CLIMATE CHANGE & NATIONAL PRIORITY:

*Strategy to Strengthen Human Capacity & Expertise*

By:
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- Senior Adviser To The Minister of Forestry on Environment & Climate Change
- Chairperson of Climate Change Working Group MoF

National Planning Workshop “Developing National Strategy to Strengthen Human Resources Capacities & Skill to Advance Green, Low Emission & Climate Change Resilient Development” by DNPI, Surveyor Indonesia, & UNITAR.

Jakarta, October 9, 2012
National Planning Workshop “Developing National Strategy to Strengthen Human Resources Capacities & Skill to Advance Green, Low Emission & Climate Change Resilient Development”

◆ SCOPING:
  – National Strategy
  – Human Capacities & Skill
  – Climate Change
  – Development
To be considered

- "strategic choices"
- “leverage/lifting up”..
  capacity
- “modalities” (National/
  sectoral—facing global)
- Correct frame & perception
  Menembak: - peringatan,
  - lumpuhkan,
  - matikan
CLIMATE CHANGE
GLOBAL & NATIONAL
Understanding the Fact:

Forest's role in global carbon:

**Reservoirs**
- 1650 GtC
  - More than twice the carbon as in the atmosphere

**Sinks**
- 2.6 GtC/yr

**Sources**
- (deforestation)
- 1.6 GtC/yr = 17.4% GHG emissions
CO2 Global Emissions and Global Carbon Forests

Forest’s role in global carbon

- **Reservoirs**: 1650 GtC more than twice the carbon as in the atmosphere
- **Sinks**: 2.6 GtC/yr
- **Sources**: 1.6 GtC/yr = 17.4% GHG emissions

**INDONESIA**:
2020: 26% up to 41%

26% : 87% forestry, peat
13% non forest
ratio Indonesia (54 : 46), world 20 : 80

*notes*
GLOBAL WARMING

TREES ARE THE SOLUTIONS:
- ABSORBING CO2
- ~ 50% trees’ biomass is a solid C/green products

80 % CO2

20 % CO2

CARBON ~ 50 % OF TREES’ BIOMASS

Interception and redistribution of precipitation.

Water storage

Photosynthesis

CO2

Habitat

Erosion control
Challenge:

MITIGATION ACTIONS
JOINTLY SOLVE CO2 emission (Capture CO2)

“CCS” INDONESIA
“VIOCE of FORESTS”

Carbon capture and storage (CCS)

Trees, forests and life on Earth

Conversion vector of Tree’s biomass - CO2eq:
Tree’s biomass to carbon ~ 0.5
Carbon to CO2 ~ 3.7
Biomass to CO2 ~ 1.83
GLOBAL & USEFUL INDICATORS FOR NATIONAL
(point of leverage)
Green Economy
(UNEP 2011, Towards a Green Economy)

“Results in improved human well-being and social equity, while significantly reducing environmental risk and ecological scarcities”

“REDD+ regime may be the best current opportunity to facilitate the transition to a green economy for (from) forestry”
Continue..
UNEP 2011, Towards a Green Economy

- investing 0.03% of GDP b/w 2011-2050 to conserve forests & private investment for reforestation → >20% increase value added in forest industry compare to BAU
SCALING UP ACTIVITIES

- Carbon cycle intervention: more solid C/less CO2, and more green products
- Introducing new commodity (CO2eq, carbon forest) green products, supply / demand, investment, financial institution

STRATEGY TO SCALE UP

- work together (companionship)
- keep it simple & workable
- understand by global (carbon market, green energy, green investment for commodity and services)
GHG and Climate Change

What is Global Warming?

Carbon dioxide (CO₂) is a greenhouse gas that scientists agree is one of the most prominent factors leading to global warming.

Emissions Trajectories Consistent With Various Atmospheric CO₂ Concentration Ceilings

The path to avoid ΔT_{avg} >2°C (gold)
Linking the World

GHG concentration: $\text{CO}_2$, $\text{CH}_4$, $\text{N}_2\text{O}$, .......

*Tons Carbon Dioxide Emmited per capita per annum*
Basic data/idea: Linking the World

NICHOLAS STERN REVIEW, 2007 p.199:
FOREST SECTOR INDONESIA
Indonesia’s Forests for Today and Tomorrow: Future Possible Value

Conservation/Protected Forests: 25.3 m ha.
Production Forests: 30.9 m ha.
Community Forests: 80.4 m ha.

Ecosystem/Environment
Services/Commodity
Renewable Energy (Wood pellet, Methanol)

VALUE RELATED TO CLIMATE CHANGE ???

YR@YETTI RUSLI
## President Decree (61/2011) on National Action Plan for GHG Emission Reduction

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Emission Reduction Plan (Giga ton CO₂e)</th>
<th>26%</th>
<th>Percentage</th>
<th>+15%</th>
<th>Percentage</th>
<th>Total</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Forestry and Peatland</td>
<td></td>
<td>0,672</td>
<td>87,6%</td>
<td>0,367</td>
<td>87,0%</td>
<td>1,039</td>
<td>87,4%</td>
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<td>Waste</td>
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<td>0,048</td>
<td>6,3%</td>
<td>0,030</td>
<td>7,1%</td>
<td>0,078</td>
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<tr>
<td>Agriculture</td>
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<td>0,008</td>
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<td>0,003</td>
<td>0,7%</td>
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<tr>
<td>Industry</td>
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<td>0,001</td>
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<td>0,004</td>
<td>0,9%</td>
<td>0,005</td>
<td>0,4%</td>
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<tr>
<td>Energy and Transportation</td>
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<td>0,038</td>
<td>5,0%</td>
<td>0,018</td>
<td>4,3%</td>
<td>0,056</td>
<td>4,7%</td>
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<tr>
<td>Total</td>
<td></td>
<td>0,767</td>
<td>100,0%</td>
<td>0,422</td>
<td>100,0%</td>
<td>1,189</td>
<td>100,0%</td>
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</table>

Indonesia voluntary commitment of 26-41% (Presiden Yudhoyono, G20 Summit, Pitchburn)
# Indonesia Forest Carbon Remote Sensing Data

## Stocks

<table>
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<tr>
<td>HL</td>
<td>5.901.396</td>
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<td>92.594.2</td>
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<td>APL</td>
<td>4.107.787</td>
<td>4.074.655</td>
<td>216.071.804</td>
<td>233.871.7</td>
</tr>
</tbody>
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**CO2e total:** 97.677.507.886

**CO2e/Tahun:** 96.617.528.831

**Catatan:**
- Perhitungan serapan karbon diperoleh dari penambahan stok karbon pada kondisi tahun 2009
- Data aktivitas diperoleh dari penutupan dan penggunaan lahan pada tahun 2009

## Sequestration

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<td>KSA/KPA</td>
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<td>48.445.355</td>
<td>29.088.806</td>
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<tr>
<td>HP</td>
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<td>161.327.234</td>
<td>159.713.528</td>
<td>66.463.239</td>
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<tr>
<td>HPT</td>
<td>55.807.574</td>
<td>100.593.669</td>
<td>58.014.888</td>
<td>17.423.963</td>
</tr>
<tr>
<td>HPK</td>
<td>38.969.239</td>
<td>67.614.690</td>
<td>70.614.891</td>
<td>11.060.157</td>
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<tr>
<td>APL</td>
<td>79.619.708</td>
<td>146.580.360</td>
<td>164.136.524</td>
<td>197.362.000</td>
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**C (ton):** 312.260.033

**CO2e total:** 1.145.994.321

**CO2e/Tahun:** 737.620.082

## Emission

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**CO2e total:** 97.677.507.886

**CO2e/Tahun:** 96.617.528.831

**Catatan:**

## Source

Source: DG PLANOLOGI MoF, 2012

*Not been published yet*
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<tr>
<td>Indonesia</td>
<td>1.87</td>
<td>3.51</td>
<td>1.08</td>
<td>1.17</td>
<td>0.83</td>
<td>0.45</td>
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<tr>
<td>Forest Area</td>
<td>1.37</td>
<td>2.83</td>
<td>0.78</td>
<td>0.76</td>
<td>0.61</td>
<td>0.32</td>
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<tr>
<td>Non Forest Area</td>
<td>0.5</td>
<td>0.68</td>
<td>0.3</td>
<td>0.41</td>
<td>0.22</td>
<td>0.13</td>
</tr>
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Do You Believe:
FORESTS/TREES BEING A REMEDY for CLIMATE CHANGE

???,
or is it (Forests/Trees) only a problems ???

Be a hero for yourself
your regions and the world
(mother earth)
TREES / FOREST AND GHG CO2 CYCLE by doing

• Planting trees: absorbing CO2
• Managing Forest: Holding solid C in term of standing biomass
• Producing Sustainable Renewable Biomass: absorbing CO2 continuously;
  Providing renewable green products—holding solid C and replace/substitute high CO2 products
  (coal, oil, cement, steel, etc)
• Reducing Emission From Forest: Self remedy
GLOBAL & NATIONAL CHALLENGES
CLIMATE CHANGE: FRAME of Approach

GLOBAL  COMMITMENT

HOW TO MOVE THE WHEELS: (Main Factors)
  Technical
  Economic,
  Global Politics

CURRENT Base position --- Change of Scale (Innovation, participations, exp.
Economic of  Scale)

FUTURE Development ... Green Development (low emission....)
Challenge:

FINANCING MECHANISM should be for ALL TYPE OF FORESTS
(an OPTION)

1. Funding !! PROJECT

2. INVESTMENT FUND

3. INVESTMENT

MARKET

GOVERNMENT

PRIVATE

COMMUNITY
UNDERSTANDING ECONOMIC OF CLIMATE CHANGE: FOREST RELATED

- SCHEME AND VALUE OF CARBON FORESTS (Sequestration, Stocks, -Emission)
- TRANSFER PRICE MECHANISM (market based), Carbon Offset...
- Eliasch Review 2008: have to include forests carbon in the market for ambitious overall emission target
- WHAT IS ABATEMENT COST, COST CURVE, long-term, global /regional supply-demand
Towards Green: examples

UK GOV

House of Commons
Environmental Audit Committee

The Green Investment Bank
Second Report of Session 2010–11

Volume 1: Report, together with formal minutes, oral and written evidence

Source: Edi Setijawan, Researcher Indonesia Central Bank.

New Policy on Green Banking

What is Green Banking?

ALL PRODUCTS
FUNDING
LENDING
CSR

Compliance Voluntary Integrated

Planet People Profit

Focus on Aim Approach

Driver involvement

Source: Edi Setijawan, Researcher Indonesia Central Bank.
Green Fuel

A Honeywell UOP technician holds a vial of the company's "green fuel"—a diesel equivalent that actually delivers more power and can be made from a variety of oils.

WOOD and its wastes can be converted to aviation fuels, diesel, and methanol.

Source: Univ of Washington & MoF, Jakarta 17 Nov 2011
Existing example (US domestic)...
BAGAIMANA INDONESIA ??

Enabling Environment

Growing Demand for Carbon Offsets

Public Interest in a Tangible Offset Product

Market Chain Actors and Linkages

Sacramento Tree Foundation (STF)
calculated tCO2e bought and offset through planting trees

Sacramento Residents, Businesses, and Nonprofit Organizations
care for planted trees

Supporting Institutions

United States Department of Agriculture: U.S.
Forest Service
report titled "Tree Guidelines for San Joaquin
Valley Communities" was used in the offset agreement

Harbison-Mahony-Higgins Builders,
Inc. (HMH)
contributed funds to offset vehicle emissions

United States Environmental Protection Agency
figures from the Office of Transportation and Air Quality
were used in the offset agreement
Email 31st January 2012: REDD+ Methodologies will already approx by summer 2012.

American Carbon Registry
migrady@winrock.org sis mail125.us2.rsgny.net
American Carbon Registry <migrady@winrock.org>
yeti.rusi@gmail.com
Wed, Aug 29, 2012 at 1:54 AM

ACR Announces Open Public Comment Period for ACR Nested REDD+ Standard

August 28, 2012: Winrock International, a world leader in developing environmentally rigorous forest carbon standards and methodologies, has developed technical guidance for registration on the American Carbon Registry (ACR) of REDD+ projects nested within a jurisdictional accounting framework.

The ACR Nested REDD+ Standard was developed by Winrock International and ACR with assistance from a jurisdictional REDD+ Technical Advisory Team. ACR welcomes stakeholder comments and feedback on the Standard through September 28, 2012.

The ACR Nested REDD+ Standard provides registration requirements for project-level REDD+ activities — including conservation of forest carbon stocks, sustainable management of forests, and enhancement of forest carbon stocks — following baseline, leakage, monitoring and other technical requirements developed at the jurisdictional level provided these meet certain minimum criteria. The ACR Nested REDD+ Standard also defines social and environmental safeguard requirements for registration of REDD+ activities.
TO BE CONSIDERED

MISSING FROM IPCC:
- 5 CARBON POOLS (AGB, UNDER STOREY, NECROMASS, LITTER, AND BGB)
- (HARVESTED) WOOD PRODUCTS ????

Pool Carbon within products are missing from many global models

GAP ???
**Challenge:**

Forest CARBON, Climate change (quadrant of companionship/starter kit)

+ 20% CO2 FROM DEFOR/LULUCF

+ 80% CO2 EMISSION FROM FOSSIL FUEL

Reducing emissions:
- Clean Technology
- Clean energy
- Markets (compliance, voluntary)

Trees as a remedy/cure for CO2 in the atmosphere (ABSORBING CO2 COOLING DOWN THE EARTH)

REDD

REDD PLUS --- new AR CDM?
STRATEGY:
HUMAN RESOURCES SKILLS & CAPACITIES

- Technical (innovations, more involvement)
- Economics (economic of Scale, Value added/multiplier, global market & investment)
- Politics (International negotiation, national rule & regulation)

POWER OF SCALE UP
Inspired by

Michael Jackson
Song
“HEAL THE WORLD”

POEM OF
“TREES FOR BETTER LIFE”

Heal the world by planting trees

Planting more means absorbing more CO2

Planting more means produce more green products

These are the anchor of forest for climate change solution..HEAL THE WORLD BY PLANTING TREES..

Thank you

vetti.rusli@gmail.com