



Monitoring of BioCF Projects

Rama Chandra Reddy
Carbon Finance Unit, The World Bank

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Harnessing the carbon market to sustain ecosystems & alleviate poverty



- Portfolio overview
- Organization of monitoring
- Monitoring elements
- Monitoring at project level
- Training and capacity development
- Monitoring priorities at project and portfolio levels
- Monitoring of co-benefits



Overview of BioCF Portfolio



- BioCarbon Fund portfolio is organized in **two tranches** and covers **three project types** – Afforestation and reforestation, REDD, agricultural soil carbon

- Afforestation/ reforestation projects – 22
 - 6 projects registered
 - 16 projects in validation

- REDD projects
 - 3 projects
 - 2 additional projects are proposed for inclusion

- Agricultural soil carbon projects
 - 1 project
 - 3 to 4 agricultural soil carbon projects under consideration



Registered CDM A/R projects of BioCF Portfolio



■ Registered CDM A/R projects:

- Albania: Assisted Natural Regeneration
- China: Facilitating Reforestation for Guangxi Watershed Management in Pearl River Basin
- China: Reforestation on Degraded Lands in Northwest Guangxi
- Ethiopia: Humbo Assisted Regeneration
- Moldova: Soil Conservation Project
- Uganda: Nile Basin Reforestation # 3



Ethiopia : Humbo Assisted Regeneration Project



- Africa's first large-scale A/R project and Ethiopia's first CDM project
- Developed by World Vision Ethiopia and World Vision Australia , in cooperation with local government
- Restores 2,728 hectares of degraded forest in Southwestern Ethiopia through assisted natural regeneration
- Expected to generate 880,000 tCO₂e (by 2036); BioCF purchase of 165,000 CO₂e until 2017 is expected to provide an income stream of more than US\$ 700,000 to local communities
- Co-benefits include prevention of soil erosion, supply of fuelwood, fodder and small timber to communities
- Assisted natural regeneration of forest involving communities - 2002 to 2010



Organization of Monitoring



- **Monitoring at project level: Project entity**
 - Project management unit is responsible for monitoring
 - Monitoring of activities that influence projects
 - Establishment of permanent sample plots
 - Measurement of carbon pools, emissions and leakage
 - Calculation of GHG removals by sinks
 - Preparation of monitoring reports
 - Support to verification

- **Monitoring at portfolio level: BioCarbon Fund**
 - Provision of monitoring guidance
 - Organization of training programs
 - Development of data collection and reporting formats
 - Review of monitoring reports
 - Provision of monitoring support - documentation, communications



Monitoring Elements at Project Level



- Monitoring of A/R projects covers:
 - Project boundary
 - Forest establishment
 - Forest management
 - Net GHG removals by sinks
 - Project emissions
 - Leakage
 - Quality control and quality assurance

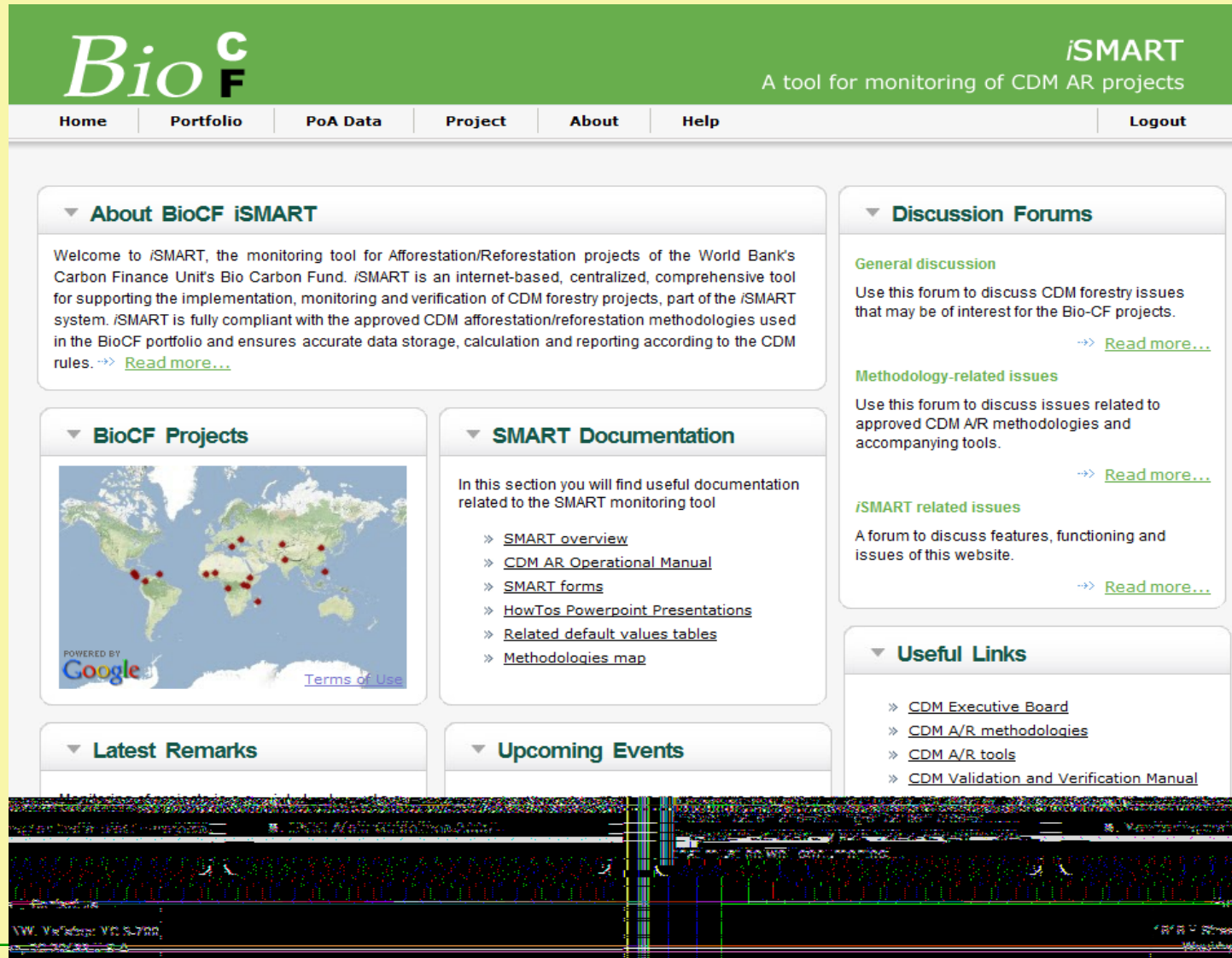


SMART – Simplified Monitoring AR Tool



- SMART is a database system in development to support the monitoring of BioCF AR projects to:
 - Support organization of project data and information
 - Calculate GHG removals by sinks
 - Support project monitoring and verification
 - Serve as permanent database for A/R projects
- SMART comprises:
 - Data collection formats
 - Reporting formats
 - Monitoring report templates
 - Operations manual
- Excel spreadsheet formats
- Calculation modules
- Quality assurance and quality control measures
- Internet-based monitoring system





The screenshot shows the iSMART web interface. At the top, there is a navigation menu with links for Home, Portfolio, PoA Data, Project, About, Help, and Logout. The main content area is divided into several sections:

- About BioCF iSMART:** A welcome message explaining the tool's purpose and a link to "Read more...".
- BioCF Projects:** A world map showing project locations with red dots, powered by Google, with a "Terms of Use" link.
- SMART Documentation:** A list of links including "SMART overview", "CDM AR Operational Manual", "SMART forms", "HowTos Powerpoint Presentations", "Related default values tables", and "Methodologies map".
- Discussion Forums:** Three sub-sections: "General discussion", "Methodology-related issues", and "iSMART related issues", each with a "Read more..." link.
- Useful Links:** A list of links including "CDM Executive Board", "CDM A/R methodologies", "CDM A/R tools", and "CDM Validation and Verification Manual".
- Latest Remarks:** A section for recent updates or comments.
- Upcoming Events:** A section for future events.

Project Data



iSMART

A tool for monitoring of CDM AR projects

[Home](#) | [Portfolio](#) | [PoA Data](#) | [Project](#) | [About](#) | [Help](#) | [Logout](#)

Project Data Form

[Open Map View](#)

* Required Fields

Project ID *	<input type="text" value="T1-07"/>
Project Name *	<input type="text" value="Ethiopia: Humbo Assisted Regeneration"/>
Country *	<input type="text" value="Ethiopia"/>
Methodology *	<input type="text" value="AR-AM0003V4"/>
Total Area *	<input type="text" value="2728"/> ha
Operational Period *	<input type="text" value="60"/> years
Start Date *	<input type="text" value="12/01/2006"/>
End date *	<input type="text" value="12/01/2036"/>
Crediting Period *	--Renewable-- <input checked="" type="radio"/> Fixed <input type="radio"/> Once <input type="radio"/> Twice
No. of discrete areas *	<input type="text" value="312"/>
Stratification Criteria *	(List all elements that will be used as stratification criteria, such as site class, precipitation, topography, aspect, slope class, altitude, etc.). <input type="text" value="soil type"/> <input type="text" value="soil depth"/> <input type="text" value="rainfall"/> <input type="text" value="erosion intensity"/> <input type="text" value="anthropogenic pressure"/>
Substrata *	(List all elements that will be used for substrata definition. E.g. species, age class, etc.) <input type="text" value="species"/>
Pools relevance	<input checked="" type="checkbox"/> Trees <input type="checkbox"/> Litter <input type="checkbox"/> Soil organic carbon <input type="checkbox"/> Dead wood <input checked="" type="checkbox"/> Below ground biomass <input type="checkbox"/> Shrubs
Project Emissions Relevance	<input checked="" type="checkbox"/> Fossil fuels <input checked="" type="checkbox"/> Biomass burn <input type="checkbox"/> Site Preparation <input type="checkbox"/> Livestock increment <input type="checkbox"/> Nitrogen fixing species <input type="checkbox"/> Fertilization <input type="checkbox"/> Nitrogen fixing non species
Leakage Relevance	<input type="checkbox"/> Fossil fuel consumption <input checked="" type="checkbox"/> Grazing displacement <input type="checkbox"/> Agriculture displacement <input checked="" type="checkbox"/> Fuelwood displacement <input checked="" type="checkbox"/> Fencing <input type="checkbox"/> Forage production
Precision Level (in %) *	<input type="text" value="0"/>
Confidence Level (in %) *	<input type="text" value="0"/>
Comments	<input type="text" value="Ethiopia: Humbo Assisted Regeneration Beta Testing Data"/>

Administrative Section

Access List

<input type="text" value="Dany Jones"/>	▲
<input type="text" value="OIS TEST"/>	▼

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1818 H Street, N.W., Malstop, MC 3-700
Washington, DC 20006 U.S.A.

Data on Discrete Land Parcels



Bio C F iSMART
A tool for monitoring of CDM AR projects

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[Stratification](#) [Site Preparation](#) [Planting schedule](#) [Survival check](#) [Silviculture](#) [Events](#)

Data >

Quality Control

Reports >

Parameters

References

Discrete Area Data Form

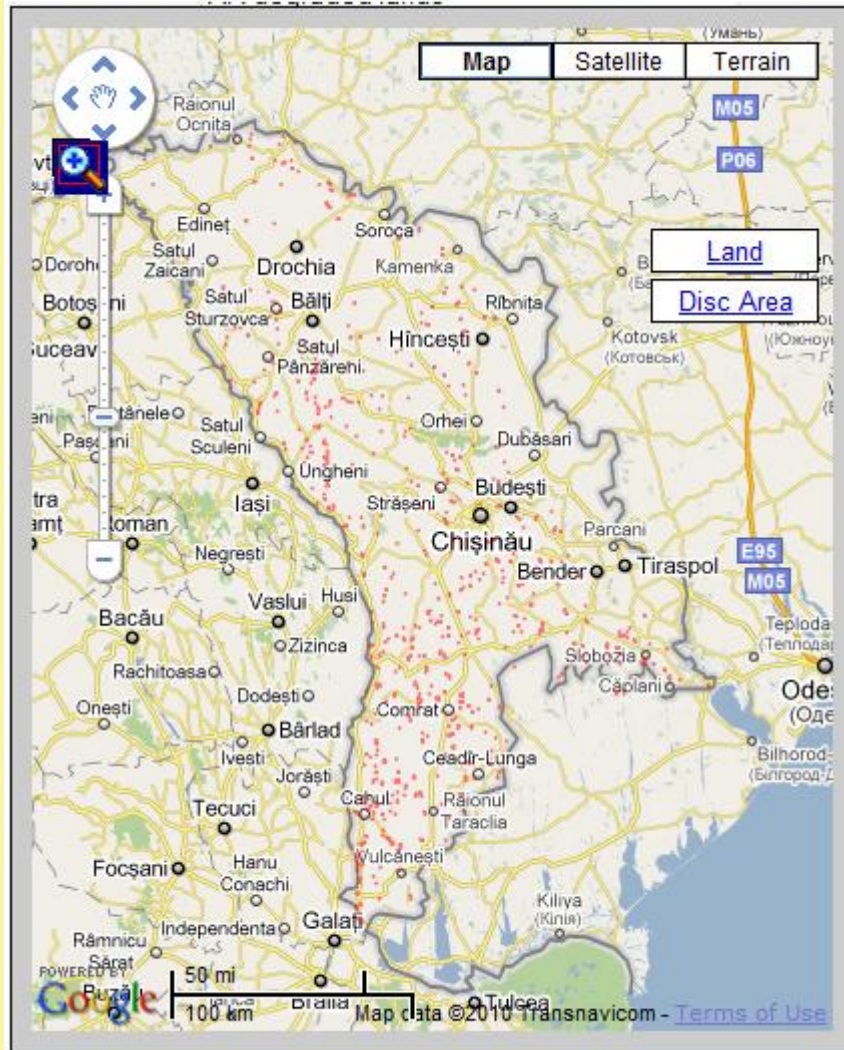
Discrete Area ID *	<input type="text" value="ET-01"/>
Area Location (most general area, e.g. province) *	<input type="text" value="Gefeta and Longena"/>
SubLocation (e.g. town) *	<input type="text" value="Gefeta and Longena"/>
SubLocation (most specific area, e.g. farm) *	<input type="text" value="Near Yoseph Terrara"/>
SubLocation	<input type="text"/> <input type="text"/>
Start date	<input type="text" value="12-01-2006"/>
Ownership *	<input type="text" value="Abela Gefeta and Longena cooperatives"/>
Areas (in ha) *	<input type="text" value="234"/>
Previous land use (e.g. cropland , grassland) *	<input type="text" value="Communal grassing and fuel wood collector"/>
Allotted stratum *	<input type="text" value="S1"/>
Soil type *	<input type="text" value="NA"/>
Erosion class *	<input type="text" value="NA"/>
Site class *	<input type="text" value="NA"/>
Species planted *	<div style="border: 1px solid gray; padding: 2px;"><ul style="list-style-type: none">Acacia syallAccacia NiloticaAlbizia gumiferaBalanitus eaegpticaCommiphera sppCroton MycrostachusFicuss sppGraveliaGravelia RobustaOlea fricanaRubus Apeatalus</div>
Comments (Use this field to record any observation related to the discrete area that you consider relevant for the monitoring process.)	<input type="text" value="This is a Ethiopia Beta Testing Data"/>

Geographic Data:

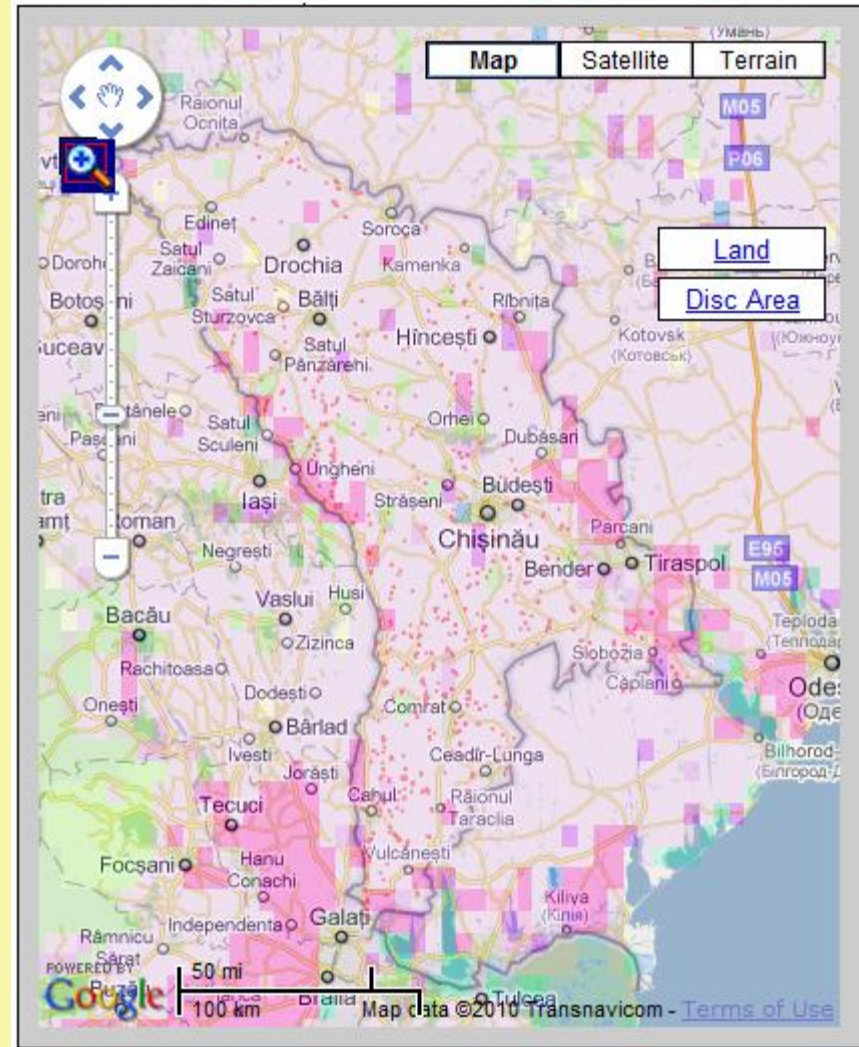
Moldova Soil Conservation Project



Moldova Soil Conservation Project - Discrete Area Layer



Land Use Layer (can overlay any type of data)



- Data >
- Quality Control >
- Reports >
- Parameters
- References

Sample Plot Data

Sample plot ID *

Date of Sample Plot Layout *

Carbon Pool

Plot Form *

Plot Type *

Line 01 direction

Line 02 direction *

Bisecting line length

Co ordinates Latitude : Longitude : [Add](#) | [Remove](#)

Area Affected * [Calc. Area](#) (in ha)

Verifications

Date of Measurement Verification *

Recheck Date

Name of the Person InCharge

Comments (Use this field to record any observation you consider relevant for the monitoring process.)

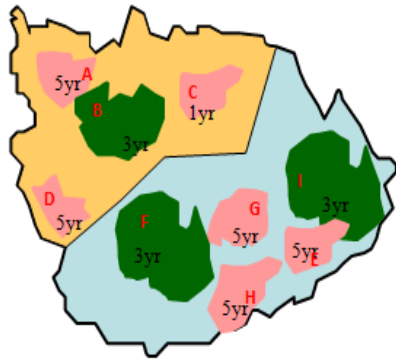
HOW TOs – Help Documentation



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Stratify a project



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Measure trees plots



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Establish permanent trees plots



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



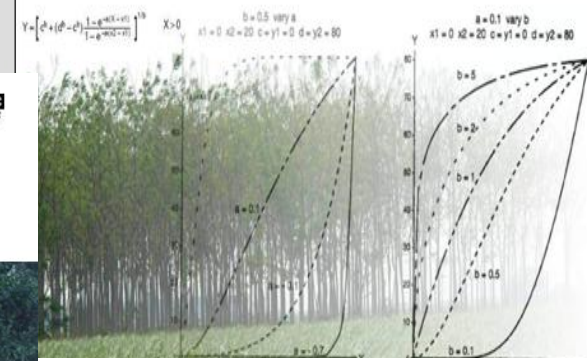
HOW TO Monitor fuel wood collection



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Build allometric models and define Biomass Expansion Factors (BEF)



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Monitor grazing displacement



The World Bank – Bio Carbon Fund
Monitoring CDM afforestation / reforestation project activities
Monitoring HOWTOS



HOW TO Monitor biomass burning



Training and Capacity Building



- Audio and videoconferences with project entities
- 5 Regional training sessions on monitoring organized for different regions in Nicaragua, Moldova, Kenya, DRC and Madagascar
 - Instruction on monitoring steps and implementation
 - Capacity building for field monitoring
 - Practice sessions on sample plots layout and measurement
- Guidance on data collection and reporting
 - Data formats and reports
- Organization of database and reporting
- Preparation of monitoring reports



Monitoring Priorities at Project Level



- **Monitoring capacity**
 - Organization of long-term monitoring
 - Institution of regular monitoring and reporting procedures
 - Requirement of trained personnel with knowledge of forest inventory
 - Retaining project staff and training of new personnel

- **Forest management**
 - Collection and organization of forest management and growth studies relevant for the project
 - Need for development of local forest growth models
 - Monitoring of carbon pools, emissions and leakage at intervals specified in the methodology



Monitoring Priorities at Portfolio level



- Support to project entities in project monitoring and data collection
- Standardization of data and reporting formats
- Regular communication with project entities
- Periodic training and support to ensuring timely monitoring of forest management activities
- Providing information in local languages
- Securing timely and accurate reports on carbon deliveries



Monitoring of co-benefits



- **Socioeconomic benefits:** Improvement of livelihoods and employment
 - Distribution of carbon payments to communities
 - Employment generation
 - Additional income from alternative activities
 - Empowerment of communities

- **Environmental benefits**
 - Conservation of biodiversity, expansion of natural habitat, reconnecting forest fragments
 - Protection against soil erosion
 - Protection against forest fires
 - Soil and water conservation





Thanks You!

rreddy1@worldbank.org
www.carbonfinance.org
www.biocarbonfund.org