Orienting the design of existing or emerging agricultural and forestry sector laws, policies and programs to achieve REDD+ objectives is critical to achieving REDD+ objectives at scale, cost-effective, and can be low-hanging fruit. NZDZ’s major policy interventions in Colombia, Ecuador and Peru (see 4.2.4 *Improved Policy Frameworks* section for more details) were on programs whose primary objectives were not REDD+ implementation. However, their implementation may have a significant impact – positive or negative – on deforestation and land-use change in Andean-Amazon regions of Colombia, Ecuador and Peru. As the budgets for these programs in some cases significantly exceeds budgets for REDD+ implementation, they represent critical opportunities for scaling sustainable land management in order to achieve deforestation reductions and/or net-zero deforestation.

### 7.3 Identification of future challenges

Future challenges can be grouped broadly into the following issues: i) maintaining and consolidating delivery of government incentives programs in beneficiary communities; ii) changes in community or local government governance structures jeopardizing local commitment to implementation of project interventions; and iii) securing favorable purchasing commitments in communities where value chain work is still incipient, amongst others. Specific examples are provided by landscape and thematic area.

*Caquetá, Colombia:*

- The Municipal Tax exemption program is being successfully implemented, however to date has been dependent on partner FN to provide verification in the field, in order for producers to receive the discount. Local capacity, budget and staff time within the Municipality of Doncello needs to be secured in order to continue to implement and upscale the program in future years. It is hoped that the revenues from the program will finance these needs.
- Implementation of practices to improve milk quality and productivity is still nascent; producers need additional technical assistance and troubleshooting to continue to implement these until they can see the improved revenues resulting from implementation of these practices.
- Lack of sufficient monitoring and attention to tree saplings planted by project beneficiaries may lead to high mortality rates, jeopardizing projected emissions reductions.
- Caquetá continues to present security risks that limit the ability of local technical assistance providers to access the project sites and presents day-to-day challenges for local producers; such as agrarian strikes that close down local infrastructure and operations. Ongoing security

issues in the region present destabilizing conditions that may prevent producers from continuing to implement some elements of the project model.

*Napo, Ecuador:*

- The implementation of naranjilla BMPs is still incipient and improvements in quality and productivity need to be consolidated. In addition, local community members are not yet well-organized and thus are not at present in a position to sell to formalized/legal buyers rather than intermediaries. RA, together with the Naranjilla Roundtable, aims to provide technical assistance and support producers in evaluating market-linkage opportunities under ICAA II.
- Financing for implementation of the community of Wamaní's integrated land management plan is uncertain. RA aims to provide support to multiple activities through ICAA II funding as well as work with the Parish of Hatun Sumaku to access new funding for priority projects via government budgets, however securing long-term financing for several elements of the community's land-use plan will be a challenge.
- Implementation of the new MAGAP commercial reforestation program will need to be closely managed to minimize mortality rates. Through our partnership with the State University of the Amazon, it is expected that technical support will be delivered to ensure this.

*Madre de Dios, Peru:*

- Internal strife within the community of Tres Islas has affected the functioning of the community board and may result in changing leadership. Destabilization of the board and/or re-election of new leaders whose priorities do not align with the NZDZ sustainable land management approach could challenge implementation of project interventions in the medium-term.
- Harvesting and commercialization of palm fruits is an innovative new economic incentive for native communities, however as a result of being innovative there is limited knowledge of best practices and factors that impact yields, product quality, etc. As the community begins to upscale production, it will be challenged to manage adaptively in order to further improve its harvesting and production practices, as well as adapt its business operations to adapt to fluctuating annual production yields.

*Overall:*

- Continuous implementation of the project's MRV protocols may be challenged if: i) producers/or communities change land-management activities; ii) they fail to perceive the value of the protocols to inform their land-management decisions; and/or iii) governments define new requirements for community-based MRV that are substantially different from those designed. The landscape most at risk of this situation occurring may be Napo, where community members may find it difficult to continuously monitor changes in strata that are difficult to access and not directly linked to production activities, and the Ministry of Environment may develop new national guidelines for REDD+ activity implementation, including community-based MRV.
- Changes in the scope of or eligibility requirements for government incentives programs NZDZ has leveraged to support field implementation, difficulties by the governments of Colombia, Ecuador and/or Peru to secure sufficient budget in future fiscal years for these, and/or limited government capacity to facilitate implementation of these programs may all challenge their ongoing implementation in project communities.

In many cases, NZDZ identified these challenges in the course of its periodic project planning and implementation processes, and integrated into its project implementation framework activities to

prepare beneficiaries to surmount these challenges (i.e. through continuously delivering technical assistance and training); to articulate arrangements with key stakeholders to minimize the impact of these challenges on the project (i.e. through supporting MAGAP in the appropriate design of the commercial reforestation program for indigenous Amazon communities and coordinating to enable the UAE to function as the community's forestry operator); and/or establish agreements with local communities and other key regional stakeholders to support the long-term sustainability of project interventions (i.e. through engaging other stakeholders in Caquetá to explore the maintenance and up-scaling of the tax exemption program, and securing agreements for SLM implementation in the community of Infierno). Moreover, as part of the NZDZ project close-out, coordination meetings were held with key project stakeholders in order to raise awareness of needs and opportunities for other actors to support the ongoing implementation of project activities in beneficiary communities. Other challenges will be addressed and mitigated, to the extent possible, through implementation under ICAA II in FY15. Last, NZDZ partners continue to fundraise to bring to scale some of the most successful elements of the project experience and further consolidate other lines of work, such as the integration of the project model with RIA and REDD+ through RA's ICAA ISU small grant.

## **7.4 Replication opportunities**

In Ecuador, Colombia and Peru, there are emerging opportunities to replicate and scale NZDZ project accomplishments to: i) inform REDD+ strategy development and/or “early mover” implementation; ii) leverage private sector investments to promote diversified, integrated management; and iii) define what and how to implement new ‘zero deforestation’ supply chain and government commitments, i.e. through the Tropical Forest Alliance (TFA). The following illustrative examples are provided by country and at the regional level.

### *Caquetá, Colombia:*

1. The NZDZ project model could be modified/adapted and utilized to fund ‘early actions’ to reduce emissions and enhance forest stocks on the Colombian Amazon that may be financed under Colombia's REDD+ Early Movers (REM) commitments.
2. Nestle is a multinational who is active in the dairy supply chain in Caquetá and throughout Colombia, a member of the TFA, and has committed to zero deforestation in its supply chain. Nestle and other similar TFA members could be engaged to define how to operationalize their zero-deforestation commitments, leveraging relevant experiences from the experiences of the NZDZ project.
3. Engaging CORPOAMAZONIA, the regional government agency responsible for natural resource management, to codify the municipal tax exemption program as a regional law. This legal framework could then be leveraged to replicate the tax incentive program in other municipalities with similar land-use dynamics and demographics in Caquetá, for example Paujil and La Florencia.
4. A critical bottleneck in facilitating smallholder dairy producer access to existing government mandated price-premiums is around economy of scale and lack of reliable local distribution and storage networks to maintain milk quality for evaluation. NZDZ presented a proposal to local authorities to address these bottlenecks; future investment in the implementation of this proposal may enable producers to access a new economic incentive to reinforce the BMPs to improve quality and productivity promoted under NZDZ.

### *Napo, Ecuador:*

1. Ecuador also anticipates receiving REM funding, and it would need to disburse through a blend of government programs and projects. While the precise programs or projects have

not been defined, lessons learned from NZDZ's engagement in shaping the formulation of the MAGAP commercial reforestation program could be leveraged to demonstrate how to align government incentive programs for natural resource management with REDD+ objectives.

2. Ecuador's prioritization of value chain development for sustainable agriculture and forestry production through its REDD+ program and 'conversion of the productive matrix' agenda, may offer opportunities to leverage additional government finance and private sector purchasing practices to consolidate NZDZ models around sustainable forestry and naranjilla production.
3. Within the Parish of Hatun Sumaku, socialization workshops and experience exchanges on the Wamaní experience with the MAGAP Commercial Reforestation Incentives Program could be held with other communities to facilitate replicating the program in other communities. Under ICAA II, RA and ECOLEX anticipate rolling-out the program in 1 other parish community.

#### *Madre de Dios, Peru:*

1. Sustainable community forest management (CFM) is one of Peru's priorities for REDD+ strategy development and implementation; in this context the integrated intervention model put forward by NZDZ in the community of Tres Islas, as well as sustainable forest management work in Infierno, could be applied/adapted to prescribe appropriate CFM interventions in its subnational REDD+ strategies, as well as orient implementation of various REDD+-related investments Peru will be making in the coming years, notably under the FIP program and REM. Through USAID ICAA-ISU funding, RA hopes to further define and demonstrate how this could be done in a means that favors meeting objectives of RIA.
2. Amongst other commodities, USAID and the TFA have prioritized addressing illegal logging in Peru; this represents another opportunity to build upon initial piloting and investments made through the NZDZ program to prescribe intervention methods that will enable addressing this deforestation driver. It would also create sustainable value chains that would enable TFA-member investment to sustain legal, sustainable timber production beyond life-of-project.

#### *Regional-level:*

At present, many governments and multinationals have established commitments for 'zero deforestation', 'net-zero deforestation' and/or other variants as a means to publically communicate and commit to their intent to address tropical forest cover loss. However, even now there is not a commonly accepted or understood concept and recognition of its key principles and parameters. The NZDZ project represents an early attempt to define what 'net-zero deforestation' initiatives may look like in the field level – they are aligned with primary deforestation drivers, have produced monitoring frameworks to evaluate compliance, leveraged opportunities to coordinate such initiatives with government programs and – in the case of Madre de Dios in particular – articulated arrangements with private sector buyers to invest in sustainable production activities that reduce deforestation. Leveraging the project experiences to work with regional and national governments, donors and the TFA to build a shared understanding of what net zero deforestation is and how it can be operationalized in ranching, forestry, and agricultural value chains in the region would offer a considerable opportunity to replicate and upscale the project model.

#### *Considerations for future USAID opportunities in the region:*

In addition to the replication opportunities provided above, suggestions are provided in the hopes of informing future USAID programming to leverage its investment in NZDZ:

1. Consider investing in technical assistance to regional governments and native communities in Madre de Dios, Ucayali and/or San Martin, to facilitate the effective government administration and community implementation of the new regulations for sustainable palm fruit harvesting. Building on this, direct investment and/or prioritization of public-private partnerships could be done, to facilitate technical assistance and training on value-added processing infrastructure and practices, business management skills, and marketing skills, to enable communities to maximize value from palm fruit production.
2. Consider building on the palm fruit regulations to create an overarching ‘Integrated forest management and multiple use’ regulation. The regulation could integrate principles of sustainable land management and best practices for a range of forest and non-timber forest products. In MDD, NTFP management is an innovative field: as in the case of palm fruits, the government often lacks sufficient information to prescribe best practices. As a result, anecdotal evidence from successful field experiences can be used to define specific good practice guidelines. The regulation thus may prescribe best timber management practices but leave requirements for nascent NTFPs more generic and adapt the regulation through more specific chapters on NTFP management as field successes for products like tamshi, lianas and others are demonstrated. This overarching regulation would create conditions to favor sustainable NTFP harvesting, processing, and diversification at the national level.
3. Evaluate the alignment between NZDZ intervention models and thematic priorities within large investments provided through FIP and JICA (Peru), the Dedicated Mechanism for Indigenous Peoples (Peru); government incentives programs (Ecuador); REM funding (Colombia, Ecuador, Peru), and TFA priorities for ranching and forest products. Once alignment is defined, in collaboration with agriculture and environmental ministries and TFA partners, technical support could be programmed to safeguard and ensure the effective implementation of other investments that are aligned with NZDZ intervention model. This could provide several orders of magnitude of leverage to USAID’s portfolio and foster the replication at scale of its NZDZ investments.

## 8 SUCCESS STORIES

### CATTLE RANCHERS IN COLOMBIA ARE SAVING THEIR FORESTS AND SAVING ON TAXES

Caquetá is a rural department centrally located in the southern part of Colombia, in the heart of Amazon rainforest. Cattle production, followed by agriculture, is the main economic activity in Caquetá, but it is also a significant driver of deforestation in a region that has one of the highest deforestation rates in the country.

However, for over 45 cattle producers in the municipality of El Doncello, cattle production is synonymous with reforestation, conservation and economic benefits. This group of producers is receiving training and technical assistance from the Rainforest Alliance and Fundación Natura as part of the Net-Zero Deforestation Zones (NZDZ) project. This initiative is supported by the United States Agency for International Development (USAID) and is focused on helping farming- and forest-dependent communities in Caquetá counteract deforestation and forest degradation through the sustainable management of farms and forestland.

As part of the project, these producers are reforesting their ranches by planting trees on pasture lots, creating small forest reserves and using trees as live fences. They are further helping to protect key forest and conservation areas, as well as waterways in El Doncello, and are protecting the integrity of the soil on their farms, treating their animals well and using feed that helps reduce methane emissions associated with cattle. Additionally, ranchers are also learning new methods to increase their production, which is currently considered to be very low (about only five liters of milk per cow, per day).

The environmental benefits of implementing these sustainable farm management practices are readily apparent, but in this case, the work has also started to pay off economically as well. The farmers are now taking advantage of a tax incentive being provided by the Municipality of El Doncello, which grants a significant reduction in property taxes for cattle producers who are conserving local forests, reducing deforestation, and are up to date in the payment of their taxes.

“Most producers here did not know that this kind of incentive existed”, says Carolina De La Rosa from the Rainforest Alliance. “As part of the project, we are helping them improve their farming practices but we are also facilitating access to existing government incentives, which benefit the farmers economically in the short term and allow them to invest in the adoption of best practices for sustainable production.”

The response from the farmers regarding the incentive has been positive and has improved tax collection rates overall within the municipality. Originally, the program granted only a 10% tax deduction, but the resulting enthusiasm and support for the program has resulted in a decision by the Municipality to increase the tax deduction up to 50%, in order to motivate more cattle farmers and those with tax arrears to join the program.

To implement this tax incentive program, the Municipality had to establish a committee composed of an agriculture and environmental coordinator, a committee delegate and a delegate from the El Doncello Treasury Office. This committee is responsible for defining priority areas for forest conservation – mainly those close to waterways – and for verifying that the producers are really implementing sustainable farming practices and protecting surrounding forests. NZDZ has provided significant technical support to complete the first rounds of verification.

**Actors in Caquetá design their improved land-management interventions**



**A local rancher attending to his cattle; promoting animal welfare was a key element of the NZDZ project model and contributes to enhancing productivity.**



## HELPING WAMANÍ TO BECOME A SUSTAINABLE AND SUCCESSFUL FOREST COMMUNITY

The Kichwa community of Wamaní is a forest-dependent native community that is part of the Hatun Sumaku parish in Napo, which is a low-developed and biodiversity-rich province in Northeastern Ecuador. Their main economic activities are based on naranjilla production, ranching and informal logging; they are not very profitable. Some of the reasons why these activities are a challenge are because the community is not well organized, and most community members lack the technical and business expertise needed to have a commercially productive operation. In the last several years, the community further suffered from soil degradation due to unsustainable land management practices, which further contributed to low productivity.

As part of the Net Zero Deforestation Zones (NZDZ) project, an initiative supported by the United States Agency for International Development (USAID), the Rainforest Alliance is working with Wamaní to help them change this situation by developing a long-term integrated management plan for the sustainable management of their forests.

This plan includes activities that support the Wamaní in organizing themselves better, improving their productivity and accessing more business opportunities while also conserving their resources, enhancing community participation in timber and NTFP harvesting and reducing the community's carbon footprint, thereby helping mitigate climate change.

Working hand-in-hand with the community members, we started by identifying two timber species with the most potential for success in the area – "chuncho" (*Cedrelinga cataeniformes*) and laurel (*Cordia alliodora*) – as well as degraded areas where reforestation activities could be implemented. Additionally, we established an initial agroforestry production model that combines the primary production of laurel trees alongside the production of naranjilla fruit.

Many members of the community also received training and technical assistance on best farming practices, reforestation and management, to prepare them for implementing sustainable naranjilla practices and the MAGAP program. Building on this foundational training, youth leaders came together to form a Community Forestry and Environmental Technical Group, which is in charge of establishing the forestry nursery that will provide the necessary plants to start the reforestation activities.

“This new work model is very interesting because it involves the community, even the youth, from the very beginning of its implementation”, says Wilson Salazar, a community member. “We are participating in trainings but also practicing what we have learned. This is building knowledge and new talent that will stay within the Wamaní community”.

Another main objective of the management plan is to help the community participate in the national Economic Incentives for Reforestation Program – an initiative of Ecuador's Ministry of Agriculture, Livestock, Aquaculture and Fisheries (MAGAP) which promotes the recovery of degraded forest areas and an increased participation of rural communities in the establishment and management of forestry plantations.

We invited the Universidad Estatal Amazónica and representatives from MAGAP to visit the area and join our trainings so that they could learn more about the project and this community. The University liked the project and decided to collaborate with the Wamaní. With our support, the University became certified by MAGAP as a “forestry operator” of the incentives program.

MAGAP approved the Wamaní's forestry management plan and they are now ready to benefit from the incentive program and to thrive as a forest community. This project is expected to benefit at least 240 community members and help reforest 60 hectares of degraded land per year.

The process of designing and implementing reforestation under the MAGAP program involved participatory planning, training and hard work to prepare the degraded lands for reforestation.



## **A NATIVE COMMUNITY WORKS TO BUILD A SUSTAINABLE BUSINESS FOR THEMSELVES AND SAVE THEIR ANCESTRAL FORESTS**

Two hours upriver from Puerto Maldonado, in Southeastern Peru, you will find the town of Infierno, which is home to the Esa-Eja native community. Infierno is becoming quite famous around the world as an ecotourism destination. Many of its 180 families have turned to ecotourism as an economic alternative to activities such as logging and slash-and-burn agriculture, which are two of the main sources of income for their families but also two of the main drivers of deforestation and land degradation in the Amazon.

The Esa-Ejas want new economic alternatives as much as they want to save their forests. The high rates of deforestation and land degradation are creating more and more problems for the community – the availability of fertile land for agriculture has declined, becoming a threat to local food security; and they are now more exposed and vulnerable to natural disasters. Community members also feel that they are losing the ancestral cultural values that are ascribed to their forests.

But a group of sixteen Esa-Ejas in Infierno are trying to make a difference and safeguard their ancestral forests while simultaneously improving their livelihoods. With help from AIDER, the Rainforest Alliance, and the United States Agency for International Development (USAID), as part of the Net Zero Deforestation Zones (NZDZ) project, the community created a local forest management committee and a sustainable forest management plan.

AIDER trained community members in sustainable forestry and agriculture practices, the basics of climate change and REDD+, deforestation reduction, carbon storage, the use of maps and GPS, and monitoring, reporting, and verification systems (MRV). As a result of these trainings, the Esa-Ejas have gained the technical capacity and knowledge needed to improve their forestry and farming practices.

Now, the community is implementing reduced impact logging practices which ensure that only the trees needed for commercial use are cut down, thereby minimizing forest damage and timber waste. These new sustainable practices also include conducting pre-harvest inventories to map trees that are ready to harvest, as well as using appropriate cutting, felling and transportation techniques. Workers have also started wearing protective gear, such as helmets, gloves, vest, glasses and hearing protectors –important safety measures which were previously rarely considered.

Our technical team also developed a participatory MRV system with the community focused on the early detection and prevention of possible invasions by illegal loggers in their forests.

Through additional trainings, the group has further learned to keep records of their harvests, production and sales. This has allowed them to be more organized, competitive and to negotiate better prices for their wood, which has led to generating more income to support their families.

At the beginning of this year, severe flooding sadly led to the destruction of homes and crops within the community. The committee's sawmill was completely flooded as well, and the community was discouraged and did not see the immediate value of continuing their production activities. However, our technical team motivated the group and encouraged everyone to continue working together; not long after, the sawmill was working again.

A coffee buyer offered to rent the sawmill part time to cut their own logs, the committee accepted and, as part of the deal, staff are being trained on improved cutting techniques. The group has already bought more machinery, and now has a stable production system. They recently signed a contract with the community to sell them all the wood for the new cabins that will be built in the Eco-lodge.

**Infierno builds a culture of sustainable forest management through responsible harvesting practices, community-based MRV and youth reforestation efforts.**



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## 9 TABLE 1 TARGETS AND ACHIEVEMENTS

### 9.1 Table

Result/Indicator	Unit	Disaggregation	Year 1		Year 2		Year 3/ Life of Project	
			Target	Actual	Target	Actual	Target	Actual
<b>Indicator 1</b> Quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO <sub>2</sub> e, reduced or sequestered as a result of USG assistance	tons of carbon dioxide equivalent (CO <sub>2</sub> e) avoided or sequestered	Caquetá	0	0	0	0	347	0/ incipient
		Napo	0	0	0	0	42	0/ incipient
		Madre de Dios	0	0	22,114	25,112	47,548	49,215
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>22,114</b>	<b>25,112</b>	<b>47,937</b>	<b>49,215</b>
<b>Indicator 2</b> Number of climate mitigation and/or REDD+ tools, technologies and methodologies developed, tested and/or adopted as a result of USG	# materials developed, tested, and/or adopted	Caquetá	3	0	4	2	4	3
		Napo	2	2	4	3	7	7
		Madre de Dios	3	0	4	4	6	8
		<b>Total</b>	<b>8</b>	<b>2</b>	<b>12</b>	<b>9</b>	<b>17</b>	<b>18</b>
<b>Indicator 3</b> Number of hectares of biological significance and/or natural resources under improved natural resource management as a result of USG assistance	# hectares	Caquetá	7,500	0	16,000	15,951	11,000	3,210
		Napo	100	0	750	4,891	750	4,891
		Madre de Dios	250	0	32,449	32,445	32,449	33,206
		<b>Total</b>	<b>7,850</b>	<b>0</b>	<b>49,199</b>	<b>53,287</b>	<b>44,199</b>	<b>41,307</b>
<b>Indicator 4</b> Number of people with increased economic benefits derived from sustainable natural resource management and conservation as a result of USG assistance	# individuals	Caquetá	0	0	0	0	216	244
		Napo	0	0	0	0	100	126
		Madre de Dios	0	0	0	0	146	216
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>462</b>	<b>586</b>
<b>Indicator 5</b> Number of products related to the Andean Amazon generated by the NZDZ partners increased	# products	Caquetá	10	0	15	4	15	11
		Napo	1	0	3	2	8	8
		Madre de Dios	3	0	5	14	6	24
		<b>Total</b>	<b>14</b>	<b>0</b>	<b>23</b>	<b>20</b>	<b>29</b>	<b>43</b>

Result/Indicator	Unit	Disaggregation	Year 1		Year 2		Year 3/ Life of Project	
			Target	Actual	Target	Actual	Target	Actual
<b>Indicator 6</b> Number of disseminated copies of product related with the Andean Amazon generated by the NZDZ partners increased	# copies	Caquetá	2,000	0	3,000	5,750	4,000	5,947
		Napo	100	0	300	0	530	0
		Madre de Dios	225	0	550	0	1,050	50,331
		<b>Total</b>	<b>2,325</b>	<b>0</b>	<b>3,850</b>	<b>5,750</b>	<b>5,580</b>	<b>56,278</b>
<b>Indicator 7</b> Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance	# hours	Caquetá	2,054	210	7,655	1,969	5,929	5,804
		Napo	1,304	501	2,836	3,018	4,116	5,749
		Madre de Dios	1,552	207	2,822	4,934	3,798	9,587
		<b>Total</b>	<b>4,910</b>	<b>918</b>	<b>13,313</b>	<b>9,921</b>	<b>13,843</b>	<b>21,130</b>
<b>Indicator 8</b> Number of people receiving USG supported training in natural resources management and/or biodiversity conservation	# individuals	Caquetá	1,036	35	2,139	664	1,564	1,421
		Napo	84	34	221	336	301	796
		Madre de Dios	540	36	1,033	741	1,428	1,665
		<b>Total</b>	<b>1,660</b>	<b>105</b>	<b>3,393</b>	<b>1,741</b>	<b>3,293</b>	<b>3,882</b>
<b>Indicator 9</b> Number of laws, policies, strategies, plans, agreements, or regulations addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially proposed, adopted, or implemented as a result of USG assistance	# laws, policies, strategies, plans, agreements or regulations proposed, adopted or implemented	Caquetá	0	0	1	1	3	2
		Napo	0	0	1	0	4	4
		Madre de Dios	0	0	1	3	3	5
		<b>Total</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>4</b>	<b>10</b>	<b>11</b>

Result/Indicator	Unit	Disaggregation	20 year projection
<b>Indicator 1</b> Quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO <sub>2</sub> e, reduced or sequestered as a result of USG assistance	tons of carbon dioxide equivalent (CO <sub>2</sub> e) avoided or sequestered	Caquetá	180,487
		Napo	11,730
		Madre de Dios	1,153,949
		<b>Total</b>	<b>1,373,303</b>

Please see “Annex 1: Estimated impacts of the quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO<sub>2</sub>e, reduced or sequestered as a result of USG assistance (Indicator 1)” for additional information on how Indicator 1 values were calculated.

## 9.2 Variance in targets

NZDZ exceeded 8 of 9 LOP overall project-level indicator targets. However, NZDZ achieved only 93% of its overall hectares under improved management target (Indicator 3). Further analysis of variance against indicator targets follows. Where there has been overachievement, the impacts on project outcomes and benefits to pilot model establishment are highlighted. In cases of underachievement, mitigation measures and efforts taken to maintain sustainability of the intervention are described. Analysis is disaggregated by global project achievements as well as by landscape.

### **Indicator 1 Quantity of greenhouse gas (GHG) emissions, measured in metric tons of CO<sub>2</sub>e, reduced or sequestered as a result of USG assistance:**

- Overall project: LOP target exceeded by 2.5% (49,215 delivered vs 47,937 committed). Implementation of the project models **over a 20 year period is conservatively projected to reduce and/or sequester 1,373,303 tCO<sub>2</sub>e**.
- Caquetá: The value of 0/incipient is used because the majority of project activity impacts are related to emissions removals (carbon stock enhancements through reforestation, implementing silvopastoral systems, etc), which take time to grow and sequester carbon. Thus, although field interventions were designed and trainings and implementation guidance was conducted on an ongoing basis on a range of BMPs from implementation of rotational grazing, to animal health, to forest conservation and nursery management, trees have only recently been planted and have not grown sufficiently to reflect a significant quantity of GHG emissions removals. It is anticipated that as a result of building local land manager capacity, incentives programs like the tax exemption and ongoing future support from other actors in the region, producers will continue to implement NZDZ BMPs into the future. A projection of expected impact is the most appropriate measure of success given the nature of the project activities and other circumstantial challenges faced by the project in Caquetá. **Emissions removals are conservatively estimated at 180,487 tCO<sub>2</sub>e over 20 years**.
- Napo: The value of 0/incipient is used for the same reasons as in Colombia: trees have only been recently planted and take time to grow. Moreover, in Napo NZDZ invested significant effort into overcoming legal and institutional barriers in order to design small-scale reforestation efforts that are backed and supported by government incentives and technical support. This activity took a significant amount of time to approve within the Ecuadorian government, which took until the middle of 2014. However, as a result of these efforts, the community of Wamaní has had its reforestation design approved under the MAGAP incentive program and has committed support for 69 ha in the coming year, including 10 ha of which has already been planted. **This totals to an estimated impact of 11,730 tCO<sub>2</sub>e over 20 years** – a measure appropriate for discussing reforestation activities that take time to grow. It is important to note that this estimate is very conservative, as it only accounts for the currently committed land under reforestation, however the community also has plans to expand land under reforestation in the coming years by hundreds of hectares.
- Madre de Dios: Calculations derived from analysis of the community of Infierno's VCS monitoring reports for its registered REDD+ project in the community indicate that emission reduction targets for year 3 have been surpassed, achieving a total of 49,215 tCO<sub>2</sub>e attributable

to NZDZ at the end of the project. Data was compiled through assessing VCS monitoring reports that gave precise forest cover loss for the years 2012-2013, while the 2013-2014 report is still pending. By combining the reported figures for 2012-2013, with VCS-approved ex-ante estimates for 2013-2014 emissions reductions we calculate that NZDZ has achieved this reduction. Moreover, that **NZDZ interventions will result in a 20 year projection of emissions reductions of 1,153,949 tCO<sub>2</sub>e**. This data is based on VCS- approved projections for the project's VCS crediting period.

**Indicator 2 Number of climate mitigation and/or REDD+ tools, technologies and methodologies developed, tested and/or adopted as a result of USG:**

- Overall project: LOP target exceeded by 6% (18 delivered vs 17 committed). Due to the complexity of community-based monitoring in Peru, additional guidance was produced to support implementation of participatory MRV activities there. This increases knowledge generation and opportunities to share experience on the NZDZ model within the MDD region.
- Caquetá: The MRV methodology was developed and baseline completed, however due to security challenges, agrarian strikes, and adverse weather conditions in Q4, field validation was not completed. To support future field validation work, MRV advances have been continuously shared with key actors. Also, as the protocol is aligned with IDEAM's national methodology, NZDZ anticipates that as FN and other actors continue to implement low-emissions ranching models in the project area, there will be future opportunities to validate field activities.
- Madre de Dios: The communities were highly interested in participating in data collection and monitoring, yet community-based MRV is quite challenging and complex. To address this, the project developed additional guidance to facilitate effective MRV implementation. This contributes to strengthening and consolidating territorial control activities and participatory implementation of Infierno's REDD+ project.

**Indicator 3 Number of hectares of biological significance and/or natural resources under improved natural resource management as a result of USG assistance:**

- Overall project: LOP target not met – only 93% of target achieved (41,307 ha delivered vs 44,199 ha committed). In Napo and Madre de Dios, targets were exceeded, further consolidating sustainable land management at the landscape scale. However, in Colombia, there was significant underdelivery due to an array of challenges described below. As a result, elements of pilot model implementation in Colombia were not implemented in some farms, leaving consolidation of the project model at a more incipient stage than in the Napo and Madre de Dios landscapes.
- Caquetá: As communicated in prior reports and via meetings with USAID, NZDZ was challenged by security issues in Caquetá since project inception. In prior fiscal years the project had changed beneficiaries and locations within the municipalities to try to address this. FY14 was a critical year for field consolidation, particularly with newer beneficiaries. However, the combination of the USAID budget reduction, ongoing security issues limiting staff travel to the region and frequent strikes that constrained access to pilot sites prevented NZDZ from delivering planned farm inputs and technical assistance to all NZDZ beneficiaries required to maintain a similar coverage of ha under improved management as achieved in FY13. In

addition, unanticipated collateral damage from the budget cut further challenged implementation: a subset of producers unhappy with a reduced level of support lost motivation in continuing some project interventions. These factors, coupled with adverse weather in FY14 Q4 that further limited access to producer sites, were key drivers that led to the achievement of only 3,210 ha in the Caquetá landscape in FY14. To address this – and to secure the sustainability of our interventions - NZDZ had built alliances with other local stakeholders and government agencies as described in section 4.2.1 *Collaboration achievements* and section 6.2.1 *Caquetá, Colombia (Achievements)* to support implementation of activities required to continue model implementation in the future. Also, NZDZ strengthened local tree nurseries to facilitate provisioning of tree saplings required for reforestation. Last, the project worked to facilitate implementation of the tax exemption program that could reach significant scale in the Municipality of Doncello – over 85,000 ha and approximately 1,000 farm families, and it is hoped that this government program will help provide continuity and economic incentives to support a key pillar of the NZDZ project model in Caquetá – forest conservation and restoration.

- Napo: NZDZ capitalized on opportunities to expand the scope of its sustainable, low-emissions land management focus from pilot site establishment to nearly all the community. This was achieved by completing an integrated management plan for the community of Wamaní, in concert with collecting taxonomic and carbon stock data that informs sustainable land management under the plan and across the entire community. Working at the scale of the full landscape, and securing the community’s agreement under the management plan do to so for at least the next five years, consolidates the landscape-scale management elements of the NZDZ project in Napo and enhances the sustainability of the project model.
- Madre de Dios: NZDZ secured a slight increase in its FY14 hectare target because the community of Infierno, through developing its annual sustainable timber management plan, decided to slightly expand the harvesting area in this fiscal year. This value may fluctuate slightly from year to year, however, the community’s ownership and support of the management plan and timber activities in general should facilitate their continued investment in this activity beyond NZDZ.

**Indicator 4 Number of people with increased economic benefits derived from sustainable natural resource management and conservation as a result of USG assistance:**

- Overall project: LOP target exceeded by 27% (586 delivered vs. 462 committed). The LOP target in all project landscapes was exceeded. Delivering economic benefits to producers and members of native communities consolidates gains made under the project. NZDZ anticipates this will also generate interest amongst a greater number of local land owners to participate in sustainable land management alternatives promoted by the project, fostering the replication of project activities within NZDZ landscapes in the future.
- Caquetá: Seven more farms than estimated applied for the tax exemption program for conservation in the Doncello municipality. It is anticipated that as more producers become aware of the program through speaking with their neighbors, as well as ongoing strengthening of the municipal verification committee, the program will continue to grow beyond the life of NZDZ and have an impact on forest conservation at scale throughout the municipality of Doncello.

- Napo: The Wamaní community showed greater interest in reforestation under the guidelines of the MAGAP program than initially anticipated, leading to a greater number of members receiving benefits. In fact, the community has committed to reforest up to 300 hectares in future years. Assuming that reforestation is successfully undertaken, the community will benefit significantly from the implementation of this program in future years; future timber sales could exceed 8,000 USD/ha.
- Madre de Dios: NZDZ technical assistance led to a higher than anticipated number of Brazil nut producers securing enhanced benefits from Brazil nut certification. These benefits complement and reinforce other NTFP and timber incentives being implemented in NZDZ native communities, helping to consolidate the project model there.

**Indicator 5 Number of products related to the Andean Amazon generated by the NZDZ partners increased:**

- Overall project: LOP target exceeded 48% (43 delivered vs 29 committed). NZDZ leveraged media contacts in Peru and its global communications unit to disseminate project advances through awareness-raising articles at a rate higher than anticipated. This work, combined with Indicator 6 below, helped the project inform a greater number of stakeholders of the project advancements and lessons learned than initially anticipated.
- Caquetá: 4 fewer products were produced than anticipated, in part due to greater than expected effort invested addressing issues resulting from security challenges and strained relationships with some producers as a result of the budget reduction. Nonetheless, NZDZ produced several capstone products that succinctly document the project model and successes in Caquetá, i.e. on the tax reduction program and the overall intervention model and opportunities to upscale it, and these documents have proven very valuable to engage key stakeholders on the overall project model. As a result of this approach, the reduction of 4 products has not adversely our ability to engage with key stakeholders.
- Madre de Dios: NZDZ took advantage of opportunities to create new products to strengthen project interventions within beneficiary communities, and leverage contacts with media in Peru to disseminate the project advances. Additional products were elaborated like radio spots, education material for community schools and articles for online publication to reach the greatest number of stakeholders possible, and to reinforce field-interventions within local communities.

**Indicator 6 Number of disseminated copies of product related with the Andean Amazon generated by the NZDZ partners increased:**

- Overall project: LOP target drastically exceeded (56,278 delivered vs 5,580 committed). This is a result of leveraging mass media outlets in Peru and Colombia in particular; the project capitalized on these opportunities as they were presented. In Napo, products were frequently disseminated to key stakeholders at the local level, however this was done informally through presentations or field visits to communities. While more effective in ensuring that our results reached key stakeholders and that these were used by them, it was not possible to document the evidence required to capture the number of materials disseminated.
- Caquetá: Project highlights relating to the tax incentive and the description of the overall ranching model, as well as leveraging media outlets, enabled NZDZ to exceed its target.

- Napo: See description in “overall project” section.
- Madre de Dios: Using radio spots for information dissemination in the communities allowed NZDZ to present very high actual results. In these areas, radio is an important media for communication and getting the attention from the community members and so helped the project to share important knowledge and reinforce key concepts of the NZDZ intervention model.

**Indicator 7 Number of person hours of training in natural resources management and/or biodiversity conservation supported by USG assistance;**

**Indicator 8 Number of people receiving USG supported training in natural resources management and/or biodiversity conservation**

- Overall project: LOP target exceeded by 52% for Indicator 7 (21,130 delivered vs 13,843 committed) and by 17% for Indicator 8 (3,882 delivered vs 3,293 committed). In both indicators NZDZ passed the LOP target because of effective promotion of the training events and the high interest of the beneficiaries in participating and learning about the important topics NZDZ covered in the different landscapes – and particularly in the Napo and MDD landscapes. Training and technical assistance was also critical to ensuring that local landowners would have the capacities necessary to continue to implement project interventions, thus ongoing capacity building was prioritized in all project landscapes whenever possible.
- Caquetá: There was minimal underdelivery in both indicators (97% and 91% respectively), due to issues mentioned previously regarding the budget reduction and unanticipated collateral impacts of the budget reduction, challenged security conditions, agrarian strikes, and adverse weather all limiting time that could be spent in the field conducting trainings. In spite of these challenges, targets were nearly met and NZDZ does not anticipate a significant impact due to the slight under delivery in this indicator.

**Indicator 9 Number of laws, policies, strategies, plans, agreements, or regulations addressing climate change (mitigation or adaptation) and/or biodiversity conservation officially proposed, adopted, or implemented as a result of USG assistance**

- Overall project: FY14 target exceeded by 10% (11 delivered vs. 10 committed). As PLARs are not cumulative, overall project progress is tracked by final FY14 total.
- Caquetá: NZDZ facilitated the implementation of the tax exemption within the Municipality of Doncello, and also proposed adjustments to the Resolution 017 of 20 of January of 2012, which provides price premia for meeting milk quality standards in the department of Caquetá. NZDZ had planned to put forward another PLAR related to proposing a sustainable livestock model within regional and national regulations/programs. While awareness-raising and advocacy work was conducted with key agencies to build interest in the NZDZ model, delays in timelines for i.e. implementation of REM funding, the design of the “Vision Amazonica” program, and others, have extended beyond the life of the NZDZ project, so an opportunity to propose a PLAR was not presented. RA, FN and other actors, however, continue to advocate for regulations favoring upscaling of the NZDZ model and related fundraising opportunities. Last, the two PLARs developed in FY14 are more directly and immediately related to providing economic incentives to local producers, and thus are considered appropriately

prioritized. For these reasons the project does not anticipate a significant adverse impact on the NZDZ project resulting from the underdelivery by 1 PLAR.

- Madre de Dios: Many community-level agreements were put in place within the community of Infierno to support the implementation of sustainable forestry and NTFP production as contributions to the community's REDD+ project. The need to establish clarity and agreement on a variety of these issues led to the higher than anticipated number of PLARs in MDD. These agreements enhance the sustainability of the long-term implementation of REDD+ activities in Infierno.

# 10 ACTIVITY TABLE

## 10.1 Activity Status Summary

<b>TABLE 2: Activity Status Summary</b>		
<b>Activity Information</b>	<b>Number of Activities</b>	<b>Percentage of Total</b>
<b>Total number of activities in Work Plan</b>	34	100%
<b>Activities not started yet</b>	0	0%
<b>Activities completed</b>	30	88%
<b>Activities on schedule</b>	0	0%
<b>Activities not completed</b>	1	3%
<b>Activities canceled*</b>	3	9%

\* Canceled because of budget reduction

## 10.2 Tri-national level

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
TRI2.1	Produce a comprehensive 'lessons learned' publication on development and harmonization of community-based monitoring protocols for the Andean Amazon, which analyzes project experience on issues such as: establishment of minimum criteria for harmonization; common methodological development processes, alignment with government programs, and challenges in implementation, amongst others.	RA	Aider, Condesan, FN	FY 14 Q 3	FY 14 Q 4		100%	Completed	
TRI3.1	Produce periodic policy briefs to support regional policy interventions, resulting in publication of summary "lessons learned on incorporating and upscaling sustainable land management in REDD+ policy" report	RA	Aider, Condesan, FN	FY 13 Q 1	FY 14 Q 4		100%	Completed	

### 10.3 Colombia – Caquetá Landscape

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
C.1.1	Conduct feasibility analyses to identify priority sites for net zero deforestation pilots, resulting in recommended sustainable management systems that will maximize carbon stocks and reduce deforestation/degradation for each	FN	Nestle, CorpoAmazonia, Lacteos del Hogar, Alcaldias, Municipales ASOHECA ACAMAFRUT	FY 12 Q 3	FY 14 Q 1		100%	Completed	
C.1.2	Develop and adjust guidance on sustainable land management including selection of tree species for reforestation, BMP's for cattle grazing lands	FN	CorpoAmazonia, SENA, Universidad de la Amazonía	FY 12 Q 4	FY 14 Q 3		79%	Not completed	Required work was conducted however not amongst all farms anticipated, thus activity is classified as incomplete.
C.1.3	Generate and install local capacity in the concepts of best management practices in agricultural production systems that allow scale up and replicate	FN	SENA, SINCHI, CorpoAmazonia	FY 12 Q 4	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
	methodologies to increase zero deforestation areas								
C1.4	Support the design of a model for production incentives that promote the implementation of best practices.	FN	Nestle, ASOHECA ACAMAFRUT, RA, CorpoAmazonia	FY 12 Q 3	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
C2.1	Develop and implement tools for community and land-owner carbon stock assessment and monitoring of C storage and GHG emission reductions as result of implementing sustainable land management and reducing deforestation	FN	IDEAM, MADS, SINCHI	FY 13 Q 1	FY 14 Q 4		100%	Completed	
C2.2	Estimate carbon sequestration potential in 3000 ha of silvopastoral and agricultural systems where BMPs will be implemented. These estimates will be utilized to monitor	FN	IDEAM	FY 13 Q 1	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
	changes in carbon stocks over the life of project.								
C2.3	Monitor flora and fauna to analyze the impact of BMP implementation and the reduction of deforestation on biodiversity	FN						Canceled	Due to budget cut

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
C3.1	Build capacities at local level in a model of sustainable livestock as a measure of adaptation and mitigation to climate change	FN	MADS, TNC	FY 12 Q 4	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
C3.2	Support and active participation in events of REDD+ to support the government	FN	MADS, TNC	FY 12 Q 3	FY 14 Q 4		100%	Completed	
C3.3	Support a proposal to reduce property taxes in one municipality	FN		FY 12 Q 3	FY 14 Q 4		100%	Completed	

#### 10.4 Ecuador – Napo Landscape

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
E1.1	Train community in best management practices for agriculture and forestry with focus on REDD +	RA	-	FY 12 Q 4	FY 14 Q 3		100%	Completed	
E1.2	Improve capacity for adequate territory planning orientated to reduce deforestation and emissions	RA	-	FY 13 Q 1	FY 14 Q 3		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
E1.3	Design and implement a model of forestry incentives under government programs in order to promote the adoption of best management practices focused on carbon sequestration, reducing emissions from deforestation and improving livelihoods	RA / Ecolex	-	FY 12 Q 4	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
E2.1	Develop and test a methodology for the measurement of carbon in aboveground biomass in agroforestry, silvopastoral, agriculture and forestry systems, integrating scientific and participatory methods. The methodology will enable spatial mapping of carbon stocks in biomass. Workshop held to develop the MRV tool with Colombia and Peru partners	Condesan	-	FY 12 Q 2	FY 13 Q 1		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
E2.2	Identification of minimum harmonization requirements for the quantification of carbon in aboveground biomass, in the 3 intervened landscapes (Ecuador, Perú, Colombia).	Condesan	-	FY 12 Q 2	FY 12 Q 3		100%	Completed	
E2.3	Develop and carry out capacity building activities that involves at least 20 local people in the proposed monitoring activities	Condesan	-	FY 12 Q 4	FY 13 Q 2		100%	Completed	
E2.4	Establish a baseline of carbon stocks in aboveground biomass in 10 pilot farms for each productivity systems at the beginning of the project.	Condesan	-	FY 12 Q 3	FY 14 Q 1		100%	Completed	
E2.5	Support the design of a proposal to implement commercial forest plantations in Wamaní in topics related to monitoring	Condesan	-	FY 14 Q 1	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
E3.1	Build capacity of local actors through the establishment of dialogue spaces to strengthen	RA	-	FY 13 Q 1	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
	governance on climate change and REDD +								
E3.3	Analyze contribution of production systems to environmental safeguards system according to government plans, focusing on its applicability and operability	Ecolex / RA	MAE	FY 13 Q 3	FY 14 Q 4		100%	Completed	
E3.4	Systematize lessons learned from NZDZ implementation process	RA / Ecolex		FY 14 Q 1	FY 14 Q 4		100%	Completed	

## 10.5 Peru – Madre de Dios Landscape

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Imple- menter	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
P1.1	Technical assistance and capacity building provided to native communities on best management practice to optimize their forest uses	AIDER	AFIMAD, CANDELA, ACCA	FY 12 Q 4	FY 14 Q 4		100%	Completed	
P1.2	Implement strategy to raise local community awareness of key aspects of REDD+, and gender issues in REDD+ and forest management by executing the following steps: i) adapt existing curriculum on forests, climate change and REDD+ for Made de Dios context; ii) once adapted, deliver pilot trainings and identify local leaders; train local leaders to deliver curriculum in their communities.	RA	WWF, AFIMAD, AIDER-CPF, MSAR, FENAMAD	FY 12 Q 4	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
P2.1	Conduct an analysis to adapt or co-develop a MRV system that community producers can implement to monitor GHG emissions changes related to adoption of climate friendly farming practices. The methodology tested in the pilots will demonstrate to regional REDD+ stakeholders a participatory process	AIDER / RA		FY 12 Q 3	FY 14 Q 1		100%	Completed	
P2.2	Facilitate and support the implementation of vigilance committees and monitoring in local communities with needs for improved local forest protection	AIDER	SPDA	FY 13 Q 2	FY 14 Q 4		100%	Completed	
P2.3	Review existing deforestation baselines for MDD, to better understand if primary threat in pilot zones is from degradation or deforestation, what the re-growth rate is versus the commercial extraction rate, and know clearly what benefit improved management would have in decreasing deforestation threat or enhancing carbon stocks	AIDER		FY 13 Q 1	FY 14 Q 4		100%	Completed	

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
P3.1	Facilitate the inclusion of management plans of producers as part of REDD+ strategies and environmental services (agricultural, livestock, forest concessionaires, licensees from ecotourism) and native communities, located within the Madre de Dios region.	AIDER	WWF.					Canceled	Due to budget cut
P3.2	Strengthen the organizational structure of producer organizations and native communities for the election of their representatives, development of assemblies, accountability, and control and monitoring of forest.	RA	AFIMAD	FY 13 Q 2	FY 14 Q 4		100%	Completed	
P3.3	Present the economic and climate mitigation benefits of best management practices systems (e.g. RAC, FSC) and propose inclusion of these systems under emerging PES/REDD+; 2 analyses/case studies developed and presented. The Rainforest Alliance will actively and consistently engage in the Mesa National REDD+, and in the MDD Mesa REDD, and present this case in those sessions using lessons learned from pilot projects as examples.	RA	AFIMAD					Canceled	Due to budget cut

#	OBJECTIVE / ACTIVITY NAME AND DESCRIPTION	Implementer	Coordination with other organizations	Implementation					Brief description of reasons for Delayed or Canceled Activities (25 words or less)
				Starting Date	Original Completion Date	Estimated Completion	% complete	Status	
P3.4	Strengthen local and regional government and civil society capacities to understand and support REDD+ activities, with particular emphasis on fostering understanding of new Peruvian forest law and relationship to REDD.	AIDER / RA	GRRNN Madre de Dios; Programa Regional Forestal; DGFFS	FY 13 Q 1	FY 14 Q 4		100%	Completed	
P3.5	Technical analysis conducted to facilitate nesting of MDD technical MRV products within subnational and national framework; 1 analysis with recommendations/tools will be developed and presented in REDD+ roundtable meetings.	AIDER	MINAM, GRRNN; MESA REDD NACIONAL	FY 14 Q 1	FY 14 Q 2		100%	Completed	
P3.6	Trainings on establishment of social and environmental safeguards systems in the MDD subnational jurisdiction. Work will be conducted in close coordination with the REDD+ SES; local government agencies responsible for REDD+ implementation, will be the target audiences for these trainings.	RA	MINAM, GRRNN; MESA REDD NACIONAL	FY 12 Q 4	FY 14 Q 2		100%	Completed	

## 11 EXPENSES

Kindly note that expense data is provided here for illustrative purposes and based on financial data available as of the report submission date. Final expense data will be provided in final project financial reports submitted at a later date.

Expenses October 2013 - September 2014			
Ecuador	Colombia	Peru	Total
304,041.25	234,597.34	247,929.42	786,568.01

## **12 ANNEX 1: ESTIMATED IMPACTS OF THE QUANTITY OF GREENHOUSE GAS (GHG) EMISSIONS, MEASURED IN METRIC TONS OF CO<sub>2</sub>E, REDUCED OR SEQUESTERED AS A RESULT OF USG ASSISTANCE (INDICATOR 1)**

### **12.1 Overview**

The combined project activities across Ecuador, Peru, and Colombia have generated important advancements in realizing emissions reductions in their respective landscapes. In all cases, each project landscape has attempted novel approaches towards reducing or removing GHG emissions from the agriculture and forestry sector in challenging landscapes and socio-political contexts. The final result in terms of GHG emissions removals gives a limited picture of the foundations that were established in each country. In the case of Colombia and Ecuador, the majority of quantifiable mitigation activities consisted of emissions removals, thereby inherently limiting the amount of quantifiable emissions reductions at the end of the life of NZDZ. In other words, these landscapes focused primarily on carbon stock enhancement activities that consisted of active and passive regeneration techniques, which take time to grow and to fix carbon dioxide. These accomplishments have laid the foundation for important restoration activities that will hit their stride in terms of carbon sequestration in the next 5-10 years.

The case of Peru is unique because partner AIDER had previously designed an avoided deforestation project under the Verified Carbon Standard prior to the inception of NZDZ. Therefore, AIDER was able to quantify its impact on forest conservation in a more robust manner due to its use of robust carbon accounting methods required by the VCS. The impact of avoided deforestation is more immediate than activities that restore forest cover. For these reasons it is important to take these considerations into account when reviewing Table 1. In sum, project partners worked to establish restoration projects on over 552 ha of tropical forests, and avoided emissions on over 10,371 ha of threatened forests using strategies previously unrealized in their respective landscapes.

**Table 1 - Final summary, Indicator 1**

Location	Year 1		Year 2		Year 3/ Life of Project		20 year projections
	Target	Actual	Target	Actual	Target	Actual	
Caquetá	0	0	0	0	347	0/incipient	180,487
Napo	0	0	0	0	42	0/incipient	11,730
Madre de Dios	0	0	22.114	25,112	47,548	49,215	1,153,949
<b>Total</b>	<b>0</b>	<b>0</b>	<b>22.114</b>	<b>0</b>	<b>47,937</b>	<b>49,215</b>	<b>1,373,303</b>

## 12.2 Peru

The activities implemented in Peru primarily focus on improving forest management operations in order to enhance the quality of forest management and safeguard the totality of the community's forest cover as a means for avoiding future deforestation. The team's activities are focused in Comunidad Infierno, an indigenous community totaling 9,518 ha comprised of approximately 180 indigenous families and whose livelihood consists of a blend of agricultural production, eco-tourism, and forestry. In addition there is a 1,531 ha eco-tourism concession also managed by the community. In Infierno, of the 9,281 ha of forest cover 1022 ha are under forest management by 17 families with support by the NZDZ project and will contribute to a low emissions land use strategy. The remaining forest cover is under enhanced protection through regular park guard patrols that deter unplanned deforestation and report any illegal deforestation promptly. AIDER also established agroforestry systems to willing participants encompassing over 10 ha, however this is a relatively lower impact strategy in terms of Indicator 1 due to the time needed for these systems to grow and accumulate biomass.

The avoided emissions estimates from park guard patrols have been estimated based on a comparison of the project's monitoring reports prepared for their Verified Carbon Standard (VCS) REDD+ project, which in turn compares recent performance as compared to annual baseline projections for deforestation, which are developed as part of their documentation for the VCS standard.

Table 2 summarizes results of AIDER's VCS monitoring results for the most recent monitoring periods for which data is available. NZDZ started funding project activities related to forest management and protection in 2012, therefore only the values from 2012-2013 are attributable to NZDZ support. Because AIDER is following the timelines of their VCS project the monitoring report for 2013-2014 is not scheduled to be performed until 2015, therefore AIDER has made a projection of the avoided emissions for the 2013-2014 period based on its ex-ante projections from its VCS project design document. For the purposes of this exercise AIDER estimates that 30% of emissions reductions are attributable to NZDZ support based on the extent to which this funding supported VCS project activities.

**Table 2 - Avoided emission estimates in Comunidad Infierno 2011-2013**

Periodo	proyectado a deforestarte		Real deforestado		Deforestación evitada		NZDZ
	ha	tCO <sub>2</sub> -e	ha	tCO <sub>2</sub> -e	ha	tCO <sub>2</sub> -e	tCO <sub>2</sub> -e
<b>2011-2012</b>	184.28	97,235.52	49.30	29,189.75	134.98	74,256.71	N/A
<b>2012-2013</b>	172.80	91,713.59	20.65	11,358.45	152.15	83,706.88	25,112
<b>2013-2014</b>	200.27	105,945.24	unavailable	unavailable	unavailable		23,992
<b>Total</b>			69.95		287.13	157,963.58	49,104

Fuente: AIDER, PDD proyecto REDD+ Infierno

The project also established 10.05 ha of agroforestry systems in 8 properties. Since these agroforestry systems are barely over one year old their carbon content is minimal, yet their contribution to local livelihoods is important and is set to bring benefits in the medium to long term. AIDER reports the carbon content of all systems combined in the table below, totaling to 11.72 tCO<sub>2</sub>-e. This estimate is in line with a calculation projected in the annual report to USAID in 2013, which was a total estimate of 8 tCO<sub>2</sub>-e. As these systems grow they will start to impart both livelihood and climate benefits.

**Table 3 - Updated carbon content values for agroforestry systems established through NZDZ**

<b>Parcela</b>	<b>Carbono total (t)</b>	<b>CO2-e total (t)</b>
1	0.01	0.04
2	0.20	0.72
3	0.69	2.53
4	0.03	0.10
5	0.24	0.88
6	1.94	7.10
7	0.00	0.01
8	0.09	0.32
<b>Total</b>	<b>3.20</b>	<b>11.72</b>

**Table 4 - Summary table for Indicator 1, Peru**

Disaggregation	Year 1		Year 2 (tCO2)		Year 3 (tCO2)		Emissions sequestered or avoided, tCO2 (life of project) tCO2	Emissions sequestered or avoided, tCO2 (20 years) tCO2
	Target	Actual	Target	Actual	Target	Actual		
Park Guard Monitoring-30% of projected avoided emissions			20,783	25,211	23,992	Pending VCS monitoring report	49,203	1,151,709
Agroforestry (carbon sequestered)			n/a		negligible due to being young trees	11.7	11.7	2,240
<b>Total</b>			<b>22,114</b>		<b>25,323</b>		<b>49,215</b>	<b>1,153,949</b>

### 12.3 Ecuador

Quantifiable measures for Indicator 1 in Ecuador are being primarily generated through carbon stock enhancements in the form of reforestation for commercial purposes. Rainforest Alliance has worked closely with the Ministry of Agriculture (MAGAP) to design a viable strategy for utilizing their nascent incentives program to fund the establishment of small-scale woodlots. Through the help of various technical experts Rainforest Alliance designed an agroforestry system that permits farmers to receive benefit at various temporal scales by promoting taungya crop-forest systems. A taungya system consists of short term agricultural products interplanted with desirable tree species. In this case the taungya system consists of planting naranjilla (*Solanum quitoense*) with laurel (*Cordia alliodora*). Naranjilla is planted for several years until it is shaded out by the tree species at which time it becomes a tree plantation. The tree species are set to be thinned and pruned over several phases so as to achieve a final spacing of roughly

4x4m apart or 157 trees/ha and are expected to reach up to 45cm in diameter at the end of 20 years. The estimates of carbon sequestration potential are given below.

Although the surface area to be planted under the project at the end of the project resulted lower than expected, the project succeeded in designing a replicable model that will be further implemented and expanded during the remaining funding of the ICAA II project and approved and supported by the Government of Ecuador. We expect up to 500 ha will utilize the design established by Rainforest Alliance and which, for the first time in the region, is benefitting from a governmental incentive program to aid in its ongoing maintenance and future success. For the time being we estimate a total of up to 11,730 tCO<sub>2</sub>e after 20 years of growth for the initial 69 ha that have been agreed upon with MAGAP in Wamaní, since this is the only confirmed amount to date, but anticipate up to a total of 500 ha of this forestry system to be implemented in the 7 communities in the region over the next 1-3 years. This larger surface area, though attributable to NZDZ has not been projected since there are no signed contracts under MAGAP yet with the other communities, however we have registered significant interest in the system following community meetings.

**Table 5 - Estimates of emissions removals from taungya crop-tree systems**

	Area target at life of project 2014	Area at life of project 2014	Total hectares after 3 years	Target at life of project tCO <sub>2</sub> e	Actual at life of project tCO <sub>2</sub> e	Target at 20 years for 10 ha tCO <sub>2</sub> e	Target at 20 years for entire project area tCO <sub>2</sub> e
<b>Total</b>	75	10	69	-	-	1,700	<b>11,730</b>

#### Avoided Emissions potential

The activities in Ecuador did not undertake baseline deforestation analyses and land use tendencies that would enable an estimate of avoided emissions. The persistent cloud cover in the eastern Andean slopes poses a serious challenge for using optical sensors to detect land cover and land cover change. The ICAA II program of activities includes a degradation study using RADAR, which potentially solves this technical challenge, however this tool will not be available in time for application to the NZDZ project. However the NZDZ program of activities in Wamaní includes incentives and work plans that help maintain 1,283.5 ha of forest cover currently registered under the SocioBosque incentive program. Although the impact of the project in terms of avoided emissions cannot be quantified given the resources of this project it will be possible to monitor the conservation of these areas in a more robust manner after the project.

## 12.4 Colombia

The project activities in Colombia faced one of the most complex mixes of land use and land cover as they were implemented within cattle farms with a mix of forest, forest regrowth, and pasture on which a variety of activities related to cattle management were carried out. Security concerns in the area as well as budget cuts to NZDZ caused Fundación Natura to decrease the overall number and areas of cattle farms where pilot activities would be implemented. In addition these activities were not fully implemented until late in 2014, therefore their impact at the end of NZDZ had to be entirely estimated on the basis of projections. In order to create these projections Fundación Natura utilized a land-use change model called EX-ACT developed by the FAO in order to quantify the potential impact of the gamut of land and cattle management activities being promoted in Caquetá. All told Fundación Natura was able to implement pilot activities in 11 farms with a total area of 587.9 ha of which 332 ha were affected by NZDZ activities.

Below is a list of activities and whether they qualify as avoided emissions or emission removals.

Activity	Type	Area (ha)	Avoided emissions or removals Life of project	Avoided emissions or removals 20 yr projection
Tax incentives to promote forest conservation	Avoided emissions	68.4	-	27,000
Restoration of degraded forest	Emission removals	13.1	-	65,817
Fencing off of forest remnants from cattle	Emissions removals	55.1		
Enrichment plantings in degraded forests	Emissions removals	13.3		
Establishment of silvopastoral systems	Emission removals	15.7		
Establishment of agroforestry systems	Emission removals	3.1		
Rotational grazing and pasture improvement	Emission removals	164	-	87,670
<b>Total</b>	<b>Emissions Avoided and removals</b>	<b>329</b>		<b>180,487</b>

Further information regarding the calculations behind Indicator 1 totals can be provided at USAID's request.