



CAMBODIA REDD+ PROGRAMME

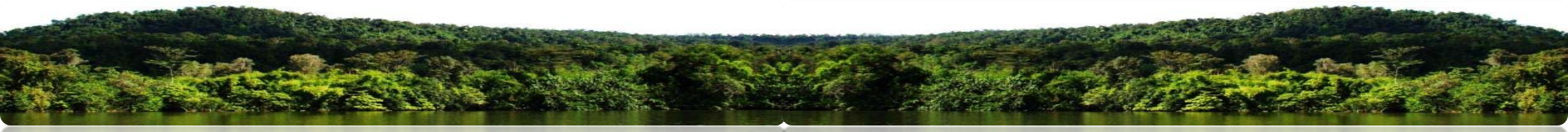
Cambodia Forest Reference Level

Presented to International Seminar for Climate Change and Forest,
The Future of REDD+.

University of Tokyo, 28 January 2016

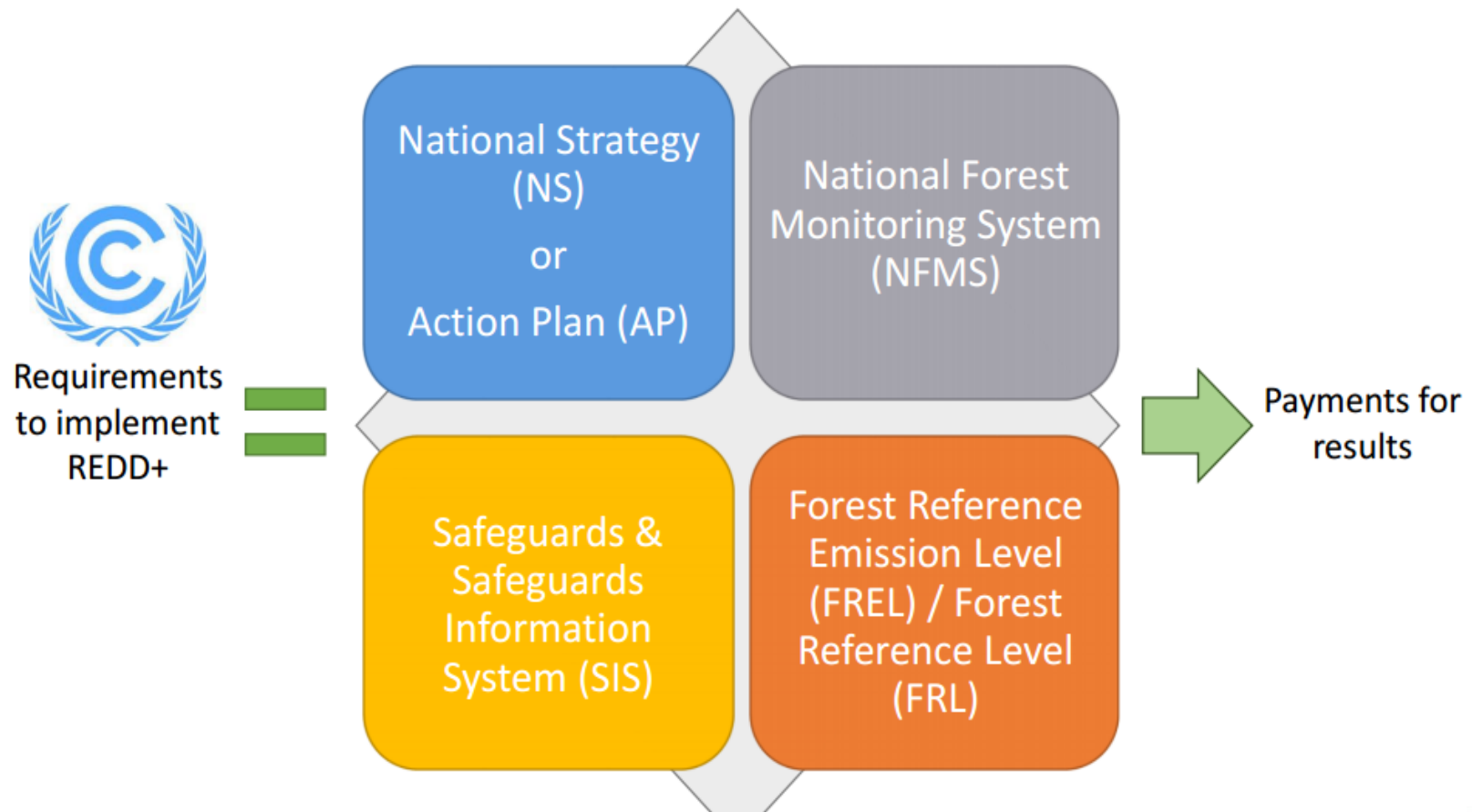
Presented by: Chivin LENG

(REL/MRV TT, UNREDD and JICA-CAMREDD...)



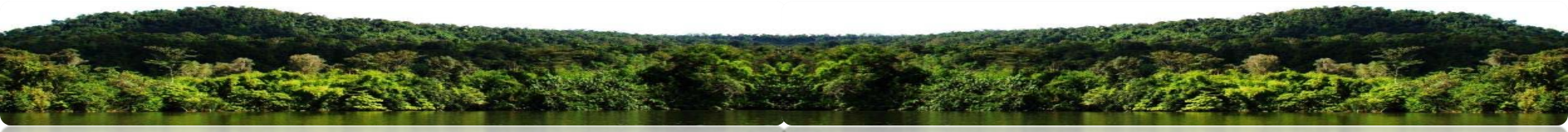
CAMBODIA REDD+ PROGRAMME

UNFCCC/COP19- Warsaw Framework or REDD+ Rules



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Country Information



- Cambodia covers a total area of 181,035 km².
- Population around 15 million
- Tropical forest cover with more than 13 million ha are forest land before 1970 (civil war)
- The annual rainfall between 2500-3000ml/yr

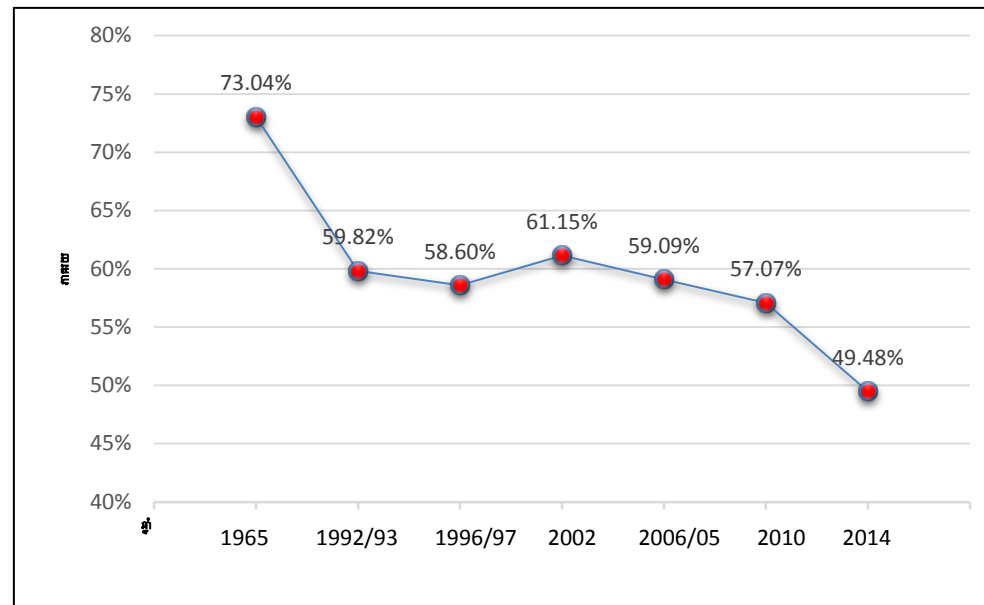


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National Forest Cover Monitoring

- Height 5m, area 0.5ha, canopy 10%
- Natural ecosystem or plantation: includes plantations such as rubber, oil palm, teak, acacia and eucalyptus and other kinds of trees
- MMU : 25 ha



Note: The result of land cover 2006, 2010 and 2014 in the figure is tentative result can't use in the formal or citation.

How it is the NRS being developed?

- Inputs from different stakeholders (*4 Technical Teams, Consultation Group, Cambodia REDD+ Taskforce*)
- Build on the outputs from readiness phase
- Following the step: (1) plan (2) skeleton (3) draft strategy (4) public consultation (4) finalize and present at COP



Why National REDD+ Strategy?

- One of the four required elements under the WF, and Cambodia has ambitions to move rapidly to RBF under the WF.
- Key policy documents and presenting the strong commitment of the country government to address D&D
- Provide clear direction to the government and stakeholders to achieve goal in reducing/eliminating D&D
- Potential for seeking more funding support from different donor requirements



Purposes:

- The Cambodia's NRS has been developed for enhance implementation of policies and measures that promote conservation and sustainable management of forests and biodiversity, plus socio-economic development that improves the livelihoods of forest dependent communities and indigenous peoples
- To provide a basis and direction for integrated governance and regulatory systems to ensure transparent, accountable, effective, efficient and equitable implementation of policies and measures.
- To fulfil Cambodia's requirements under the UNFCCC to be eligible to receive results-based payments for implemented REDD+ policies and measures;



3.4 Scopes and Scale

The Cambodia's NRS is in due course implemented at the national level, with interim sub-national activities to experiment selected policies and measures.

To align with the current scopes and capabilities of the NFMS and FREL/FRL, the NRS initially addresses drivers of deforestation and enhancement of forest carbon stocks through afforestation/reforestation activities.

The NRS contributes to climate change mitigation actions in the forest sector by undertaking all the following activities:

Reducing emissions from deforestation

Reducing emissions from forest degradation

Conservation of forest carbon stocks

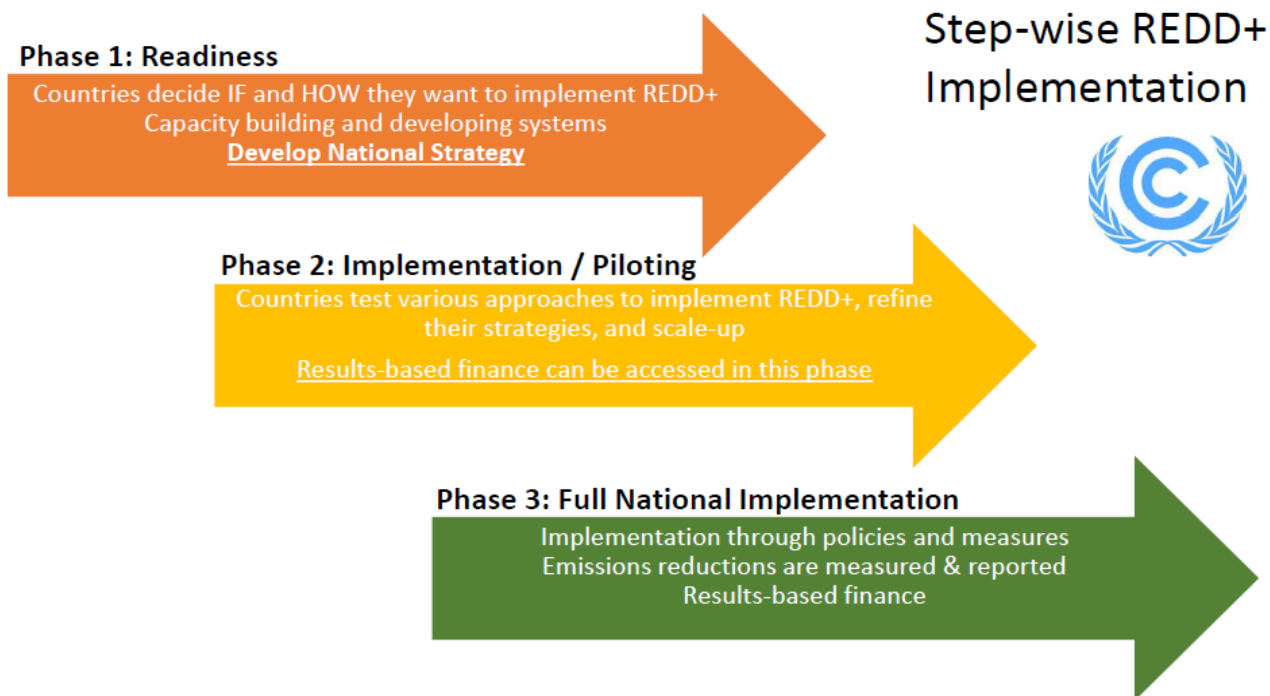
Sustainable management of forests

Enhancement of forest carbon stocks



Goals

The following goals of NRS build on activities identified and completed as part of the Cambodia REDD+ Roadmap(2011).



Cambodia's FREL/RLs



Overview of progress on FREL/FRL in Cambodia

- Cambodia FRL is completed and waiting for official approval
- Intends to submit next month or so, aim participate in technical assessment 2016
- Main reasons for FREL/FRL submission to the UNFCCC are:
 - Follow and support UNFCCC process
 - Intends to implement REDD+ mitigation actions and therefore intends to monitor and assess these actions in Country
 - Accessing result- based payments



Institutional structure

- In Cambodia three government agencies, namely FA, MoE and FiA manage forests
- FA is respond for wall to wall of land use/cover mapping.
- field forest survey is being implemented individually by FA, MoE and FiA.



Purpose of FREL/FRL in Cambodia

- To assess performance of CC mitigation actions; FRL is developed for both domestic and international use.
- To support implementation of future REDD+ activities
- To define the period of development of a revised FRL and the cycle/period of REDD+ implementation
- To develop FRL in Cambodia primarily for UNFCCC, but also considering climate finance external to the UNFCCC



REDD+ FREL/FRL scale in Cambodia

- FRL under development for **National Scale**
- **Reasons:**
 - Data availability (Nat. scale)
 - Inter-Institutional collaborations (Forest estate under three institutions)
 - Linkages to National policies to implement REDD+
 - Human resources and capacities
 - Ultimate goal of UNFCCC



REDD+ FREL/FRL scope in Cambodia

- **Activities:**

- Aim: include only **Deforestation**
- Consideration: Degradation (Wood fuels), SFM*

Note: Limited data on Degradation at present, however REDD+ strategy aims in medium term on Enhancement and SFM inclusion. Deforestation/Degradation also dependent on adoption of REDD+ forest definition

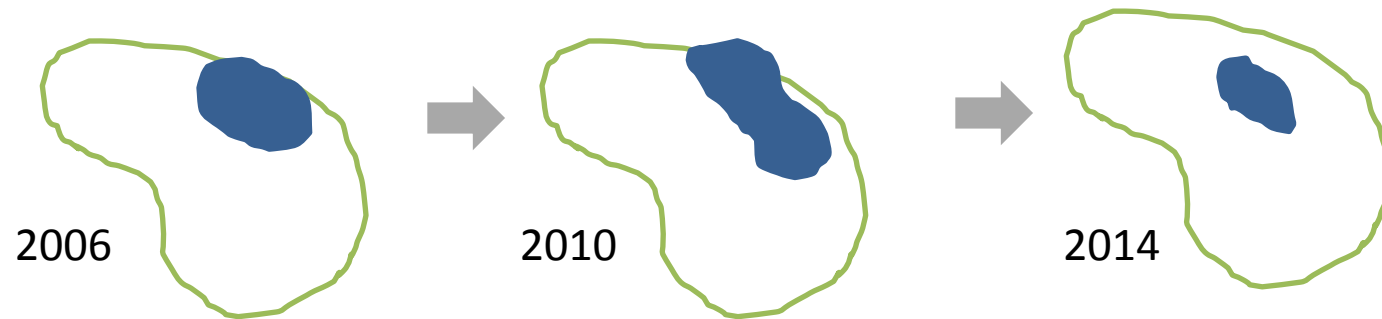
- **Pools:**

- Aim: **AGB, BGB** (ratio),
- Consideration: Deadwood, Litter, soil (limited data)

- **Gasses: CO₂** (no data other gasses, conservative)



Historical data Use and Construction approach chosen



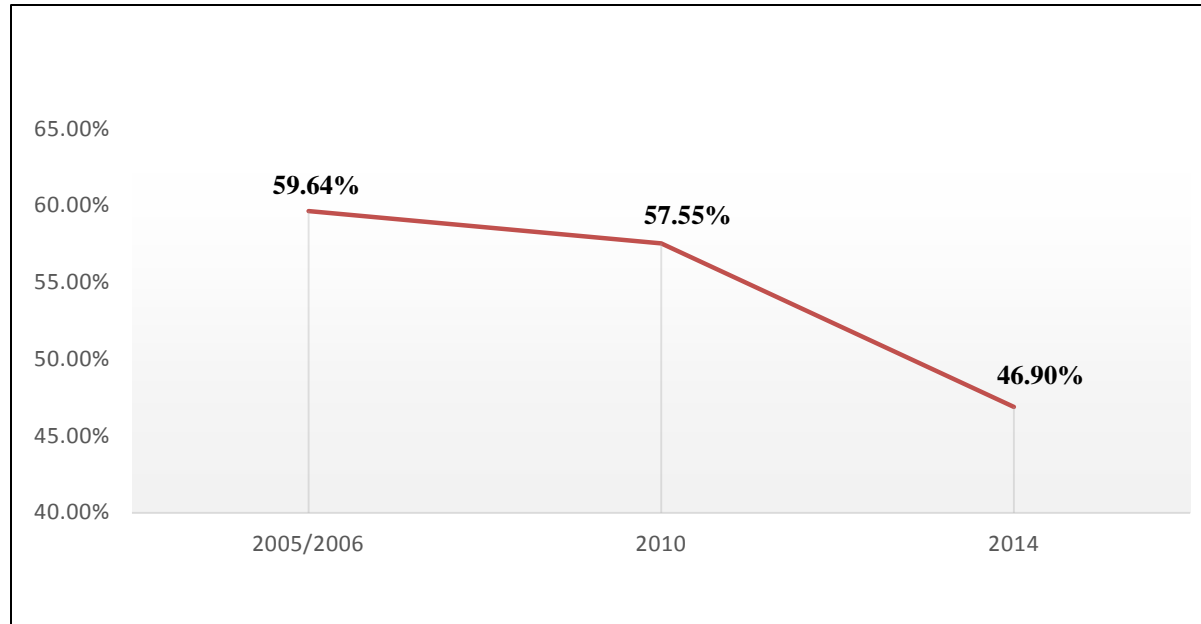
- (i) As the baseline map, “2014 map” is produced by using 2013/2014 satellite image data (LANDSAT 8). This map covers the full country (Forest/Non-Forest) and will function as a basis for future monitoring of land use and land use changes;
- (ii) Two Historical maps are used to derive historical land use and carbon stock change
 - (i) By upgrading of existing 2010 FA map and consideration of other data sources for non-forest areas (MRC map 2010). Verification of the map is done by using ALOS AVNIR2 data for inaccessible areas. (Size of forest and non-forest area may change as the result of upgrading or modification).
 - (ii) By translating the 2005/2006 FA map in a comparable legend. Verification of this map has already been carried out by GRAS. And consideration of other data sources for non-forest areas



REDD+ FREL/FRL forest definition in Cambodia

Definition for REDD+ (in process): 5m, 0.5Ha, 10%;

- Excluding: Perennial crops, oil palm, rubber, and land with land use functions (Economic Land Concessions, etc.)
- MMU : 5ha , 22 Class



Note: The result of land cover 2006,2010 and 2014 in the figure is tentative result can't use in the formal or citation.

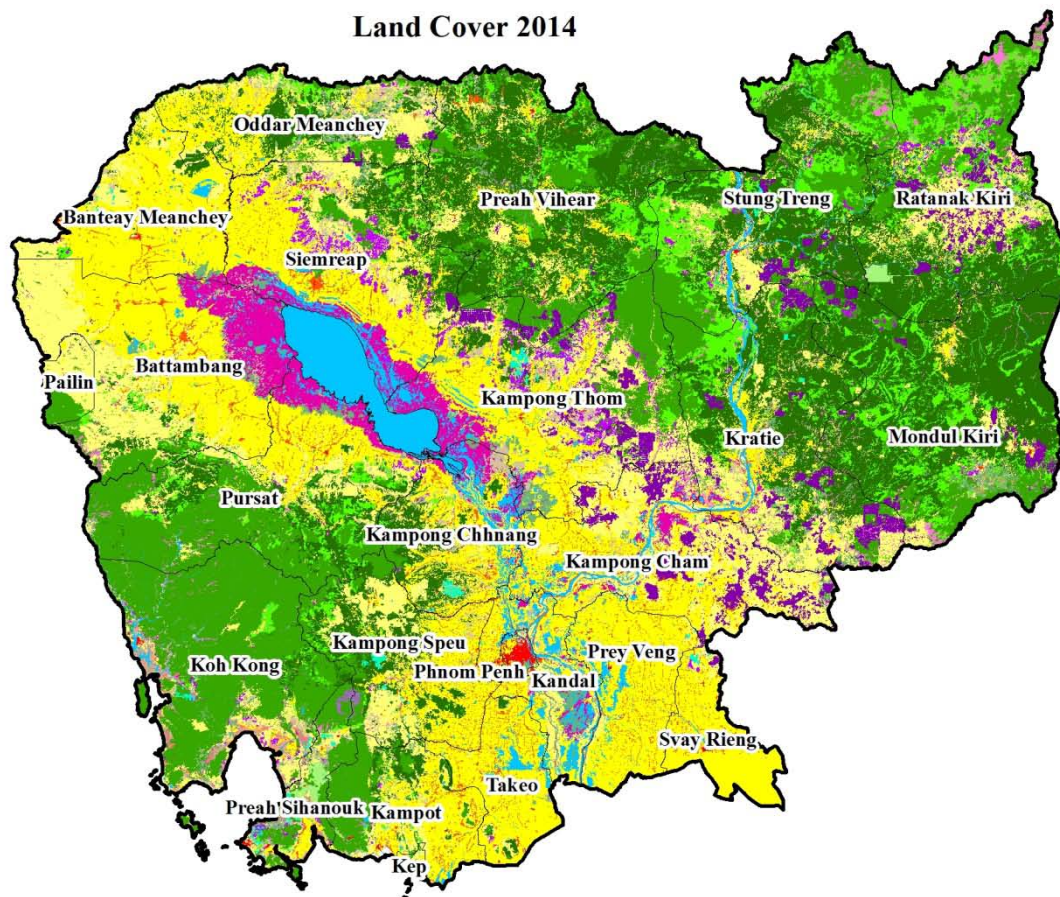
Total Annual CO₂ Emissions and Removals (t CO₂ / year)

FREL reference period

Period (year to year)	2006-2010	2010-2014
Annual CO ₂ Removals (t CO ₂ / year)	6,626,082	20,299,560
AVG Annual CO ₂ Removals (t CO ₂ /year)	13,462,821	
Annual CO ₂ Emissions (t CO ₂ / year)	-34,149,211	-151,253,835
AVG Annual CO ₂ Emission (t CO ₂ /year)	-92,710,560	
Net Total Annual CO ₂ Emissions and Removals (t CO ₂ / year)	-27,523,129	-130,92,349
AVG Net Total Annual CO ₂ Emissions and Removals (t CO ₂ / year)	-79,247,739	



Land Cover 2014



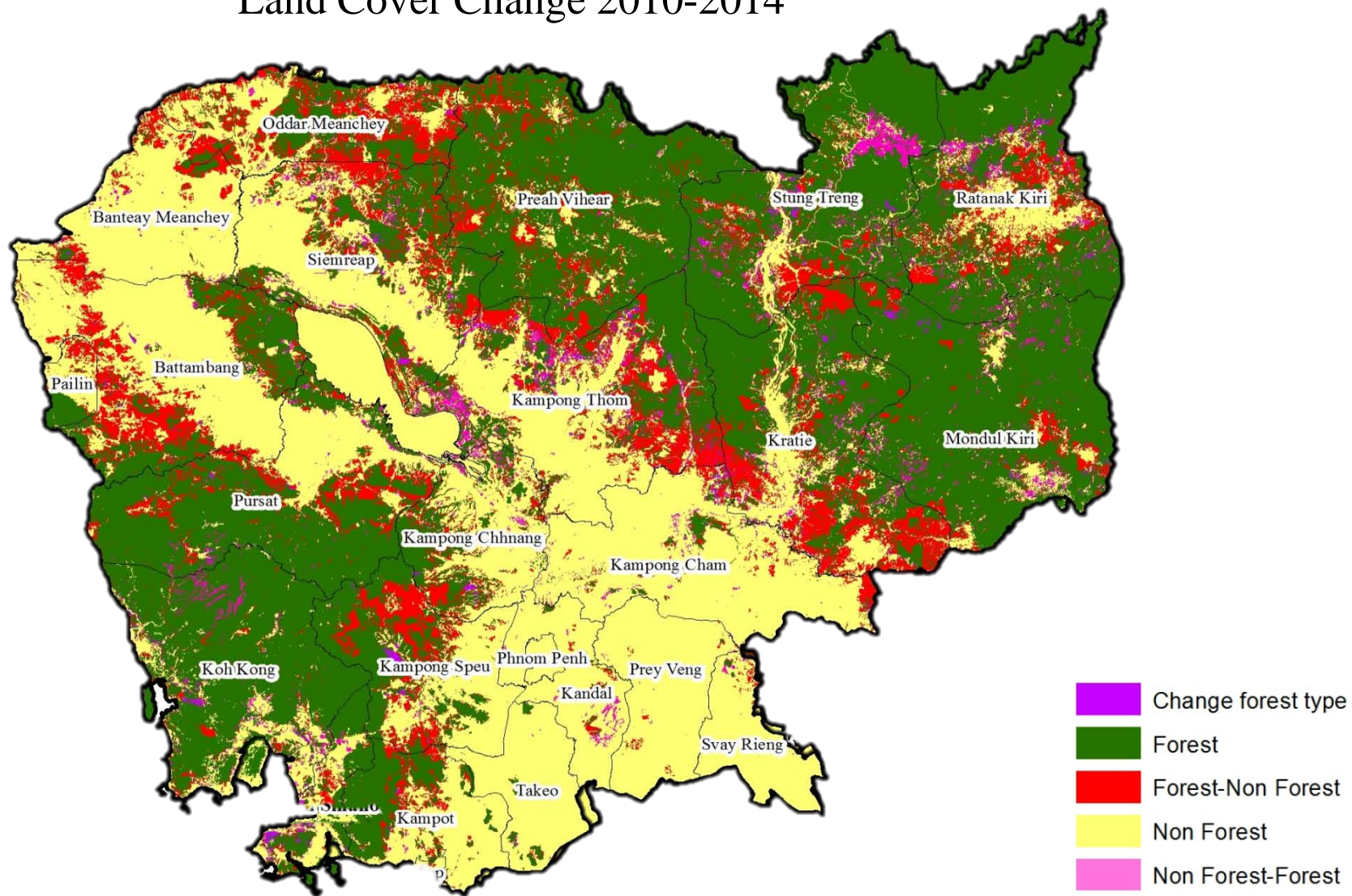
Legend

- Bamboo
- Village
- Built up Area
- Deciduous forest
- Evergreen forest
- Flooded forest
- Forest regrowth
- Grassland
- Agriculture
- Paddy Filed
- Mangrove
- Rear Mangrove
- Pine
- Palm Oil plantation
- Pine plantation
- Rock
- Rubber Plantation
- Sand
- Semi evergreen
- Tree Plantation
- Water
- Wood shrub

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Land Cover Change 2010-2014



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REDD+ FREL/FRL methodology in Cambodia

- Methodology: Historical Average

Reasons:

- Conservative
 - Available data still limited for projections
-
- Adjustments to National circumstances will be reviewed especially in regard to 2012 moratorium on new land concessions. However as granting of ELCs has reduced, area of allocation SELCs has risen since.



Future trends

- A number of trends in the national context point to continued high emission levels
- continue relying on extractive economic institutions in the land-use sectors for coming soon future.
- currently underdeveloped, mining is expected to grow extensively in the future
- Many of the issues illustrated above illustrate the need for a well-functioning and effective governance of the forestry sectors
- These reasons and acknowledging the uncertainty of future impacts on emissions within these sectors,
- Historical emissions over 2006-2014 represents a conservative approach to FRL development.



FRL Validity

- 8 years historical average
- 4 year updating circle

Year	Map/Activity Data		National Forest Inventory		Forest Reference Emission Level			National Communications (NC)			Biennial Update Report (BUR)			
	Data	Production	Data collection	Completion	Baseline	Submission	Technical assessment	Inventory Year	Preparation	Submission	Inventory Year	Preparation	Submission	ICA
2014	•				•			•			•			
2015		•				•				•				
2016	•		•				•		•			•		
2017		•	•						•			•		
2018	•		•		•			•	•	•	•	•	•	
2019		•	•			•						•		•
2020	•		•	•			•		•		•	•	•	
2021		•	•						•			•		•
2022	•		•		•			•	•	•	•	•	•	
2023		•	•			•						•		•
2024	•		•	•			•		•		•	•	•	
2025		•	•						•			•		•
2026	•		•					•	•	•	•	•	•	



REDD+ FREL/FRL challenges in Cambodia

- **Forest Definition** for REDD+: No rubber plantation, palm oil plantation
- **Data access** (especially accurate locations Land concessions) to compute activity data under REDD+ Forest Definition as well as emission factors for non-forest
- Activity data currently does not include **degradation**
 - Use of average emission factor
 - Degradation and sustainable forest management activities cannot included under current FREL/FRL



Thank You!

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