

Like many of you, the UN-REDD Programme followed the Copenhagen negotiations closely especially on the issue of REDD+. Doing so was critical since the outcomes of COP-15 will impact UN-REDD's strategic options moving forward. The Programme has also followed the numerous and diverse analysis and opinions that have emerged out of COP-15. In this context, it's helpful to revisit the facts with respect to REDD+ in Copenhagen.

The first encouraging development for REDD+ at COP-15 came when Australia, France, Japan, Norway, the United Kingdom, and the United States agreed to dedicate US\$3.5 billion as initial public finance to slow, halt and eventually reverse deforestation in developing countries in the context of an ambitious and comprehensive outcome in Copenhagen.

During the conference, REDD + was discussed in two bodies: the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Ad Hoc Working Group on Long-Term Cooperation Action (AWG-LCA). The SBSTA produced a draft decision on methodological REDD issues, which was adopted by COP-15. This document deals with issues that the UN-REDD Programme is well-placed to deliver and that are central to its new strategy, including identifying and addressing drivers of deforestation and forest degradation resulting in emissions; establishing robust and transparent national and sub-national forest monitoring systems; and developing guidance for effective engagement of indigenous peoples and local communities.

REDD garnered mention in Articles 6, 8 and 10 of the official Copenhagen Accord. Specifically, Article 6 states, "We recognize the crucial role of reducing emission from deforestation and forest degradation and the need to enhance removals of greenhouse gas emission by forests and agree on the need to provide positive incentives to such actions through the immediate establishment of a mechanism including REDD+ to enable the mobilization of financial resources from developed countries."

The Copenhagen Accord also established the Copenhagen Green Climate Fund, which will be worth US\$10 billion a year from 2010-2012. Financing for "forestry" is included in this figure. By 2020, "developed countries commit to a goal of mobilizing jointly US\$100 billion a year," which includes carbon markets.

Coming out of COP-15, the UN-REDD Programme is more encouraged than ever by the widespread and growing consensus around REDD+, as a key element in global climate change mitigation. The Programme continues to receive an ever increasing number of requests by countries wanting to join the UN-REDD Programme, including Mexico, Costa Rica, Solomon Islands, Republic of Congo, Kenya, Nigeria and Sudan. To respond to this increasing demand and move towards longer-term programming as the Quick Start phase comes to an end, the UN-REDD Programme is finalizing a five-year programme strategy. This strategy will seek to mobilize additional resources to help more and more countries develop successful REDD+ mechanisms that have the potential to mitigate climate change for many decades to come.

Yemi Katerere
Head of the UN-REDD Programme Secretariat

News

The Road Ahead for UN-REDD

The UN-REDD Programme reflects on the successes of 2009, and the challenges and opportunities of extending REDD+ efforts around the world in 2010

The start of 2010 marks the most exciting, and pivotal, time for REDD+ and the UN-REDD Programme. As the world weighs

in on the results of COP-15, REDD+ stands stronger than ever, backed by more consensus and more references in the Copenhagen

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Accord than any single other climate action. In early December, Secretary General Ban Ki-moon and the World Bank

President Robert Zoellick defined REDD+ as, "an essential element of tackling global climate change," and they highlighted the emerging, "community of practice, policy development, and on-the-ground lesson learning around REDD+." These kinds of endorsements are powerful and they build the case for collaboration and advancement on REDD+ issues. It is now more important than ever to ensure momentum, awareness and REDD+ partnerships continue to build in the coming year.

In the face of these heightened stakes, the UN-REDD Programme remains committed and poised to play a leadership role on REDD+ issues. The Programme, a joint collaboration of the FAO, UNDP and UNEP, was launched in 2008 to support efforts to reduce emissions from deforestation and forest degradation in developing countries. Since then, the UN-REDD Programme Policy Board has moved quickly to approve US\$24 million in funding for nationally-led REDD+ processes, and another US\$9.5 million for global programmes that provide support to national efforts. The Programme is now working with nine member countries in Africa, Asia and Latin America, and in October 2009, five more countries were given observer status, bringing the total number of countries involved in the UN-REDD Programme to 14 in just over one year of operation.

These countries, in turn, have helped to create a REDD+ community of practice that has significantly advanced their efforts to establish the capacity, institutions and processes for REDD. Countries such as the DRC, Indonesia, Tanzania and Viet Nam are now set to start implementing their REDD+ activities.

Throughout 2009, the UN-REDD Programme was also active at the international level, helping to organize several high-profile events such as the United Nations Secretary-General's High-Level Event on REDD in September. In addition to coordinating the participation of over 100 governments, the Programme was instrumental in bringing key people from civil society, including local and international NGOs, media, and the private sector to this meeting, which in turn communicated the political urgency of REDD+ among influential heads of states from around the world. The Programme also produced several cutting-edge documentaries and short

videos on various aspects of REDD+ that were broadcast on BBC World to 300 million homes in 170 countries. All of these national and international efforts have been made based on strong national leadership, flexibility, low barriers to entry and a focus on Indigenous Peoples and Civil Society participation.

The Road Ahead

The UN-REDD Programme acknowledges there is still much ground left to cover in 2010 and beyond. The Programme is encouraged by the growing number of countries requesting to join. But to meet this groundswell of demand, the Programme must actively seek out new streams of funding to ensure the good work already done on REDD+ gets pushed farther and deeper in the coming year.

The Programme's technical work, especially in the area of Measurement, Verification and Reporting (MRV) also needs to be scaled up in 2010, so that countries have the necessary tools to develop new laws, policies and institutional frameworks aimed at reducing deforestation.

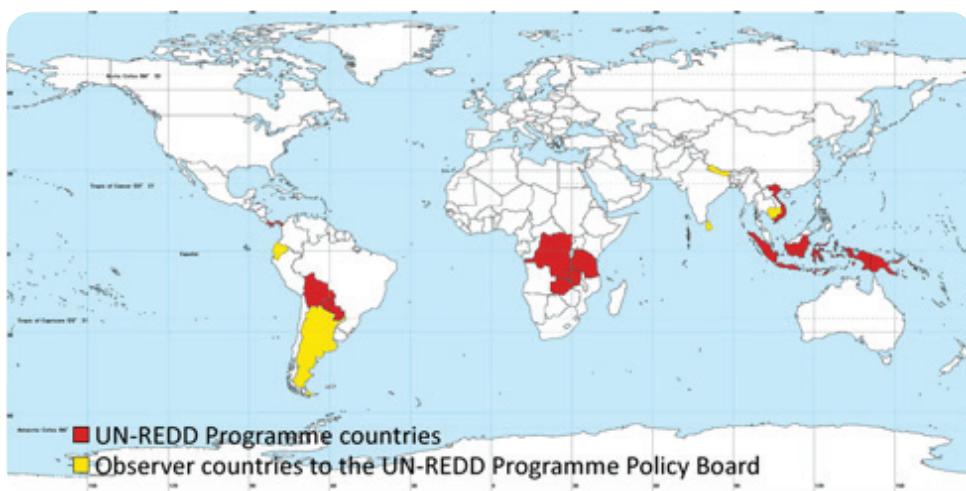
The UN-REDD Programme will also seek to play even more of a convening role at an international level; one that brings the right expertise and stakeholders to the table to ensure REDD+ mechanisms are more accessible, and more successful than ever. 2010 is the International Year of Biodiversity which will provide the UN-REDD Programme with an excellent opportunity to further explore and highlight the co-benefits of REDD+ and fully demonstrate how it can benefit biodiversity in forest ecosystems.

A key priority in 2010 will be to ensure even closer coordination between the UN-REDD Programme, the World Bank and other multilateral and bilateral initiatives supporting REDD+ efforts. The UN Secretary-General and World Bank President recently stated that, "the United Nations agencies and the World Bank stand ready to work together with bilateral and other partners to support a REDD+ governance structure with delivery channels that capitalize on the comparative strengths and capacities of the United Nations System and the World Bank Group."

Both leaders further suggested that the UN-REDD Programme and the Forest Carbon Partnership Facility, could be, "a starting point in the design of a unified and coherent institutional architecture for REDD+... to meet country requirements in a timely, effective and coordinated manner."

The UN-REDD Programme is fully aware of these priorities and remains flexible to adapt to a new REDD+ institutional architecture, and committed to supporting coordinated national REDD+ programmes at the country level.

There is no question that 2010 is full of opportunities and challenges for the UN-REDD Programme. REDD+ must continue to deliver the climate change mitigation it promises, and the UN-REDD Programme is resolved to support such efforts at both the national and global level. We will do our part, and look forward to collaborating closely with the many other initiatives that are bringing all their resources and commitment to bear on this opportunity. Our planet and our future generations require nothing less. ■



UN-REDD and observer countries

Forest Day 3 in Copenhagen

Forests hold the key to climate change mitigation



There are some very good- and alarming- reasons why nearly 1500 of the world's forestry experts felt compelled to gather on December 13, 2009 in Copenhagen. It has been estimated that deforestation and forest degradation account for up to one-fifth of the current global total of all greenhouse gases emitted by human activity. What's more is that forests, if managed in a sustainable way, could contribute to more than 20 percent of the climate change solution. With that in mind, the Forest Day 3 event at the Copenhagen Climate Change Conference marked a historical moment in the fight against climate change, giving the forest sector the due attention it deserved as one of the key players in negotiations, and placing REDD+ high on the climate change agenda.

Forest Day 3, put on by The Center for International Forestry Research (CIFOR), the Government of Denmark and the Collaborative Partnership on Forests, was a day of deliberations amongst the world's foremost forestry experts, representatives of non-governmental organizations, indigenous leaders, policy makers and climate change negotiators. Speakers included Nobel laureates, Rajendra Kumar Pachauri, Wangari Maathai, and Elinor Ostrom, and the United Nations Special Envoy on Climate Change, Gro Harlem Brundtland, among many others.

A number of key messages emerged from discussions that day. In particular, one message that resonated over and over again was that forests had to play an early and central role in global and national climate mitigation and adaptation strategies; and that sustainable forest management is central to the

success of REDD. These were all welcomed messages for the UN-REDD Programme, which co-hosted several learning events held that day.

After the plenaries, the UN-REDD Programme contributed to the forum by participating in four side events on MRV, early lessons learned in REDD countries, forests & biodiversity and REDD+ & rural livelihoods.

The Collaborative Partnership on Forest's summary of Forest Day 3 stressed that "Forests can make a very significant contribution to a global mitigation portfolio. Even if forests contribute less than 20 percent of global emissions, they have potential to contribute much more than 20 percent of the solution. Reducing or reversing deforestation provides synergies with adaptation and sustainable development."

Forest Day 3 speakers also acknowledged the important role local and forest communities could play in REDD. As forest stewards, their engagement and participation is critical for the success of REDD. The future of REDD+ relies on commitments from both developed and developing countries. Speakers during the event underscored that on the one hand, developed countries must commit to compensate developing countries economically for REDD, and for enhancing the storage of carbon in their forests in a sustainable way; while on the other hand, developing countries must commit to fulfill these reductions sustainably through a transparent and verifiable way, while also protecting the rights of local and forested communities.

Key messages coming out of the learning events touched on a number of issues including early lessons from REDD experiences, social impacts of REDD initiatives, governance and institutional capacity for adaptation and mitigation, and biodiversity. The Collaborative Partnership on Forest's summary concluded that, "National consensus on a single national REDD+ strategy, reached through a broad and transparent consultation process, and integrated into the national development plan, is emerging as the principal method for organizing REDD+ activities at the national scale."

While there has been consensus on the methodology, speakers stressed the importance of developing national REDD+ strategies that ensure social impacts are taken into consideration, and safeguards are taken into account, where appropriate. The event summary noted that, "Rights and tenure are crucial issues to address and resolve early in the implementation of REDD. Key items requiring attention are: conflicting claims to resources, state dominance in control of forest, inadequate recognition of indigenous and community rights, and the application of Free, Prior and Informed Consent (FPIC) and UN Declaration on the Rights of Indigenous Peoples (UNDRIP)."

Good governance is also central to the success of REDD and requires sound commitment to disclosure, transparency and responsibility at all levels. Without this commitment there can be no real flow of information. For these reasons, and others, governance and institutional capacity for adaptation and mitigation was also a topic explored during the learning events. The drafting committee's summary on Forest Day 3 reinforced this and concluded that, "Transparency needs to be achieved to avoid or limit corruption at all levels, even at the grassroots level. REDD is a multi level challenge and needs coordination at and across all levels."

With many messages and burning issues deliberated over during the day's events, Forest Day 3 wrapped up with many left feeling euphoric, but this feeling was also coupled with a sense of uncertainty. Many questions remain unanswered: what will the future hold for REDD+? What will a future REDD mechanism in the post-Kyoto climate change regime look like? How will it work and what obstacles remain? These were and still are questions on the table, but one thing is for certain coming out of Forest Day 3—there is a tremendous global will to ensure forests are here to stay. ■

Moving in the Right Direction on MRV

As REDD represented the few areas of consensus among countries during the UN Climate Change Conference in December, efficient and transparent measuring, reporting and verification (MRV) of emissions for REDD has never made more sense. Below is an account of progress on MRV during COP15



Forest Day 3 panel on "Measuring and monitoring, baselines and leakage"

In order to know the amount of emissions we can avoid, reduce and capture, measuring carbon, reporting on progress and verifying becomes essential when planning on implementing an effective REDD mechanism in any country.

During the UN Climate Change Conference important steps forward were made to strengthen activities and expertise towards better measuring, reporting and verification

of emissions. This subject was tackled extensively during the Forest Day 3 event on 13 December, during one of the five events that included UN-REDD Programme participation.

One of the events entitled "Measuring and Monitoring, Baselines and Leakage" was hosted by the UN's Food and Agriculture Organization (FAO), the International Tropical Timber Organization (ITTO), the Norwegian Ministry of Environment, France's Office

National des Forêts, and the UN-REDD Programme, and looked at past and future forest-related carbon emissions.

Speakers touched upon aspects such as the inclusion of MRV in a comprehensive national regulatory and policy framework as well as experiences on forest monitoring from Vietnam, Peru, Ecuador (UN-REDD countries) and Cambodia. Discussion with the public addressed the costs of capacity building in MRV compared to the cost of technology transfer, the possibility of tracking emissions from all forest ecosystem carbon pools; the need to avoid leakage by establishing a REDD framework that is attractive to all parties; the lack of historical data for creating degradation baselines; and the differences between top-down and bottom-up approaches to national reference levels.

Another important achievement during COP15 was represented by the signing of a memorandum of understanding between the FAO and Brazil's National Institute for Space Research (INPE). According to the FAO press release, the agreement lays the groundwork for a major push to assist developing countries in monitoring climate change impact.

Monitoring systems in many developing countries need to be enhanced in order to be able to accurately account for forest carbon stocks and participate in a REDD mechanism. Brazil's INPE has wide experience in this domain and is willing to share its knowledge in large-scale monitoring of deforestation and forest degradation to provide accurate and transparent data. ■

UN-REDD in the Classroom

A new high school curriculum in the US uses the UN-REDD Programme website to educate the next generation about REDD



North American high school students are about to discover what REDD is all about. Save The Rainforest Inc., a non-profit organization

in the US that involves youth in campaigns to save rainforests, has recently developed a curriculum on REDD for students in Grades 9-12. The new curriculum uses the UN-REDD Programme's online multimedia materials, as well as other web resources to give students

a basic overview of REDD issues and efforts around the world.

"Students need to learn that REDD may have a profound effect on the future well-being of the planet," says Bruce Calhoun, President of Save The Rainforest, Inc. Calhoun developed the REDD curriculum shortly after the Climate Change Conference in Copenhagen. "Very few people are aware of REDD and REDD perhaps holds the key to saving tropical forests."

The curriculum uses the UN-REDD media package for journalists as a primer for students to understand the fundamentals of REDD. Students will also use other multimedia videos and policy board presentations on

the UN-REDD website to learn about REDD issues in various countries, including Indonesia, Sri Lanka and Ecuador. The program also includes a module on Google Earth's new technology prototype that enables online, global-scale observation and measurement of changes in the earth's forests, which Google unveiled during COP-15.

Save The Rainforest Inc. is working with teachers associations, such as the National Association of Biology Teachers in the US and the North American Association of Environmental Educators to start offering the curriculum, free of charge, to teachers in all 50 US states and in Ontario, Canada, starting in January. Save The Forest Inc. has already received requests for the REDD curriculum from educators as far as Australia.

Calhoun, a former high school biology teacher himself, hopes the program will help spread the word about REDD to the public.

"There is a precedent for this model. In the late 1980s, we educated students about rainforests. They in turn played a large role in educating the public about rainforests. Also, we hope students will help monitor REDD, and raise a 'REDD' flag if they observe perverse outcomes during the implementa-

tion of REDD," says Calhoun. Save The Rainforest Inc. has been working with high school students since its founding in 1988. One of their main activities is organizing high school ecology courses in the tropics.

To view Save The Forest's REDD curriculum and provide feedback on their curriculum, you can consult their website at: <http://www.saverfn.org>. ■

Features & Commentary

Forest Degradation: The Unattended Party in REDD+

The international attention in the climate context has very much focused on deforestation, while less work has been done on degradation and therefore we know less about how to approach it.

By: Markku Simula



Markku Simula

According to a recent assessment carried out by the Global Partnership on Forest Landscape Restoration, about 1 billion hectares are reported to be degraded forests and forest lands. About 80% is located in

the tropics. Globally degradation is thought to result in similar emissions to those from deforestation.

There are about 350 million people consisting of indigenous peoples, local communities, settlers and smallholders who depend on degraded forests and forest lands for their livelihoods and they are often suffering from extreme poverty. Bringing degraded areas under sustainable management would not only help in climate change mitigation and adaptation but it would also create employment and income for millions of people.

There is, however, a risk that the rural poor may not be able to benefit from REDD+ and that their forest tenure and use rights can be negatively affected when maintenance and enhancement of the forest carbon pools are introduced as a binding objective by REDD financing. Without establishing clear and

secure land tenure, building capacity, provision of financial support and due consideration of the values and needs of local people it is unrealistic to assume that they will really benefit from REDD+. Another issue is that in many countries lands that have been transferred to community ownership have often been degraded and require significant investment through restoration. REDD payments would have to be sufficient and may have to be differentiated to address variation in local conditions.

On the other hand, if forest owners, communities and dwellers are paid for doing nothing, the system is not likely to work. Many payment schemes for forest environmental services have suffered from becoming simple subsidy schemes where the link between the payment and the obligation of the owner has remained unclear.

In forest management the objectives are always set in the long term and this also holds true for the maintenance and enhancement of carbon reservoirs. Periodic short-term changes in the forest growing stock are part of regular forest management. We should definitely avoid a situation where harvesting under sustainable forest management becomes forbidden, i.e. considered generating emissions as this would make its achievement impossible in practice leading to significant losses of other benefits.

What matters is that the carbon pools are maintained and enhanced in the long run.

The issue of reference period/scenario in the degradation context is probably less problematic than in the case of deforestation. What matters is that we focus on the estimation of change in carbon stocks over a specific time period while eliminating their short-term variation. This should be done across a designated area which is large enough allowing stand-level variation due to regular management interventions as part of sustainable forest management. Stand/site-level assessment is also needed but for taking local-level corrective action rather than for reporting on changes in carbon stocks.

Mitigation of climate change requires quick results, and restoration of degraded forests can absorb more CO₂ fast. It represents an excellent bridging strategy and at the same time, resilience is improved and the capacity of vulnerable biological populations is improved. The opportunity costs are low and the results have important co-benefits. Time will be needed for capacity building, tenure reforms and governance strengthening, but action cannot be delayed.

Markku Simula is an independent consultant specialized in forest policy and economics. He heads a consultancy company, Ardor, working for various international organizations. He holds a Doctor of Forestry from the University of Helsinki where he teaches international forest policy as Adjunct Professor. ■



Degraded forest of blue pine in Bhutan

Reports & Analysis

Google Earth and Forest Monitoring

During COP-15, Google announced a new Google Earth application that enables observation and measurement of changes in forest cover, and the UN-REDD Programme has agreed to work with Google to test their prototype in Africa.

Maurizio Teobaldelli, Senior Programme Officer for the UNEP's World Conservation Monitoring Centre (WCMC) in Cambridge, UK, provides his analysis.



Maurizio Teobaldelli

During the recent Climate Change Summit (COP15) Google's philanthropic arm, Google.org, presented a new Earth observation application, developed together with the Carnegie Institution for Science, Imazon (Instituto do Homem e Meio Ambiente da

Amazônia) and the Gordon and Betty Moore Foundation. The system will enable users to assess online, global-scale land cover change. Google's system could therefore be suitable for supporting future forest monitoring as part of REDD, a key area for the UN-REDD Programme.

The strength of Google's prototype is in combining innovative forestry science, including SAD (Sistema de Alerta de Deforestação) and CLASlite (Carnegie Landsat Analysis System-Lite), with technology resources, such as raw satellite imagery datasets and a high-performance satellite imagery-processing engine running online in the Google Network System (Fig. 1). The application, which is not yet accessible to the general public, is expected to be more broadly available in the future as a not-for-profit service. So far, the prototype has only been released as a closed beta version to a select group of partners as a user test.

Google and the UN-REDD Programme agreed to test their prototype in Tanzania (one of the UN-REDD pilot countries) and also to include some applications from FAO Forest Resources Assessment.

The Imazon's SAD, led by Carlos Souza, has been capable of generating deforestation maps and statistics of the entire Brazilian Amazon on a monthly basis since 2008, using MODIS sensor images. CLASlite, led by Greg Asner, provides a set of ecologically meaningful images identifying forest

cover, forest cover changes and human-induced disturbances, such as extensive high-impact logging or repeated fires. In particular, CLASlite firstly harmonizes and processes remotely-sensed data (up to 10 images) acquired by different satellite platforms and then automatically extracts three different land cover classes (live vegetation, non-live vegetation, and bare substrate) at sub-pixel resolution, providing at the same time any error in the estimation.

Google's prototype could be used to assess forest land cover changes which could then be integrated with active remotely-sensed data, such as LiDAR, Light Detection and Ranging, or RADAR, Radio Detection and Ranging and ground measurements to build biomass density maps of tropical forests.

Google's prototype could be used to assess forest land cover changes which could then be integrated with active remotely-sensed data, such as LiDAR, Light Detection and Ranging, or RADAR, Radio Detection and Ranging and ground measurements to build biomass density maps of tropical forests.

It is not yet known which rules and definitions will be used to set up an MRV system in REDD and whether or not they will draw on past experience. However, the Conference of the Parties does request the use of "the most recent Intergovernmental Panel on Climate Change (IPCC) guidance and guidelines, as adopted or encouraged by the Conference of the Parties, as appropriate, as a basis for

estimating anthropogenic forest-related greenhouse gas emissions by sources and removals by sinks, forest carbon stocks and forest area changes."

According to the IPCC guidance, in order to estimate carbon stocks associated with human-induced activities it is necessary to collect activity data, that is, information representing existing land-use categories including classification, area data and sampling. This information, represented by maps or tabulations, varies in how and when it is collected by countries. They can have different reporting frequencies and different attributes, such as annual censuses, periodic surveys and remote sensing. In fact, characterizations of land use include considerations that go beyond only the observed biophysical cover on the earth's surface; functions describing land use in an economic context, and activities that are defined as the combination of actions resulting in a certain type of product, are needed to define the parameters of land use and land use change.

Once countries have collected activity data, in terms of area of Land Use and Land Use Change (LULUC), it is possible to multiply the activity data by a carbon stock coefficient or "emission factor" to provide the source or sink estimates.

Google's system will not give information regarding emission factors, so in situ measurements, such as sample ground plots and national forest inventories are still necessary in order to acquire information on forest parameters. These parameters should be used in combination with other technologies including LiDAR or RADAR to assess carbon stocks and carbon stock changes over large areas at Tier 2 or at Tier 3 levels.

Based on these considerations, simply knowing about land cover and land cover change is not enough to monitor, measure, report and verify carbon stocks and carbon stock changes in REDD. Google's system still does not incorporate in situ measurements, nor does it allow for the measurement of changes in forest-related GHG emissions. But



Fig.1: Selected results of the Google's prototype showed during the COP15 in Copenhagen (December, 2009). CLASlite online (a) detects "deforestation" and "forest degradation" in Rondonia, Brazil from 1986 to 2008 whereas SAD online (b) shows a region of recent "deforestation" in Mato Grosso, Brazil.

they are developing and using a system to collect data from the field in one of the UNREDD Programme pilot countries, which uses mobile phones equipped with GPS.

In summary, a user-friendly system package, integrated in the Google Earth Engine, which allows non-expert users to quickly assess the regional distribution of tropical forest and changes in forest land, would be useful in supporting REDD. Furthermore, a not-for-

profit system available online for scientists and national experts from tropical countries will be very useful in helping to lower the costs of forest monitoring.

Maurizio Teobaldelli is a MRV specialist in the UN-REDD Programme working since August 2009 as senior programme officer at the UNEP World Conservation Monitoring Centre, Climate Change & Biodiversity Programme in Cambridge, UK. Prior to this, Maurizio headed

an Italian consultancy company (Studio Tecnico Foreco), and has also worked as scientific programme officer at the European Commission (DG-Joint Research Centre, Institute for Environment and Sustainability, Climate Change Unit). Maurizio holds a MSc in Forestry from the University of Florence, and a PhD in Forest Ecology from the University of Padua in Italy. ■

Looking Ahead

Fourth Policy Board Meeting of the UN-REDD Programme

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