



REDD in Community Forests - Oddar Meanchey

Distinctive features

The Oddar Meanchey REDD project is the outcome of a partnership involving local villages, the national Forestry Administration (FA), Pact, Terra Global Capital (TGC), and Community Forestry International (CFI). The project is located in the northwest Cambodian province of Oddar Meanchey. In recent years, the province's forests have been under constant and intense pressure from commercial and illegal logging, forest fires, economic land concessions, and encroachment. These issues, coupled with rapid economic growth, population expansion, migration, and land speculation accelerated deforestation throughout the province. Between 2002 and 2006, Oddar Meanchey lost 2% of its forests annually.

This project was specifically approved by the Council of Ministers (Decision no. 699 signed May 2008), with the principle that the project ensures carbon revenues are used to: (1) improve the forest quality, (2) provide maximum benefits to local communities which participate in project activities, and (3) study the potential area for new REDD projects in Cambodia. By protecting and regenerating deciduous and evergreen forests, the project is also expected to provide significant biodiversity and environmental benefits, including increasing the number of birds, reptiles, and amphibians, and protecting watershed services. The project is one of the country's REDD demonstration projects for Cambodia's National REDD Roadmap.



The project area consists of 13 discrete community forest areas that are managed by 58 villages over a total project area of 64,831 ha. Project actions include strengthening and clarifying land-tenure, community forestry patrols and fire control, community-based water resource development projects, sustainable farming systems, agricultural intensification, fuel efficient stove distribution, and assisted natural regeneration. The Royal Government of Cambodia is responsible for selling the carbon offsets on behalf of the community forest management committees. Operationally, the success of the project depends on strengthening community capacity to protect local forests through legal recognition and technical and financial support.

	Heading	Explanation
Locational factors		



Location	Oddar Meanchey Province, Cambodia
Spatial boundaries	<p>Project area: 67,853 ha</p> <p>Reference area: 738,757 ha</p> <p>Leakage monitoring area: 116,806 ha leakage belt (77,608 ha forested)</p> <p>Leakage management area: Leakage mitigation activities conducted but size of area not given</p>
Land cover	Lowland evergreen, semi-evergreen, and dry deciduous forests
Agents and drivers of forest cover change	<p>Agents: Migrants, private companies, local communities, hunters, soldiers</p> <p>Underlying drivers: Population growth, migration, unplanned and uncontrolled settlement development, insufficient law enforcement, market for luxury wood and agricultural commodities</p> <p>Proximate causes: Forest clearing for land sales, Conversion to cropland, Conversion to settlements, Fuelwood collection, Fire for land clearing, Hunters using fire, Illegal logging for commercial timber sale, Timber harvesting for local use, Large economic land concessions, Timber concessions</p>

Basic project features



Objectives	<ul style="list-style-type: none"> ▪ Sequester CO₂ ▪ Create 30-year income stream to enhance household livelihoods and natural resource management ▪ Enhance the hydrology in the upland watersheds of the Tonle Sap Basin ▪ Conserve biodiversity and endangered species.
Proponent/s	Forestry Administration of the Royal Government of Cambodia
Actors involved in project design and implementation and their roles	<ul style="list-style-type: none"> ▪ Forestry Administration (FA), responsible for selling carbon, contributing to project design, administration, forest protection, etc. ▪ PACT, assists FA in conducting project activities ▪ Children's Development Association, supports implementation in the field ▪ Terra Global Capital, responsible for carbon calculations, PDD design, data management, etc. ▪ Clinton Climate Initiative, technical partner and funds ▪ Sonnenschein Nath & Rosenthal LLP, provides legal advice ▪ Community Forestry International, contributes to

	<p>project design, research and monitoring</p> <ul style="list-style-type: none"> ▪ Technical Working Group – Forest & Environment, responsible for project review, controls and approvals ▪ Buddhist Monk’s Association, facilitates communication with community forestry groups ▪ Communities of Oddar Meanchey, protect and manage the forest; assist in planning and implementing activities to improve livelihoods and forest quality.
Tenure and Carbon rights holder/s	<p>Tenure: Community forests demarcated by the Forestry Administration</p> <p>Carbon rights: Government</p>
Upfront financing	<p>John D. and Catherine T. MacArthur Foundation, the Multi-Donor Livelihoods Facility jointly funded by DANIDA, DfID and NZAid, and the Clinton Climate Initiative (through a grant from the Rockefeller Foundation)</p>
Start date	<p>28 February 2008</p>
Crediting period	<p>30 years</p>

Baseline emissions



Methodology	<p>VCS VM0006 Carbon Accounting Methodology for Project Activities that Reduce Emissions from Mosaic Deforestation and Degradation</p>
Reference data (unplanned deforestation/degradation)	<p>Reference period: 1990-2008</p> <p>Types of data used: Six historical Landsat images were used, together with some high resolution images (SPOT 5) for validation and ground-truthing purposes</p> <p>1994: Landsat TM</p> <p>2000: CGIAR-SRTM; Landsat ETM+</p> <p>2002: Landsat ETM+</p> <p>2004: Landsat TM</p> <p>2006: Landsat TM</p> <p>2008: Landsat TM</p> <p>Non-remote sensing geographical and</p> <p>Spatial information: Forest cover, land use, road, village and administrative boundary maps</p>
Reference data (planned deforestation/degradation)	<p>Not applicable</p>
Stratification of project area	<p>2 forest strata: Deciduous and Mixed forests, Evergreen Forests</p>
Deforestation rate and location	<p>Historical</p> <p>3.03%</p> <p>Projected</p> <p>Scarcity factor applied to 3.03% historical rate</p>

	<p>Likely baseline scenario</p> <p>Forests throughout the province will lose forest cover at a rate of at least 3% per year.</p> <p>Modelling procedure</p> <ul style="list-style-type: none"> ▪ Deforestation for 5 periods between 1990 and 2006 were analysed using Landsat 5 and 7 images. SPOT-5 and airborne images were used for map validation. 3,000 reference points were used to produce maps from satellite images (66% used for software training, 33% for verification). ▪ Rates of future deforestation and forest degradation in absence of the project are assumed to be identical to the rates of historical deforestation during the 10 years before the project start in the reference region. ▪ Six spatial drivers were identified that affect the deforestation likelihood. These spatial drivers are used in a predictive statistical model to predict the location of future deforestation ▪ Factors for the modelling: Forest scarcity factor, which is initially 1, but gradually decreases as the proportion of remaining forest decreases.
<p>Carbon pools</p>	<p>Carbon pools included</p> <ul style="list-style-type: none"> ▪ Aboveground tree biomass ✓ ▪ Belowground tree biomass ✓ ▪ Non-tree woody biomass ✗ ▪ Litter ✗ ▪ Dead wood ✓ ▪ Soil ✗ ▪ Wood products ✓ <p>Estimation method</p> <ul style="list-style-type: none"> ▪ Biomass survey: 50x50 m PSPs – 61 in evergreen forest, 55 in deciduous and mixed forest, 36 in non-forest strata. Stratified random sampling approach applied. ▪ Social assessment conducted to quantify carbon stored in long-lived wood products.
<p>Carbon stock changes</p>	<ul style="list-style-type: none"> ▪ Non-tree biomass loss from forest clearance is excluded from the calculation as is the replacement value of rice paddies (the most common land use after forest clearance). The latter is less than the former, so the calculation is conservation. ▪ After the removal of carbon in aboveground live pool, carbon in below ground biomass pool disappears within project duration.
<p>GHG emissions</p>	<p>Emissions from project activities include CO₂ and CH₄ found in the loss of biomass due to fire prevention activities. Emissions from leakage prevention activities include N₂O from fertilizer used for agricultural</p>

	intensification.
Net emissions without project	<ul style="list-style-type: none"> ▪ 12,857,076 tCO₂e

Project GHG emissions reduction strategy



Scope	Avoid unplanned and planned deforestation, Sequester carbon from assisted natural regeneration activities
Activities	<ul style="list-style-type: none"> ▪ Secure forest management rights for project communities through legally-binding forest management agreements with them ▪ Support communities to develop sustainable forest and land use management plans ▪ Patrolling, sign posting, demarcating boundaries, etc. to protect forests from illegal logging ▪ Assisted natural regeneration and enrichment planting over ~ 10,000 ha ▪ Provide fuel-efficient stoves to 7,500 households ▪ Reduce use of wood burning to generate smoke to keep away mosquitos by providing large mosquito nets treated with insecticide to local households to cover livestock pens ▪ Provide technical and financial support to local farmers to develop sustainable techniques to increase land productivity, thereby reducing pressure on forests ▪ Water resource development: Investments in de-silting tanks, tube well drilling, drinking water system development, and installation of purification technologies ▪ Enhancing production, processing, and marketing of non-timber forest products including honey, rattan, and bamboo and resin oil, as livelihoods strategy ▪ Physical interventions (fire breaks), volunteer fire brigades, regulations and education to reduce fire impacts on forests.
Leakage mitigation strategy	<ul style="list-style-type: none"> ▪ Project works with participating communities to assist them in developing long term resource management plans, including for natural resources in the leakage belt under their control.
Non-permanence risk mitigation strategy	<ul style="list-style-type: none"> ▪ Building strong partnerships between the FA, CFMC, and local NGOs at the field (triage) and provincial level. ▪ Project activities that reduce risks of fires, illegal logging, etc.
Additionality	<ul style="list-style-type: none"> ▪ Most likely alternative land use scenario is a continuation of mosaic pattern deforestation in the project area ▪ The project produces no financial revenues other than carbon sales

- The project is a first-of-a-kind in Cambodia
- Project activities have not been implemented at scale in the project area and surrounding geographical areas


With-project emissions




Effectiveness of measures	Projected effectiveness varies with project activity, year and driver addressed.
Carbon stock changes	No additional calculations
GHG emissions	<ul style="list-style-type: none"> ▪ Decrease in N₂O and CH₄ emissions due to reduced occurrence of fire in project area conservatively omitted. ▪ Sources of non-CO₂ gases and fuel-related CO₂ gases estimated for clearing biomass for firebreaks, biomass burning as part of ANR, fuel used for forest patrolling, and N₂O emissions from increased fertilizer use.
Leakage	<p>Types</p> <p>Activity shifting: Expected from migrant encroachment, conversion to croplands and settlements, fuelwood gathering, forest fires for hunting and to clear land, timber harvesting for local use, and economic land and timber concessions.</p> <p>Market effects: Expected from illegal logging for commercial sale.</p> <p>Deduction</p> <p>23%</p>
Non-permanence risk	<p>Buffer</p> <p>20%</p>
Ex-ante estimated net greenhouse gas emissions reductions	<p>Total over crediting period: 6,143,676 tCO₂e</p> <p>Annual average: 204792.23 tCO₂e.</p> <p>Annual average per ha: 3.02 tCO₂e</p>
Monitoring of carbon stock changes and emissions	<p>Parameters</p> <ul style="list-style-type: none"> ▪i. Deforestation drivers, project activities and emission sources related to REDD project activities inside and outside of the project area. ▪ii. LULC class and forest strata transitions in the project area, leakage area and reference region ▪iii. Carbon stock densities in LULC classes and forest strata ▪iv. Carbon stock increases in the area on which ANR is performed ▪v. Any natural disturbances regardless of the cause of the loss <p>Methods</p> <ul style="list-style-type: none"> ▪i., ii. Various: Remote-sensing technologies validated with ground truthing data; Social assessments (for annual volume of fuelwood collected) ▪iii. PSPs

	<ul style="list-style-type: none"> ▪iv. Project records ▪v. Various: Social assessments for area disturbed by forest fire or converted to croplands and settlements, and for annual extracted volume of commercial timber <p>Frequency</p> <ul style="list-style-type: none"> ▪i., ii. Annually, every 2 years after validation of the project, or at baseline update (depending on parameter) ▪ iii. Every 2 years after project validation ▪iv. Annually ▪v. At baseline update <p>Etc.</p>
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Stakeholder identification and engagement

	Stakeholders identified	The Project Stakeholders are defined as any individual with a stake in the implementation and outcomes of the project. These include community forestry members, local authorities, and NGOs.
	Identification process	Knowledge from prior activities in the project area and actors expected to be impacted by project.

Full and effective participation

	Access to information and consultation	<ul style="list-style-type: none"> ▪ Village meetings used to share information with communities, due to high levels of illiteracy ▪ Children’s Development Association (CDA) and Buddhist Monk’s Association met repeatedly with local village members and leaders to discuss community forestry management issues and guidelines for participating in a carbon project. ▪ Contracts signed with both CDA and the Buddhist Monk’s Association to provide them resources to hold series of additional meetings with all project communities to discuss procedures and modalities of the REDD project including the concept, benefits and risks, and study the current situation and existing problems that communities are facing. ▪ Cambodian-language (Khmer) color brochure produced describing the project, distributed to all communities, and followed up with meetings. ▪ Monthly team meetings among local FA, NGO, and community leaders will be held to discuss issues, problems, and strategies and to share information. ▪ Quarterly meetings of the provincial working group and the Oddar Meanchey Community Forestry Federation will be used to inform local government representatives regarding project achievements and experiences.
	Participation in design and implementation	<ul style="list-style-type: none"> ▪ Series of meetings held to involve identified stakeholders in project design process ▪ Findings from community meetings used to formulate

	<p>contractual agreements with local communities and annual work plans for technical and financial assistance.</p> <ul style="list-style-type: none"> ▪ Communities secure tenure by signing conservation agreements and contribute to designing and implementing project activities on forest management and improvement and livelihood development. ▪ Local employment is a key component of the project. All community members are given an equal opportunity to apply for employment.
Feedback and grievance redress procedures	<ul style="list-style-type: none"> ▪ The project has developed policies and procedures providing guidance to project stakeholders on how to resolve resolving complaints and grievances. These project policies, including the “Policy on Complaints and Grievances for Project Stakeholders”, were been developed in 2011 and translated into Khmer. ▪ The project relies on existing and emerging institutions to mediate any conflict arising from project related activities. Conflicts that cannot be resolved at the level of the CFMC groups will be mediated by a mutually agreed upon, neutral third party, as stated in the Community Forestry Agreement signed by the Community Forestry Management Committees (CFMCs) and the FA.
Worker relations and safety	<p>The project will meet or exceed all applicable national labor laws and regulations covering worker rights. Documents explaining national rules on worker’s rights and the obligations both contracting parties will be made available in local languages when relevant. These materials will be placed and posted in easily accessible areas. Safety guidelines will be formulated to address risks that endanger worker health. The project will also subscribe to or create a life insurance program that would provide coverage for any project participant who dies or is disabled as a result of project related work.</p>

Communities



Without-project scenario	<p>Social appraisals carried out by CFI during 2006-2008. Population, migration, relationship with land and forest, and living standards are discussed</p> <ul style="list-style-type: none"> ▪ Communities will increasingly lose control over their community forests leading to economic hardship. In-migration and commercial land development will result in social conflicts. Clearance of forests will negatively impact water availability and the micro-climate. Declining rainfall and soil moisture will decrease the productivity of the predominantly rainfed agriculture.
With-project scenario	<p>Expected net benefits</p> <ul style="list-style-type: none"> ▪ Secure the land tenure of families in project communities ▪ Increasing employment opportunities and livelihoods

	<p>from natural resources on a sustainable basis</p> <ul style="list-style-type: none"> ▪ Strengthened community leadership, organizational and financial capacities ▪ Improved relationships with local government ▪ Resolution of resource conflicts ▪ Local communities educated on forest management and biodiversity <p>Possible negative impacts on other stakeholders and mitigation strategy</p> <p>The distance of community impact beyond the project zone is limited. Hunters and migrants, who in many cases are subsisting from illegal land-use activities, may be forced to seek alternative livelihoods, or move outside of the project area. Employment opportunities will be presented to avoid excluding these agents of deforestation from the project.</p>
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Impact monitoring	<p>Indicators</p> <p>Age, gender, and number of people per household, Location of where individuals immigrate from, Agriculture improvements, Number of boundary conflicts and resolutions, Species used and rates of extraction, Number of people working in significant employment sectors and NTFP income, Reason for land clearing, Wealth, Suggested project actions for community observed success, Percent of community informed about project, Cultural and other HCVs, Disaster impact on forest loss, Deforestation drivers and countermeasures, Population change, Distance travelled to collect wood, ANR success indicators</p> <p>Methodologies</p> <p>Household Survey, Participatory Rural Appraisals, Periodic Social Evaluations. Control group used.</p> <p>Frequency</p> <p>Every two years to coincide with verification</p>
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Biodiversity and ecosystem services



Without-project scenario	<p>Social appraisals were carried out by CFI during 2006-2008 and forest types and endangered species are discussed</p> <ul style="list-style-type: none"> ▪ Deforestation in the province will continue at the current rate. Forest degradation will reduce the density of the understory vegetation and disrupt the natural age distribution of trees. Rampant hunting and deforestation will lead to the extinction of the last tiger population in northwest Cambodia, and will increase the number of endangered species. Deforestation will lead to soil erosion and sedimentation of the Tonle Sap (Great Lake), as well as reduced aquifer recharge.
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<p>With-project scenario</p>	<p>Expected net benefits</p> <ul style="list-style-type: none"> Forest protection and regeneration will increase biodiversity in the forests, especially the number of birds, reptiles and amphibians, and the risks of farm pests will be reduced. <p>Possible negative offsite impacts and mitigation strategy</p> <p>Pressure from hunting or NTFP gathering could be displaced to outside project area. Activities to compensate communities for any loss in income or harvested forest products due to project-related restrictions will be implemented. Training will be provided on sustainable NTFP harvesting and hunters / charcoal makers will be encouraged to find alternative livelihoods. Former hunters will be employed as biodiversity monitors. Improved governance and patrolling will reduce illegal charcoal production.</p>
<p>Impact monitoring</p>	<p>Indicators</p> <p>Proportion of villagers who have heard about project conservation activities, Number of ha of degraded forest where assisted natural regeneration activities undertaken, Number of ha burned, Number of sightings of key indicator species, List and location of known species in HCV areas, Invasive species, NTFPs</p> <p>Methodologies</p> <p>Frontline SMS monitoring by local communities, Socio-economic sample survey, Sightings, camera traps</p> <p>Frequency</p> <p>Mostly annually; Every two years to coincide with verification</p>

Progress

	<p>Validation</p>	<p>VCS validation report issue date: 22 August 2012 CCBA validation report issue date: 17 October 2012</p>
	<p>Verification</p>	<p>VCS verification period and report issue date: 28-February-2008 to 28-February-2012; 29 August 2013 CCBA verification period and report issue date: February 28, 2008 – February 28, 2012; 28 August 2013</p>
	<p>Credits issued</p>	<p>Number: 48,000 issued As of: 27 February 2016</p>

Further information



- VCS Project Database:
<https://vcsprojectdatabase2.apx.com/myModule/Interactive.asp?Tab=Projects&a=2&i=904>
- CCBA Projects
<http://www.climate-standards.org/?s=oddar>

Documents reviewed

VCS and CCBA: PD, PDD, Validation and Verification reports, Monitoring reports, Monitoring Plan
Project pamphlet