



FOREST AND CLIMATE CHANGE: *STRATEGY & MODALITIES* (kerangka dasar untuk pembahas makalah utama)

By:

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Semiloka Nasional Implementasi RAN GRK
berbasis Lahan,
BAPPENAS dan IPB, Bogor 4 Oktober 2011



SEMILOKA NASIONAL

Pembangunan Kerangka RAN/RAD GRK menuju
NAMAs di Indonesia utk Sektor berbasis Lahan

PERPRES NOMOR 61 TAHUN 2011

TENTANG

RAN PENURUNAN EMISI GRK

- ◆ BIDANG KEHUTANAN DAN LAHAN GAMBUT
- ◆ Target Penurunan Emisi (26%) : 0,672 (Giga ton) CO₂e
- ◆ Target Penurunan Emisi (41%) : 1,039 (Giga ton) CO₂e

Lampiran: NO;RENCANA AKSI; KEGIATAN/SASARAN; PERIODE
LOKASI;INDIKASI PENURUNAN EMISI GRK (Juta Ton CO₂e);
PENANGGUNGJAWAB

Kisi-kisi Makalah Utama:

Land based, NAMAs, Scooping; Baseline, outlook of LULUCF; MRV; Role of MoF in NAMAs

Pesan Utama (hal 1):

...tdk dimaksud merubah kerangka dasar REDD+ yg ada..?

hal 23 butir 10.1 langkah berikut

“mengklarifikasi dan menentukan ruang lingkup NAMAs utk sektor berbasis lahan....dst..terutama perlu adanya keterkaitan ruang lingkup REDD+..

Hal 16 "REDD+ MRV harus menjadi bagian sistem MRV nasional"

Baseline (emisi atau including stock) etc
IPCC..Gambar 4 hal 16 content Emission!!!

Hints ttg IPCC:

Forest Carbon Accounting: Overview & Principles, by
Charlene Watson London School of Economics and Political
Science (with UNDP, UNEP/Energy) ... "IPCC guidance is vast
and often difficult to navigate"

Up to CANCUN COP 16

Earth summit 1992, Kyoto Protocol (LULUCF, AR-CDM), RED, REDD, REDD+ : Indonesia for the world "BALI COP 13 2007"

- RED 2005, REDD+ 2007 (COP 13, Bali)
- Bali Action Plan, 1.(b).(iii):
REDD after 2012, **Conservation, Sustainable management of Forest** , and **Enhancing forest carbon stocks**
- Indonesia commitment, G20 **Pitchburg reduce emission by 26 up to 41%**
- Copenhagen Accord REDD+
- Cancun Outcome draft text AWG LCA REDD+

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

Understanding

- ◆ Green Economy and Climate Change
 - ◆ Forest and Climate Change:
 - Policy
 - Development Plan
 - Policy Implementation
- 
- Strategy
and
Modalities

Continue..

UNEP 2011, Towards a Green Economy

◆ Forest cover (ha)	1990	2010	
. World Forest Area (bil)	4.17	4.03	}
. World Planted FA (mil)	178	264	
◆ Deforestation (mil ha/y)			
. Ann net forest loss	8.3	5.2	}
. Ann deforestation	16	13	
. Ann increase planted forest	3.36	5	

Positif & intensif

Indonesia's Forests (± 136 mill ha.) for Today and Tomorrow

Conservation
Forests
25.3 m ha.

Protected
Forests
30,9 m ha

Production
Forests
80.4 m ha

**Community
Forests**



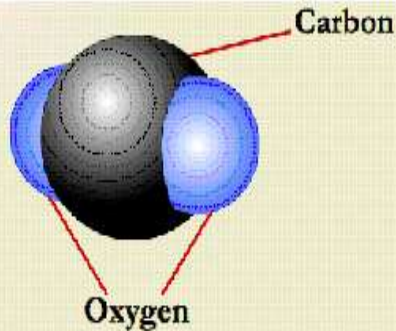
Ecosystem/
Environment

Services/
Commodity

Renewable Energy
(Wood pellet,
Methanol-4th GenRenw En)

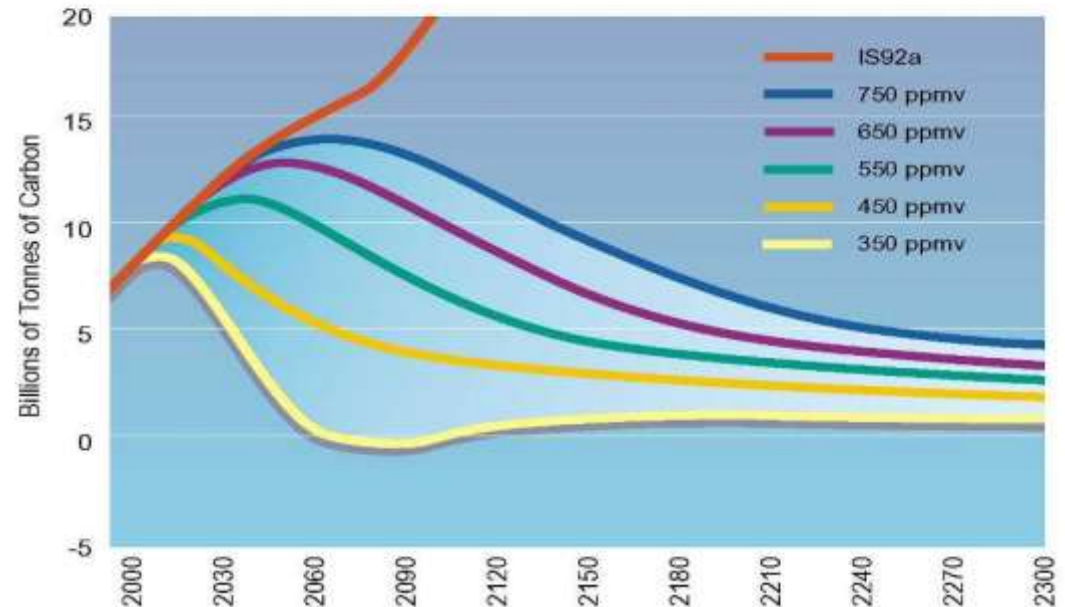
GHG and Climate Change

What is Global Warming?

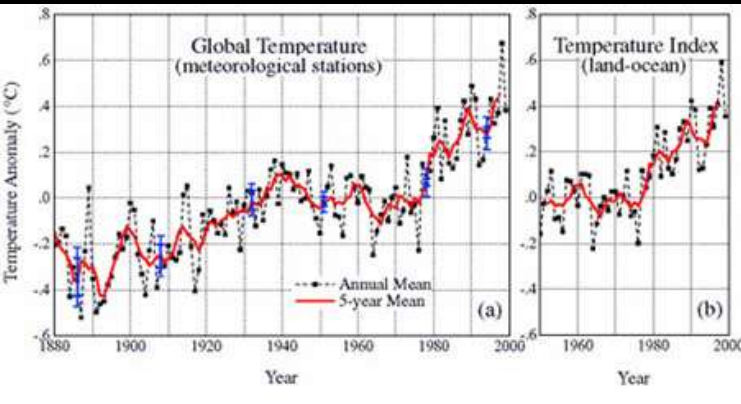


Carbon dioxide (CO_2) is a greenhouse gas that scientists agree is one of the most prominent factors leading to global warming.

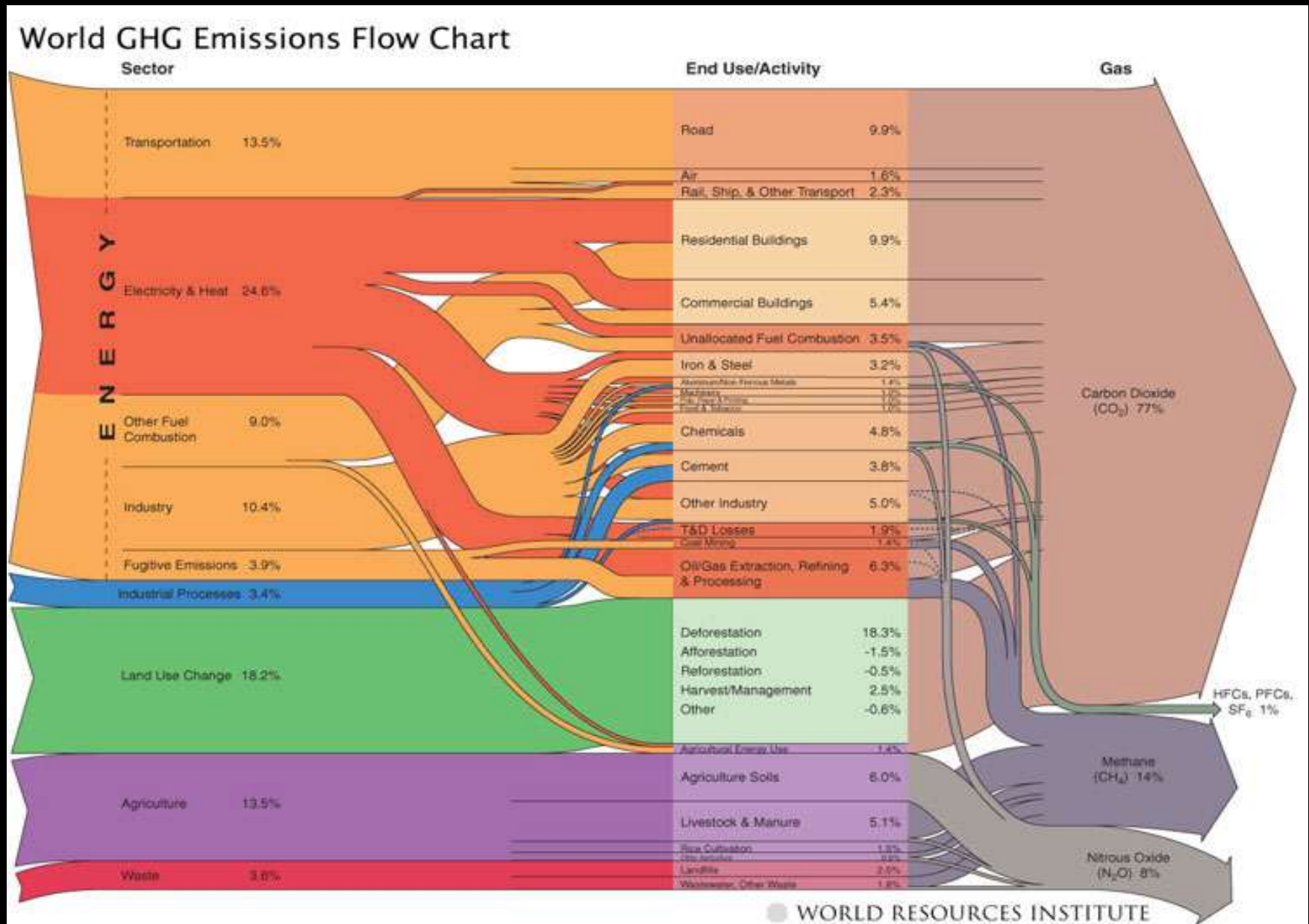
Emissions Trajectories Consistent With Various Atmospheric CO_2 Concentration Ceilings



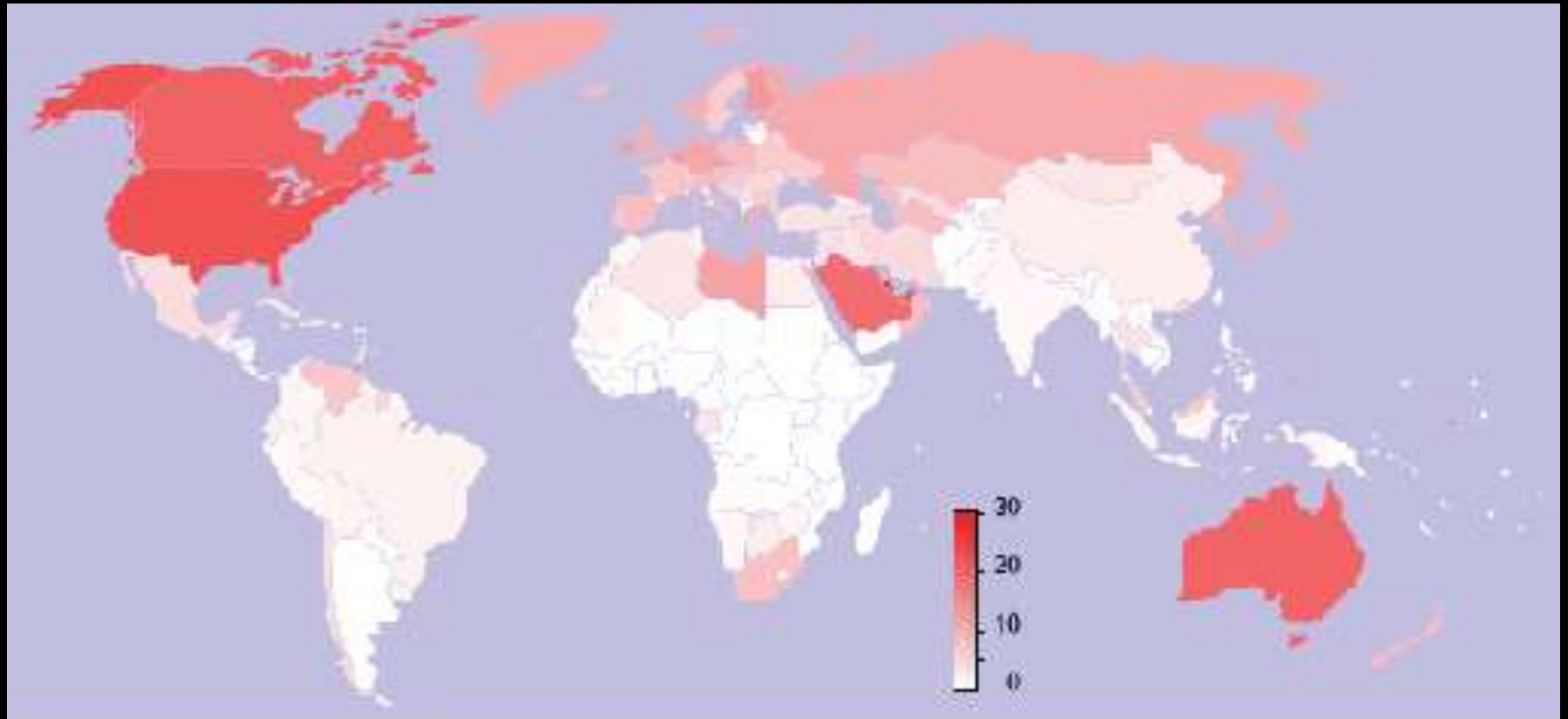
The path to avoid $\Delta T_{\text{avg}} > 2^\circ\text{C}$ (gold)



NICHOLAS STERN REVIEW, 2007 p.199:



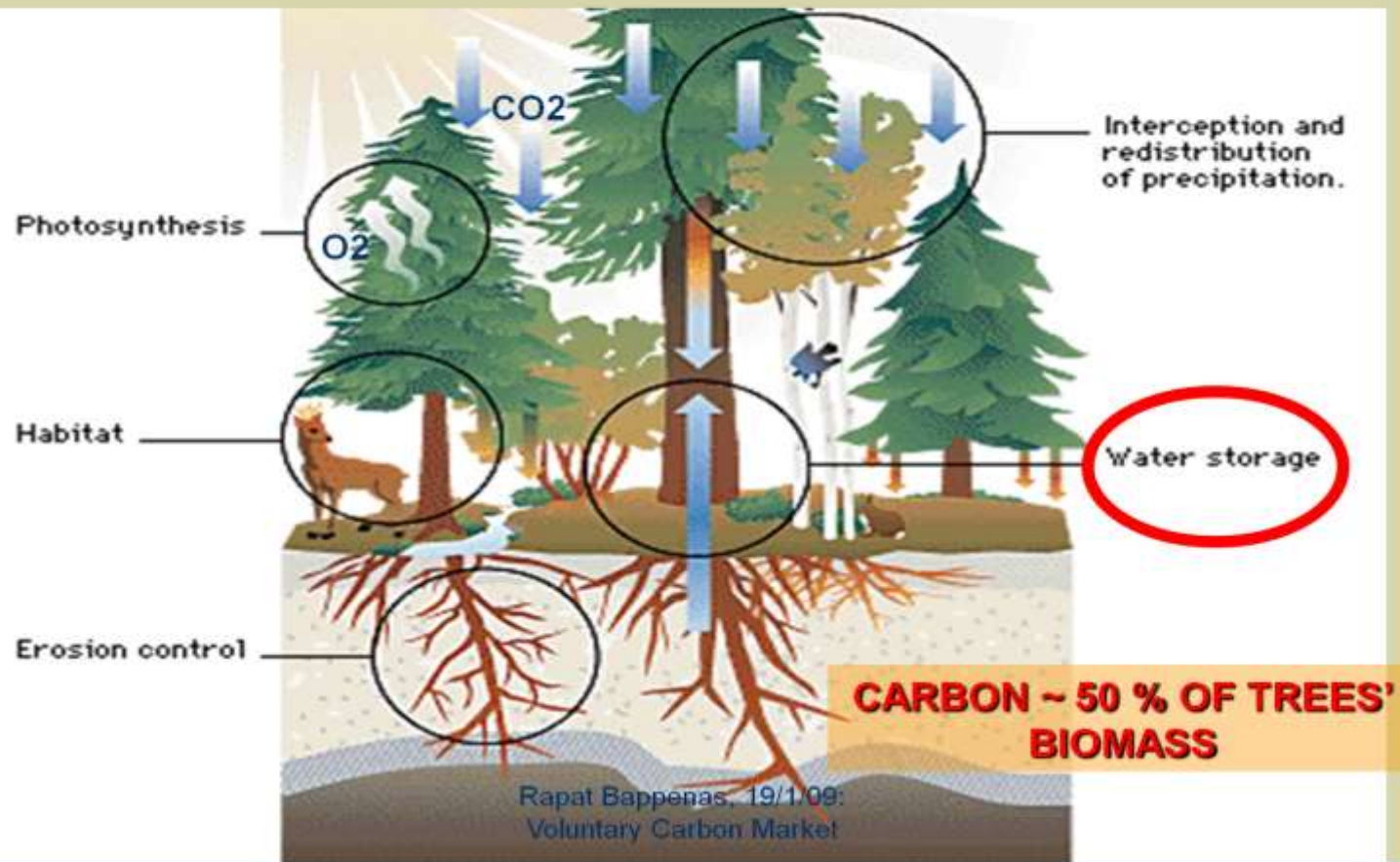
GHG concentration: CO_2 , CH_4 , N_2O ,



Tons Carbon Dioxide Emmitted per capita per annum

TREES, FORESTS AND LIFE ON EARTH

- CARBON CYCLE
- WATER CYCLE



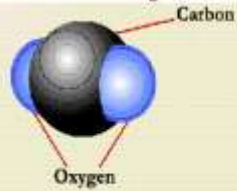
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GLOBAL WARMING

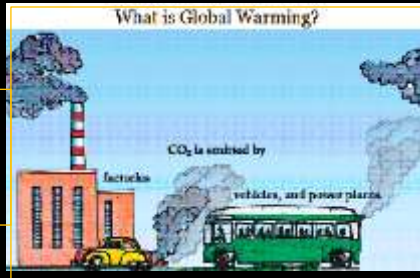
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GLOBAL WARMING

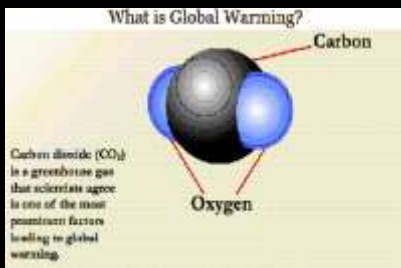
80 %
CO₂



20 %
CO₂

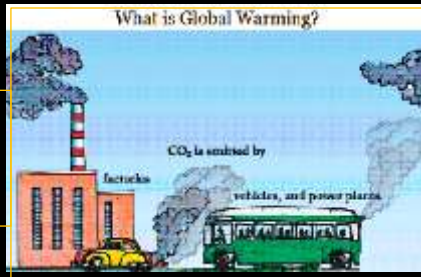


1



GLOBAL WARMING

80 %
CO₂



20 %
CO₂



2

Photosynthesis

O₂

Habitat

Erosion control

CO₂

Interception and
redistribution
of precipitation.

Water storage

CARBON ~ 50 % OF TREES' BIOMASS

Rapat Bappenas, 19/1/09:
Voluntary Carbon Market

TREES ARE THE SOLUTIONS:

- ABSORBING CO₂
- ~ 50% trees' biomass is a solid C/green products

3 ROLES OF FOREST AND CLIMATE CHANGE

FOREST AS A
SOURCE OF
EMISSION
(REDUCING
EMISSION FROM
DEFORESTATION &
DEGRADATION)

◆ FOREST C **STOCK**
(Stabilization of
terrestrial carbon)

◆ ABILITY TO **ABSORB**
CO2 GHG &
Transform into
BIOMASS
(SEQUESTRATION-
OLD COMMITMENT - AR-CDM)

Understanding source of CO₂ EMISSION FROM FORESTS (RATIO: 20% GLOBAL, 54% INA)

◆ FOREST FIRE



◆ ENCROUGMENT, ILLEGAL LOGGING, OVER CUTTING ETC



◆ NEW development, NEW SITES FOR AGRICULTURE PRODUCTS, AND OTHER LAND USE CHANGES (Indonesia's palm oil land site from forest only 4.8 m ha out of 133 m ha of forest)

EMISSION FROM FORESTS IS CARBON NEUTRAL

Understanding the Fact:

Forests' role in global carbon

Reservoirs



1650 GtC

more than twice
the carbon as in the
atmosphere

Sinks



2.6 GtC/yr



Sources

(deforestation)



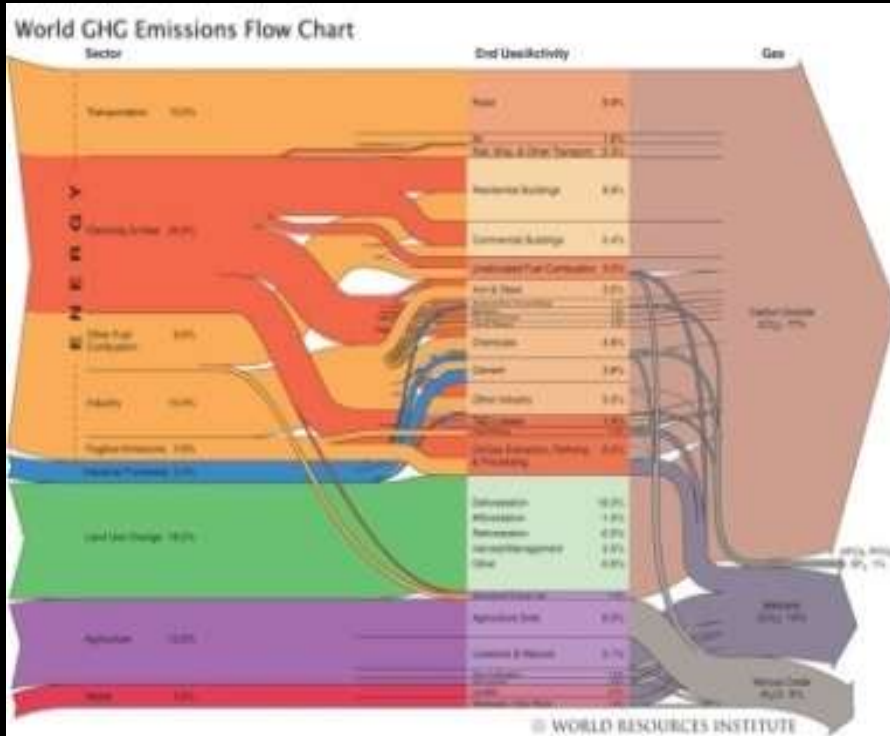
1.6 GtC/yr =



**17.4% GHG
emissions**



CO2 Global Emissions and Global Carbon Forests



Forests' 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



INDONESIA :

2020: 26% up to 41 %

26% : 14% forestry
12% non forest

ratio Indonesia (54 : 46), world 20 : 80

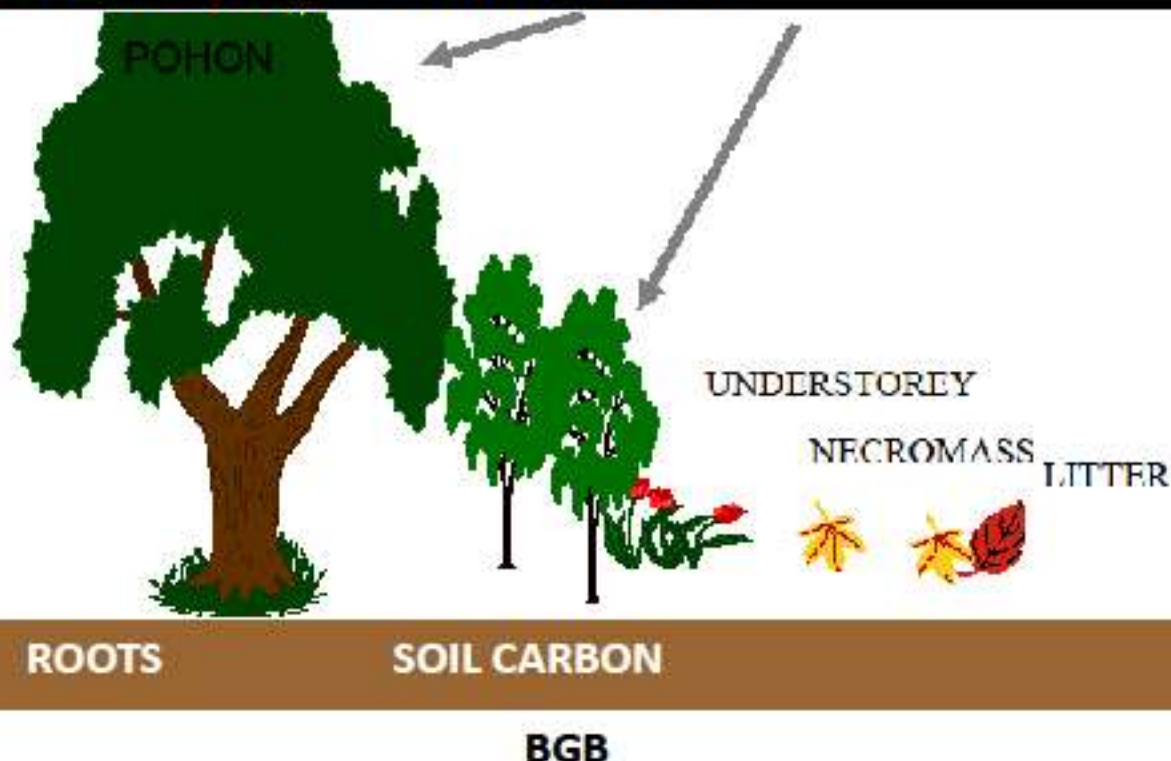
TO BE CONSIDERED

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 ???



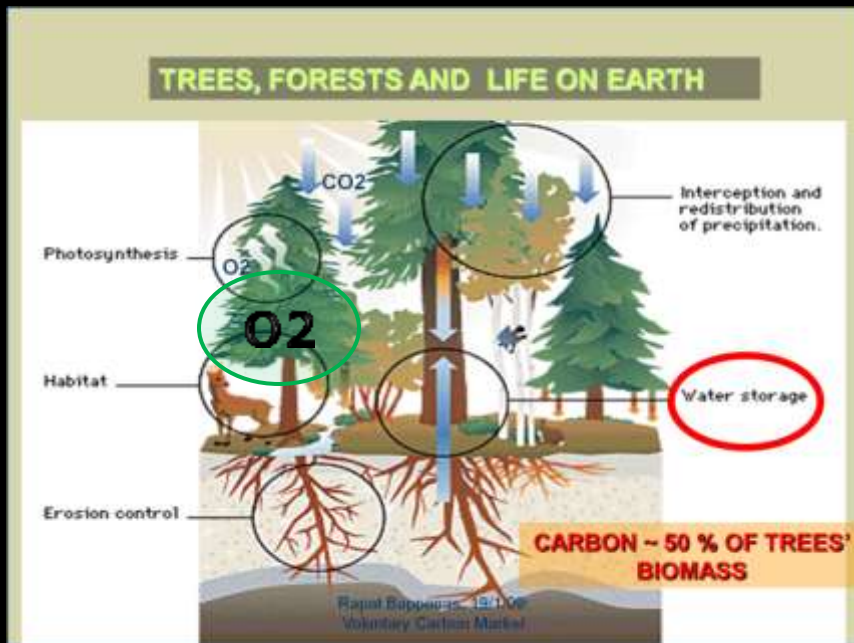
Challenge:

MITIGATION ACTIONS

JOINTLY SOLVE CO₂ emission (Capture CO₂)

"CCS" INDONESIA
"VIOCE of FORESTS"

Exp of Carbon capture
and storage (CCS)



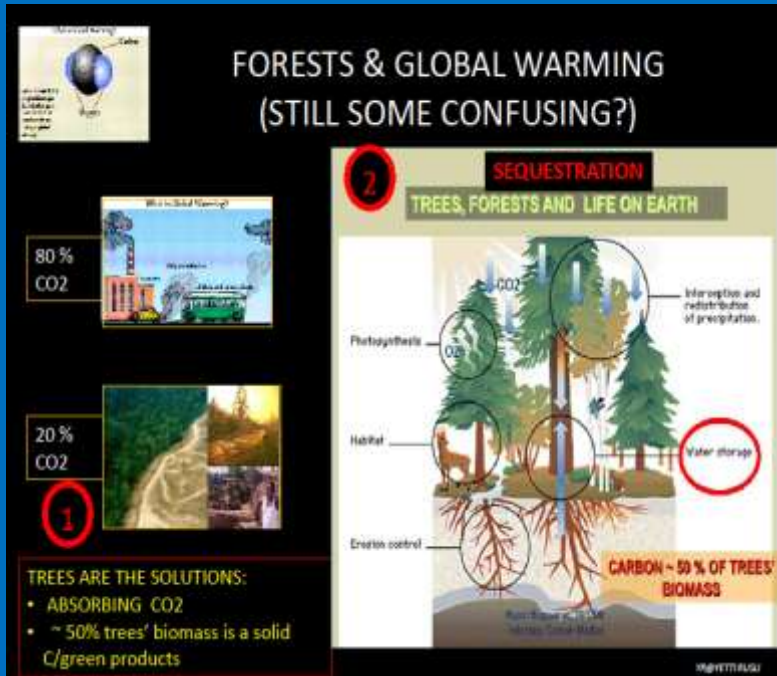
Conversion vector of Tree's biomass - CO₂eq:

Tree's biomass to carbon ~ 0.5

Carbon to CO₂ ~ 3.7

Biomass to CO₂ ~ 1.83

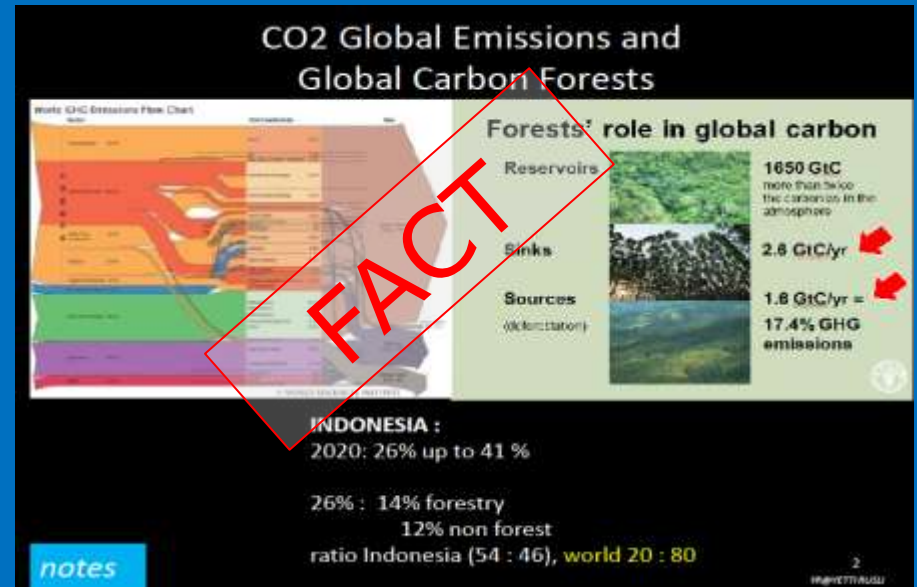
EMISSION vs OR & SEQUESTRATIONS



HURT THE VALUE OF NATURE SYSTEM ("akal sehat")



STATISTIC OF EMISSION & SEQUESTRATION



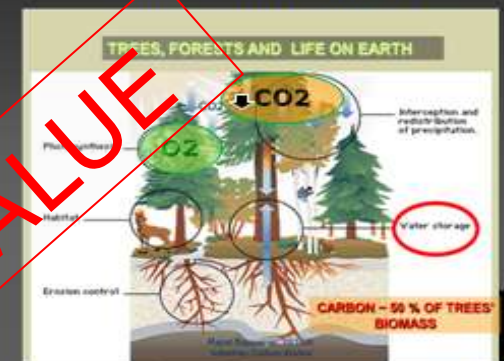
Challenge:

MITIGATION ACTIONS: JOINTLY SOLVE CO₂ BY REDUCING emissions and CAPTURING CO₂

Expl of Carbon capture and storage (CCS)



"CCS" INDONESIA "VOICE of FORESTS"

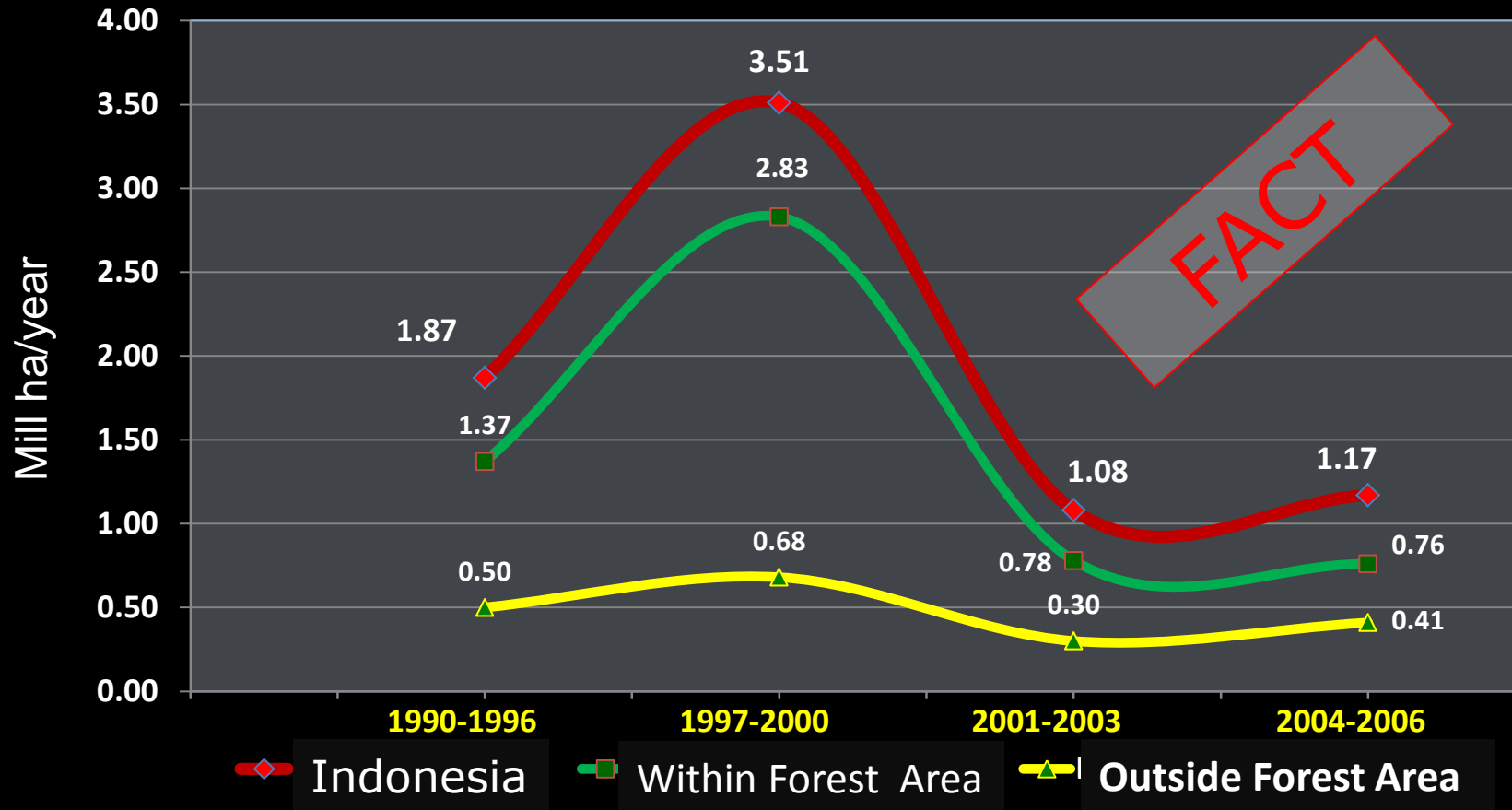


FOREST & C CHANGE: the future green value

Major role of forest on climate change:

1. EMISSION (the world focus so far)
 2. SEQUESTRATIONS (old commitment but important)
 3. STOCK of SOLID CARBON (IGNORING FACTS/World data)
- ◆ If concern only about emission from forest means HURTING THE VALUE OF NATURE SYSTEM (“tidak sesuai dg akal sehat”), theory, text book an facts.

REPORT ON REAL ACTIONS RATE OF DEFORESTATION



Annual Rate of Deforestasi	1990-1996	1997-2000	2001-2003	2004-2006
Indonesia	1.87	3.51	1.08	1.17
Within Forest Area	1.37	2.83	0.78	0.76
Outside Forest Area	0.50	0.68	0.30	0.41

FOREST CARBON, CLIMATE CHANGE
(QUADRAN OF **COMPANIONSHIP**/STARTER KIT)

+ 20% CO2
FROM DEFOR/
LULUCF

± 80% CO2 EMISSION FROM FOSIL FUEL

REDD

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)

R E D D P L U S --- new AR CDM ?



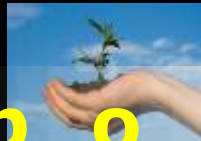
F o r e s t

LOCAL,



NATIONAL,

+

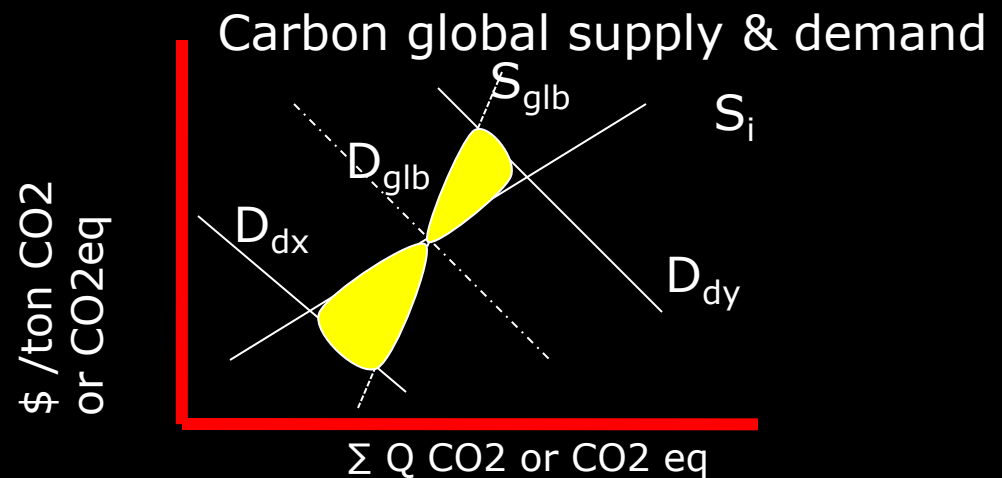
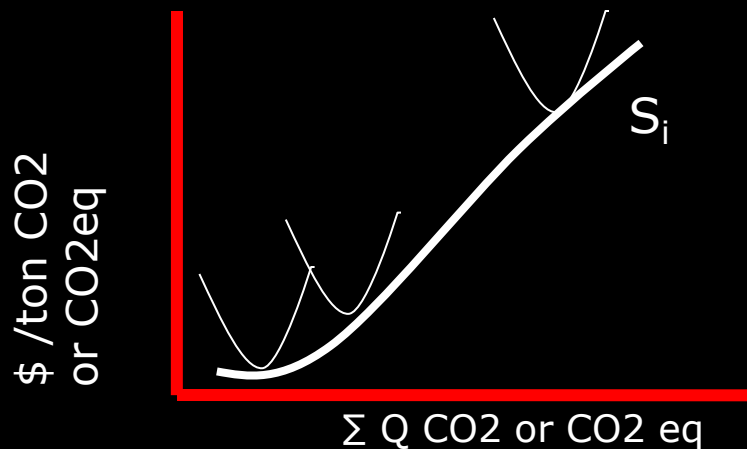


GLOBAL

c a r b o n

UNDERSTANDING ECONOMIC OF CLIMATE CHANGE: **FOREST RELATED**

- ◆ SCHEME AND VALUE OF CARBON FORESTS (Sequestration, Stocks, -Emission)
- ◆ TRANSFER PRICE MECHANISM (market based), Carbon Offset... ; bilateral & multi seharusnya tdk berdampak intervensi pasar
- ◆ 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



Alternative (Financing option):

80 %
Emission

20 %
Emission

CDM

REDD +
after 2012

INDONESIA

+ CONSERVATION,
SFM, ENRICH C STOCK

Funding !!
Investment Fund !!
Investment !!

Gov Spending

Gov Spending

Market for private investment

Challenge:

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

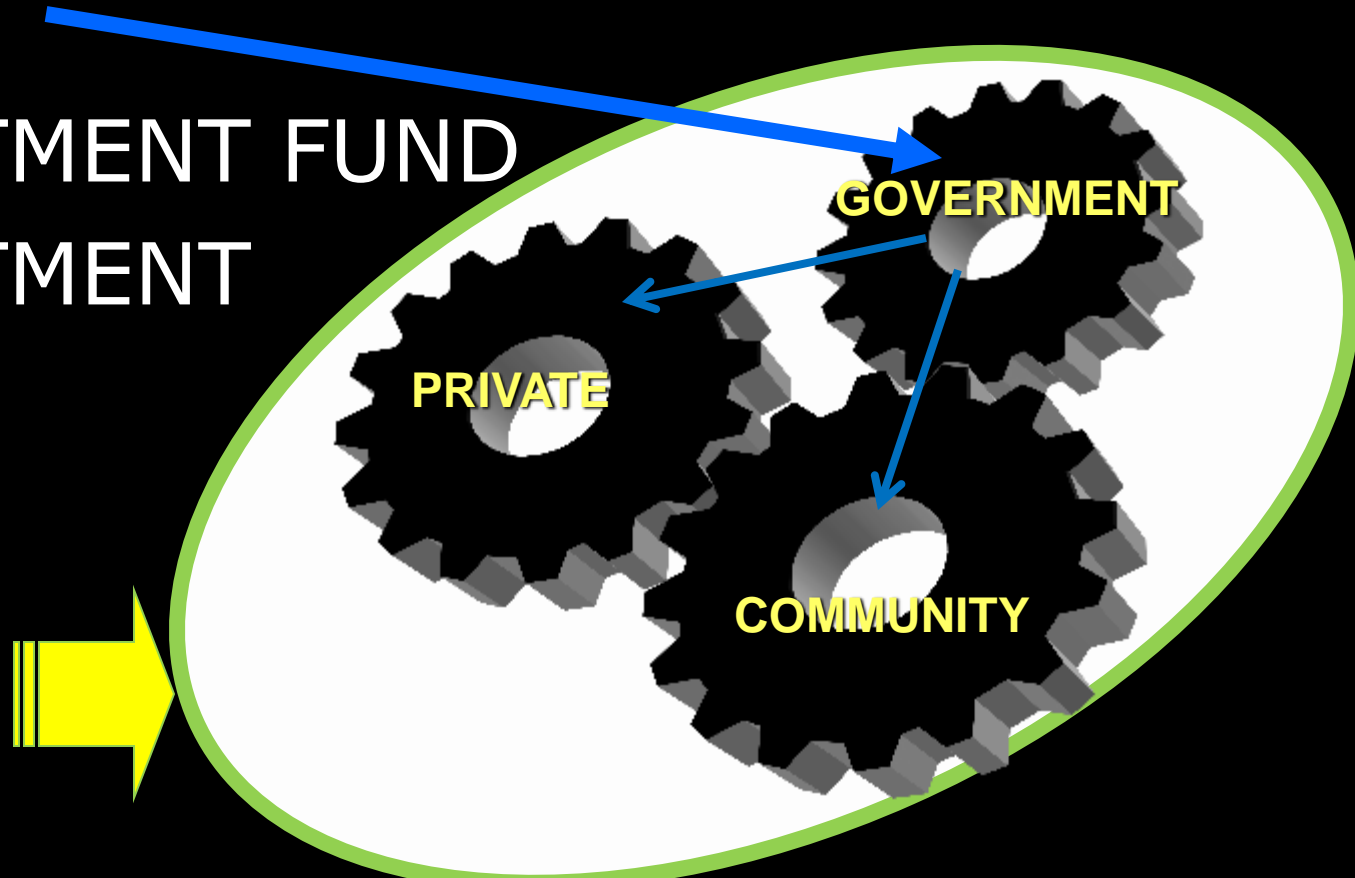
1. Funding !!

PROJECT

2. INVESTMENT FUND

3. INVESTMENT

MARKET



INDONESIA SHOULD WELCOME ALL POSSIBILITIES ..

Indonesia has modalities for all activities for all type of forests:

The activities range from conventional forestry program (SFM, Conservation, community etc), AR CDM, REDD, REDD+ (REDD, Conservation, enhancing c stock, SFM), Up to new programs within forest and climate change (**Wood Pellet**, Wood Methanol)

SHOULD BE THE CHANGING
OF GLOBAL DEMANDS AND
EXPECTATION FROM FORESTS
("REPACKAGING **SFM**" AND
IMPROVING)

FINANCIAL SCHEME SHOULD GIVE
BENEFITS TO THE COUNTRY AND
THE WORLD **GREEN** ECONOMY

RAN penurunan GRK PERLU MENGISI GAP DLM STUDY UTK Indonesia's Forests (± 136 mill ha.) for Today and Tomorrow

Conservation
Forests
25.3 m ha.

Protected
Forests
30,9 m ha

Production
Forests
80.4 m ha

**Community
Forests**



Ecosystem/
Environment

Services/
Commodity

Renewable Energy
(Wood pellet,
Methanol-4thGenRenw En)



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 yetti.rusli@gmail.com

