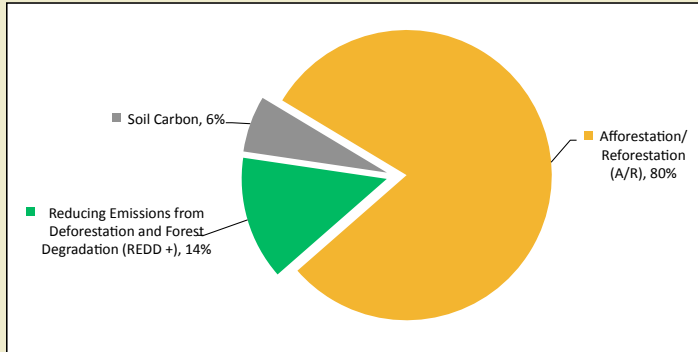


# The BioCarbon Fund Experience

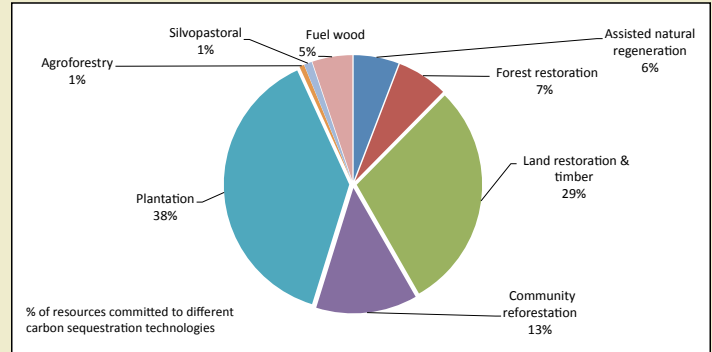
## Insights from Afforestation/Reforestation (A/R) Clean Development Mechanism (CDM) Projects

The **BioCarbon Fund (BioCF)**, housed within the World Bank's Carbon Finance Unit, is a public-private initiative mobilizing resources for pioneering projects that sequester or conserve carbon in forest and agro-ecosystems, mitigating climate change and improving rural livelihoods. Below is a summary of the report *BioCF Insights from A/R CDM Projects* to be released early 2011.

### Most BioCF resources are earmarked to A/R projects...

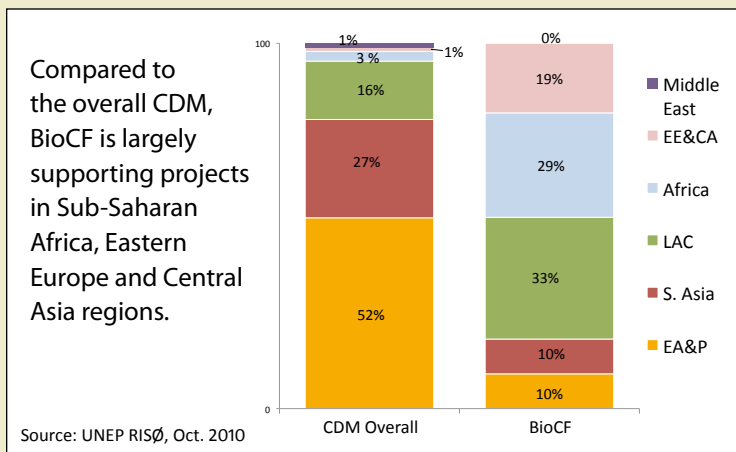


### ...in different carbon sequestration technologies.

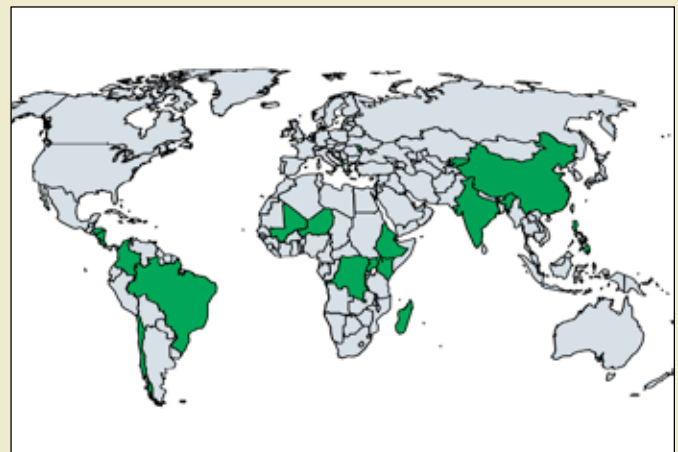


## Bringing Carbon Markets to Rural Areas in Developing Countries

### Tackling an equitable distribution...



### ...with 25 projects in 5 regions of the world.



## A/R Methodology and Project Evolution

The A/R sector has fewer registered projects compared to the overall CDM. The reasons for this are many. The modalities and procedures for these projects were created later than in other sectors. The methodology approval process was strict and time-consuming. Furthermore, A/R methodologies are very complex to apply.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	Total
Decisions on methodologies and procedures											
Other sectors	x										
A/R-CDM			x								
Approved methodologies											
Other sectors			10	22	29	22	21	11	17	17	149
A/R-CDM					1	4	8	3	1	1	18
Registered projects											
Other sectors				1	62	408	427	431	673	508	2510
A/R-CDM						1	0	0	10	6	17

The BioCF developed several of the approved A/R CDM methodologies. The BioCF has also created tools such as TARAM<sup>1</sup> for ex-ante estimation of CERs and SMART<sup>2</sup> to facilitate the application of methodologies.

<sup>1</sup> Tool for Afforestation and Reforestation Approved Methodologies. <sup>2</sup> Simplified Monitoring Afforestation and Reforestation Tool.

## CDM Regulations

Compliance with the A/R CDM requirements can be challenging...

At preparation:

- Unclear and overlapping applicability conditions make the selection of a suitable methodology difficult.
- Selecting a baseline and demonstrating additionality require a large amount of information, often unavailable.

At validation:

- Multiple revisions to methodologies delay validation of projects.
- Low capacity of projects to comprehend regulation and provide supportive documentation increases delay.

At verification:

- When projects deviate from the PDD changes to monitoring plan must be re-submitted for the CDM Executive Board approval. This can be time-intensive, delaying verification and credit issuance.

...and it takes time.

Average years BioCF projects spent on the CDM cycle

	Pre 2007	Post 2007
Preparation	3.9	1.4
Validation	1.2	1.1
Registration	0.3	0.4
<b>Total</b>	<b>5.4</b>	<b>3.0</b>

Projects initiated after 2007 spent less time in preparation as a result of increased experience and simplified methodologies. However, validation and registration timelines have remained the same.

## Land Issues

Carbon finance can contribute to increasing land tenure security in project areas.

- With the right institutional instruments in place to clarify carbon ownership and ensure adequate implementation, projects with different land tenure situations can effectively participate in the CDM.
- Land tenure securitization can be an incentive for farmers' participation in forest carbon projects.
- Of the 25 BioCF projects, four required land tenure clarification. Carbon finance has contributed to increasing the level of land tenure security of these projects, but this came at a cost and required time.

Project developers struggle with complying with CDM land eligibility rules.

- The A/R CDM "land eligibility rule" needs more flexibility to accommodate land-use decisions.
- Developers of multi-stakeholder projects struggle with getting farmers to sign contracts that are required for validation.
- Demonstration of land eligibility is challenging in the absence of official records and satellite imagery, as well as the low capability of projects to interpret data and information.
- The "1990 rule"<sup>3</sup> excludes areas with significant potential for A/R and results in scattered planting plots. This negatively affects the social, ecological and financial aspects of projects.
- By excluding areas that are temporarily stocked with carbon the "land eligibility rule" makes projects on agricultural lands in the tropics challenging.

## Greenhouse Gas (GHG) Accounting

Accounting for GHG emission reductions in forest carbon projects is complex.

- Project developers have little capacity to interpret the CDM Executive Board guidance on GHG accounting.
- Growth data, models, and parameters to substantiate the calculation of sequestered carbon are often unavailable. This affects projects that plant native species in particular.
- Estimation and monitoring of leakages and emissions is time- and data-intensive.
- Implementing monitoring plans can be challenging; it requires building and sustaining a project developer's capacity.

<sup>3</sup>The "1990 rule" requires demonstrating that the project lands have been deforested since at least 1990.

## Non-permanence

Temporary crediting (tCERs and ICERs)<sup>4</sup> as an approach to address non-permanence of A/R projects has a limited effectiveness.

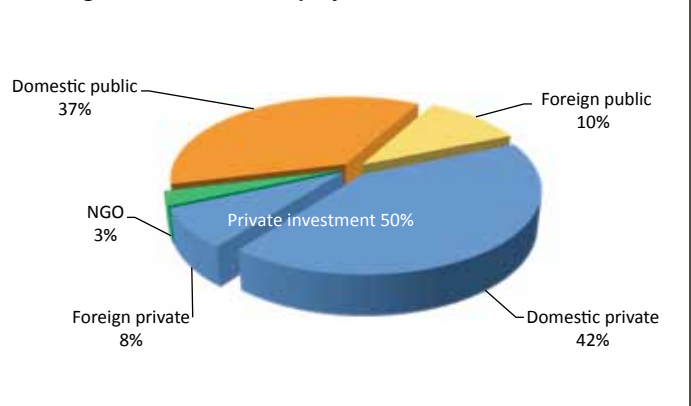
- All BioCF projects selected tCERs. This is due to the long life of ICERs which prevents developers from taking advantage of carbon price speculation.
- The price of forest credits is determined by the need to replace them with a permanent credit. This may not reflect the real costs of some projects.
- The replacement rule led to non-fungible credits, which negatively affects demand for forest carbon credits in markets such as the European Union Emission Trading Scheme.
- Temporary credits cannot be renewed beyond a project crediting period which limits the long-term carbon sequestration goals of some projects.

## Finance

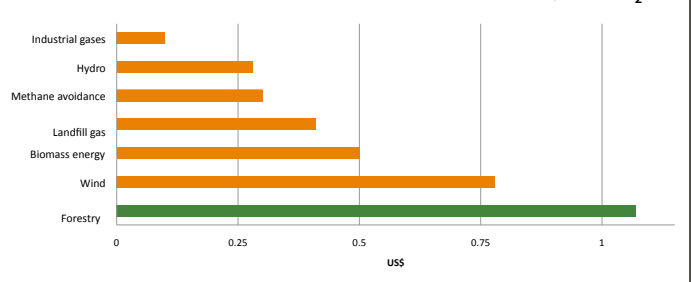
Although it represents a small portion of the total investment, carbon finance leverages financing.

- With its added revenue stream, carbon finance helps overcome investment barriers.
- Projects planting native species are often not financially viable despite carbon revenues; and therefore, additionality should be automatic.
- Each dollar of carbon finance catalyzed close to \$7 of underlying investment. Almost half of this is public funding.
- Most of the private investment comes from domestic sources such as equity from project entities and loans from local banks.
- Development costs for forest projects are higher than those of other sectors, but are gradually decreasing overtime as experience increases.
- Transaction costs of meeting regulatory requirements are on average 6% of project total investment, but this has also to be compared to the potential carbon revenues.
- Carbon revenues are often used to cover operation and maintenance costs. This could potentially be a problem if projects are delayed.
- Carbon revenues can increase farmers' motivation to maintain the forest use in the long run.

Leveraged finance in BioCF projects (n = 19)



World Bank project development costs per technology (\$/tCO<sub>2</sub>e)



## Institutions

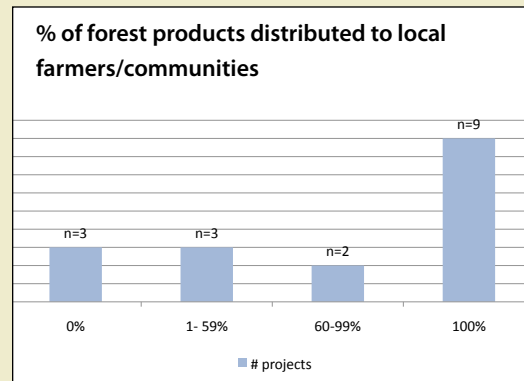
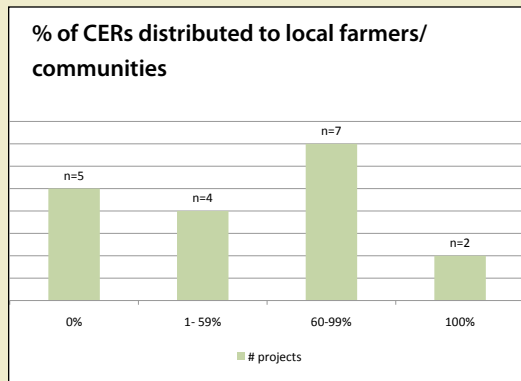
- Good governance is essential for the development of effective forest carbon initiatives.
- Complex partnerships with multiple participants face additional challenges in terms of communication and coordination.
- Designing and implementing forest carbon projects requires a wide range of local expertise including technical, social, legal, and managerial capacity.
- To allow projects to trade carbon as a commodity, carbon ownership agreements are created in line with the host country national legal framework, taking into account project land tenure situations.
- Having effective institutional arrangements, including land tenure agreements, in place to clearly define the rights and responsibilities of all project participants is essential to ensure the long-term commitment of all parties involved.

<sup>4</sup>tCERs are temporary credits and ICERs are long-term credits.

## Institutions (continued)

Designing and creating equitable benefit-sharing schemes that effectively improve local livelihoods is essential for the long-term success of forest carbon projects.

In most projects, the benefit-sharing scheme reflects a trade-off between carbon revenue and timber. For example, where the project entity uses 100% of the carbon revenues to cover its up-front investment, the farmers are entitled to 100% of revenues from timber or other forest products.



## Additional Socio-economic and Environmental Benefits

Forest carbon projects deliver many socio-economic and environmental co-benefits, including:

- Employment opportunities and new sources of revenues
- Access to markets for forest products
- Livelihood diversification
- Increased land tenure security
- Increased appreciation and stewardship of forestry
- Biodiversity conservation
- Land restoration and reduction of soil erosion
- Protection of water sources
- Improvement of water filtration
- Increased resilience to adapt to climate change

## Recommendations

The CDM Executive Board should consider:

- Addressing the non-permanence of forest carbon in a broader way by allowing for A/R projects to use alternative approaches to temporary crediting.
- Revoking the "1990 rule" and using more flexible criteria to exclude deforested lands (for example land deforested 10 years before the project starting date).
- Revising the "land eligibility rule" to accommodate land areas that are under significant land use pressure.
- Simplifying the additionality requirement for projects to which financial viability is not the main rationale.
- Continuing to simplify and consolidate methodologies, including facilitating methodology selection; allowing project developers to use default values for estimation of leakages and soil carbon content; and facilitating the project monitoring process.
- Simplifying the procedures for least developed countries, recognizing that some have weak forestry sectors.
- Broadening land use eligibility to go beyond Afforestation/Reforestation projects.
- Making the regulatory process more predictable by streamlining procedures and following strict timelines.

This brochure is a snapshot of the report *The BioCarbon Fund Experience: Insights from Afforestation and Reforestation Clean Development Mechanism Projects* to be released early 2011. It is a continuation of the World Bank's efforts to document its experience in Carbon Finance since 1999.



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