

5th Annual Meeting of Low Carbon Asia Research Network (LoCARNet)

INTENDED NATIONALLY DETERMINED CONTRIBUTION OF CAMBODIA

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(Bandung, Indonesia)**

HAK MAO

**Ministry of Environment,
Cambodia**



Outline

I. Overview of Cambodia



II. Government's policies to address climate change



III. Key considerations for INDCs of Cambodia



IV. Outline of INDCs of Cambodia

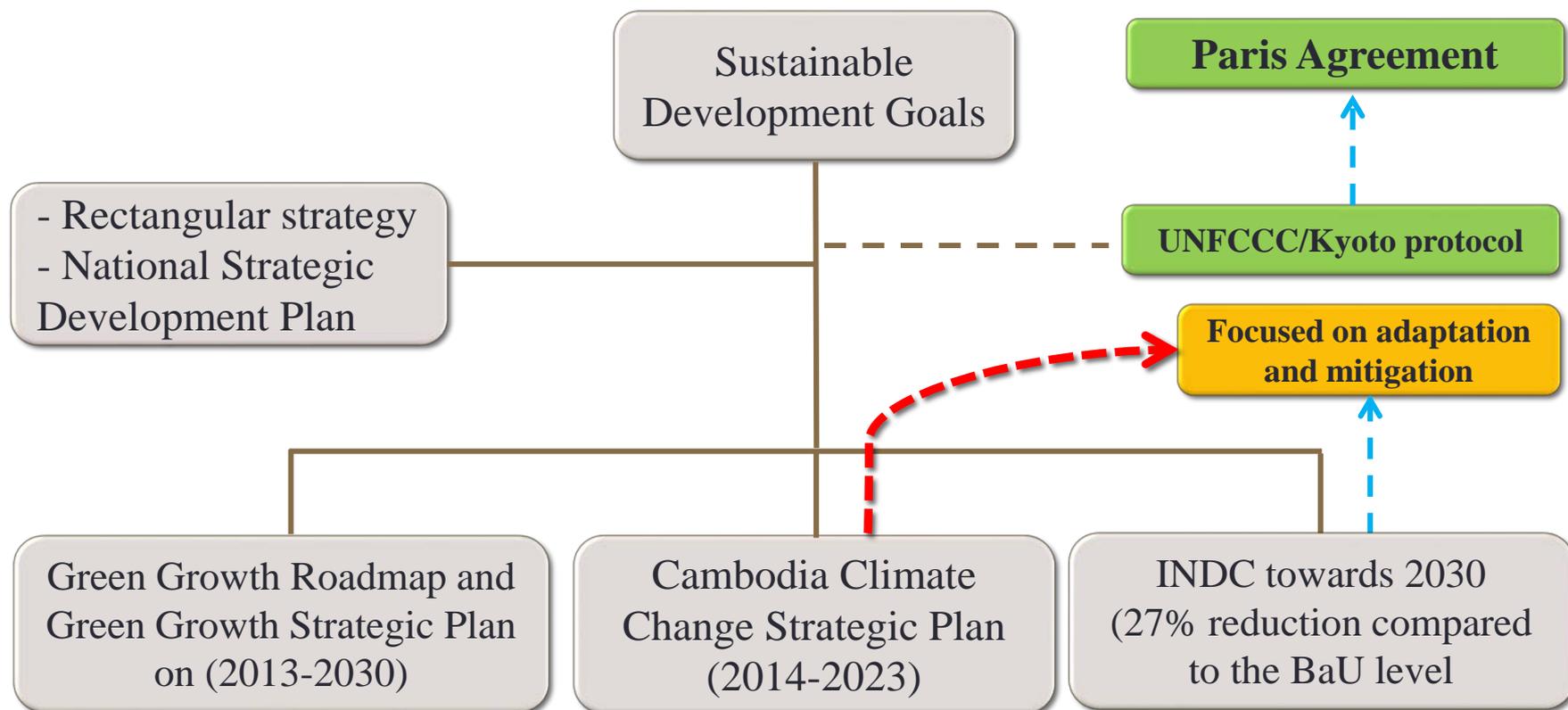


V. Conclusions and Next steps

I. OVERVIEW OF CAMBODIA

- Government's plan to move to an upper middle income country by 2030 and a developed level by 2050;
- Energy mix of total primary energy supply in 2015 (Biomass: 44%, Oil: 38%, Coal: 11%, Hydro: 4%, and Electricity 3%);
- Total final energy consumption by sector in 2015 (Transport: 46%, Residential: 31%, Industry: 16% and Others: 8%)
- 100% of villages electrified by 2020 and 70% of all households electrified by 2030;
- Forest cover decreased from 73% in 1960 to 57% in 2010 and Government's target to maintain 60% by 2015; and
- Per capita emissions 0.23tCO₂ in 2000 and were expected to reach 1.3 tCO₂ by 2050.

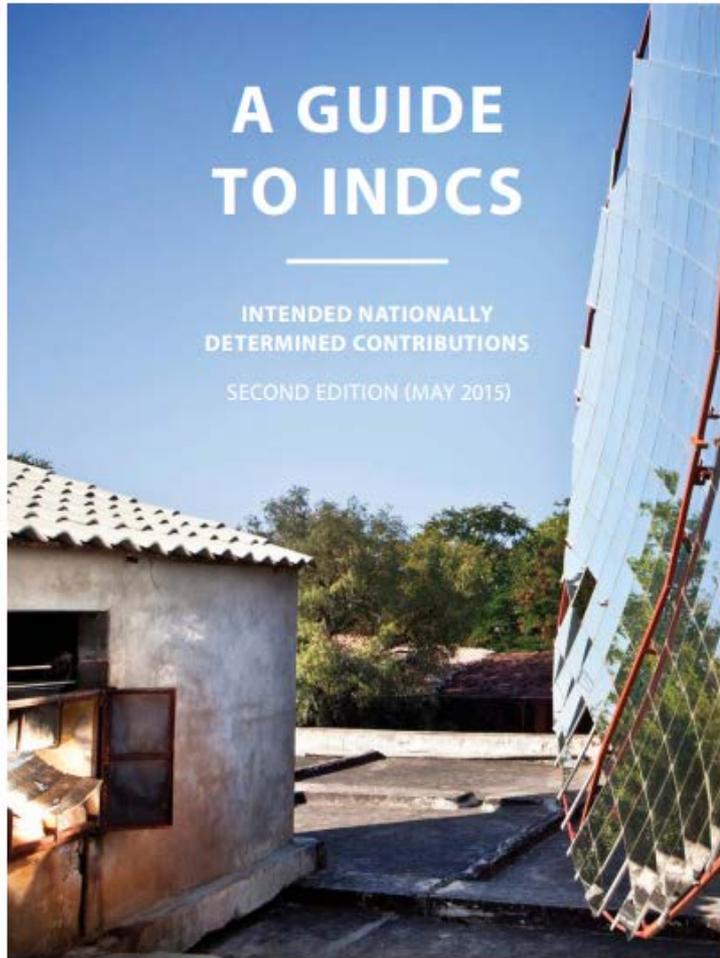
II. GOVERNMENT'S POLICIES TO ADDRESS CLIMATE CHANGE



III. KEY INDICATORS FOR INDCs OF CAMBODIA

- **Cambodia is not a major contributor to climate change but is the most vulnerable country**
- **Land-use change and forestry is a major source and sink of GHG emissions/removal while the energy sector just gradually increased**
- **Major sources used to prepare the INDC**
 - Second National Communication;
 - Climate Change Strategic Plan 2014-2023, NAPA; and
 - National Policy on Rural Electrification by Renewable Energy, etc.
- **Key stakeholders for preparing the INDC**
 - The Ministry of Environment is the main focal point; and
 - Active participation, coordination, and cooperation from relevant line ministries are crucial.

IV. OUTLINE OF INDCs OF CAMBODIA



1. National Circumstances

2. Mitigation

i. Contribution

ii. Information to facilitate clarity, transparency and understanding

iii. Fair and Ambitious

3. Adaptation

4. Planning Process

5. Means of Implementation

1. ADAPTATION

- **Agriculture:** The agricultural production system is dependent either on rainfall or on the annual flooding and recession of the Tonle Sap Great Lake.
- **Infrastructure:** the increasing occurrence and severity of floods exacerbated by climate change are resulting in high costs for the maintenance and upgrading of roads and irrigation infrastructure.
- **Forestry:** Most lowland forest will be exposed to a longer dry period, particularly forest areas located in the northeast and southwest. More than 4 million hectares of lowland forest, which currently has a water deficit period of between 4 and 6 months, will become exposed to a greater water deficit period of between 6 to 8 months or more.

- **Human health:** Direct and indirect impacts. Direct impacts include death, injury, psychological disorders and damage to public health infrastructure. Indirect impacts include changes in the geographical range and incidence of vector-borne diseases, water-borne and infectious diseases, malnutrition and hunger as a result of ecosystem disturbance
- **Coastal zones:** Coastal zone resources already face a number of pressures, including from over-fishing, over-exploitation of forest resources and mangrove ecosystems leading to increased erosion. Climate change adds to these existing challenges through sea level rise, shrinking arable land and decreasing availability of drinking water.

Priority actions

Promoting and improving the adaptive capacity of communities and restoring the natural ecology system

Implementing measures of management and protection of areas to adapt to climate change

Strengthening climate information and early warning systems

Developing and rehabilitating the flood protection dykes for agricultural/urban development

Increasing the use of mobile pumping stations and permanent stations in responding to mini-droughts, and promoting groundwater research in response to drought and climate risk

Developing climate-proof tertiary-community irrigation to enhance the yields from agricultural production of paddy fields

Promoting the climate resilience of agriculture through building sea dykes in coastal areas and scaling-up of climate-smart farming systems

Developing crop varieties suitable to Agro-Ecological Zones (AEZ) and resilient to climate change (include coastal zones)

Promoting aquaculture production systems and practices that are adaptive to climate change

Repairing and rehabilitating existing road infrastructure and ensuring effective operation and maintenance, taking into account climate change impacts

Up-scaling the Malaria Control Program towards pre-elimination status of malaria

Up-scaling of national programmes on acute respiratory infection, diarrhoeal disease and cholera in disaster-prone areas, including conducting surveillance and research on water-borne and food-borne diseases associated with climate variables

Strengthening technical and institutional capacity to conduct climate change impact assessments, climate change projections, and mainstreaming of climate change into sector and sub-sector development plans

2. MITIGATION

Sector	Priority actions	Reduction (Gg CO ₂ eq.) 2030 compared to BaU
Energy Industries	<ul style="list-style-type: none"> - Grid connected renewable energy generation (solar energy, hydropower, biomass and biogas). - Off-grid electricity such as solar home systems, hydro (pico, mini and micro). - Promote energy efficiency by end users. 	1,800 (16%)
Manufacturing Industries	<ul style="list-style-type: none"> - Promote use of renewable energy and adopt energy efficiency for garment factory, rice mills, and brick kilns. 	727 (7%)
Transport	<ul style="list-style-type: none"> - Promote mass public transport. - Improve operation and maintenance of vehicles, and the increased use of hybrid cars, electric vehicles and bicycles. 	390 (3%)
Other	<ul style="list-style-type: none"> - Promote energy efficiency for buildings and more efficient cook-stoves. - Reduce emissions from waste through use of bio-digesters and water filters. - Use renewable energy for irrigation and solar lamps. 	155 (1%)
Total Savings		3,100 (27%)

Name of activity	Description	Estimated emission reductions
<p>Increase forest cover to 60% by 2030, and maintaining it after 2030</p>	<p>Cambodia is striving to increase the forest cover by 60% from 57% in 2010. This will be achieved in particular through:</p> <p><u>Reclassification of forest areas to avoid deforestation:</u></p> <ul style="list-style-type: none"> - Protected areas: 2.8 million hectares - Protected forest: 3 million hectares - Community forest: 2 million hectares - Forest concessions reclassified to protected and production forest: 0.3 million hectares - Production forest: 2.5 million hectares. <p><u>Implementation of the FLEGT programme in Cambodia</u></p> <p>The objective is to improve forest governance and promote international trade in verified legal timber.</p>	<p>4.7 tCO₂eq./ha/year for up to 5 million hectares</p>

¹ FLEGT stands for Forest Law Enforcement, Governance and Trade. It aims to reduce illegal logging by strengthening sustainable and legal forest management, improving governance and promoting trade in legally produced timber.

V. CONCLUSIONS AND NEXT STEPS

- Cambodia is a low emission country but the most vulnerable to the impact of climate change;
- The country has very high potential for GHG emissions reduction by applying mitigation measures, especially from forestry sector;
- 27% of GHG emissions are expected to reduce by 2030 compared to the BaU level (INDCs);
- The country has very limited information on related data for GHG emission estimation, hence the improvement of data collection and management is needed;
- Human resource development is needed to enhance research activity and climate change research hub should be established; and
- Mobilization of resources is needed to ensure the implementation of the proposed activities as indicated in the INDCs.