



CARBOAFRICA

Quantification, understanding and prediction of carbon cycle and other GHG gases in Sub Saharan Africa

4-Monthly NewsLetter

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EDITORIAL

Dear reader,

From an environmental policy point of view 2007 culminated with the UNFCCC conference on climate change in Bali. Although there were many contrasts, a general consensus emerged from the conference: a major commitment of non Annex 1 countries, the key role played by Africa, the importance of avoiding deforestation and forest degradation in meeting emissions reduction. At the end of this issue (Appendix 1) there is a good summary on the Bali conference. In the light of the Bali outcomes, the importance of CarboAfrica has been increasing at local, regional and global level, as testified by the numerous invitations in international meetings and the Video that EuroNews has filmed on our project. In this issue we present also our training activities: we had a very positive output from the 1st CarboAfrica training course held in Congo, last December, and we will expect the same output from the next one in South Africa, 10-15 March 2008. Also an overview on field activities and other meetings has been given.

The CarboAfrica Secretariat

Fire meeting at Leicester University 23-24 October 2007

Members and contributing scientists to WP4 (fire-climate-carbon cycle interactions) met at Leicester University on October 23 and 24 to discuss recent developments in the WP activities and coordinate research objectives for the coming months. The

meeting was attended by scientists from Lund University, King's College London and Leicester University, and concentrated on the WPs progress in African burned area mapping, fire detection and radiative power assessment, and African fire modelling. The meeting concentrated on the first publications arising from the WP, which will be based on a novel burned area product (produced in collaboration of Leicester University and JRC; L3JRC) in combination with Lund LPJ-GUESS/SPITFIRE modeling. The analysis will concentrate in particular on the effects of fuel availability (which

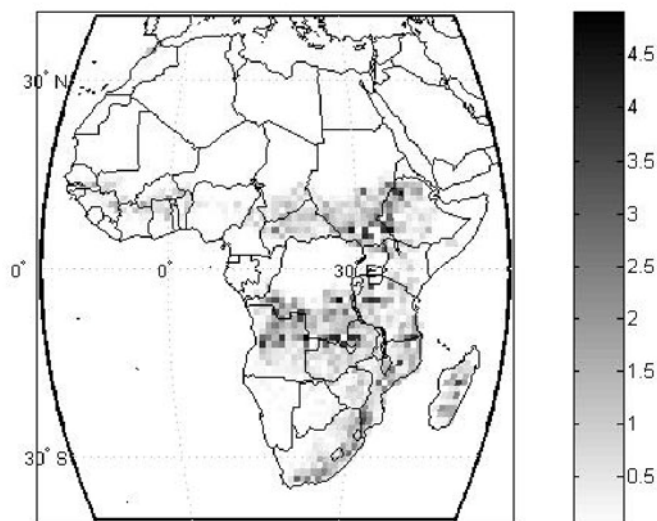


Figure 1. Average annual emissions by wildfires in Tg carbon per 1 X 1 degree grid cell between 2001 and 2005. The burned biomass is calculated using the dynamic global vegetation model LPJ-GUESS-SPITFIRE in conjunction with the burned area map L3JRC.

depends on vegetation type and activity, and hence on climate) on fire emissions and intensity, and the effect this has on fire-related mortality.



Figure 2. The field fire experiment in South Africa.

The meeting attendees also discussed the progress on aerosol optical depth corrections of remote sensing images which is proceeding according to plan at Leicester University, and which aims to produce a much improved burnt area characterisation. Moreover, first results from the very successful fire experiment, conducted at Krueger National park in August 2007 were presented. The experiment combined a set of ground and airborne measurements of fire-related fluxes of heat and matter.

EuroNews and the CarboAfrica Video!



EuroNews Television (www.euronews.net/) was launched on 1st January 1993 as the first multilingual pan-European news channel covering world news from a European

perspective in a choice of seven languages. EuroNews broadcasts simultaneously in English, French, German, Italian, Portuguese, Russian and Spanish.

EuroNews wanted to prepare a report on latest pan-European projects relevant to GEO (the Group on Earth Observations, www.earthobservations.org) and decided to focus on CarboAfrica. They have filmed CarboAfrica activities in a selected African country (Congo) and at the project coordinator's headquarter in Viterbo (Italy). The result was an 8 minutes long video, that has been successfully presented in the GEO ministerial summit in Capetown. The Directorate-General for Research of the European Commission wanted also to screen the report in their booth during the GEO meeting.

The video is available on the EuroNews Web site (<http://www.euronews.net/index.php?Page=futuris&lng=1>) in seven languages, as listed above.

GEO Ministerial Summit

Cape Town (South Africa), 27-30 November 2007



The Ministerial Summit on Global Earth Observations (GEO) was held from the 27 to 30 November 2007 in Cape Town, South Africa.

An exhibition open to the public and in particular to the GEO participating delegations was held in parallel to the Summit. In this context the Directorate General for Research of European Commission organised an umbrella booth for all European Projects linked to GEO. CarboAfrica has been identified by European Commission as a particularly valuable European project contributing to GEO. CarboAfrica organised a stand with a poster prepared on purpose and a lot of information material (flyers, project brochures, newsletters, etc).

European Forum on Science and Journalism

Barcelona (Spain), 2-4 December 2007

On 2-4 December in Barcelona (Spain) there was the European Forum on Science and Journalism, organized by Directorate General for Research of European Commission. The workshop was attended by 150 journalists and 50 science communication professionals from all over Europe. As part of the programme there were two press briefings presenting EU Research success stories. Dr Antonio Bombelli was invited to make a presentation on CarboAfrica, as a European project with an international importance and as a good appeal for journalist. The topics raised by CarboAfrica generated a great interest from the audience, and allowed good links to be established.

1st CarboAfrica Training Course Ecosystem functioning, Biomass and carbon markets

Brazzaville (Congo), 10-14 December 2007

The aim of this training course was to propose a state of art in the field of biomass assessments in natural ecosystems (forests, agro-forests, savannah, etc.). It mainly focused on methodological aspects such as sampling, analysing raw data, finding and fitting appropriate equations, calculating confidence intervals and validating models. The course was divided into two parts: (i) two days and a half were devoted to general lectures and the

sessions which were open to every student or professional who was interested in the topics; (ii) the remaining time was devoted to practical sessions (field and computer) which were restricted to a limited number of persons (due to hardware limitations). The course was organized by the CarboAfrica partners UR2PI (Unité de Recherche sur la Productivité des Plantations Industrielles, Congo), CIRAD (Centre de Coopération Internationale en Recherche Agronomique pour le Développement, France), FAO (Food and Agriculture Organization of the United Nations), the GTOS programme (Global Terrestrial Observing System), and the University Marien Ngouabi of Brazzaville and was held in Brazzaville, from the 10th to 14th of December 2007.



Figure 3. The authorities opening the training course.

The opening session was Chaired by Mr Henri Ossebi, the Minister of Education of Congo, the country representative of FAO (François Rasolo), the Rector of the University Marien Ngouabi (Georges Marius Moyen), and two representatives of the organizing committee (Fidèle Mialoundama, University Marien Ngouabi; Laurent Saint-André, CIRAD).

Keynote speakers were coming from both Europe (W. Kutsch, MPI; B. Zeller, INRA; A. de Grandcourt, N. Picard, O. Hamel, and L. Saint-André from CIRAD) and Congo (I. Dianzinga, F. Mialoundama, J. Loumeto, C. Bouka-Biona). Topics were the following: (i) ecosystem functioning, principles, main drivers, role of biomass, (ii) main biogeochemical cycles (carbon, water and nutrients) and role of biomass, (iii) the carbon cycle, main components and associated errors, (iv) Carbon markets, what is required? and (v) Biomass assessment and methodologies.



Figure 4. Teachers and students of the training course.

To facilitate the communication of information the slides were either in English when the talk was in French or in French when the talk was in English.

A total of 16 students coming from several countries (Congo [4 from UR2PI, and 7 from the university], France [1], Rwanda [1], Sudan [1], Burkina-Faso [1], and Cameroon [1]) were registered for the training course, and 14 could attend it. During the first two days and a half (general lectures), 40 to 61 persons attended the workshop (including the students).

These people were mainly coming from Congo from various institutions, including: Universities, Ministry of Forestry, Ministry of Research, one Regional NGO, several Research Institutes. The field of research/interest of these individuals was as various as physiology, sociology, biodiversity, ecology, bioethics, forestry, agroforestry, ecophysiology, climatology.

For the rest of the course, an average of 24 individuals attended the practical work sessions (field work and computer training). After each thematic session, students presented their ongoing work for further discussions and exchanges (8 of the 14 students presented their work, two presentations were in English).



Figure 5. Practical work sessions: computer training (above) and field works (below).

A CD-rom will be published including presentations and some key papers of each thematic. Local dissemination of the information was ensured by two Congolese TV Channels and a regional journal "La Semaine Africaine" (N°2756, page 15).

Finally, CarboAfrica would like to thank Guy Moukandi (ENSP) and Fidèle Mialoundama (University of Brazzaville) for their fruitful/efficient help and assistance for the organization of this training course. CarboAfrica would also like to thank CIRAD, UR2PI, INRA (Institut National de Recherche Agronomique Française), the French government and FAO-GTOS who funded this seminar and the University Marien Ngouabi who kindly hosted the training course. At the end of the seminar, all participants emphasized the need of a permanent training course in Africa on biomass assessment (data analysis, model fitting etc.) and on all related parameters to climatic changes. The consortium CarboAfrica could contribute efficiently to such need, for example by way of E-learning resources.

Announcement: the 2nd CarboAfrica Field Training Course. Carbon Cycle Measurement: Soil, Photosynthesis and Fluxes

The next CarboAfrica Training Workshop will be focused on field activities, and will be held at Phalaborwa, Kruger National Park, South Africa, 10-15 March 2008. The objective of the course is to expose trainees to a range of field-based methods relating to carbon cycle measurement. The training will be very practical and hands-on, with students working in small groups, each with an instructor. There is place for a maximum of 15 trainees. The workshop topics are:

1. Soil and vegetation characterisation - Dr Bob Scholes (CSIR, South Africa)
2. Photosynthetic measurements - Dr Werner Kutsch (Max-Planck-Institute for Biogeochemistry, Germany)
3. Eddy covariance flux measurements and processing - Lutz Merbold (Max-Planck-Institute for Biogeochemistry)

The cost of the workshop is ZAR 2560 (about euro 240), which covers accommodation in the local guest house (sharing, for nights of 10-14 March), meals during the workshop and workshop transport. FAO will provide financial support to cover the workshop fee and airfare for at least 10 attendees from Africa.

In order to register for the workshop, please e-mail Bob Scholes (see below) and send him a copy of your CV. In the e-mail please let him know if you require full or partial financial support in order to attend the workshop.

For any enquiries: Dr Bob Scholes (bscholes@csir.co.za) or Mr Rudzani Makhado (rmakhado@csir.co.za).

News from Congo

CarboAfrica partners (CIRAD, UR2PI and DSA-SUN) in cooperation with IDR (Institut du Développement Rural, Université Marien Ngouabi, Brazzaville) carried out the following activities (or part of these):

- the start of a survey of the CH₄ and N₂O fluxes on termites' nests (2 types of termites *Cubitermes* and *Nasotitermes*) at two different distances: near the nests (<1m) and far away (3m).



Figure 6. A termite nest.

- the start of another survey of the root dynamic of the savannah through rhizotrons, sequential cores, in growth cores and root bags.



Figure 7. The rhizotron.

- the evaluation of the methodologies for estimate the biomass in the eucalyptus plantation is still in progress. After the understorey (litter, grass and shrub) of a mature eucalyptus stand (7 year-old), the



Figure 8. Litter measurements.

work will continue with the roots of a young stand (18 months) (see CarboAfrica NewsLetter N. 2).

- the 12th field campaign occurred at the site of Tchizalamou to measure the above-ground and below-ground biomass and the Leaf Area Index (LAI) of the grass at the savannah. A Normal Digitalized Vegetation Index (NDVI) sensor has been installed in November 2007 on the meteorological tower and the LAI measurements will be compared with the NDVI values.

News from Zambia

The team from the Max-Planck-Institute for Biogeochemistry and the Zambian Meteorological Department have finished the set up of the instrumentation of the flux tower in Zambia. The

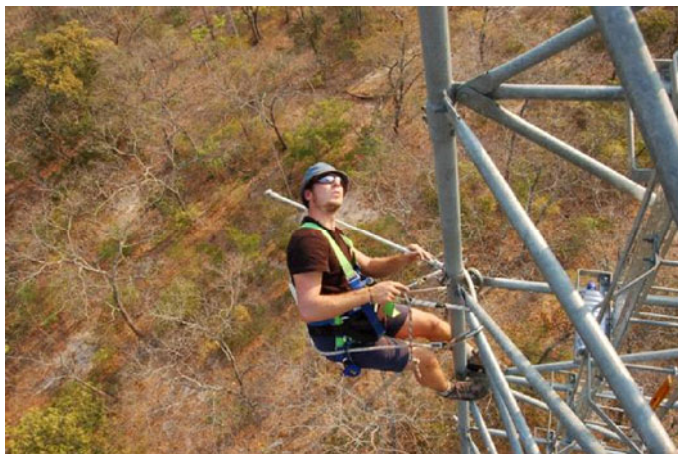


Figure 9. Climbing on the tower to set up the scientific equipment!

tower, that had been erected in 2000 for the SAFARI 2000 programme, is located in a Miombo woodland near Mongu, Western Zambia. The team from Jena mounted an eddy covariance system with an open and a closed path sensor to be able to compare both sensors in tropical areas. In addition, microclimate sensors were installed to characterize energy balance and hydrology.



Figure 10. A tensiometer for soil water potential measurements.

The whole system is powered by a photovoltaic station comprising 48 panels.



Figure 11. The 48 photovoltaic solar panels supplying energy to the equipped tower.

Currently, scientists from Jena are back to Mongu to do the site characterization, measurements of soil respiration and leaf photosynthesis.



Figure 12. The equipped eddy covariance flux tower in Zambia..

United Nations Framework Convention on Climate Change (UNFCCC) Conference in Bali 3-14 December 2008

The 13th conference of parties (COP 13), and the 3rd meeting of the parties (MOP3) of the UNFCCC, held in Bali (Indonesia) last December, focused on four pillars: (1) mitigation, (2) adaptation, (3) technology transfer and (4) financial mechanisms to support the above activities. The conference concluded with the achievement of a roadmap that draws the next cycle of negotiations until 2009. Many of the outcomes of the conference are very relevant to the CarboAfrica project. In particular most of the concerns of African countries (deforestation, forest degradation, small scale CDM, sectorial approaches, financial mechanisms, access to funding for developing projects etc.) have been taken into account.

CarboAfrica has sent a representative to attend the conference in Bali: Mr Henry Matieu, doing his PhD on REDD activities in Africa. See the Appendix 1, at the end of this issue, for a complete report on the Bali conference.

Related Links

ACE – African Carbon Exchange (ACE) Project
<http://www.nrel.colostate.edu/projects/ace>

AfDevInfo - African Development Information Services
www.afdevinfo.com/htmlreports/newsletter_7.aspx

AMMA - African Monsoon Multidisciplinary Analysis
<http://amma.mediasfrance.org>

CARBOEUROPE (Integrated Project CarboEurope-IP, Assessment of the European Terrestrial Carbon Balance)
<http://www.carboeurope.org>

Climate Change and Africa
www.climate.org/CI/africa.shtml

EO-LANDEG (Earth Observation initiative in a former homeland of South Africa in support of EU activities in land degradation and integrated catchments management)
<http://www.eolandeg.com>

ESASTAP - European South Africa Science and Technology Advancement Programme
<http://www.esastap.org.za/esastap/home/index.php>

European Commission - Evaluating protected areas in Africa
www.tem.jrc.it/PA/index.html

FIRMS - Fire Information for Resource Management System
<http://maps.geog.umd.edu/firms>

FLUXNET (Integrating Worldwide CO₂ Flux Measurements)
<http://www.fluxnet.ornl.gov/fluxnet/index.cfm>

GCP - Global Carbon Project
<http://www.globalcarbonproject.org>

ILEAPS - Integrated Land Ecosystem-Atmosphere Processes Study
<http://www.atm.helsinki.fi/ILEAPS/>

Marien Ngouabi University - University of Brazzaville, Congo
<http://www.univ-mngb.net/>

NEPAD - New Partnership for Africa's Development
<http://www.nepad.org/>

ROSELT - Réseau d'Observatoires de Surveillance Ecologique à Long Terme
mdweb.roselt-oss.org/index.php?la=eng

SAFARI 2000 Project
daac.ornl.gov/S2K/safari.html

TCO - Terrestrial Carbon Observation
<http://www.fao.org/gtos/TCO.html>

TroFCCA - Tropical Forest and Climate Change Adaptation
<http://www.cifor.cgiar.org/trofcca>

CarboAfrica Bibliographic Archive

CarboAfrica aims to create an archive of a comprehensive bibliography of papers related to Africa, carbon cycle, GHG and Climate Change. Therefore, please send to CarboAfrica@fao.org any document, publication, and presentation relevant to the topics mentioned above and CarboAfrica in particular. Then we will put them in the website <http://www.carboafrika.net> as downloadable documents, or just as references. In any case please let us know if there are any intellectual property rights and/or citation rules to be respected.

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Contacts

CARBOAFRICA is an international project funded by the European Commission and coordinated by Prof. Riccardo Valentini, University of Tuscia (ITALY).

For any further information: www.carboafrika.net

Antonio Bombelli (Project Manager): bombelli@unitus.it

Join the CarboAfrica mailing list server! You will be informed on important incoming events and receive project news, documents and the periodic 4-monthly newsletters.

http://www.carboafrika.net/listserver_en.asp

Please circulate this issue to any interested people.

The wild road from Bali to Copenhagen

Outcomes of the United Nations
Climate Change Conference
Bali, 3-14 December 2008



By *Matieu Henry* (University of Tuscia, Italy; henry@unitus.it)

1. Introduction: what was Bali about?

The convention of Rio (1992) and the Kyoto protocol (1997) correspond to the most developed international instruments in terms of environmental management. The Kyoto protocol, which entered into application in February 2005, tends to develop actions to stabilize the concentration of greenhouse gases in the atmosphere to a level that would not be dangerous to anthropic activities. The Kyoto protocol is particular for two things: it creates an economical value for carbon to encourage emission reduction activities and it commits industrialized countries (Annex I) to binding targets for a first commitment period (2008-2012). The Kyoto protocol was established on some weak aspects: (1) scientific knowledge is limited, (2) principles of differentiated responsibility which does not commit developing countries to any emission reduction and (3) some industrialized countries such as the US and Australia didn't ratify the protocol.

The 13th conference of parties (COP 13), and the third meeting of the MOP (MOP3), held in Bali (Indonesia) were some of the most important meetings since the climate convention entered into application. It took place after the publication of the 4th report of the GIEC which main conclusion is that emissions reductions have to be between 25-40% by 2020. In addition the report of the GIEC confirms that it is possible to bind temperature increases but urgent actions must start NOW!

The main issues of the conference were: (1) to reinforce the convention and widen the participation (particularly of emerging countries such as China and India), (2) to build the road map for the application of the second commitment period of the Kyoto protocol (2008-2012) and (3) to re-integrate the US into the negotiations. During the last general meeting of the United Nations in September, the UN agreed that negotiations have to focus on four main building blocks: (1) mitigation, (2) adaptation, (3) technology transfer and (4) financial mechanisms to support the above activities.

2. Most important decisions

The conference of Bali concluded on December 15th with the achievement of a roadmap that establishes a negotiation process for the post-2012 regime to struggle with climate change. It resulted in the following points:

2.1. Bali road map

The Bali road map consists of a sufficiently detailed and consistent base to set up a new cycle of negotiations. It specifies the issues that have to be debated, an ad hoc group which includes all the parties of the convention, the meeting (4 per year) and a deadline (2009). It takes into account most of the consideration of African countries (deforestation, forest degradation, small scale CDM, sectoral approaches, financial mechanisms, access to funding for developing projects etc.). The Bali road-map recognizes the official report of the GIEC and the necessary emission reductions between 25 and 40% for Annex I countries to avoid dangerous climate change. Almost all the parties agreed to include quantified emission reductions into the text, but, the US was opposed, blocked the negotiations, and due to this the text contains only a reference to the GIEC report in the footnotes. The Bali road map reasserts the principle of common but differentiated responsibilities in term of mitigation. It requires from Annex I countries commitments, appropriate actions, and quantified objectives to reduce emissions. It requires from non-Annex I countries, that they must undertake, "appropriate mitigating actions in the context of sustainable development, supported by technology and enabled by financing and capacity building".

2.2. Adaptation

Issues: Adaptation has emerged as a major issue during the conference as projections indicate rising sea levels, river flooding, droughts and a scarcity of water will affect more people. Adaptation is the main concern for many developing countries, particularly the poorest and most vulnerable ones. The adaptation fund (AF) is notable for

various reasons: (1) it exists under the Kyoto protocol unlike the “Least Developed Countries and the Special Climate Change Funds” and it is outside the direct sphere of influence of countries such as the United States, who have not ratified that protocol, (2) its revenue is generated, namely through a two per cent levy on the CERs generated by emission reduction projects under the CDM, (3) the magnitude of revenues it is projected to generate (between \$160m to \$950m) and (4) it is exclusively dedicated to the funding of concrete adaptation activities. However, the important issues are related to the size of the fund when considering that the World Bank recently estimated the cost of adaptation to be in the tens of billions of euros. Secondly, that the developing countries criticize the GEF for being rigid when accessing the funds.

Decision: During the Bali conference, despite the weak or disruptive efforts of some countries, a highly positive outcome was achieved overall. Not only was adaptation included as a key building block for the post-2012 framework under the Dialogue, with many references to addressing the needs of poor countries, but the desperately needed ‘Adaptation Fund’ was finalised. COP/MOP3 adopted a decision on the operational aspects of the AF. The AF was designed to support projects on adaptation in developing countries and it will be composed of sixteen members: five from the UN regional groups, one from small island developing states, one from the least developed countries, and two each from both non-Annex-I nations and Annex I participants. The AF will be under the supervision of the COP/MOP and it will be reviewed within a three years’ period and first by COP/MOP 6. The AF will be initially managed by the Global Environment Facility (GEF) so that it can be operative by the beginning of the first commitment period. The World Bank was requested to take on trustee functions.

[COP/MOP3 decision on the Adaptation Fund](#)

[Decision 10/CP.7 establishing the Adaptation Fund](#)

2.3. Technological transfer

Issues: Parties have taken decisions to promote the development and transfer of environmentally sound technologies at each session of the COP. Technology transfer within the Framework Convention on Climate Change provides both opportunities and incentives for international cooperation. The industrialized countries should provide incentives to assist and encourage developing countries in taking actions: "The extent to which developing country parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country parties of their commitments under the Convention related to financial resources and transfer of technology" (Article 4.7). During last SBSTA meeting, developing countries had specific concerns and needs that should be given special attention in any global effort for: the protection of environment, poverty alleviation, reinforcement of capacity building, financial assistance, and consideration constraints to technological transfer, including intellectual property. At present, technology transfer has still occurred under normal commercial terms, which demand large returns for intellectual property rights. Therefore, it goes against the spirit of the Convention. Developing countries proposed to set up a new financial mechanism under the convention. The most important issue of the on-going debate surrounds a proposal from the G-77/China for the establishment of an international technological information centre.

Decision: Following the demand from developing countries, technological transfer was considered within the SBSTA and the SBI. Governments recognised the need to urgently deliver technology to developing countries, and agreed to create a new ‘programme’ to scale up the level of investment in technology transfer. The COP-SBSTA decision reconstituted the Expert Group on Technology Transfer (EGTT) and identified a set of actions aimed at the improvement of financing environmental technology development in developing countries. The COP-SBI decision requested the GEF to prepare a strategic programme to foster financial investments in technology transfer and identified a set of performance indicators to monitor progress and developments in this field.

[COP13 decision \(SBSTA\) on the Development and transfer of technologies under the Subsidiary Body for Scientific and Technological Advice](#)

[COP13 decision \(SBI\) on the Development and transfer of technologies under the Subsidiary Body for Implementation](#)

2.4. Reducing emissions from deforestation in developing countries (REDD)

Issues: An agreement on the fight against deforestation in developing countries was on the Bali agenda. Deforestation contributes to 20% of GHG emissions. Excluded from the first commitment period of the Kyoto Protocol, the idea was submitted by Papua New Guinea and Costa Rica, with the support of the Coalition of Rainforest Nations, at the 11th Conference of Parties (COP-11) to the UN Framework Convention on Climate Change (UNFCCC) in Montreal in 2005. The proposal has initiated a two year examination process, characterized by an extremely high participation of stakeholders. The debates were focusing on: (1) inclusion of forest degradation, (2) funding mechanisms, (3) the framework: under or outside the Kyoto protocol, (4) mode of

compensations: definition of a baseline, permanence of C sequestration and (5) the scale of approach. REDD was the hot topic leading up to the conference and was the subject of at least a third of the side events over the two weeks, including a dedicated '[Forestry Day](#)' hosted by the Centre for International Forestry Research (CIFOR) and the Indonesian Forestry Ministry.

Decision: COP13 agreed on the need to take action in order to combat deforestation, inviting Parties to adopt an adequate set of actions in this respect and urged SBSTA to develop a work plan on methodological issues related to the estimation of emissions from deforestation and forest degradation in developing countries, as well as conservation and sustainable management of forests.

The REDD agreement includes reducing forest degradation, and the final two paragraphs leave the door open for a wide range of other mechanisms to be included, such as: (1) conservation of existing carbon stocks (it can be interpreted as a means for developing countries to be paid for managing national parks and strictly-protected forest reserves), (2) reforestation and the 'enhancement of forest carbon stocks' will focus on plantations for forest restoration and (3) enrichment and recognition of pre-2012 REDD activities.

There are a number of outstanding concerns with REDD, from the perspective of forestry professionals and civil society groups, and were not adequately addressed in the final agreement.

National accounting: REDD will be a national level mechanism, not project-based. Non-annex 1 countries will submit national reports of their forest-based carbon stocks, and will receive CERs based on their success in meeting REDD targets.

Financial compensations: The income from the trade of C credits will be distributed to national governments. This could have potential negative implications for efforts to decentralise management of natural forest resources.

Local/indigenous forest use rights: Many civil society organisations perceive REDD to have negative implications for forest-dependent peoples in implementing countries. The centralised nature of the mechanism is one reason for this concern, but it is also rooted in the issues of land tenure rights. The final REDD document quite deliberately refers to the 'needs' of local communities, not their 'rights'.

Baselines: The definition of the baseline has still to be debated over the coming two years.

Funding: The World Bank launched the [FCPF](#) during the Bali conference. This fund will be about 300 millions of euros and over a period of 5 years. This caused controversy largely due to the outstanding issues with REDD. The Chair of the United Nations Permanent Forum on Indigenous Issues (UNFPII) accused the World Bank of dishonesty in failing to consult with them during the preparation of the FCPF. The World Bank has responded to these criticisms with a promise to release funding to host countries dependent on full, informed, transparent consultation with all concerned parties, including indigenous communities.

Over 30 non-annex 1 countries have already applied to the World Bank for access to the FCPF. The World Bank has selected about 20 countries (Ghana is included) by mid-2008 to receive funding for a 'Readiness Mechanism' to improve skills, monitoring systems and infrastructure required for REDD and to prepare a national REDD strategy. A smaller number of countries, which the Bank deems to have participated successfully in the Readiness Mechanism, will receive further FCPF money under a 'Carbon Finance Mechanism' to pilot incentive payment systems before 2012.

[COP13 decision on the Reducing emissions from deforestation in developing countries: approaches to stimulate action](#)

2.5. The Clean Development Mechanism (CDM)

Issues: The CDM has been up and running for just two years, but in that short time it has shown its ability to reduce greenhouse gas emissions and stimulate green investment in developing countries. There are currently more than 895 registered CDM projects in 49 countries, and about another 2000 projects in the project registration pipeline. The CDM is expected to generate more than 2.6 billion certified emission reductions (tradable CERs) by the time the first commitment period of the Kyoto Protocol ends in 2012. A year after Secretary-General, Kofi Annan launched the Nairobi Framework, aimed at spreading the benefits of CDM to more countries, several more projects have been launched in Africa. Projects in Africa account for just 2.6 per cent of all CDM projects. There are currently only 15 A/R CDM projects in process of validation in the world, from which two are in Africa (Uganda and Tanzania). A/R CDM projects represent [0.09%](#) of the scope of the registered projects. The technical and administrative requirements associated with CDM are more difficult for A/R projects given the technical complexity to estimate forest carbon reductions which result in often lengthy registration processes. A/R projects still face substantial legal, financial and institutional barriers. Demand for CDM A/R project credits is limited as

these credits are not yet accepted by the largest carbon market, the EU Emissions Trading Scheme (EU ETS). There have been mounting calls from developing countries, particularly from African countries, to receive money from the CDM. The countries are asking simplification of the procedure for application and verification of projects. Many countries complained that the process for approval of projects is too time consuming and expensive.

Decision: [The potential for Africa to host CDM projects was underlined, but a great deal more remains to be done, and much more is needed in terms of donor support.](#) In addition, parties agreed to double the size of small-scale afforestation/reforestation project activities to 16 kilotonnes of CO₂ per year. This will therefore benefit countries which unable to take part in the mechanism for this category of project activities. COP/MOP3 took note of the annual report of the Executive Board on the implementation of CDM projects and provided further specifications in terms of governance, methodologies, regional participation and resources under the CDM. Some significant changes to the implementation of the CDM were agreed in Bali, most obviously in the two fields of biogas and afforestation/reforestation AR/CDM.

Biogas: The MOP3 agreed to reinstate the ‘Switch from non-renewable biomass for thermal application by the user’ (SSC I.E) mechanism under the CDM.

Energy efficiency: The MOP3 also agreed to reinstate the ‘Energy efficiency measures in thermal applications of non-renewable biomass’ (SSC II.G) methodology under the CDM.

[COP/MOP decision on Compliance under the Kyoto Protocol Annual Report for 2006-2007 of the Compliance Committee](#)

2.6. Other decisions

Ø Review pursuant to Article 9 of the Kyoto Protocol

Under Article 9 of the Kyoto Protocol COP/MOP is requested to “periodically review the Protocol in the light of the best available scientific information”. The first Kyoto Protocol review was carried out in Nairobi (COP12) and COP/MOP3 decided for the second review to take place at COP/MOP4 in 2008 pursuant to the conditions and the timetable laid down in Bali.

[COP/MOP3 decision on Scope and content of the second review of the Kyoto Protocol pursuant to its Article 9](#)

Ø Compliance

COP/MOP3 considered the annual report of the Compliance Committee and expressed its concern about the delay of certain Annex I Parties in the submission of the fourth national communication to the Secretariat. On Article 18 of the Kyoto Protocol and the amendment to the Protocol for the adoption of a compliance regime “entailing binding consequences” no agreement was reached at COP/MOP3 which decided to postpone discussion on this item at SBI28 in 2008.

[COP/MOP decision on Compliance under the Kyoto Protocol Annual Report for 2006-2007 of the Compliance Committee](#)

Ø Joint Implementation (JI)

On JI COP/MOP3 considered the annual report of the Joint Implementation Supervisory Committee and discussed on a few measures designed to improve the attractiveness of JI projects.

[COP/MOP3 decision on Guidance on the implementation of Article 6 of the Kyoto Protocol Annual report for 2006-2007 of the Joint Implementation Supervisory Committee](#)

3. Conclusion

The Bali conference brought forward three main decisions: (1) the decision on future cooperation under the UN Framework Convention on Climate Change (UNFCCC) or known as the Bali roadmap (the “Dialogue”), (2) the conclusions of Kyoto’s second commitment period negotiating body (the Kyoto 2 track – also known as the Ad-Hoc Working Group - AWG), and (3) the one year review of the implementation of the Kyoto Protocol (Article 9). However, while the president of the European Commission expressed his satisfaction that the Bali Climate talks gave birth to an agreement launching formal negotiations on a global climate regime for post-2012, this is the beginning of the real hard work. On one hand, there are still plenty of socio-technical uncertainties concerning implementation of adaptation projects, the REDD mechanism and the improvement of A/R CDM projects in Africa. On the other hand, the position of the US, the only country without emission reduction commitment, has a crucial political influence on the Kyoto protocol, slow actions and conditioned an unambitious road-map while it is urgent to take actions to mitigating climate change.
