



***STRENGTHENING CAPACITY FOR ENVIRONMENTAL  
LAW IN THE ASIA-PACIFIC : DEVELOPING  
ENVIRONMENTAL LAW CHAMPIONS  
Manila, 1st - 5<sup>th</sup> June , 2015***

**CLIMATE CHANGE & CLEAN ENERGY LAW**

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# Learning outcomes

ADB

## Session Topic

- Understand the basic science of climate change
- Understand the international regime on climate change
- Understand the scope and content of regional and national climate law

## Teaching Methodology

- Understand the use of film to assist understanding of scientific concepts
- Understand the value of a structured class discussion and how to manage class responses (e.g., dealing with silence, or with too much argument)
- IUCN Academy Climate Law Teaching Resources
- <http://www.iucnael.org/en/online-resources/climate-law-teaching-resources>

- Climate change is a global issue identified as a significant threat to both humans and biological diversity ;
- It is the law relating to both **mitigation** of, and **adaptation** to, climate change
- A relatively new branch of environmental law, often taught in Law Schools as a separate subject
- International and national regimes
- What is the scope of climate change law?
  - Includes clean energy / renewable energy law  
eg ejeepneys (Institute for climate and sustainable cities)
  - Understanding the science



# Hanoi holiday snaps





Paloma

Restaurant & Bar

Spring in the Wind

89K-7229

85573

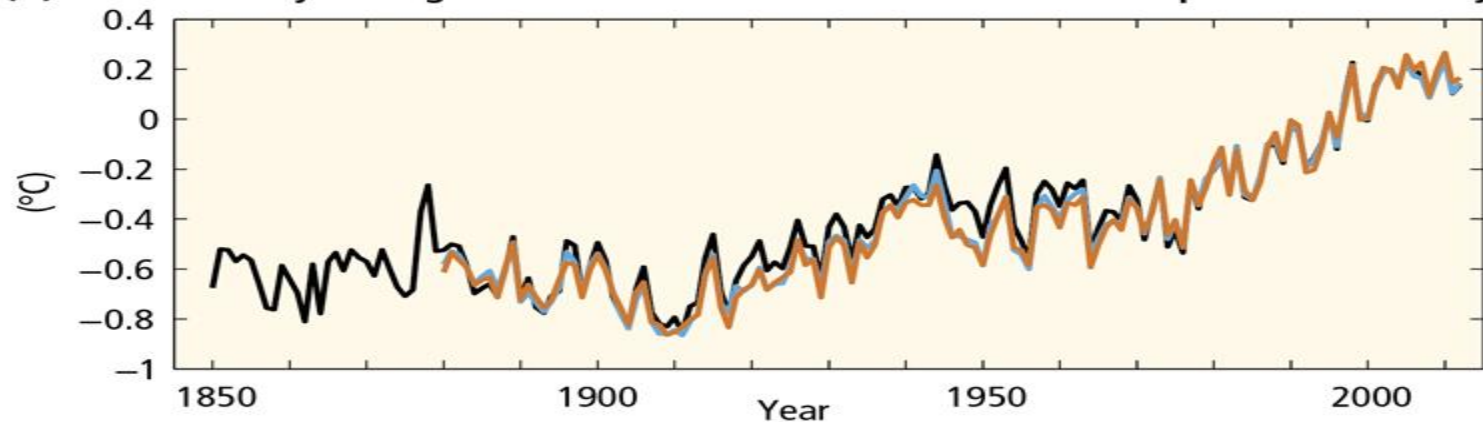
## The Science of Climate Change

- To teach climate law effectively, it is essential to first explain to students the scientific dimensions of climate change;
- This is particularly important because there is still not yet **full scientific certainty** about all aspects of climate change, in particular its impacts at the regional rather than global level
- Lack of full scientific certainty has prompted opposition in many countries to new climate laws;
- Use of graphs; statistics and film
- <http://nas-sites.org/americasclimatechoices/videos-multimedia/climate-change-lines-of-evidence-videos/> - National Academies Washington DC
- Intergovernmental Panel on Climate Change <http://www.ipcc.ch/>

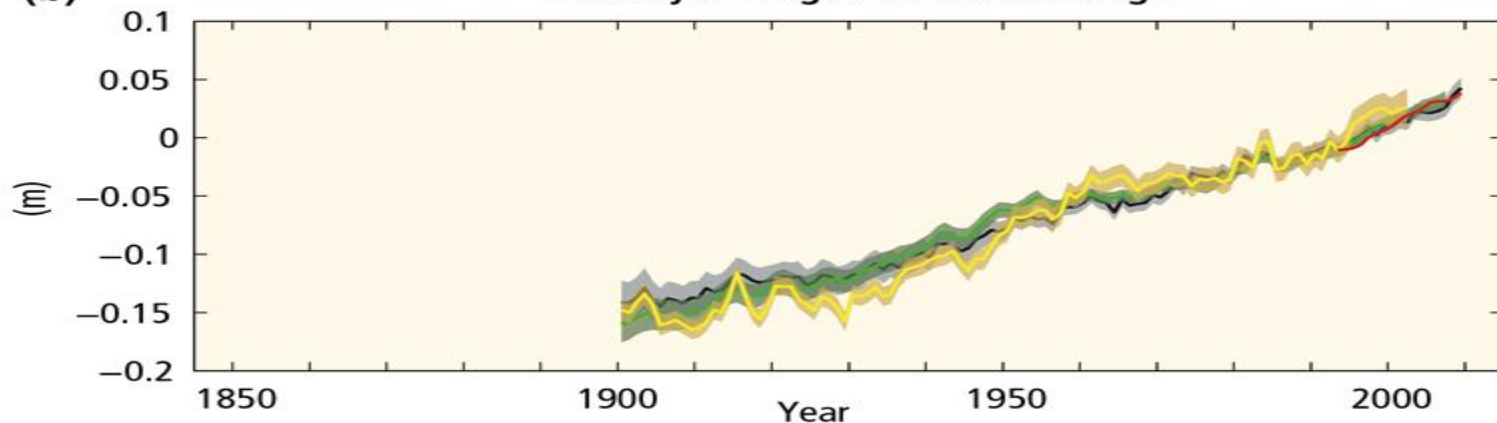
## The Science of Climate Change – the IPCC

- Scientific studies of climate change have been reviewed every five years since 1987 in the reports of the Intergovernmental Panel on Climate Change (IPCC);
- In its Fourth Assessment Report (AR4) in 2007, the IPCC stated that:  
“Most of the observed increase in globally-averaged temperatures since the mid-20th century is **very likely due** to the observed increase in anthropogenic GHG concentrations.”
- In its Fifth Assessment Report (AR5) in 2014, the IPCC stated that:  
“The evidence for human influence on the climate system has grown since the Fourth Assessment Report (AR4). It is **extremely likely** that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in greenhouse gas concentrations and other anthropogenic forcings together.”

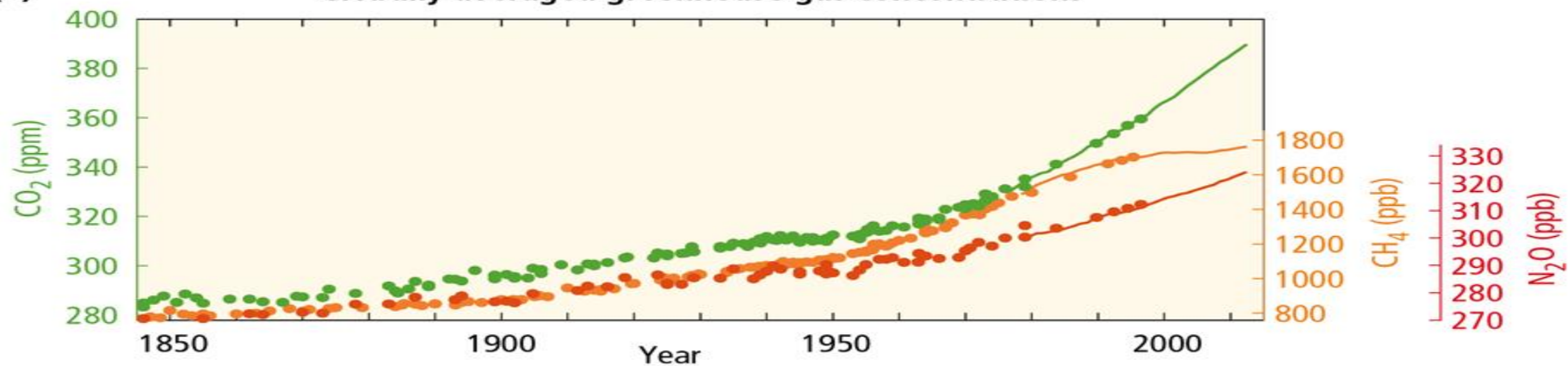
**(a) Globally averaged combined land and ocean surface temperature anomaly**



**(b) Globally averaged sea level change**



**(c) Globally averaged greenhouse gas concentrations**





# The Science of Climate Change – the causes

- CO2 emissions from fossil fuel & cement now account for about 90% of total CO2 emissions
  - Economic and population growth drive CO2 emission increases from fossil fuel combustion (coal)
  - Globally energy use increased by 31%, 1971-2010
    - OECD and EIT – per capita energy use rose 13-14%
    - LAM rose by 60%
    - MAF rose by 90%
    - ASIA rose by 200%
- \*\* energy use in these 3 regions per capita is less than OECD + EIT 40 years ago

# Widespread impacts attributed to climate change based on the available scientific literature since the AR4

## POLAR REGIONS (Arctic and Antarctic)



## NORTH AMERICA



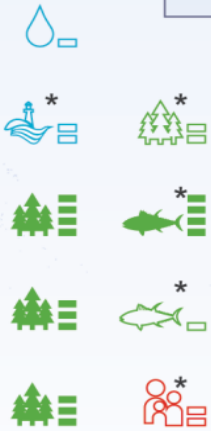
## EUROPE



## ASIA



## SMALL ISLANDS



## CENTRAL AND SOUTH AMERICA



## AFRICA



## AUSTRALASIA



9329

10544

8101

1987

2982

3255

### Confidence in attribution to climate change



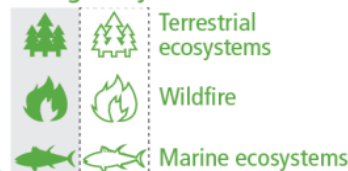
☐ indicates confidence range

### Observed impacts attributed to climate change for

#### Physical systems



#### Biological systems



#### Human and managed systems



\* Impacts identified based on availability of studies across a region

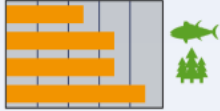
Outlined symbols = Minor contribution of climate change  
Filled symbols = Major contribution of climate change

# Representative key risks for each region for

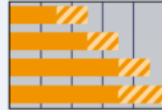


## Polar Regions (Arctic and Antarctic)

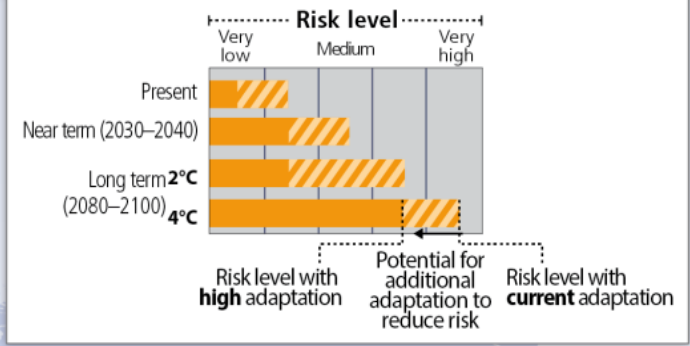
Risks for ecosystems



Risks for health and well-being



Unprecedented challenges, especially from rate of change



## North America

Increased damages from wildfires



Heat-related human mortality



Increased damages from river and coastal urban floods



## Europe

Increased damages from river and coastal floods



Increased water restrictions



Increased damages from extreme heat events and wildfires



## Asia

Increased flood damage to infrastructure, livelihoods and settlements



Heat-related human mortality



Increased drought-related water and food shortage



## The Ocean

Distributional shift and reduced fisheries catch potential at low latitudes



Increased mass coral bleaching and mortality



Coastal inundation and habitat loss



## Central and South America

Reduced water availability and increased flooding and landslides



Reduced food production and quality



Spread of vector-borne diseases



not assessed  
not assessed

## Africa

Compounded stress on water resources



Reduced crop productivity and livelihood and food security



Vector- and water-borne diseases



## Small islands

Loss of livelihoods, settlements, infrastructure, ecosystem services and economic stability



Risks for low-lying coastal areas



## Australasia

Significant change in composition and structure of coral reef systems



Increased flood damage to infrastructure and settlements



Increased risks to coastal infrastructure and low-lying ecosystems



## Climate Change Law – International measures

- **UN Framework Convention on Climate Change (UNFCCC)**

- Signed at Rio Earth Summit, 1992
- Entered into force 21/3/1994 (192 parties)
- Objective “ ...stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent **dangerous** anthropogenic interference with the climate system.” (Art.2)
- <http://unfccc.int/2860.php>

# Climate Change Law – International measures

## UNFCCC (cont.)

Each of **Annex 1 (developed)** countries is required to “adopt national policies and take measures to mitigate climate change by limiting its emissions of greenhouse gases and protecting its greenhouse gas sinks” (Art. 4.2)

General obligations are also imposed on **all** Parties regarding the production of national greenhouse gas (GHG) inventories (Art. 4.1)

“Commitments by developing countries under the Convention will depend on the provision of financial resources and transfer of technology by developed countries;

Also must take into account that “economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.” (Article 4.7)

# Climate Change Law – International measures

- **Kyoto Protocol (1997)**

- Signed in Kyoto, Japan in 1997
- Entered into force 16/2/2005 (182 parties)
- Annex 1 countries agreed to reduce their overall emissions by 5.2% below 1990 levels between 2008-2012 (1<sup>st</sup> commitment period)
- Specific, but varying targets set for each UNFCCC Annex 1 country (Article 3)
- No new commitments for Parties not included in Annex I

# Climate Change Law – International measures

- **Kyoto Protocol cont**
- Ability to meet mitigation commitments through:
  - Clean Development Mechanism (Art.12)
  - Joint Implementation (Art.6)
  - International Emissions Trading (Art.17)
- Implementation issues
  - Scope and role of flexibility
  - Extent of land-use and forest changes allowed in the calculations
  - The parameters of a compliance monitoring and enforcement mechanism.

# International measures since Kyoto

- Bali road map
  - action plan to get a legally binding instrument to take over from Kyoto
  - Parties agreed to consider ‘measurable, reportable and verifiable nationally appropriate mitigation actions’ for all parties
  - Wide agenda
  - Possibility of sectoral targets for middle income countries, possibly without sanctions
- Growth of regional and national emission trading schemes eg EU, Australia, Canada, Japan, China, US.
- Is there greater potential for JI as developing countries move to emerging economies?
- Much higher profile for forestry and agriculture – 20% of global carbon emissions from deforestation and degradation of forests. REDD



# Progress??

- 2008 – Poznan
- 2009 – Copenhagen – failure to deliver strong commitments - Copenhagen Accord; promise of \$100b/yr by 2020
- 2010 – Cancun – individual country pledges (not legally binding) – don't keep temperatures below 2 degree increase
- 2011 – Durban – agree to a legally binding agreement by 2015; climate justice issues; Green Climate Fund operationalised
- 2012 – Doha – women + climate
- 2013 – Warsaw - adaptation; mechanism on loss and damage; gender balance in the process; REDD+ program completed
- 2014 – Lima – adaptation; green climate fund > US\$10b; multilateral assessment; non-state actors
- 2015 - Paris



# Regional and National measures



- There is a rapidly emerging body of legislation, particularly in developed countries, directed to mitigation of climate change, and more recently to adaptation measures
- There has also been resort to litigation in some countries, particularly USA, UK and Australia to FORCE authorities to act to regulate greenhouse gas (GHG) emissions;
- National legislation is required for a cohesive and comprehensive approach to climate change
- Regional approaches – Singapore Declaration on Climate Change, Energy and the Environment 2007
- ASEAN Declaration on Environmental Sustainability 2007
  - Ministers undertake to....*encourage* Member States to address climate change in line with their respective policies.

# National measures

- **Types of national climate-related legislation**
  - Prescribing targets for the reduction of GHG emissions
  - Requiring the reporting of GHG emissions for a national inventory
  - Imposing economic measures to reduce emissions:
    - trading (“cap and trade”) systems;
    - Carbon tax on emissions
  - Energy-related measures e.g., targets for renewable energy; feed in tariffs; rebates
  - Carbon sequestration measures

# What is REDD & REDD+?



- **Reducing Emissions from Deforestation and Forest Degradation (REDD)** is an effort to create a **financial value** for the **carbon stored in forests**, offering **incentives for developing countries** to reduce emissions from forested lands and invest in low-carbon paths to sustainable development.
- **"REDD+" goes beyond deforestation and forest degradation**, and includes the role of **conservation, sustainable management** of forests and **enhancement of forest carbon stocks**.  
*(UN-REDD Programme-Definition)*



# Genesis

# of REDD+



- Developing countries especially countries with large forest covers demanded the “**recognition**” of their countries in absorbing green house gases.
- “Formal recognition” started in **UNFCCC – CoP 13th Bali**, Dec 2007- Decision 2/CP.13:  
*Reducing emissions from deforestation in developing countries: approaches to stimulate action.*



***Encourages developing country Parties to contribute to mitigation actions in the forest sector by undertaking the following activities, as deemed appropriate by each Party and in accordance with **their respective capabilities and national circumstances**:***



- (a) Reducing emissions from deforestation;
- (b) Reducing emissions from forest degradation;
- (c) Conservation of forest carbon stocks;
- (d) Sustainable management of forests;
- (e) Enhancement of forest carbon stocks;





**COP19/CMP9**  
**UNITED NATIONS**  
CLIMATE CHANGE CONFERENCE  
**WARSAW 2013**

**UNFCCC-CoP 19 in Warsaw produced several decisions on REDD+:**

- 1/CP.19 Modalities for national forest monitoring systems;
- 10/CP.19 Coordination of support for the implementation of activities in relation to mitigation actions in the forest sector by developing countries, including institutional arrangements;
- 11/CP.19 Modalities for national forest monitoring systems;
- 13/CP.19 Guidelines and procedures for the technical assessment of submissions from Parties on proposed forest reference emission levels and/or forest reference levels;
- 14/CP.19 Modalities for measuring, reporting and verifying;
- 15/CP.19 Addressing the drivers of deforestation and forest degradation;



# The Rationales of REDD+

## REDD+

REDD+ helps to mitigate climate change through forests, and provides social and environmental benefits. It includes these essential components: creating incentives for not clearing standing forests, maintaining and expanding forest cover, sustainably managing forest and recovering degraded lands.





# REDD+ Architecture

National approach,  
sub-national  
implementation

- Forest cover and carbon stock changes,

Attractiveness

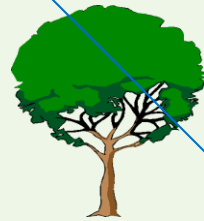
Responsibilities and benefits

- National registry

Source of fund

CO<sub>2</sub>

Historical emission /future scenario



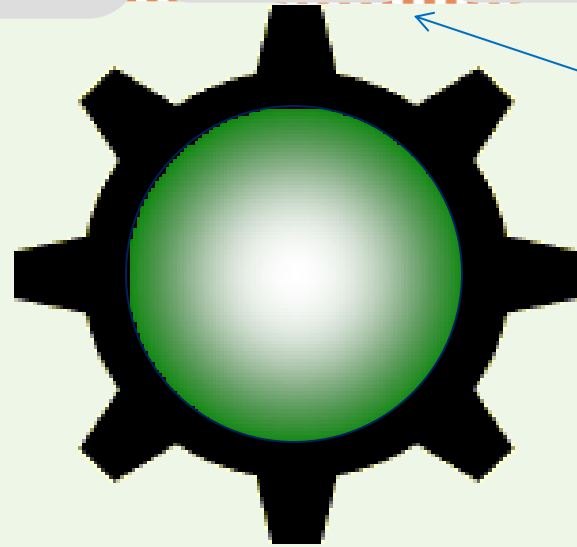
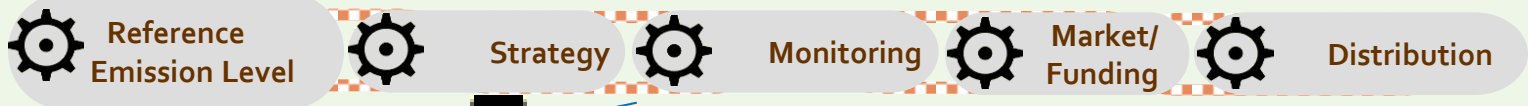
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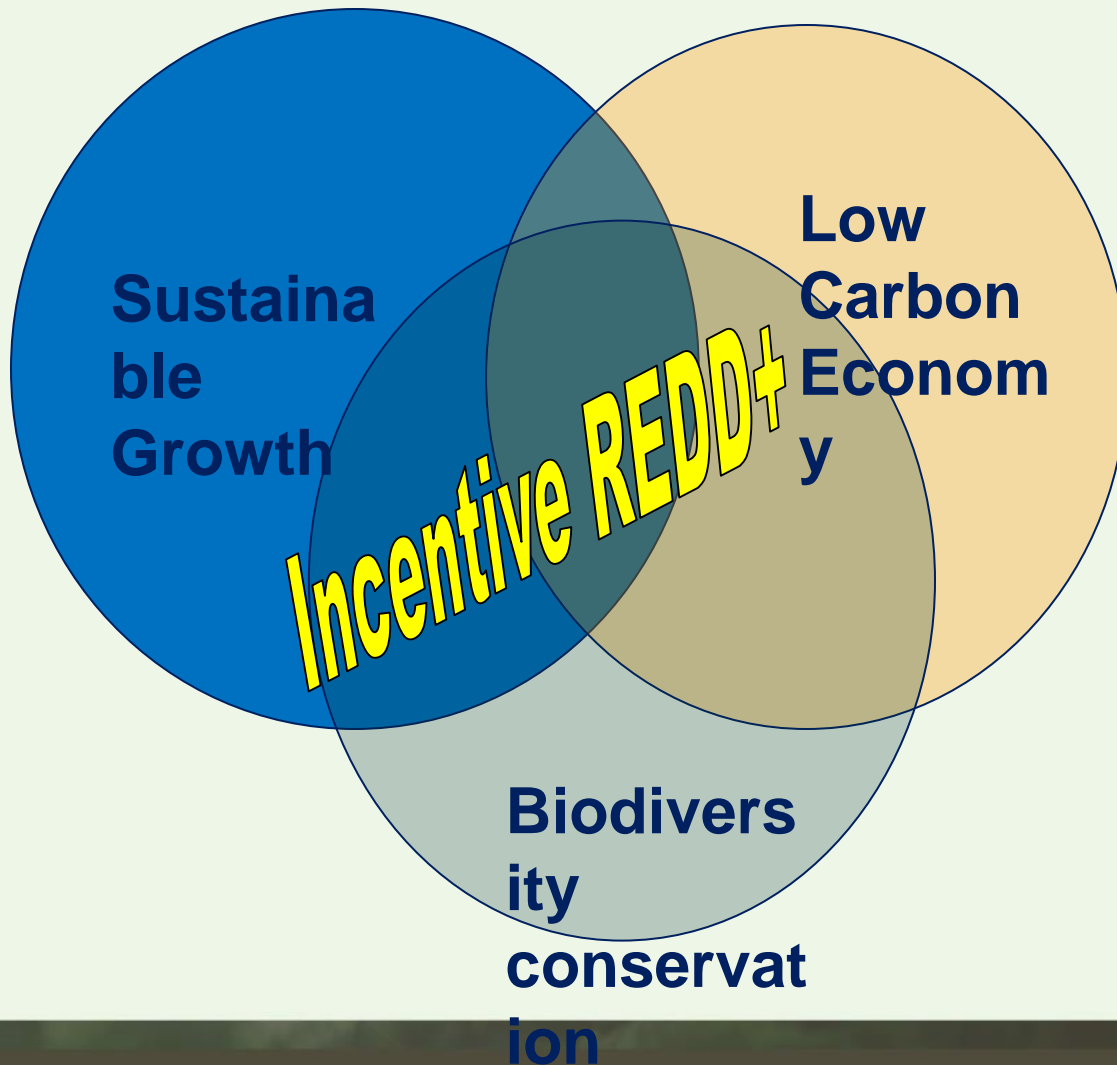
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IFCA 2007 recommendations :  
REDD strategy for 5 landscapes :  
Production forest, Conservation forest, Timber plantation, Peat land, Oil palm plantation (related to LUC)

# REDD+ Incentives



# Implementation Trends of REDD+



- Voluntary schemes have shaped implementation – e.g. FCPF (Forest carbon Partnership Facility) and VCS (Verified Carbon Standard)
- **Bilateral arrangements** have also shaped – such as: Letter of Intent (LoI) : Norway – Indonesia
- Recent trends:
  - Emphasis on jurisdictional approach
  - Emphasis on protecting carbon stock depletion