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LAND COVER AND CHANGE

Newsletter of the GOFC-GOLD Land Cover Project Office

GOFC-GOLD Symposium 2013

The GOFC-GOLD Land Cover Implementation Team (IT) will organise in coordination with the GOFC-GOLD Fire IT the next GOFC-GOLD Symposium in April (15-19) 2013 on the campus of Wageningen University, The Netherlands. See page 2 for more information.



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Multi-source satellite monitoring of Central Siberia's Forest Resources

About 50 % of Russia's forest resources have been inventoried more than 25 years ago. The consequence is that most of the operationally used forest inventory data are obsolete. In fact, human induced and climate-driven impacts lead to massive changes and at least significant reductions of the natural forests in Russia. Examples can be given with the huge forest fires in the Krasnoyarsk region in Siberia in the summer of 2012. The reality is that there exist no practically applicable methods for up-

dating growing stock volume in obsolete forest inventories, particularly for vast and remote territories in Siberia. Addressing the important issue of assessing forest resources in the boreal zone, particularly in Siberia, the ZAPÁS project is aiming to actively support the EU-Russian Space Dialogue. ZAPÁS (Rus.: Запас) – was chosen as project acronym since this word is used in forest terminology for growing stock volume or forest stock, which is one of the envisaged products of this project. ZAPÁS delivers innovative procedures, new products and multi-scale cross-validation in-

formation for forest resource assessment and monitoring. In accordance with the FP7 call SPA.2010.3.2-01 EU-Russian Cooperation in GMES (SICA), ZAPÁS focuses on the synergistic exploration of Earth observation data provided by ESA and ROSCOSMOS and on the exchange of methodological know-how in processing Earth observation data. The geographical focus is Central Siberia, which contains two administrative districts of Russia, namely Krasnoyarsk Krai and Irkutsk Oblast. The project team aims at developing Earth observation products at

two geographical scales. Improved regional scale land cover and biomass maps will be derived for Central Siberia to (a) improve existing coarse scale land cover databases, (b) link them with biomass information from medium resolution Radar imagery, and (c) use these up-to-date land-cover and forest resource geo-information as input for a full carbon accounting. The results of the terrestrial ecosystem full carbon accounting are addressed to the Federal Forest Agency as federal instance. The high resolution products comprise biomass and change maps for selected local sites. These products are addressed to support the requirements of the local forest inventories. A key part of the project is to provide the geo-information products to the user community via a web map portal (Figure 1). Detailed information is provided at <http://zapas.uni-jena.de>.

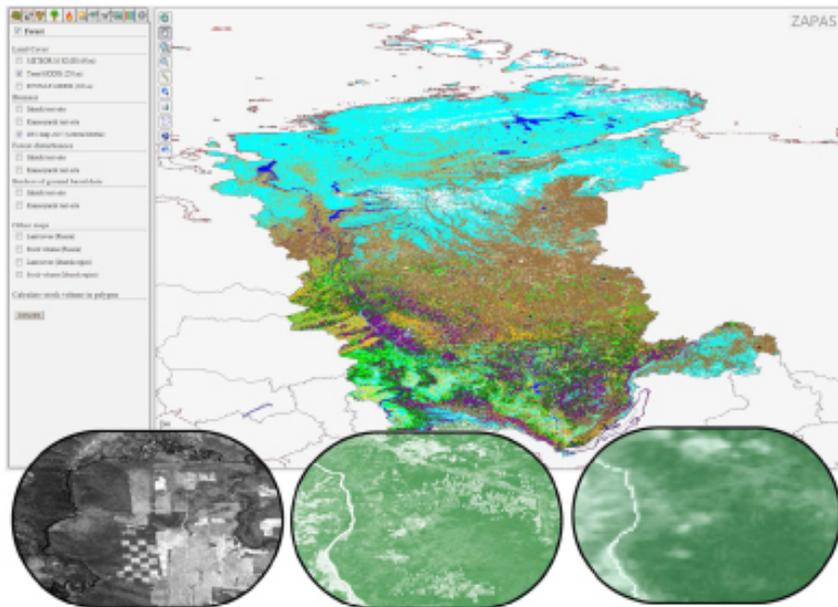


Fig. 1: Web-portal interface of the project

3rd GOFC-GOLD Symposium, Wageningen, The Netherlands, April 15-19, 2013

The GOFC-GOLD Land Cover Project Office announces the organisation of the 3rd GOFC-GOLD Symposium in Wageningen, The Netherlands on April 15-19, 2013.

Two previous GOFC-GOLD Symposiums were organised in 2006 and 2008 in Jena, Germany at Friedrich Schiller University. The last Symposium was attended by more than 150 persons coming from research institutes, academic research, non-governmental organisations and private sector. Besides presenting GOFC-GOLD progress in various areas and activities, the Symposium was aimed at engaging the global community of forest and land cover monitoring experts to develop technical consensus in critical areas (REDD, boreal forest monitoring, standards in reporting guidelines, land cover map validation). This third GOFC-GOLD Symposium is intended to provide the land cover monitoring community an opportunity to discuss current challenges related

to REDD+, Land Cover ECV, GEO, GLC mapping and validation activities. The Symposium will provide members of the GOFC-GOLD ITs, WGs, and RNs an opportunity to discuss the future of the upcoming priorities and organisation (structure, orientations, internal and external synergies).

Objectives: The GOFC-GOLD Office organizes this Symposium to review the recent research accomplishments in the global land cover and forest monitoring in the arenas of research, implementation, support of international assessments, and capacity development in developing countries. Specific activities from GOFC-GOLD and its partners will be reported. The Symposium will outline the specific research, applications and development needs that should be targeted by GOFC-GOLD in the future. The Symposium will be an opportunity for GOFC-GOLD to commu-



nicate on its advancements and on its contributions to a series of international initiatives notably those that aim at standardizing and harmonizing GLC mapping procedures. In addition the Symposium will enable the members of the GOFC-GOLD to meet other international experts. Therefore the Symposium will be an opportunity to present state-of-the-art research and provide recommendations for future work based on identified research gaps. The outcomes of the meeting will enable GOFC-GOLD to provide its sponsors (Food and Agriculture Organization, United Nations Educational, Scientific and Cultural Organization, World Meteorological Service, International Council for

Science and United Nations Environment Programme) with updated scientific and technical information to support internationally coordinated initiatives like the COP events, those from the Global Terrestrial Observing System, and those from the Group on Earth Observations. Gathering the GOF-C-GOLD members will permit the update of the long-term objectives of the organization, and strengthen its leading role in the GLC and forest mapping community.

Detailed objectives are listed online (see link below). The general agenda is provided in table 1.

Persons interested in land monitoring activities are cordially invited to come to Wageningen to participate to a series of specialised workshops dedicated to Land Monitoring activities. For registrations please contact Antoinette Stoffers (Antoinette.Stoffers@wur.nl). Further details will be provided

ed in the next GOF-C-GOLD Land Cover newsletters and on the webpage provided below. The 3rd GOF-C-GOLD Symposium is sponsored by Wageningen University, ESA, NASA, START, GCOS, GEO, and CIFOR.

Information on the Symposium: http://www.gofcgold.wur.nl/sites/Gofcgold_Symposium2013.php

Monday, 15		Tuesday, 16			Wednesday, 17	Thursday, 18		Friday, 19
Session 1	Session 3	Session 5	Session 7	Session 9		Session 11	Session 13	Session 15
REDD Working Group meeting	Fire team meeting (1)	Land Cover team meeting (1)	Biomass Working Group meeting (1)	Fire team meeting (1)	Land Monitoring Symposium Plenary Session (1)	Global Land Cover Validation	Advanced remote sensing methods	GEO Global Land Cover Task meeting
Lunch break		Lunch break			Lunch break	Lunch break		Lunch break
Session 2	Session 4	Session 6	Session 8	Session 10		Session 12	Session 14	Session 16
Follow-up on REDD+ MRV Stepwise approach with CIFOR	Fire team meeting (2)	Land Cover team meeting (2)	Biomass Working Group meeting (2)	Fire team meeting (2)	Plenary Session (2)	Session on land cover ECV	Regional Network meeting	Plenary session (all-week session summaries)

Table 1: Preliminary agenda of the GOF-C-GOLD Symposium

Interdisciplinary collaborations needed among the scientific community to make REDD+ work

The last Forest Day¹ was organised during the United Nations Framework Convention on Climate Change (UNFCCC) - Conference of Parties (COP18) this year in Doha, Qatar.

A more comprehensive approach is now considered moving towards the concept of 'Living Landscapes'. As indicated on a post by Veronique (Niki) De Sy on the CIFOR blog: Forest news², this integrated approach should concern not only REDD+ implementation and policies but also research. Such interdisciplinary approaches for REDD+ are fostered in a special issue of Current Opinion in Environmental Sustainability³ that reviews the state of the art REDD+ research encompassing both natural and social perspectives. The special issue attempts to address

different REDD+-related issues defining conditions of success with a 'how, where and when' approach. The integration of the so-called REDD+ co-benefits (biodiversity, social safeguards) in the MRV system is discussed as well as coordination between local and national scales. Finally, the special issue discusses the pace REDD+ activities should be carried out depending on the local circumstances (data, competencies, funds available, sustainable payments for

carbon credits in the longer term).

1. [Forest Day 6 website: http://www.forestclimatechange.org/events/forest-day/forest-day-6/home.html](http://www.forestclimatechange.org/events/forest-day/forest-day-6/home.html)
2. <http://blog.cifor.org/13006/forestry-research-needs-to-cross-scientific-boundaries-to-make-redd-work/#.UNB1QXdXt8E>
3. <http://www.sciencedirect.com/science/journal/18773435/4/6>



Integration of biodiversity and socioeconomic data in forest monitoring

Veronique (Niki) De Sy, from Wageningen University, The Netherlands, discussed on Forest News (CIFOR's blog¹) the interest for countries to go beyond carbon emission measurements for their forest monitoring activities under REDD+. The integration of biodiversity and rural social conditions have been discussed by experts during the last COP in Doha, Qatar. In such a way the REDD+ MRV system would make a step towards the establishment of a comprehensive tool for policy development. In their current design forest inventory and monitoring systems are often not completely adapted to national policy management. However the effort to integrate ad-

UN-REDD
PROGRAMME



ditional information would enable countries a better understanding of the drivers of deforestation and forest degradation. Such a system would allow the definition and prioritization of REDD+ strategies in the context of broader development objectives. In addition, such an integrated monitor-

ing system would enable countries to report to other environmental agreements. However the difficulty to integrate social safeguards and biodiversity aspects will require a higher level of coordination of forest monitoring activities. This reinforces the need of a stepwise progress creating the conditions for continuous improvements².

1. <http://blog.cifor.org/13018/forest-monitoring-should-integrate-biodiversity-and-socioeconomic-data-say-experts/#.UNB1QndXt8E>
2. <http://www.cifor.org/online-library/browse/view-publication/publication/3944.html>

A voluntary REDD+ database (VRD)

A voluntary REDD+ database (VRD) has been launched in 2010 at the Ministerial Meeting of the REDD+ Partnership in Nagoya, Japan. The initiative is built on previous data collection efforts from Australia, France and Papua New Guinea. The objectives are to improve transparency around REDD+, support efforts to identify and analyse gaps and overlaps in REDD+ financing, and help share experiences on REDD+. The database provides statistics (bar plots, maps, etc.) on the arrangements voluntarily reported that undertake REDD+ activities. In such a

frame countries and institutions can play both the funder and recipient's roles across different arrangements.



As of December 2012, the VRD holds information submitted by 17 funder countries, 33 REDD+ countries, 15 institutions, and reports a total of 1287 REDD+ arrangements. It is possible to provide data through an online questionnaire and download data that is made freely available.

The database is managed by the United Nations Food and Agriculture Organisation, Rome, Italy, and the United Nations Environment Programme, World Conservation Monitoring Centre, Cambridge, UK. You can access the database following this link: <http://reddplusdatabase.org/>

GlobBiomass User Consultation Meeting 9-11 October 2012 in Jena, Germany

More than 85 international experts in forest biomass mapping and monitoring discussed current research questions and user requirements during the recent "European Space Agency (ESA) GlobBiomass User Consultation Meeting" from 9-11 October 2012 in Jena, Germany.

The meeting was held to bring together scientists, users, space agency representatives and com-

mercial satellite operators. The meeting was hosted by the Department of Earth Observation of the University of Jena and the Max-Planck-Institute for Biogeochemistry (MPI-BGC), two institutions with a huge expertise in remote sensing based biomass retrieval and carbon cycle modeling.

Further support by ESA, the German Aerospace Center (DLR), the National Aeronautics and Space Ad-

ministration (NASA), JenaOptronik GmbH, Astrium, RapidEye AG and GAF AG helped to perform a very successful meeting with interesting talks and inspiring discussions. "Many branches need information about the spatial distribution and temporal dynamics of forest biomass. We would like to learn from the experiences of the users and identify their requirements", explains Prof Christiane Schullius from

the University of Jena who initiated the “GlobBiomass Meeting”.

The first day of the conference started with an introduction of international programs such as the GEOCAR-BON Project, the GEO Global Forest Observations Initiative and the activities of the GOF-C-GOLD Biomass Working Group. The highlighted topics of the key note presentations in the afternoon concerned the role of biomass measurements for land surface models and the biomass needs for different kind of applications, for example forest inventory and monitoring, forest protection, forest certification, and forest industry and silviculture. The primary aim of the second day was to stimulate active discussions and a direct exchange between the participants. The sessions therefore always included short teaser talks of both scientists and users, keeping time for questions and discussions. The last day of the conference gave a compre-



hensive overview about available and missing validation data and efforts.

The first “ESA GlobBiomass User Consultation Meeting” can be regarded as the starting point for a potential future GlobBiomass project funded by ESA and concerted with other space agencies to make best use of current space asset. A successful acceptance and implementation of a GlobBiomass project will be an important step towards a coordinated, international concept for global biomass mapping. “This is the only way to ensure a long-term data basis for biomass monitoring in order to reduce the uncertainties in the climate models”, stress Prof Christiane Schmullius and MPI-BGC’s director Dr Markus Reichstein, the co-organizer together with ESA of the recent meeting.

The next working steps in the following weeks will, therefore, concentrate on preparing draft user requirements to enable ESA issuing an invitation to tender for GlobBiomass in the first quarter of 2013. To initiate the tender for the GlobBiomass project, ESA requests participating user organizations to send a Letter of Commitment and to communicate their needs which will be summarized in a User Requirements Document (URD).

The first filled questionnaires are already in evaluation. All interested organizations and institutions, which have not yet received and filled the requested form, are encouraged to also enter the user survey. The questionnaire and further information about the “GlobBiomass Meeting” can be found on the following webpage: http://www.gofc-gold.uni-jena.de/wg_biomass/globbiomass2012/

Next Landsat readies for February launch (LDCM)

The Landsat Data Continuity Mission (LDCM) is scheduled to be launched on February 11, 2013. The launch is to occur from Vandenberg Air Force Base, located near Los Angeles, California, USA, using an Atlas V rocket. The LDCM provides continuity with, and improvement upon, previous Landsat missions. Two new optical channels have been added to offer improved mapping of water bodies and cloud screening capacity. A pushbroom sensor will now be used, based upon solid state detectors and a minimization of moving parts. The new sensor is called the Operational Land Imager, or OLI. The free and open data access policy of the USGS will be



continued with LDCM. Over 400 images will be collected daily, following a schedule to ensure seasonal global coverage. Land cover mapping and change detection will be further supported by LDCM, which will be known as Landsat-8 post launch.

The LDCM is a joint initiative of United States Geological Survey of the De-

partment of Interior and the National Aeronautic and Space Administration.

The Landsat program collects data to support a wide range of interests, nationally and globally, empowering government, commercial, industrial, and educational communities. Key commercial partners in the building of LDCM include Orbital Science Corporation (spacecraft bus) and Ball Aerospace & technologies Corporation (OLI). The thermal infrared sensor (TIRS) was designed and built by NASA Goddard Space Flight Center.

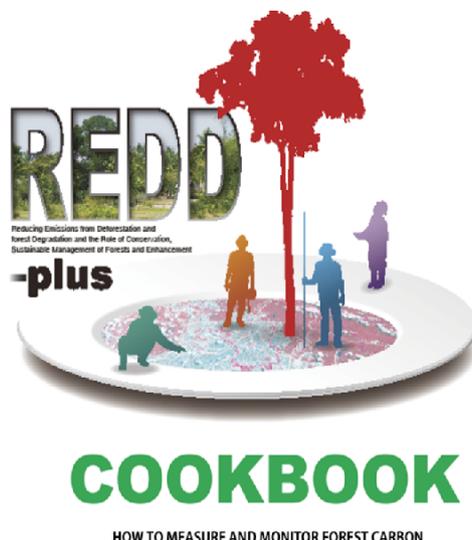
Additional information on the Landsat program can be found at: <http://landsat.usgs.gov>

Publication of REDD-plus Cookbook

REDD Research & Development Center of Forestry and Forest Products Research Institute, Japan has published “REDD-plus Cookbook” at COP 18 under the UNFCCC.

This Cookbook is an easy-to-understand technical manual which provides basic knowledge and technologies required for REDD-plus with the main focus on the forest carbon monitoring methods. It shows the procedure to calculate carbon emissions and removals for establishing reference emission level and reference level based on IPCC guidelines in REDD-plus implementation. It indicates many references including “REDD Sourcebook” by GOLC-GOLD for a deep understanding of each section.

The Cookbook comprises four parts: Introduction, Planning, Techniques, and Reference Guide. “Introduction”, is designed for the policy



makers and their partner organizations working for the introduction of REDD-plus at national/sub-national level, “Planning” is intended for the REDD-plus implementing organizations/countries working on REDD-plus at national/subnational level, and “Technical” for the experts who

work on the REDD-plus activities at national/sub-national level. On the other hand, “References” provides useful references which assist users for a better understanding of “Introduction” and “Planning” sections.

In the sections “Introduction”, “Planning”, and “Technical”, knowledge and the sufficient skills required to address REDD-plus are compiled in units called “recipe”. Users can easily go through the items in each recipe to in-depth recipe or references in accordance with the flow chart. “Reference” aims to provide users with useful information by proposing or showing examples that can be used as a guide when exploring realistic and practical measures for designing and implementing the projects and programs.

REDD-plus Cookbook can be downloaded on this page: <http://www.ffpri.affrc.go.jp/redd-rdc/en/reference/cookbook.html>

Calendar of upcoming events

Event	Date	Venue	Contact
LCLUC ST meeting, with South Asia RN meeting	6-14 January 2013	Calicut and Coimbatore, India	Krishna P. Vadrevu
SAFNet Workshop	February 2013	Tanzania	Anja Hoffmann
GOFC-GOLD Symposium	15-19 April 2013	Wageningen, Netherlands	Brice Mora
GlobWetland III User Consultation	10-13 June 2013	ESRIN, Frascati Italy	ESA & RAMSAR convention
Miombo workshop: a platform to build informed action for the miombo woodlands of S. Africa	June 2013	Maputo, Mozambique	Anja Hoffmann
Impact of GHG's and Aerosols in Asia and SEARRIN WS	June 2013	Japan	Krishna P. Vadrevu
Trans-Atlantic training on LCLUC-related topics	17-21 June 2013	Prague, Czech Republic	Garik Gutman
The Living Planet Symposium	9-13 September	Edinburgh, Scotland	ESA
CARIN Regional Network Workshop	October 2013	Tashkent, Uzbekistan	Olga Krankina

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<http://www.gofcgold.wur.nl/sites/letter.php>

If you have any suggestions or recommendations for future contributions to this newsletter please feel free to contact us.



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