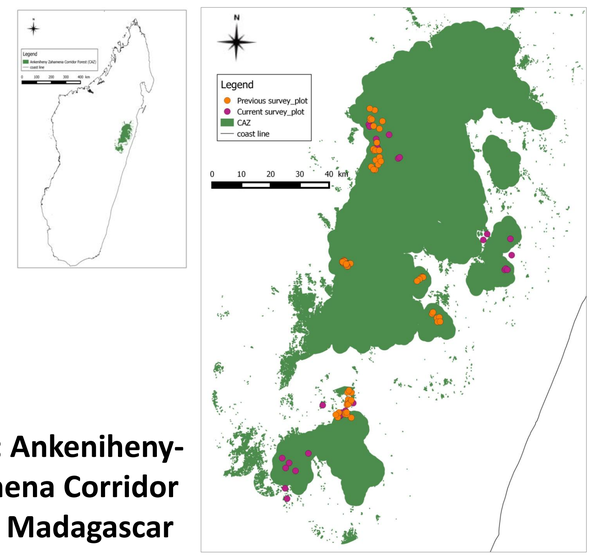
INCREASING BENEFITS FOR LOCAL COMMUNITY AND NATIONAL DEVELOPMENT THROUGH APPLICATION OF ADVANCED CARBON SURVEYS IN HUMID TROPICAL FOREST LANDS

Mieja Razafindrakoto (1), Andriambolantsoa Rasolohery (2), Ranaivoson Ntsoa Tenihary (1), Andry Andriamananjara (1), Tantely Razafimbelo (1), Jeannicq Randrianarisoa (2), Andrisoa Rianahary (1), Mihajasoa Razafisoazara (1), Andrianotahina Harivony (1), Tiana saneho (1), Tantely Randriarilala (1), Jennifer Hewson (3), Razakamanarivo Herintsitohaina (1)

(1) Laboratoire des RadioIsotopes, BP 3383, Route d'Andraisoro, Antananarivo 101, 2) Conservation International, Antananarivo, Madagascar; 3) Conservation International, 2011 Crystal Drive, Suite 500, Arlington, VA 22202, USA

CONTEXT

In 2013, the Government of Madagascar and Conservation International submitted a Project Design Document (PDD) to the Verified Carbon Standard (VCS) program to implement a project, *Reduced Emissions from Deforestation in the Ankeniheny-Zahamena Corridor (CAZ)*, to address the high rates of deforestation that threaten the forest in this part of Madagascar. Carbon surveys were carried out in 2008 as part of the project design process and these surveys will be updated in 2017. Under a recent ESPA project, *Can Paying for Global Ecosystem Services Reduce Poverty* (P4GES), an in-depth assessment of carbon stock in the main carbon pools was carried out in 2014 in multiple areas of CAZ. This in-depth assessment used advanced methodologies which, in turn, can support the VCS project update planned for 2017. In this poster we compare the methodologies and results of the two surveys as summarized in the table below.



Map 1: Ankeniheny-Zahamena Corridor (CAZ), Madagascar

METHODOLOGY

	Previous survey, 2008	Recent survey, 2014
	63 sites	77 sites
	Use of allometric equation (Vieilledant & al.2012)	
Aboveground biomass (AGB)	**Wood Specific Gravity** (WSG): **standard value** (0.61)	WSG: **updated value**
Dead wood (DW)	Equation of Winrock international, 2008	
Belowground biomass (BGB)	Use of **standard equation** (Cairns & al., 1997)	**Root:Shoot ratio** from new field work (Photo1)
Soil up to 100cm depth (SOC100)	Excluded to conservatively underestimate emissions	**Soil sampling** in $1m^3$ pit in the field (Photo2) **Laboratory works** (Photo3)

Photo 1: Root sampling

Photo 2: Soil sampling by cylinder for bulk density

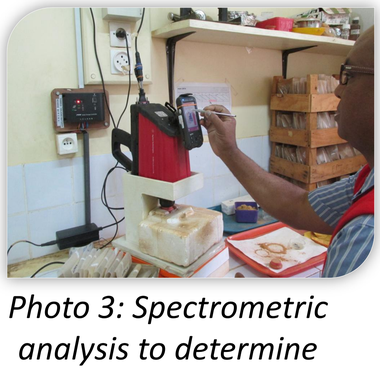


Photo 3: Spectrometric analysis to determine carbon content

For more information Scan the code

RESULTS

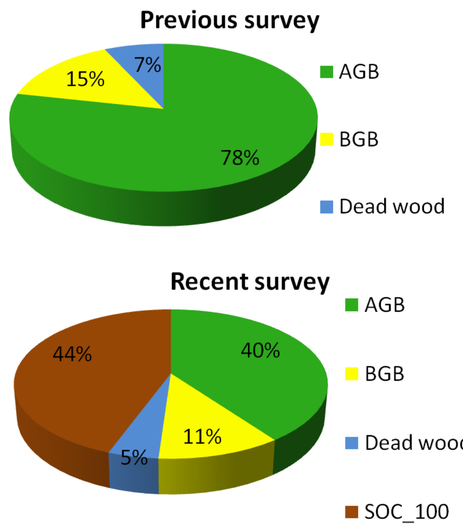


Figure 1: Contribution of each pool in carbon storage

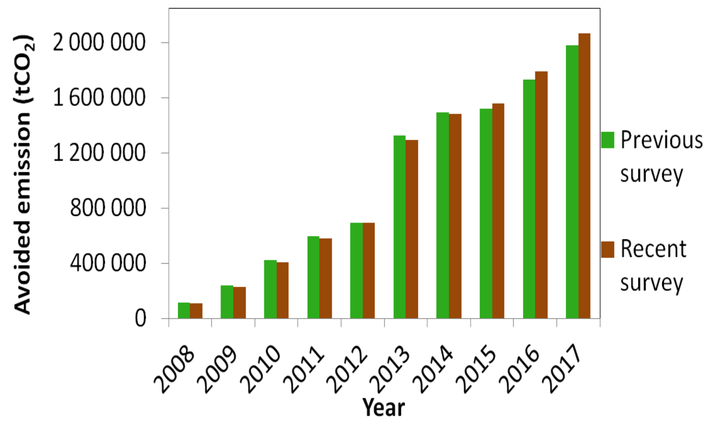


Figure 2: Ex ante annual avoided emissions (t CO_2) for the two surveys

- Similar importance of BGB and DW pools for the two surveys.
- Recent survey highlights the amount of **carbon stored in soil (44%)** compared to **AGB (40%)** (Figure 1)
- Potential avoided emissions in CAZ (10 years): **10 119 728.55 tCO_2** and **10 213 927.66 tCO_2** respectively for previous and recent survey.
- **9 500 tCO_2** : potential additional **annual** value of carbon credit

CONCLUSION

The in-depth assessment carried out during the P4GES project highlighted the contribution of the SOC pool in carbon storage estimation. These types of in-depth assessments can further enhance the calculation of avoided emissions in REDD projects and resulting importance in the carbon market; potentially providing even more benefits for local people.

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http://www.perr-fh-mada.net

CONTACTS
mieja.razafindrakoto@gmail.com; razakamanarivo@gmail.com; arasolohery@conservation.org

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