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STANDARDIZATION OF REDD MONITORING TECHNOLOGY TO LEVEL THE PLAYING FIELD

by Beth Zgoda*

To meet the goals of the United Nations Framework Convention on Climate Change (“UNFCCC”), the nations of the world must address the approximately seventeen percent of global greenhouse gas emissions from deforestation.¹ Reducing emissions from deforestation and degradation (“REDD”) will require transparent accountability for national mitigation action and effective technology sharing.² Remote-sensing technologies—primarily utilizing satellite imagery—are an effective means of monitoring and verifying REDD.³ Although many developing countries currently lack the capacity to make use of remote-sensing technology,⁴ the technology is readily available to governments and non-governmental organizations through software programs that analyze publicly-available data sets produced by existing satellites.⁵ With this in mind, the REDD Web Platform of the UNFCCC website already provides links to information about remote sensing, including, among other things, technical assistance for data collection and training.⁶ The UNFCCC Parties must further encourage the use of effective remote-sensing monitoring of REDD in two ways. First, they must reach out to all developing country parties to ensure that they receive capacity-building training and funding. Second, they must develop uniform standards for data collection and processing so that the software programs under development can produce results easily comparable to each other.


Many developing nations lack the technical capacity and skills to make use of available technologies.⁷ Currently, the UNFCCC has a Regional Capacity Building Project for Sustainable National Greenhouse Gas Inventory Management Systems in Southeast Asia (“SEA GHG Project”).⁸ The SEA GHG Project is focused on building capacity within eight Southeast Asia countries by strengthening their institutional and technical capacity to monitor national GHG data, including training on software that incorporates remote-sensory imaging into its data analysis.⁹ This project is scheduled for completion in September of 2010.¹⁰

The UNFCCC REDD Web Platform states that a replication of the SEA GHG Project is scheduled for 2010 in Africa.¹¹ The SEA GHG Project should coordinate with the Australian government’s National Carbon Accounting System, which is already supporting capacity building for monitoring in several developing countries, including in Kenya, Tanzania, Guyana, and Cambodia.¹² In addition, the SEA GHG Project should be replicated in South and Central America. Efforts in South America should also incorporate the Brazilian government’s experience, as Brazil has already developed its remote-sensing technological skills and made its datasets publicly available.¹³

The Copenhagen Accord recognizes the need for a mechanism to provide financing from developed to developing countries for REDD.¹⁴ Any REDD-financing mechanism should invest in hiring

teams within each country, or within partnerships of countries, providing them with the available technology and training. Much of the technology, including data sets from satellites and programs to process the information, is available free or at low cost; many of the programs can run on a standard desktop computer.¹⁵ The funding would primarily go to salaries and training. As the teams for monitoring remotely would be smaller than teams needed for on-the-ground monitoring, remote-sensing will not only increase accuracy but decrease costs for monitoring REDD progress in developing countries.

One way for developing countries to fund ongoing monitoring programs is to allow the sale or trade of their carbon credits on a worldwide carbon market. For such a market to function properly, the carbon credits must be based on uniform standards of measurement.¹⁶ Several different countries and organizations are developing software for monitoring REDD from satellite data.¹⁷ Unfortunately, there are no uniform standards for the data produced by the satellites and for the output and input of the REDD-monitoring software programs,¹⁸ which will hamper any capacity-building efforts by reducing the ability to trade REDD credits. Without uniform standards, each satellite dataset and software program may lead to different results for the same area. The lack of standardization both of data and of software processing may allow countries with greater capacity and additional dedicated funding to shop around for the program and satellite that show better results for them, and the less developed countries will not have that option to game the system. The UNFCCC needs to develop uniform standards that software program developers can incorporate into their designs and REDD financing must include funding for a team of researchers to develop and issue guidelines for what factors and standards the software programmers should use.

Monitoring of REDD can be achieved with currently available technologies if the UNFCCC community is willing to build the capacity necessary to utilize those technologies. Building capacity requires direct investment in all developing forest nations. To build capacity adequately, there must be uniformity of data and data processing so that each country is trained to use systems that reach compatible and interchangeable results. If REDD is to be used as a means of trading within the carbon market, the means of measuring results must be interchangeable to ensure tradable results. 

Endnotes: Standardization of REDD Monitoring Technology to Level the Playing Field *continued on page 57*

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¹ INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CONTRIBUTION OF WORKING GROUP III TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE: TECHNICAL SUMMARY 27 (2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg3/ar4-wg3-ts.pdf>. See Conference of the Parties Fifteenth Session, Copenhagen, *Copenhagen Accord*, ¶ 6, U.N. Doc. FCCC/CP/2009/L.7 (Dec. 18, 2009) [hereinafter *Copenhagen Accord*], available at http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf.

² See *Copenhagen Accord*, *supra* note 1, ¶¶ 5-6.

³ See Australian Government Department of Climate Change, International Forest Carbon Initiative, <http://www.climatechange.gov.au/government/initiatives/international-forest-carbon-initiative.aspx> (last visited Feb. 16, 2009) [hereinafter Australian International Forest Carbon Initiative]; GREGORY P. ASNER, CARNEGIE INST. FOR SCI. & ENVTL. DEF. FUND, MEASURING CARBON EMISSIONS FROM TROPICAL DEFORESTATION: AN OVERVIEW 9 (2009), available at http://www.edf.org/documents/10333_Measuring_Carbon_Emissions_from_Tropical_Deforestation—An_Overview.pdf.

⁴ See CONSERVATION INT'L ET AL., TECHNICAL FEASIBILITY OF REDD MAPPING AND MONITORING, http://www.edf.org/documents/10536_Technical_Feasibility_of_REDD_Mapping_and_Monitoring.pdf (last visited Feb. 16, 2010) [hereinafter TECHNICAL FEASIBILITY]; Rhitu Chatterjee, *An Eye in the Sky Watching Forests Disappear*, SCI. & DEV. NETWORK, July 8, 2009, <http://www.scidev.net/en/features/an-eye-in-the-sky-watching-forests-disappear-1.html> (last visited Feb. 19, 2010).

⁵ E.g., Carnegie Institution for Science, Carnegie Landsat Analysis System, <http://claslite.ciw.edu/en/index.html> (last visited Feb. 16, 2009); Global Observation of Forest and Land Cover Dynamics, Overview, <http://www.fao.org/gtos/gofc-gold/overview.html> (last visited Feb. 16, 2009); Global Terrestrial Observing System, <http://www.fao.org/gtos/index.html> (last visited Feb. 16, 2009); NASA Land-Cover and Land-Use Change Program, <http://lcluc.umd.edu/index.asp> (last visited Feb. 16, 2009) [hereinafter NASA]; U.S. Geological Survey, USGS Global Visualization Viewer, <http://glovis.usgs.gov/> (last visited Feb. 16, 2009); Colorado State University, Natural Resource Ecology Labora-

tory, Agriculture and Land Use National Greenhouse Gas Inventory Software, <http://www.nrel.colostate.edu/projects/ghgtool/software.php> (last visited Feb. 16, 2009); Australian Government, Department of Climate Change, National Carbon Accounting Toolbox, <http://www.climatechange.gov.au/government/initiatives/ncat.aspx> (last visited Feb. 16, 2009).

⁶ UNFCCC, REDD Web Platform—Methodologies and Tools—Remote Sensing, http://unfccc.int/methods_science/redd/methodologies/remote_sensing/items/4540.php (last visited Feb. 16, 2009); UNFCCC, REDD Web Platform—Technical Assistance—Data Collection, http://unfccc.int/methods_science/redd/technical_assistance/data_collection/items/4533.php (last visited Feb. 16, 2009); UNFCCC, REDD Web Platform—Technical Assistance—Training Activities, http://unfccc.int/methods_science/redd/technical_assistance/training_activities/items/4534.php (last visited Feb. 16, 2009); UNFCCC, REDD Web Platform—Technical Assistance—Other Technical Assistance, http://unfccc.int/methods_science/redd/technical_assistance/other/items/4535.php (last visited Feb. 16, 2009) [hereinafter UNFCCC Other Technical Assistance].

⁷ See TECHNICAL FEASIBILITY, *supra* note 4; Chatterjee, *supra* note 4.

⁸ UNFCCC Other Technical Assistance, *supra* note 6.

⁹ See *id.* Agriculture and Land Use National Greenhouse Gas Inventory Software, Software Description, <http://www.nrel.colostate.edu/projects/ghgtool/software.php> (last visited Feb. 16, 2009).

¹⁰ UNFCCC Other Technical Assistance, *supra* note 6.

¹¹ *Id.*

¹² See Australian International Forest Carbon Initiative, *supra* note 3.

¹³ See ASNER, *supra* note 3, at 6.

¹⁴ See *Copenhagen Accord*, *supra* note 1, ¶¶ 6, 8.

¹⁵ See, e.g., Chatterjee, *supra* note 4 (discussing Carnegie, *supra* note 5).

¹⁶ See International Organization for Standardization, ISO's Global Relevance Policy, http://www.iso.org/iso/global_relevance_policy (last visited Feb. 16, 2009).

¹⁷ See, e.g., sources cited *supra* note 5.

¹⁸ See Chatterjee, *supra* note 4.