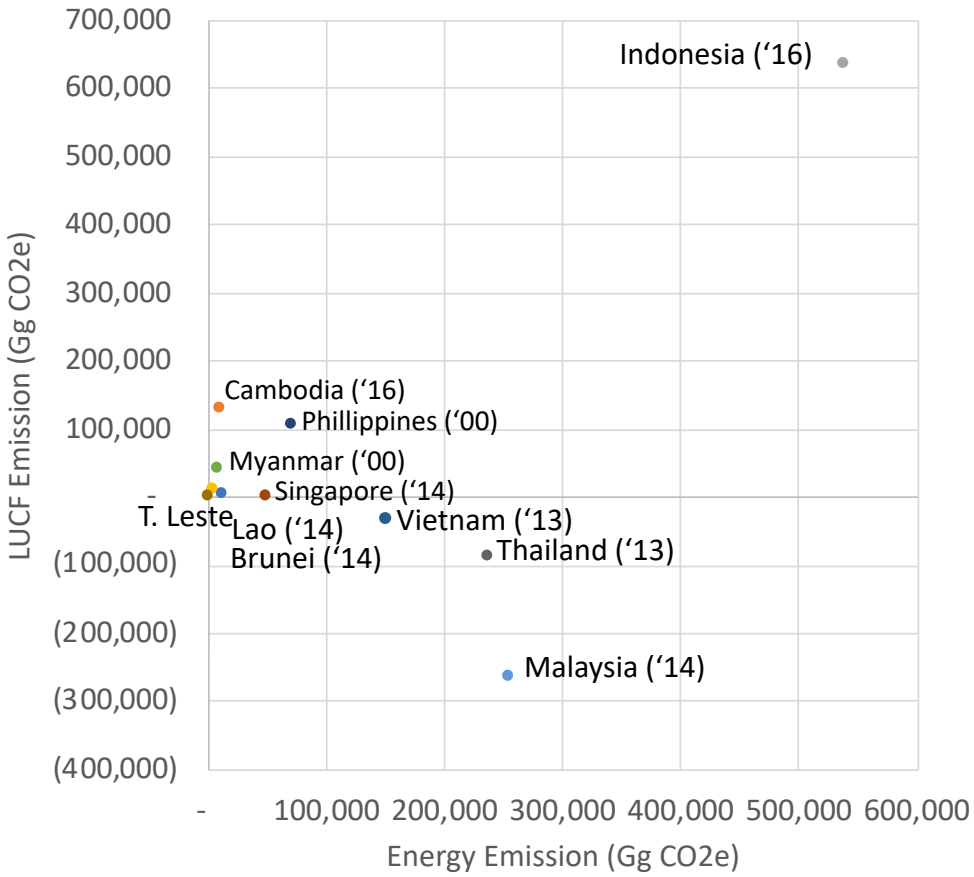



Transforming Asia: Challenges and Opportunities for Green Recovery toward Net-Zero Emissions

Rizaldi Boer
Centre for Climate Risk and Opportunity Management in Southeast Asia and Pacific, IPB University

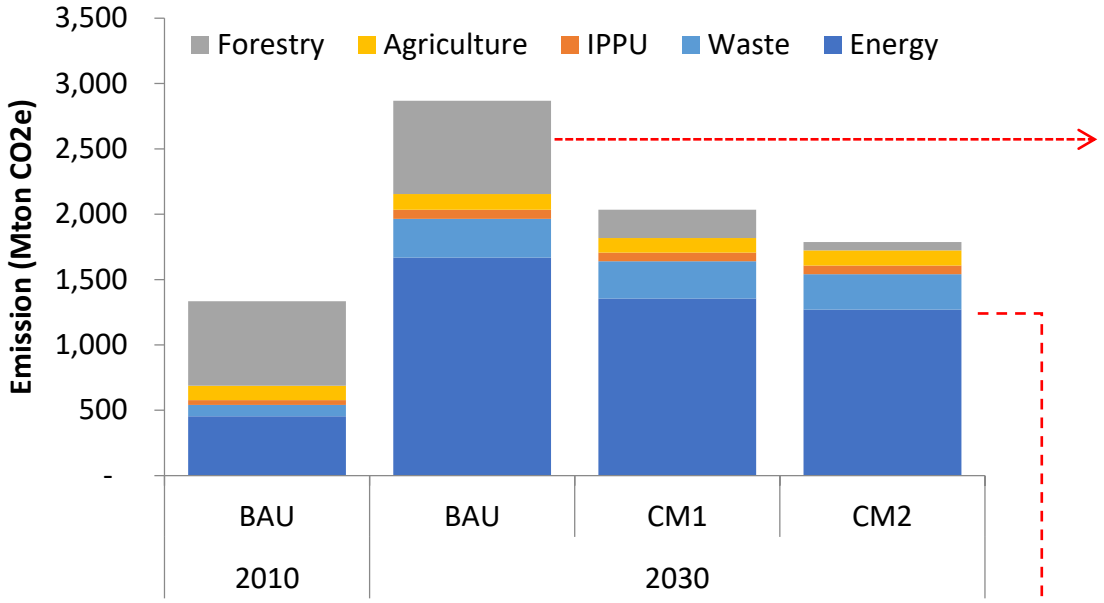
Significance and necessity of exploring the transformation toward net-zero emissions

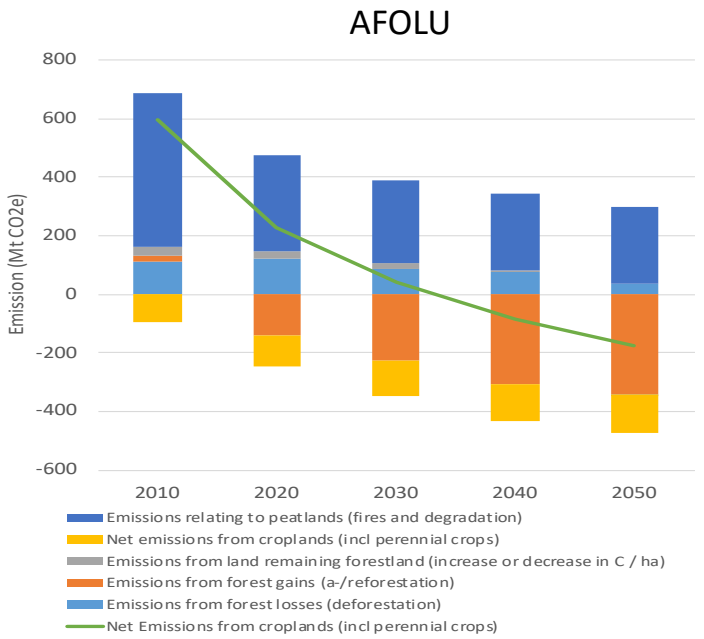
- ASEAN countries accounts for 3.5% of global greenhouse-gas emissions – expected to increase substantially due to population growth and increasing urbanisation and industrialisation
- Among ASEAN, Indonesia has the largest contribution to the total emission in which LUCF as main source of the emission followed by energy sectors

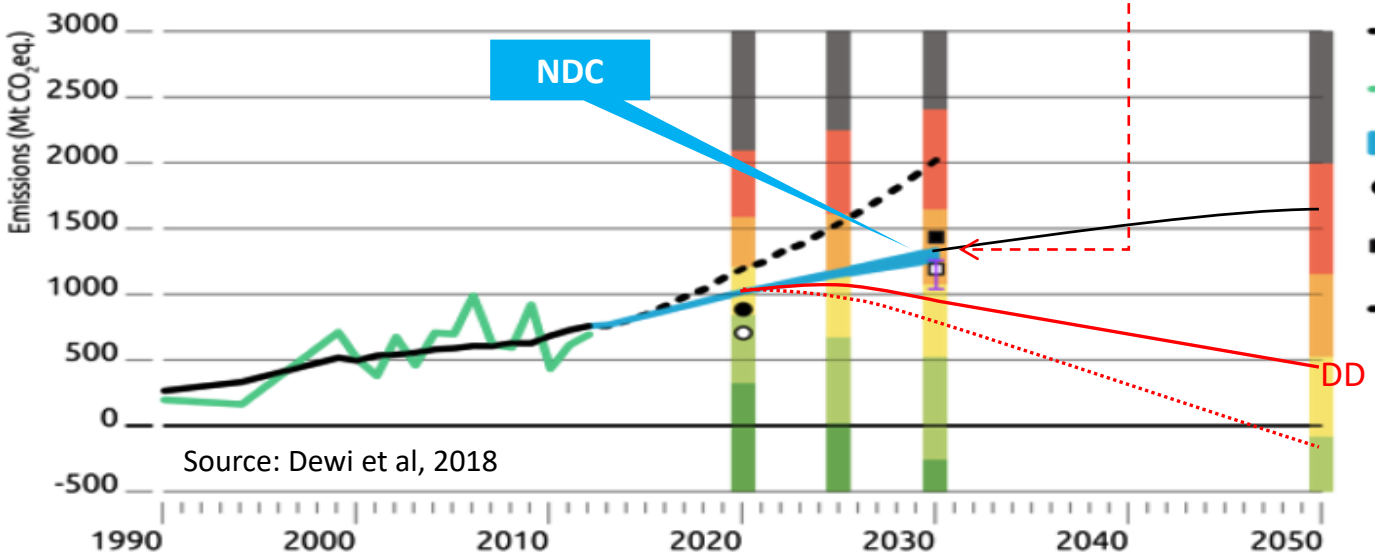


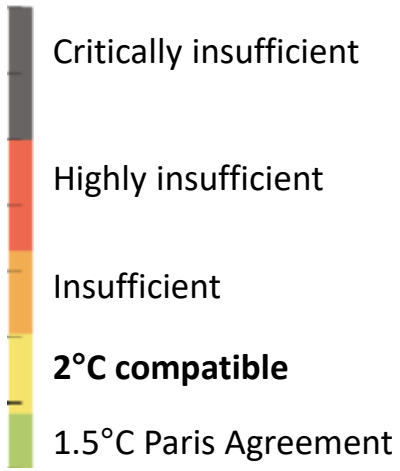
Source: NCs and BURs of AMS (http://unfccc.int)

NDC INDONESIA









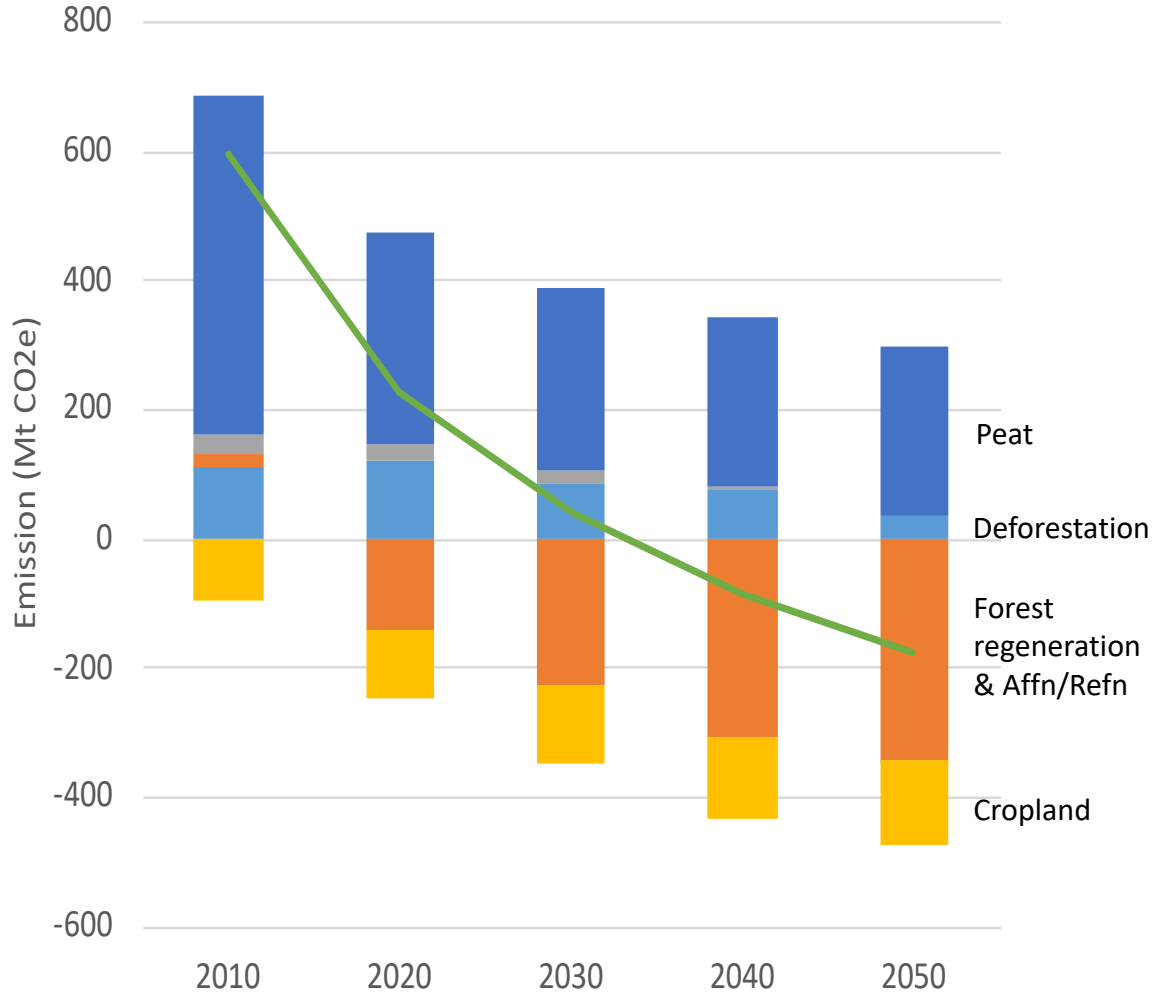
Energy Scenarios toward Paris Target 2050

(Source: Siagian et al., 2016)

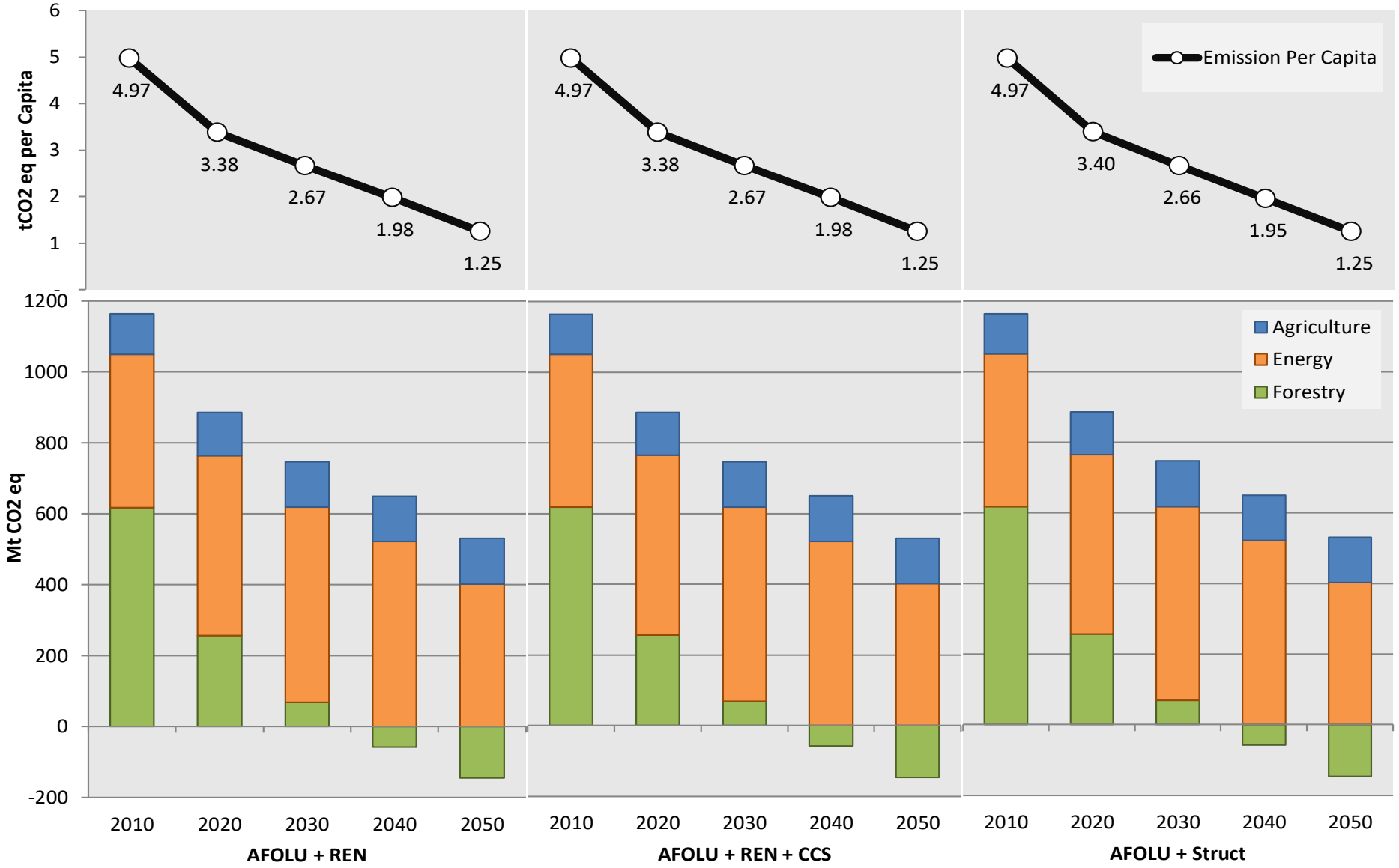
1. “Renewable” scenario puts the emphasis on the large-scale deployment of renewable-based power generation complemented by nuclear energy.
2. “Renewable + CCS (Carbon Capture and Storage) Scenario” considers a more balanced technological deployment in power generation, in which renewables would still play an important role but be complemented by the diffusion of CCS and nuclear power.
3. “Economic Structural Change Scenario” considers the role of structural changes in the Indonesian economy, with the implementation of a more service-oriented economy, combined with more energy efficiency measures, and more fuel switching to low- or non-carbon energy by end-users.
4. Deep decarbonizing the AFOLU to become net sink by 2050

AFOLU SCENARIO TOWARD PARIS TARGET 2050

- Significant decreased in deforestation (zero unplanned deforestation)
- Enriching forest regeneration
- Restoring degraded peat land and introduced paludiculture (mix farming system which adapted to peatland ecosystem → lead to significant decreased in peat fire
- Boosting the reforestation through Social forestry supporting food security and energy security
- Boosting the productivity of agricultural crops



Deep Decarbonization Strategies



Fact Sheet_Commit Project: Dewi and Boer, 2018

CHALLENGES

Challenges in Energy Sector Transformation

- Limited renewables deployment due to **competition with low-cost fossil fuel** and **distribution infrastructure limitation.**
- Consideration in maintaining coal-related industries; national stakeholders are not interested **in leaving strategic assets stranded.**
- **Bioenergy production target (CPO-Biofuel) induced risks of deforestation** through land competition with food crops.

Challenges in Land-Based Mitigation

- Improvement of land and forest management may require **high investments and institutional changes.**
- **Optimizing the use of unproductive land,** particularly in addressing land tenure issues.
- Reducing agriculture workers due to urbanization – boosting productivity
- Incentive system for **accelerating the development of timber plantation** and conserving production forest/peat restoration

OPPORTUNITIES FOR TRANSFORMATION TOWARD NET-ZERO EMISSIONS-AFOLU SECTORS

- Ecological Fiscal-Transfer Policies
- Establishment of Public Services Agency for Environmental Fund
- Mandatory certification policies for concessions
- Implementation of moratorium policies
- Carbon Pricing Policy
- Multi Permits for concessions
- Allowing agriculture commodities to be managed in forest area
- Social forestry and agrarian reform