

## Forest Carbon Initiatives: Better Planning Needed for Maximizing Mitigation and Adaptation Synergies

**Summary:** The objective of this policy brief is to present an analysis of forest carbon initiatives (FCI) against four guiding principles to provide a basis for planning and promoting synergies between climate change mitigation and adaptation (M+A). The brief provides recommendations to maximize synergies in FCIs in general, based on experiences from the BIODEV project in West Africa.

### Key Messages

- Integrating mitigation and adaptation (M+A) in forest carbon initiatives (FCI) requires planning adaptation alongside mitigation using a synergistic approach that: reduces risk, minimizes trade-offs, benefits from multiple funding sources, reduces deforestation and forest degradation and could bring substantial adaptation and mitigation benefits at multiple scales in the land-use sector.
- Project developers, developers of ‘standards’, project beneficiaries and target groups, policy makers and donors have different motivations and responsibilities in promoting synergies in M+A.
- There is no comprehensive framework for planning and promoting M+A synergies in FCI due to the different spatial and temporal scales of outcomes and the complex interactions between M+A policies, funding, stakeholders’ engagement, forest health, etc.
- The health of forest ecosystems is important to guarantee the sustainable provision of carbon and adaptation benefits. Project developers, forest managers and policy makers should therefore take appropriate actions to reduce the risks of climate change on ecosystems health.
- Project developers, donors and developers of project standards should promote FCIs that generate net positive environmental and social benefits (in terms of enhancing the adaptive capacity of communities), and that motivate and incentivize community participation.
- Indicators for verifying, monitoring and certifying FCI should be defined by project developers and carbon standards, and understood from the beginning by donors and project target groups to ensure that both adaptation and mitigation outcomes are delivered.

## Forestry initiatives and Climate Change

Forestry is considered to be one of the cost-effective climate change mitigation and adaptation options, and consequently forestry activities have been designed, tested and implemented across different countries and regions. Forestry mitigation activities are twofold: first, activities that remove carbon from the atmosphere through the establishment of new carbon sinks through afforestation and reforestation (A/R) (e.g. the establishment of plantations, agroforestry systems and forest restoration); second, activities that prevent carbon emissions (e.g. forest protection and/or avoided deforestation and forest degradation). All these approaches are based on the provision of incentives to plant trees and conserve forest, thus increasing or maintaining forest carbon stocks. In tropical countries where forestry projects and programs are on the rise, agroforestry practices such as alley cropping, intercropping, silvopasture, woodlots, taungya systems constitute a major source of building carbon as well as resilience by smallholders for both mitigation and adaptation outcomes (Lasco et al. 2014).

From a climate change adaptation perspective, forestry activities are important. Forests provide a range of ecosystem goods and services, and an important safety net function, and are therefore relevant for reducing the vulnerability of societies to climate change. Forests also provide regulation services in reducing the impacts of climate variations ([Pramova et al. 2012](#)). However, forest ecosystems are themselves vulnerable to climate change, thus proper management strategies of forestry activities are needed for forests to adapt to climate change. These adaptation strategies include a range of biophysical approaches such as silvicultural management, enhancing landscape connectivity, fire control, forest protection, management of invasive species, gene bank management, and forest regeneration techniques; and social approaches such as increasing awareness, education, improving knowledge, etc. ([Kalame et al. 2009](#), [Guariguata et al. 2008](#)).

### **Synergies in Forest Carbon Initiatives: Meaning and Expectations**

The overlap between mitigation and adaptation measures in forestry initiatives leads to inter-relationships which require planning to maximize potential benefits and to minimize potential trade-offs. This brief draws largely on [Chia et al. \(2016\)](#) and defines FCIs as forestry activities, projects, programs and mechanisms aimed at capturing and storing carbon. Most of the initiatives use different international carbon standards and mechanisms as highlighted in Box 1. An important question is therefore to know how both mitigation and adaptation synergies can be achieved in forest carbon initiatives? First, carbon storage through avoided deforestation and forest degradation are more likely to be permanent if they integrate the adaptation needs of communities and forest ecosystems. Second, integrating adaptation needs is an incentive and motivation for local people to accept carbon projects, thus a foundation for sustainability. Third, adaptation projects that integrate mitigation activities may be able to benefit from carbon funding and capacity building opportunities, and donors may favour adaptation projects that produce global mitigation benefits. To reduce risks and minimize trade-offs in forest carbon initiatives, it is often necessary to plan adaptation alongside mitigation ([Matocha et al. 2012](#), [Locatelli et al. 2015](#)). Furthermore, planning and implementing adaptation and mitigation using a synergistic approach could bring substantial benefits at multiple scales in the land-use sector ([Daguma et al. 2014](#)).

## Box 1. Examples of standards and mechanisms for developing forest carbon initiatives

- **The Plan Vivo Standard** is community focused. Eligible activities include A/R, the restoration of degraded forest, agroforestry, and avoided deforestation.
- **The Verified Carbon Standards (VCS)** is carbon focused (carbon centric). Eligible activities include A/R, revegetation, improved forest management (IFM), avoided deforestation and degradation (ADD).
- **Climate Community and Biodiversity Alliance (CCBA) Standards** focuses on communities, biodiversity and other non-carbon benefits. Eligible activities include A/R, the restoration of degraded forest, agroforestry, and avoided deforestation.
- **The Gold Standard** is applied to projects that convert non-forest land to forest land through A/R, including agroforestry.
- **REDD+ Social and Environmental Standards (REDD+ SES)** facilitates and support the development of FCIs under the UNFCCC framework.
- **Social Carbon** is applied in A/R and ADD projects.
- **Carbon Fund Emission Reduction Program (ERP)** addresses key drivers of deforestation and forest degradation and barriers to carbon stock enhancement identified in the national REDD+ strategy and implemented mainly at the sub-national levels.
- **Clean Development Mechanism (CDM)** is one of the Flexible Mechanisms defined in the Kyoto Protocol where developing countries can earn certified emission reductions through A/R activities (amongst others) that can be traded in emissions trading schemes.

## Guiding Principles to Achieve Synergy in Forest Carbon Initiatives

Planning and ensuring the delivery of adaptation benefits from FCIs depends on how they are designed to take into account opportunities for minimizing trade-offs and enhancing potential synergies. To plan and promote synergies, the four principles outlined in Figure 1 should be considered at the international, national or sub-national levels, where *standards, frameworks, mechanisms* and *guidelines* are developed (see Box 1); and at the national, sub-national and local levels where *programs projects* are designed and implemented. While doing this, it is important to understand that the different stakeholders involved (such as project developers, standards developers, project beneficiaries and target groups, policy makers and donors) have different motivation and responsibilities in promoting synergies in M+A (see Table 1 and Box 2).

**Table 1. Different stakeholders have different roles in promoting synergies**

Guiding Principles to Achieve Synergy	Level	Responsible / Interested Stakeholder
1. Improve forest ecosystems health	Local and national	Project developers, policy makers, project beneficiaries and project target groups
2. Enhance adaptive capacities	Local and national	Project developers, project beneficiaries, project target groups, and policy makers
3. Verify, monitor and certify	Local and international	Project developers, project partners and standards developers
4. Promote synergistic outcomes	Local, national and international	Project developers, policy makers and standards developers

## **Box 2. Promoting M+A synergies in Burkina Faso: Example from BIODDEV project**

BIODEV is a biocarbon project funded by the Government of Finland and implemented by a consortium composed of the World Agroforestry Centre (ICRAF), the Centre for International Forest Research (CIFOR), the University of Helsinki (UH), and the University of Eastern Finland (UEF), along with national partners in Burkina Faso, Guinea, Mali and Sierra Leone. Biocarbon development refers to increasing biological or natural carbon through improved agroforestry and forestry management and tree planting. The goal of BIODDEV is to achieve sustainable development with long-term livelihood and environmental benefits for rural populations and the global community. In Burkina Faso, synergies between M+A were promoted through a range of interventions at the local level (in four pilot villages; namely Cassou, Dao, Kou, and Vrassan) as well as at the national level.

First, the project supported tree planting as a means to restore the health of degraded parklands, forest, and farm lands in and around Cassou. Adaptation consideration related to drought, temperature, pests and diseases guided the selection and production of tree planting materials. Farmers were trained and supplied with adequate material to propagate and plant. By 2016, about 450 000 trees of various species were planted using propagated seedlings, direct seeding, and assisted natural regeneration to enhance the carbon stock of the project area.

Second, the adaptive capacities of communities for adaptation and mitigation were enhanced by the establishment of Rural Resource Centres (RRCs). Communities used RRCs to get advisory services, trainings, and problem solving related to natural resource management. RRCs created avenues for promoting innovation, good governance, inclusive participation, decision-making, and mechanisms for prevention and resolution of conflicts on forest lands and resources. Moreover, extension services were provided to women to support the commercialization of non-timber forest products, especially karité (*Vitellaria paradoxa*) and néré (*Parkia biglobosa*).

Third, the BIODDEV project prepared a proposal for carbon certification using the Plan Vivo Standard for pursuing community-based land-use activities that are eligible for payments for ecosystem services (PES). The objective was to motivate communities in Cassou for active participation in a sustainable ecosystem restoration project, and management of their forest resources. The targeted activities for verification, monitoring and certification of carbon and non-carbon values are agroforestry, afforestation, reforestation, restoration, and assisted natural regeneration.

Lastly, training and policy support were provided to policy makers, research organizations and universities, extension officers, civil society organizations and farmers, in order to create some of the conditions to promote and expect synergy outcomes. Some of the interventions supported the establishment of RCCs, Burkina Faso national climate change committee and a diagnostic analysis of climate change policies. Several trainings were conducted on climate change M+A science, synergies, projects, mainstreaming into policies, as well as on carbon measurement, forest management, improved stoves, tree domestication, community enterprise development, etc.

### **1. Improving the health of forest ecosystems**

The health of forest ecosystems will provide, on the one hand, quality carbon offsets that are important for climate change mitigation, and on the other hand good quality ecosystem goods and services that are important for adaptation to climate change. In this context, assessing the potential risks for forest ecosystems as a result of climate change, accompanied by the design of forest management adaptation measures, is important during the planning of projects and programs – the CCBA standards provides some useful but insufficient guidance. Project developers and policy makers, as well as the project beneficiaries and target groups, will have more responsibility and interest to contribute at this level.

### **2. Enhancing adaptive capacities of communities for mitigation and adaptation**

Enhancing the socioeconomic or livelihood situation in and around project and program areas is important for both adaptation and mitigation. Many standards and mechanisms strongly underscore the need for projects and programs to deliver net social and environmental benefits. Some, such as CCBA and Plan Vivo, require social impact assessments and the design of measures for communities from potential negative impacts. Despite this opportunity for enhancing adaptation in FCIs, this perspective is not often explicitly highlighted as a means to deliver adaptation outcomes, but as a means to improve public acceptability of forest carbon initiatives. Therefore, project beneficiaries, project target groups, project developers and policy makers have the responsibility to explicitly include adaptation outcomes in projects.

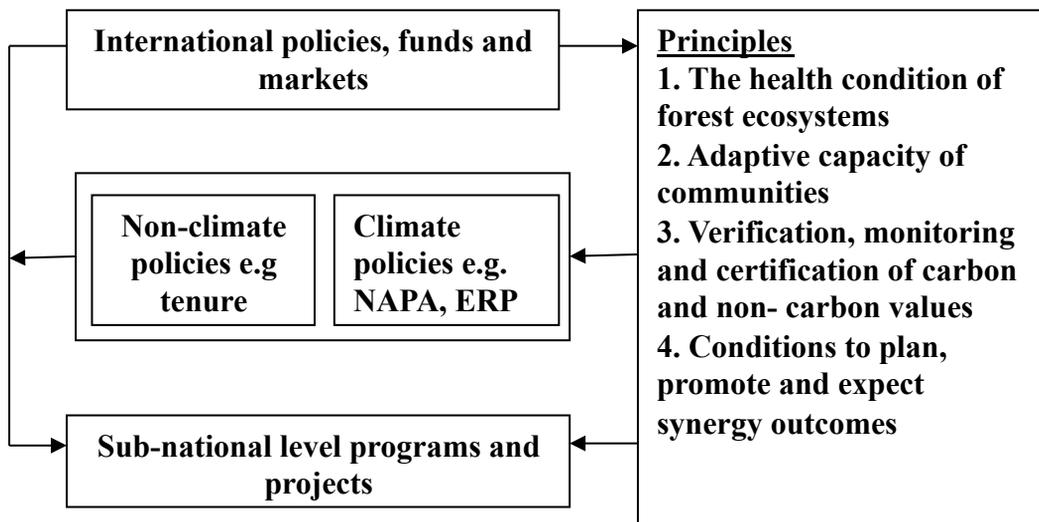


Fig. 1: Synergies between M+A: principles to consider when designing and implementing forest carbon initiatives.

### ***3. Verification, monitoring and certification of carbon and non-carbon values***

Of all the eight standards mentioned in Box 1, only the REDD+ SES and Social Carbon standards do not require direct monitoring, verification and certification of carbon benefits. Verification and certification of net carbon values is a means to demonstrate that forests have actually generated and stored carbon, which is relevant for climate change mitigation. For non-carbon values related to adaptation, livelihoods, biodiversity and other ecosystem services, only the VCS does not provide direct regulatory framework for monitoring and verification of performance. However, most standards give the possibilities for projects to combine with other standards to address relevant shortcomings. In this light, standards developers have the responsibility to ensure through verification and certification that carbon and non-carbon benefits are generated before donors can distribute funds. Prior to certification by standards developers, project developers and other project partners have the responsibility to ensure that project activities are producing the expected results.

### ***4. Conditions to plan, promote and expect synergy outcomes***

Some of the existing standards, notably Plan Vivo and CCBA, provide guidance to strengthen adaptation and mitigation outcomes, including multiple benefits linked to livelihoods. Some of the criteria used by CCBA to achieve synergetic adaptation and mitigation outcomes include: (i) Assessment of exposure and sensitivity of forest and other systems to climate change; (ii) Designing strategies to reduce impacts or enhance biodiversity and ecosystem services; (iii) Assessment and enhancing of livelihood resources/assets; and (iv) Verification, monitoring and certification of non-carbon values and benefits. At the very early stage of the project, project developers and standards developers have the responsibility to ensure that planned activities will lead to the promotion of mitigation and adaptation synergy outcomes. Policy makers can also play a role in creating the enabling environment by developing appropriate policies, plans and strategies.

## **Recommendations**

Not all projects and programs have the potential to promote synergies or minimize trade-offs. Therefore, to plan and expect synergy outcomes the following recommendations are important to consider:

First, there is need to identify the population to be involved in projects and programs in terms of (i) the degree of vulnerability (ii) their capacity and willingness to participate in projects and programs,

Second, the location of projects and programs is very important in determining the need for adaptation and the effectiveness of mitigation activities. Thus, it is critical to plan and expect synergy outcomes when areas with risks related to climate related changes overlap with the need for adaptation to climate variability and change.

Lastly, project developers will likely incur extra costs and needs for technical expertise taking into account the principles and criteria for planning and promoting adaptation and mitigation outcomes in their forest carbon initiatives.

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