

## **BIOREDD+ BROCHURE**

### **Introduction to the USAID BIOREDD+ PROGRAM**

BIOREDD+ is the flagship environmental program of the United States Agency for International Development (USAID) in Colombia. USAID BIOREDD+ is currently developing a portfolio of Climate, Community and Biodiversity Alliance (CCBA) compliant REDD+ projects in the Colombian Pacific, to be registered at the Verified Carbon Standard (VCS) before September 2014. The projects seek to protect the existing natural resource base, while promoting the regeneration of currently degraded tropical forests in one of the world's mega-diverse regions. Via the REDD+ mechanism, poverty alleviation and the development of socially and economically sustainable development options for Afro-Colombian and indigenous communities that inhabit the region, go hand-in-hand with improved environmental stewardship.

### **The Chocó Biogeographic Region**

The Colombian Pacific is deemed to be one of the most bio-diverse areas of the world, with over 9,000 species of vascular plants, 200 mammals, 600 birds, 100 reptiles, and 120 amphibians, many of which are endemic to Colombia. It is characterized by a variety of ecosystems, transitioning from coastal mangroves and wetlands to *paramos* and high mountain forests.

This area forms part of the Chocó Biogeographic corridor, one of the 10 world's mega-diverse hotspots. This region alone accounts for more than 40% of the total vertebrate population of Colombia, some of which are threatened with extinction, including tamarins, spider monkeys, sloths, eagles (*Spizaetus isidori*), poison dart frogs (*Ranitomeya minuta*, *altobueyensis*), crocodiles (*Caiman crocodylus*), otters (*Lontra longicauda*) and peccaries. And it is not just animals that are in danger of extinction. Several trees species – including *Jigua Negro*, *Guayaquil*, *Abarco*, *Nispero*, cedar, mahogany and oak – found in REDD+ development areas such as Carmen del Darién, Riosucio and Río Quito, are all under threat.

The region is characterized by abundant wetlands, including a site listed in the Convention on Wetlands of International Importance (RAMSAR) in one of the REDD+ areas (Usaraga, Siviru, Pizarro in the Baudó River basin). Most of the mangroves in Colombia are located along the Pacific coast (232,391 hectares), largely around the municipalities of Tumaco, Francisco Pizarro, Buenaventura, Bajo Baudó and Litoral de San Juan. These critical ecosystems are highly impacted by the presence of local communities who degrade mangroves for firewood and to create land for subsistence cultivation. According to the latest report on deforestation in Colombia, the Bajo Mira y Frontera area (included in USAID BIOREDD+ Program's portfolio), is one of the country's "deforestation hotspots".

The region is largely undeveloped, without roads, and local communities still move around by canoe and on foot. Despite its relative inaccessibility, it has been subject to sustained natural resource degradation for the last 50 years, derived from selective logging, illicit crop cultivation, gold mining, extensive cattle ranching and the expansion of cash crops. The current average biomass density is deemed to be around 40%-60% of its potential.

### **The People and their Communities**

The Colombian Pacific is largely occupied and owned by ethnic Afro-Colombian and indigenous communities, organized in collective territories, with land titles and property rights recognized and protected by Colombian constitutional law. Their traditions, economy and livelihoods are the result of a long and profound interaction with their natural environment and through centuries of experimentation and learning they have accumulated a wealth of knowledge and developed strategies to meet their spiritual, cultural and physical needs. However, expanding populations and increased interaction with broader Colombian society

have exerted additional pressure on the region’s fragile resource base. Increased extraction of timber and other resources are increasingly apparent. Over the last decade or so, this has led to a search for more sustainable socio-economic development options, which can contribute to the conservation and restoration of ancestral forests while strengthening the culture and governance capacity of ethnic communities. They have identified REDD+ as one such option.

### **The USAID BIOREDD+ Program Portfolio**

USAID is financing BIOREDD+ as part of its Aid for Development agenda in Colombia, taking into account US/Colombian bilateral agreements on climate change and biodiversity. The USAID BIOREDD+ Program is a bona fide REDD+ project developer, with the additional advantage of having no explicit financial interest in the future value of emissions reductions. As a USAID initiative, BIOREDD+ also benefits from the novel mechanism created by the Development Credit Authority (DCA) that guarantees up to 50% of the value of invested funds. BIOREDD+ is already investing USAID funds to co-finance pilot investments in productive activities to help deter or diminish unsustainable logging.

The USAID BIOREDD+ Program portfolio of up to 14 REDD+ projects is being developed jointly with local communities who have clear legal title to their land and have themselves agreed to REDD+ project development. They will be implementing REDD+ project activities with the expectation of generating revenues in exchange for their conservation efforts. These include sustainable productive activities, social investments, governance strengthening, land use planning, and conservation enforcement mechanisms.

Appropriate cash crops can provide important sources of income to prevent logging, fight poverty and enhance livelihoods. Funds invested in social capital such as sanitation, health or education can fight poverty. The overall investment mix will vary from project to project, but in all cases it will serve to strengthen community control over natural resource use and associated conservation commitments and will comply with CCBA social and environmental safeguards.

### **REDD+ Scope and Distribution**

Activities are currently being developed in 29 autonomous communities (Afro-Colombian Councils and Indigenous Reserves) with constitutionally protected, legal title to their lands. If all of these initiatives come to fruition it will result in the development of 14 REDD+ projects on a total area of just over one million hectares, organized in four geographic nodes, with more than 60,000 potential beneficiaries (see table below for more details). As such, it is the largest REDD+ initiative of its type in the world.

### **Distribution of USAID BIOREDD+ Program Projects**

Node	Municipality	REDD+ project #	Community	Total Area (Hectares)	Number of Families	Number of People
<b>Tumaco</b>	Tumaco	1	CC Bajo Mira y Frontera	46,482	1,240	6,271
	Tumaco, Francisco Pizarro	2	CC Acapa	94,388	1,453	8,106
<b>Total Tumaco</b>			2 REDD+ Projects	140,870	2,693	14,377
<b>Buenaventura</b>	Buenaventura	3	CC Yurumanguí	54,776	529	2,918

		4	CC Cajambre	75,710	1,497	5,281
		5	CC Bajo Calima	66,724	690	3,538
			CC Bahía Málaga-La Plata	51,396	111	543
<b>Total Buenaventura</b>			3 REDD+ projects	248,606	2,827	12,280
	Cantón de San Pablo	6	CC COCOMACASANP	36,667	963	4816
	Medio Baudó		CC Río Pepé	8,192	294	1306
	Bajo Baudó/Litoral del San Juan	7	CC Concosta	73,034	829	4743
	Bajo Baudó	8	CC Sivirú	21,697	120	600
			CC San Andrés de Usaragá	13,060	54	333
<b>Chocó Sur</b>			CC Pizarro	7,132	305	1625
			CC Río Piliza	18,329	116	579
	Alto, Bajo Baudó	9	CC Acaba	174,253	2249	16091
	Bajo Baudó	10	RI Bellavista Unión Pitalito (Waunana)	29,260	147	647
			RI Río Bajo Grande (Emberá)	2,436	45	230
			RI Santa Rosa de Ijua (Waunana)	6,352	13	52
			RI Ordo Sivirú Aguaclara (Emberá)	4,040	25	116
<b>Total Chocó Sur</b>			5 REDD+ Projects	394,452	5,160	31,138
<b>Darién-Urabá</b>	Riosucio	11	CC Vigía de Curvaradó y Santa Rosa de Limón	33,909	36	461
			CC Río Montaña	25,006	68	428
			CC Apartadó-Buenavista	19,154	29	102

			CC La Madre	8,231	30	139	
			CC Chicao	18,026	58	368	
		12	CC La Larga y Tumaradó	107,064	164	754	
		13	CC Pedeguita y Mancilla	48,972	62	367	
	Chigorodó	14	RI Yaberaradó (Emberá Katío)	10,992	129	762	
			RI Polines (Emberá Katío)	2,743	63	302	
	Mutatá		RI Jaikerazavi (Emberá Katío)	32,482	89	530	
			RI Chontadural Cañero (Emberá Katío)	9,850	36	159	
	<b>Total Urabá Darién</b>			4 REDD+ Projects	316,429	764	4,372
	<b>TOTAL PACIFICO</b>			14 REDD+ Projects	1,100,357	11,444	62,167

### The Application of Cutting-Edge Science

Technology and science play a key role in project development. The USAID BIOREDD+ Program is deploying a novel combination of remote sensing tools and field inventory plots, under which carbon stocks will be better estimated, with less uncertainty, and lower risk. Active sensors using radar technology can penetrate the forest canopy and help estimate tree volume and structure with a combination of long and short wave detection. To accurately calculate canopy height and land elevation, especially in hilly areas where standard RADAR may confuse elevation with forest cover, USAID BIOREDD+ Program is using another active remote sensing technology: LIDAR.

Combining LIDAR with SAR has not yet been applied to REDD+ projects anywhere else in the world and takes carbon estimation to another level. This work is being undertaken by a team of scientists led by Dr. Sassan Saatchi, an internationally renowned NASA researcher, who has developed algorithms to combine SAR and LIDAR data and produce reliable estimates of carbon stocks associated with degraded forests. Remote sensing information will be further calibrated using on-the-ground, one-hectare inventory plots, which combine field data with adjacent 0.25 hectare plots to guarantee sampling validity at high confidence levels. This work is being carried out by the Medellin Botanical Garden.

To guarantee market acceptance of this new technological approach, a VCS methodology is being amended as part of the USAID BIOREDD+ Program activities, with the help of carbon industry leaders, Terra Global Capital.

### **Why invest in the USAID BIOREDD+ Program Portfolio?**

The REDD+ projects being developed by the USAID BIOREDD+ Program are expected to generate significant carbon benefits from both (i) avoided deforestation and (ii) regeneration of forests. Anticipated carbon revenues will support broader REDD+ sustainability via social and productive investments and improved local, democratic governance. The use of advanced technology and cutting-edge science, with VCS validation, guarantees investors primarily interested in emissions reductions far more accurate carbon estimates than have been possible to date, as well as more certainty over what is being purchased. For investors motivated more by corporate social responsibility, CCBA certification provides a “seal of approval” for broader social, environmental and biodiversity objectives. These projects are all designed to enhance the wellbeing of some of Colombia’s poorest communities, while helping protect one of the country’s most beautiful and bio-diverse forest endowments.

The USAID BIOREDD+ Program is developing Social and Economic Assessments, with the participation of recognized national and regional universities, research centers, and local communities, to determine sources of income (including timber), social investment needs, and profitable productive activities that may help deter or prevent logging. Indeed, the USAID BIOREDD+ Program is already investing in pilot productive activities – including artisanal fishing, certified cacao and ecotourism, for example – that will help sustain REDD+ commitments and ensure alternative income generation in the longer term. Strengthening local governance capacity is also an area in which BIOREDD+ is investing USAID resources to empower local communities to better manage their resources and achieve exacting conservation goals.

With all these pieces of the jigsaw in place, almost 40 experienced, in-country professional staff and a new DCA risk-sharing mechanism, investing in the USAID BIOREDD+ Program projects provides an unbeatable opportunity for mitigating climate change, protecting one of the most biologically diverse areas of the planet and fostering the development of Colombia’s Pacific Coast communities.