

Overview of REDD-plus mandates under the UNFCCC and role of forest monitoring using satellite technology

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Jenny Wong, Programme Officer

Mitigation, Data and Analysis Programme, UNFCCC secretariat,

Content/ Aim of presentation

- This presentation aims to provide:
 - an overview of the UNFCCC process on reducing emissions from deforestation (REDD-plus) in developing countries;
 - an overview of areas where satellite technology could play a role in ensuring transparency of the measuring, reporting and verification (MRV) process and the environmental integrity of REDD-plus activities.
- Brief overview of REDD-plus decisions and mandates under the Convention
- Relevance of satellite technology to various aspects of REDD-plus implementation
- Importance of development cooperation



Overview – Decisions and mandates

❑ The COP process on REDD-plus:

- **Proposal by PNG and Costa Rica** calling for the COP (11th session, Montreal, **2005**) to consider possible approaches for addressing emissions from deforestation
- Between 2007 and 2012, several milestone decisions were adopted, creating basis for REDD-plus **readiness activities** and **framework/scope** for **national/sub-national** implementation (decisions 2/CP.13, 1/CP.16)
- At COP 19, 7 decisions adopted as the **Warsaw Framework for REDD-plus** – providing the methodological guidance and financing framework
- **COP 21 (Paris) completed the work** on methodological guidance (3 decisions)



Overview – Decisions and mandates

- Decision 1/P.16, paragraph 70 provides the **scope of REDD-plus** - the 5 activities:
 - Reducing emissions from deforestation;
 - Reducing emissions from forest degradation;
 - Conservation of forest carbon stocks;
 - Sustainable management of forests;
 - Enhancement of forest carbon stocks.
- Implementation is **voluntary** and undertaken in the context of **adequate and predictable support**, including financial resources and **technical and technological support**.
- **Implementation in phases**: readiness through development of national strategies and plans and capacity-building, implementation of national policies and plans, demonstration activities and results-based actions.
- Implementation should be at the **national level**, with **sub-national** implementation as **an interim measure** and according to a **step-wise approach**.



Overview – Decisions and mandates

- ❑ With the successful completion of REDD-plus negotiations, **developing countries are beginning to implement their REDD-plus actions**. Several **essential elements**:
 - Voluntary submission of a **forest reference emission level and/or forest reference level**, subject to a technical assessment;
 - Submission of data and information on **results achieved in a technical annex to the BUR**, subject to a technical analysis;
 - Summary of information on the **safeguards** in decision 1/CP.16;
 - Information on **national forest monitoring system**;
 - A **national strategy** or action plan on REDD-plus.

- ❑ In a number of decisions, the COP called on developing country Parties implementing REDD-plus to provide transparent, complete, consistent and accurate data and information, taking into account national capabilities and capacities, that would be suitable for review (verification through technical assessment by experts)



Decisions and mandates – potential role for satellite technologies

Decision 4/CP.15: One of the early decisions providing initial **methodological guidance for REDD-plus** implementation, in particular **measuring, reporting and verification**

The COP requested developing country Parties implementing REDD-plus to establish **robust and transparent national forest monitoring systems** and, **if appropriate, sub-national systems** as part of national forest monitoring systems.

These forest monitoring systems should:

- Use a **combination of remote sensing and ground-based forest carbon inventory approaches** for estimating emissions and removals, forest carbon stocks and forest area changes;
- Provide estimates that are **transparent, consistent**, as far as possible **accurate** and that **reduce uncertainties**;
- **Results** from monitoring are **transparent** and **suitable for review**.



Decisions and mandates – potential role for satellite technologies

Decision 1/CP.16: 3 essential methodology-related elements that must be in place as part of REDD-plus implementation – developing countries need to develop:

1. A national forest reference emission level and/or forest reference level;
2. A robust and transparent national forest monitoring system for the monitoring and reporting of REDD-plus activities;
3. A system for providing information on how the safeguards are addressed and respected.

In each of these elements, developing countries need to develop, collect and analyse data and information that will help them monitor the progress of their actions on REDD-plus. Remote sensing technologies could play a role in the development of data and information necessary for reporting on each of these elements.



Decisions and mandates – potential role for satellite technologies

Decision 12/CP.17: This decision provided the **modalities** for developing countries intending to submit their **forest reference emissions levels and/or forest reference levels**.

When submitting a reference level for a technical assessment, developing countries need to include the following in their submission:

- Information used in constructing the reference level, including **historical data**, in a comprehensive and transparent way;
- **Transparent, complete, consistent and accurate information**, that includes description of data sets, approaches, methods, models;
- Data and information on **carbon pools, gases and activities** included in the reference level;
- **Definition of forest**.

Remote sensing technologies could play a role in provision of data and information on each of the above that would facilitate countries in developing their forest reference levels.



Decisions and mandates – potential role for satellite technologies

- **The Warsaw Framework for REDD-plus:** A package of decisions that provided the full methodological and financial guidance for the implementation of REDD-plus.
- At least 3 decisions that have provisions requesting Parties to provide data and information when reporting on their REDD-plus activities. The use of remote sensing technologies facilitate countries in their collection and analysis of data and information relating to forest land use and forest land use changes.
 - Decision 11/CP.19: Modalities for national forest monitoring systems
 - Decision 13/CP.19: Guidelines for the technical assessment of submissions of proposed forest reference emission levels and/or forest reference levels (links to decision 12/CP.17)
 - Decision 14/CP.19: Modalities for measuring, reporting and verifying(links to decisions 12/CP.17 and 13/CP.19)
- Remote sensing technologies can play a huge, critical role in supporting developing countries to obtain the relevant data and information in order to develop their reference levels and for reporting on their results that are suitable for MRV/technical assessment.



Decisions and mandates – potential role for satellite technologies

- **Decision 11/CP.19:** Modalities for national forest monitoring systems
- The COP decision identified **several characteristics** that should be taken into account when developing national forest monitoring systems:
 - Build upon existing systems, as appropriate;
 - Enable assessment of different types of forest in the country; including natural forest, as defined by the Party;
 - Be flexible and allow for improvement
- While no direct reference to remote sensing, these guidance are still applicable for consideration
- When countries report on their results-based actions, they are also required to provide a description of their national forest monitoring systems and the institutional roles and responsibilities for MRV-ing the results.

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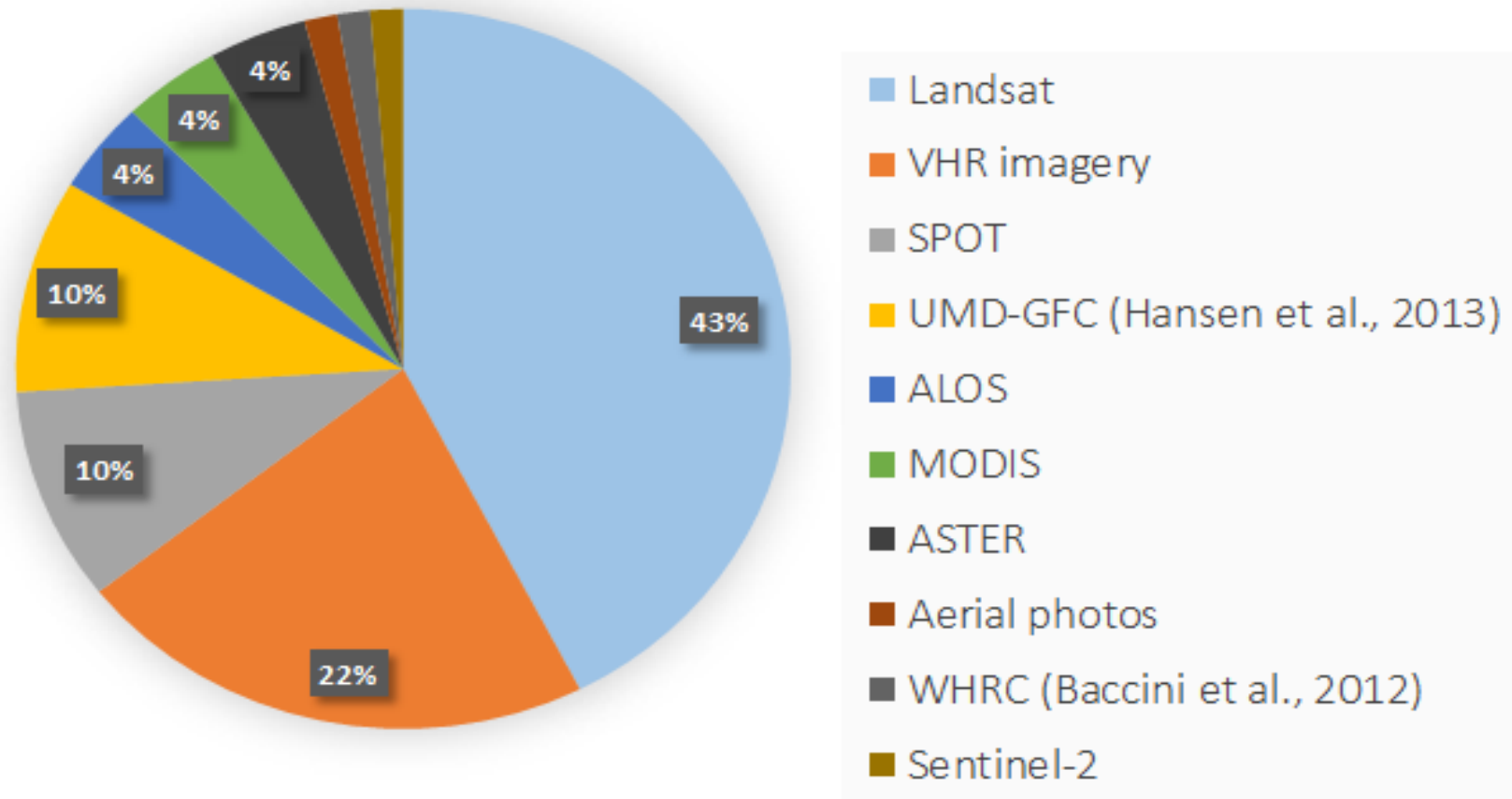
Use of remote sensing for development of reference levels

- Most Parties use remote sensing data, particularly to derive their **activity data** (to determine extent of forest area) needed for the construction of their reference levels. The countries also use remote sensing for validation of products (e.g. land cover maps).
- Landsat data are the most widely used, likely due to:
 - ✓ the available time-series and long-term continuity of the programme (Thematic Mapper since 1982 and plans to launch Landsat 9 in 2020)
 - ✓ spatial resolution (30-m) that is compatible with the minimum area of forest definition of most countries
 - ✓ demonstrated applicability in tropical forest mapping contexts
- Limitations to the use of remote sensing include:
 - cloud coverage
 - existing capability to map land-cover but not necessarily able to directly map land-use. Some countries use land-cover change as a proxy for land-use change as an interim step. IPCC guidance calls for identifying land-use change
 - lack of familiarity and technical capacity for radar processing



Use of remote sensing for development of reference levels

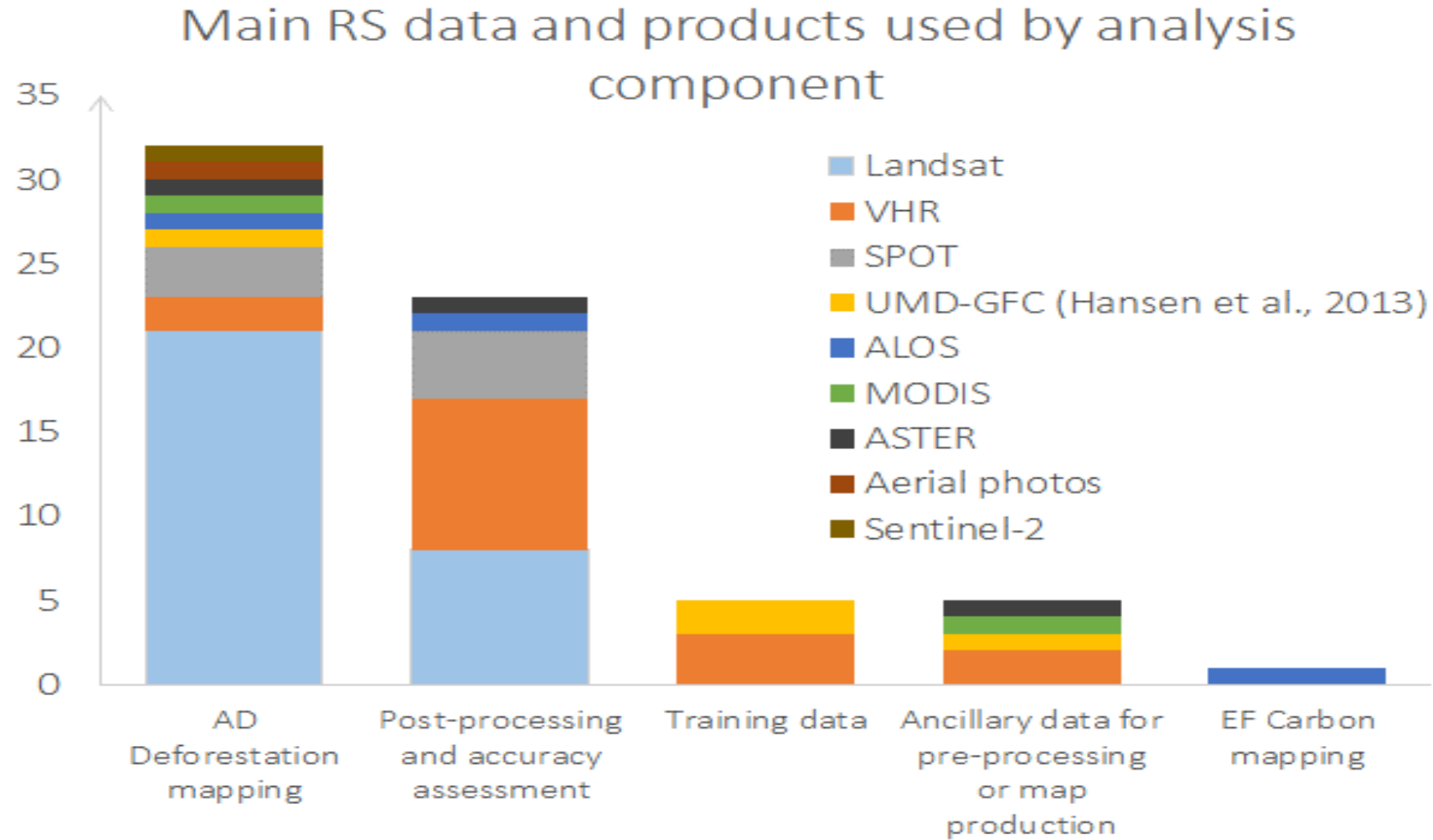
Proportion of RS data used in RLs (%)



(* Information compiled by Joana Brandao de Melo, UNFCCC intern.)



Use of remote sensing for development of reference levels



(* Information compiled by Joana Brandao de Melo, UNFCCC intern.)



Importance of development cooperation

On REDD+:

- The UNFCCC COP has encouraged Parties, in a position to do so, to support capacity-building, provide technical assistance, facilitate the transfer of technology to improve data collection and estimation of emissions, develop capacities for monitoring and reporting and address institutional needs of developing countries doing REDD+
- Support (financial, technical and capacity) is needed for activities relating to measuring, reporting and verifying, addressing drivers of deforestation, addressing the REDD+ safeguards, developing national strategies, construction of reference levels and enhancing institutional needs.

Cooperation in the new Agreement:

- In the Paris Agreement, there is recognition of the importance of strengthening and scaling-up cooperative actions among Parties in the implementation of both mitigation and adaptation activities as well as in technology development and transfer and in enhancing the capacities of developing country Parties in their implementation.
- The COP encourages Parties, Convention bodies and international organizations to engage also with relevant non-Party stakeholders to share their experiences and suggestions and to cooperate in order to facilitate the implementation of policies, practices and actions (in this case, the forest and land use sector).



Importance of development cooperation

Some key messages from the technical examination process:

- 1) **Solutions exist** to limit warming to 2 degrees C
 - 2) **Leadership and willingness to act are required** to overcome barriers to mitigation action
 - 3) **Financial support, technology transfer and capacity-building** are urgently needed
 - 4) **Cooperative initiatives** (national, regional, international) **are essential** to mobilize climate action across a range of stakeholders and need to be further promoted
 - 5) **The UNFCCC has the potential to play a catalytic role** in helping countries overcome barriers and realize their mitigation potential
- Through political leadership, cooperation and capacity-building, these could enhance the role of satellite technologies that could facilitate developing countries' efforts to implement mitigation actions in the forest sector.



Useful weblinks

- REDD-plus – background on the negotiations under the SBSTA, SBI and COP
http://unfccc.int/land_use_and_climate_change/redd/items/7377.php
- REDD-plus web platform
<http://redd.unfccc.int/>
- Land use, land-use change and Forestry under the Convention and Kyoto Protocol
http://unfccc.int/land_use_and_climate_change/lulucf/items/1084.php



Thank you for your attention!

Questions? **jwong@unfccc.int**

Website: **<http://unfccc.int/redd>**

