International Climate Change Financing for Land Use: Beyond a Paris Agreement

Ken Andrasko, Winrock International
for LEAF/AFOLU WG Finance workshop, Bangkok, July 7-9, 2015
Overview of Talk

- Land use in future climate agreement.
- Financing land use
- Thinking more holistically
- AFOLU Next steps needed
What Does Paris Agreement Need to Do on AFOLU?

REDD+ is essentially finished, perfect, just needs funding. Otherwise:

**Key Points**

- Land-use mitigation is essential to meet the goals discussed in the context of avoiding dangerous climate change
- The Geneva negotiating text contains all the elements needed to include land use
- Work after Paris will be needed on methodological detail and transparency
- Existing agreements on LULUCF and REDD-plus are useful and should be recognized and built upon in a new agreement.

Paris Agreement on AFOLU: 2

“Paris text on mitigation should:

a) “Encourage all Parties to use land use approaches to mitigate climate change

b) Identify land use GHG mitigation in national … contributions

c) Set out land use accounting principles, building on what has usefully been agreed in the KP context . . . [which] may suggest useful solutions elsewhere

d) Build on existing COP decisions, including REDD+

e) Agree on relevance of approaches that support synergies between adaptation and mitigation for … sustainable management of ecosystems”

## Lee et al. view of what text could look like:

<table>
<thead>
<tr>
<th>Location</th>
<th>Suggested text</th>
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</thead>
<tbody>
<tr>
<td><strong>Preamble</strong></td>
<td>Recognizing that the special characteristics of land use, including in relation to land management systems, food security, removals as well as emissions, impact on biological diversity, multiple sustainability objectives, disturbance, permanence, legacy and non-anthropogenic effects, require particular consideration under this agreement.</td>
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| **Mitigation** | All Parties should consider policies and measures in the land-use sector that aim to mitigate emissions. Parties are encouraged to undertake mitigation actions in accordance with COP decisions, including on REDD-plus, CMP decisions on land use activities under the KP where appropriate, and future decisions by the COP or the Governing Body. In respect to land use in national [commitments][contributions][actions]:  
  a. Anthropogenic emissions and removals in the land-use sector should be accounted for in assessing progress towards Parties’ [commitments][contributions][actions];  
  b. Inclusion should be on the basis of the most recently agreed IPCC estimation methodologies;  
  c. Parties should include all IPCC land use categories over time, in accordance with common but differentiated responsibility and respective capacities (CBDR/RC);  
  d. Once a source, sink, activity, or pool is accounted for, it should not subsequently be excluded from accounting;  
  e. Definitions of forest, land use and activities should be used consistently over time, or an explanation should be provided as to why and how a definition has changed;  
  f. Under certain conditions, Parties may exclude from their accounting emissions and removals resulting from natural disturbances;  
  g. Parties may build on the existing principles, methodologies and accounting approaches for including land-use under the Convention and its Kyoto Protocol. |
| **Adaptation** | Parties should consider in the land-use sector, synergies between mitigation and adaptation, taking into account the overall objective of the Convention. |
| **Finance** | Parties are encouraged to consider joint adaptation and mitigation [commitments][contributions][actions]; and to include approaches of sustainable management of forests and other ecosystems, in their adaptation planning. **Under General principles**  
  ... recognizes that financing for forest-related mitigation should build on previous COP decisions, and incentivize national contributions in the context of CBDR/RC.  
  ... encourages financing for the integral and sustainable management of forests and other ecosystems including joint adaptation and mitigation. |
| **Transparency** | Parties shall:  
  ... specify whether NDCs are accounted on the basis of full coverage of IPCC categories, or specify which activities, categories pools and gaues are included.  
  ... be transparent in the use of reference levels, either by use of existing decisions under the Convention and its Kyoto Protocol or by providing comparable information.  
  ... be transparent on the approach used to address natural disturbance emissions and removals, either as consistent with available IPCC guidance or by providing comparable information.  
  The COP or Governing Body shall elaborate further guidelines related to transparency of action and support, recognizing the importance of greenhouse gas emissions by sources and removals by sinks resulting from land use activities, and the need for review and assessment provisions. |

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Key Issues & Questions in the Agreement re AFOLU / LULUCF

The Warsaw and Lima COPs requested Parties in a position to do so, to provide during the first quarter of 2015 information on Intended Nationally Determined Contributions (INDCs). The submissions\(^5\) available at the time of writing show that Parties intend to include land use in their NDCs, but not always on the same basis. This demonstrates the need for transparency to ensure NDCs can be well understood. Transparency is also needed to clarify the extent to which Parties expect emissions mitigation to be achieved by own effort, with international support, or by a mixture of the two.

Consistent with the discussion in the main part of the briefing paper the following pieces of information are likely to be useful in achieving transparent understanding of how Parties intend to include land use in NDCs.

<table>
<thead>
<tr>
<th>Issue</th>
<th>Question</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>1) Coverage</td>
<td>Land-use included on the basis of complete coverage of all IPCC inventory categories?</td>
<td>Under the Kyoto Protocol some LULUCF activities are mandatory, some voluntary.</td>
</tr>
<tr>
<td>2) Category or activity exclusions</td>
<td>If question 1) indicates that coverage is not complete which activities, or land use categories, are included and which excluded? Is there a time-scale to achieve complete inclusion?</td>
<td></td>
</tr>
<tr>
<td>3) Pools and gases</td>
<td>Are all pools and gases required by IPCC or COP decisions estimated for the categories or activities included?</td>
<td>It would be useful to specify the intended approach, e.g. using forest management reference level guidance under the KP 2(^{nd}) CP, or COP agreed guidance for REDD plus forest reference (emission) levels.</td>
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<td>4) Base year, reference level or benchmark</td>
<td>Is land use fully included in specifying GHG emissions and removals for the base year? If not, has a reference level been used? What is the difference between full inclusion in the base year, and the method used?</td>
<td>It would be useful to specify the intended approach, e.g. using forest management reference level guidance under the KP 2(^{nd}) CP, or COP agreed guidance for REDD plus forest reference (emission) levels.</td>
</tr>
<tr>
<td>5) Natural disturbances</td>
<td>Is the intention to be able to exclude emissions and subsequent removals from natural disturbances? If yes, what are the criteria for exclusion and for returning land affected by disturbances to accounting?</td>
<td>It would be useful to say whether the disturbance provisions agreed for use under the KP for the second commitment period will be applied, and if not what the alternative approach will be, and whether it will be equivalent to the KP-CP2 one? Will long-term carbon stocks be maintained?</td>
</tr>
<tr>
<td>6) Forest management, especially age class structure</td>
<td>Is the intention to be able to correct for the effects of forest management, especially on forest age class?</td>
<td>If yes, will the reference level approach be used, as agreed for use under the KP for the second commitment period will be applied, and if not what the alternative approach will be, and whether it will be equivalent to the KP-CP2 one? Will long-term carbon stocks be maintained?</td>
</tr>
<tr>
<td>7) Harvested wood products</td>
<td>Which of the approaches outlined by the IPCC will be used</td>
<td>It would be useful to say whether the HWP approach agreed for use under the KP for the second commitment period will be applied.</td>
</tr>
<tr>
<td>8) Own action and international support</td>
<td>Is a distinction made between the two?</td>
<td>If so, how will the distinction be made, e.g. by adopting an intensified target in the presence of international support for land sector actions?</td>
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\(^5\) Submissions can be found at [http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx](http://www4.unfccc.int/submissions/indc/Submission%20Pages/submissions.aspx)
Paris Agreement on AFOLU: 4  Finance

“ The Paris text on finance should:

a) Recognize … past COP decisions related to REDD+, ensuring those decisions are applied when providing finance for REDD+ activities …

b) Encourage provision of finance for land use actions in the context of NDCs, recognizing and providing incentives for countries to put forward domestic actions or contributions in the context of CBDR/RC.

c) Recognize support for approaches that encourage synergies between mitigation and adaptation including the sustainable management of ecosystems.”

Note: NDCs = Nationally Determined Contributions, or mitigation plans and targets
What to Look for In an Agreement & Potential Implications

2015: INDCs. Paris Agreement

2016: Best timeframe to define LEDS, to be part of 2020 finance regime and plans


2020: Agreement into effect.

- Clarify investment target(s): possibly separate mitigation target from a public-sector adaptation target. (eg, GCFund has 50/50% target for funding.) Copenhagen $100B by 2020 commitment: slow, single target.

- Close adaptation finance gap: Is minimal private sector interest.

- Clarify country needs, esp wy adaptation: via finance plans submitted by countries during 2016-18?? … maybe via Annexes to Agreement?

- Define how to set finance targets: via science-based top-down model results? Or via bottom-up country needs assessments?
AFOLU LEDS Needs to Figure Out Its Role in Adaptation: Huge TA Need & Funding Source

<table>
<thead>
<tr>
<th>Country</th>
<th>Top-Down Estimate (UNEP)</th>
<th>Top-Down Estimate (World Bank)</th>
<th>Bottom-Up National Estimate</th>
<th>Estimated Current Govt Spending ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>$88.1 m</td>
<td>$130.2 m</td>
<td>$258 m</td>
<td>$18.1 m</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>$188.3 m</td>
<td>$278.3 m</td>
<td>$1,220 - $5,840 m</td>
<td>$306.2 m</td>
</tr>
</tbody>
</table>


However:
- Ethiopia’s innovative Climate Resilient Green Economy strategy costs $7.5 B per year!
- Ethiopia invested $306 m domestic budget in adaptation in 2011-12.
- So -- scale is huge, big opportunity to find AFOLU role in each country.
What Does the Landscape Look Like After Paris??

- If agreement: 2-4 year period of negotiating details of guidance – how to implement it.
- Eg UNFCCC Bali COP announced REDD+ 2009 . . . final rules agreed Warsaw COP 2013.
- Strong signal in agreement should stimulate investment in eligible activities by supportive countries & companies ?: policy stability ?
- AFOLU WG role: Can explore meaning of Paris at next workshops in 2016.
Finance: Flow of Funds from Source to Finance Instrument to Policies, Measures

Sources of Funds
- Domestic Public Sector
- International Public Sector
- International Public Sector
- International Private Sector

Flow of Funds

Financial Instruments
- Tax expenditures
- Grants
- Loans
- Loan guarantees
- Results-based payments
- Bonds
- Private equity
- Risk management mechanisms (e.g., insurance, derivatives)
- Carbon credit purchases
- Other purchase agreements (e.g., supply chain requirements)

Uses of Funds (actions to reduce emissions)
- Governance Strengthening
- Regulation
- Economic Incentive Mechanisms
- Direct Investments in Sustainable Land Management

- Flow of funds from source to actions for sustainable land use.
- Key Q is: Which funds to use for what? How to access them?
Identifying Cost-Effective AFOLU Options
e.g., Ethiopia cost curve (in Ethiopia R-PP for FCPF)

Overall, there is more than 145 Mt abatement potential in 2030 from strategy options in forestry

2030 technical abatement potential

Note: The curve presents an estimate of the maximum potential of all technical GHG abatement measures below for the selected levers if each measure was pursued aggressively, starting with the most affordable measures. It is not a forecast of what role different abatement measures and technologies will play. These are preliminary numbers, more precise figures can be determined once pilot projects are completed.

1 Assuming A/R abatement potential comes from its usage as conservation areas. If the areas will be used for plantation forestry, further research/analysis is need to calculate the abatement potential.

2 High cost due to high initial CAPEX (cost subsidized 100% by the programme) but compensated by 0 running cost (+ additional income) if compared with other stoves options.

SOURCE: EDRI, Source List A; IPCC, Expert Interviews
Big New Restoration Initiatives: Can They Help Fund AFOLU?? Should We Explore Them?

Bonn Challenge: restore 150 million hectares by 2020. Could sequester 53 Gt CO2e over 50 years at cost of US $80 billion

Figure 1. Fund Investment Model

- 1. Acquisition of degraded land
- 2. Land rehabilitation
- 3. Sustainable production/use
- 4. Release of upgraded land

Rehabilitation /use rights are acquired via leasing or concession license

Degraded land is rehabilitated and prepared for sustainable use

Land is leased out for sustainable production or use

Upgraded land is released to owners or transferred to new concessionaires

Use rights paid to land owners (public, private, or communities)

Leasing income and/or restoration credits

Leasing income

Transaction costs

Sale of concession

Transaction costs

Rehabilitation costs

Credits from restoration are generated

Revenues from voluntary and regulated markets

Transaction costs and/or payment offsets.

Activities undertaken by the Fund

Activities undertaken by operators

Cash flows for the Fund

www.winrock.org

The Global Mechanism, of UN Convention to Combat Desertification (UNCCD)
Using Analysis to Target Funding: E.g. PES in SW China, Using NPV Maps to Define Where PES Payments Likely to Change Behavior

Rubber plantation spatially explicit NPV map of Menglun, Xishuangbanna, Yunnan Province, SW China. Low productivity / low NPV land with high potential for payments for forest restoration = filled by white grid. Higher productivity, higher NPV buffers along roads and rivers (with white diagonal lines), generally too expensive for restoration payments for ecosystem services of water production and carbon. PES too expensive here.

Source: Yi et al., 2014a, In Andrasko, 2015
## Assessing Mitigation Options & Finance: eg, China

Andrasko, 2015

<table>
<thead>
<tr>
<th>Mitigation Activity or Alternative Source of Funding</th>
<th>Distinguishing Features</th>
<th>Carbon Benefit/Ha/Year (low= &lt; 5 tCO2/yr; medium = 5 -20; high = &gt; 20)</th>
<th>Financial, Monitoring or Reporting Attributes</th>
</tr>
</thead>
<tbody>
<tr>
<td>PES, Restoration: Grain to Green</td>
<td>Massive government farmer PES program</td>
<td>Low: soil and vegetation restoration</td>
<td>Simple payments, but inefficient budget outlays</td>
</tr>
<tr>
<td>PES: Enhanced targeting of payments &amp; benefits</td>
<td>Sophisticated targeting via analysis</td>
<td>Same as PES only more efficient per hectare</td>
<td>Requires sophisticated monitoring &amp; payments</td>
</tr>
<tr>
<td>Restoration of Tibetan Plateau grasslands</td>
<td>Pilots exist funded by government or donors</td>
<td>Low: soils and arid revegetation</td>
<td>Donor or government funding; expensive/ha</td>
</tr>
<tr>
<td>REDD+</td>
<td>Requires accurate monitoring</td>
<td>Avoided deforestation high, degradation medium</td>
<td>Payment only for performance: tCO2</td>
</tr>
<tr>
<td>Private sector corporate social responsibility</td>
<td>Few pilots to date; minimal demand</td>
<td>Charismatic PAs and natural forests most likely, thus medium to high</td>
<td>Untested benevolent donor financial model</td>
</tr>
<tr>
<td>Linking protected area carbon payments to China’s ETS pilot</td>
<td>Very large potential demand; pilots and methods exist elsewhere</td>
<td>Low for soils, medium for forest restoration, high for forest protection</td>
<td>Need establish links to national regulatory program with set prices</td>
</tr>
</tbody>
</table>
Informing Sus. Dev. Decision Trade Offs: E.g.: Impacts of Land Use Change on Ecosystem Services, Econ. Dev. & Resiliency in Mekong Watershed, 2010 - 2045

- Hydrological cycle drives biophysical change & Ecosystem Services.
- Expanding ag commodities & deforestation predicted to change both.

Figure 2: a) Forecast of changes in Rainfall, in mm, 2010 to 2045; b) Land cover change, 2010 to 2045.

Uses predicted future climate change impacts on water flows, and sediment and water pollution loadings.

Source: Winrock, 2015; MRC 2009
Early Winrock Mekong Study: How Could We Reduce Envir’l Footprint of Ag Commodities Produced in Lower Mekong ??

Winrock for USAID SFB project in Cambodia is modeling Impacts of Land Use Change on Ecosystem Services in Lower Mekong River Watershed.

- Policymakers need tools to assess deforestation impacts: soil erosion & sediment loads, forest cove biodiversity, livelihoods, ag commodities.

- 3 future scenarios to 2045, including climate change impacts: 1) BAU - rapid development with forest loss; 2) green planning;; and 3) conservation with less forest loss

- Financial mechanisms to explore:
  - Can PPPs with private companies be developed to introduce producer Best Practices ??
  - Adopt Indonesian-style production standards ?
  - Can govt. sustainability goals be set and implemented ??
How Can We Integrate AFOLU LEDS into Other Sectors?

- We need to define AFOLU LEDS opportunities & promote them into multi-sector LEDS plans – or be irrelevant.

**Mitigation**
- LU Planning to site ag expansion.
- Mangrove restoration to protect infrastructure.
- Policy shifts oil palm to degraded lands.
- Bamboo or jatropha to replace fossil fuels

**Adaptation**
- Restoration
- Mangrove protection
- Climate Smart Ag
- Green buffers
- Watersheds

**LEDS Dev’ment (Energy, etc.)**
- Afforestation
- Restoration
- REDD+
- Bioenergy production
- Conservation tillage

[Image: www.winrock.org]
Final Thoughts . . . & 5 Potential Next Steps:

• Time to decide how to integrate AFOLU into LEDS multi-sector mainstream.
• Integrated analysis & pilots on ground are critical to define AFOLU’s role in LEDS.
• Minimal private sector interest in AFOLU… so we need to . . .

1. Train WG members in business plan development, to bridge finance & AFOLU communities ?

2. Cooperate to ID one big LEDS project: apply to GCFund? Write a NAMA w/ a country ??
3. Cooperate w big restoration initiative? Eg UNCCD, Bonn Challenge ??
4. Knowledge management is needed now: Write 2 case studies exploring what AFOLU LEDS is ??
5. Find ways to add AGRICULTURE !
Let’s Get Going!

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