



# Business opportunities for mitigation action in developing countries

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## Outline

- The global mitigation challenge
- Mitigation actions in developing countries - CDM
- The role of carbon markets
- New market mechanisms and approaches for mitigation actions
- Examples of business opportunities
  - Movie: 'Banking on A Green Economy'

# The global mitigation challenge

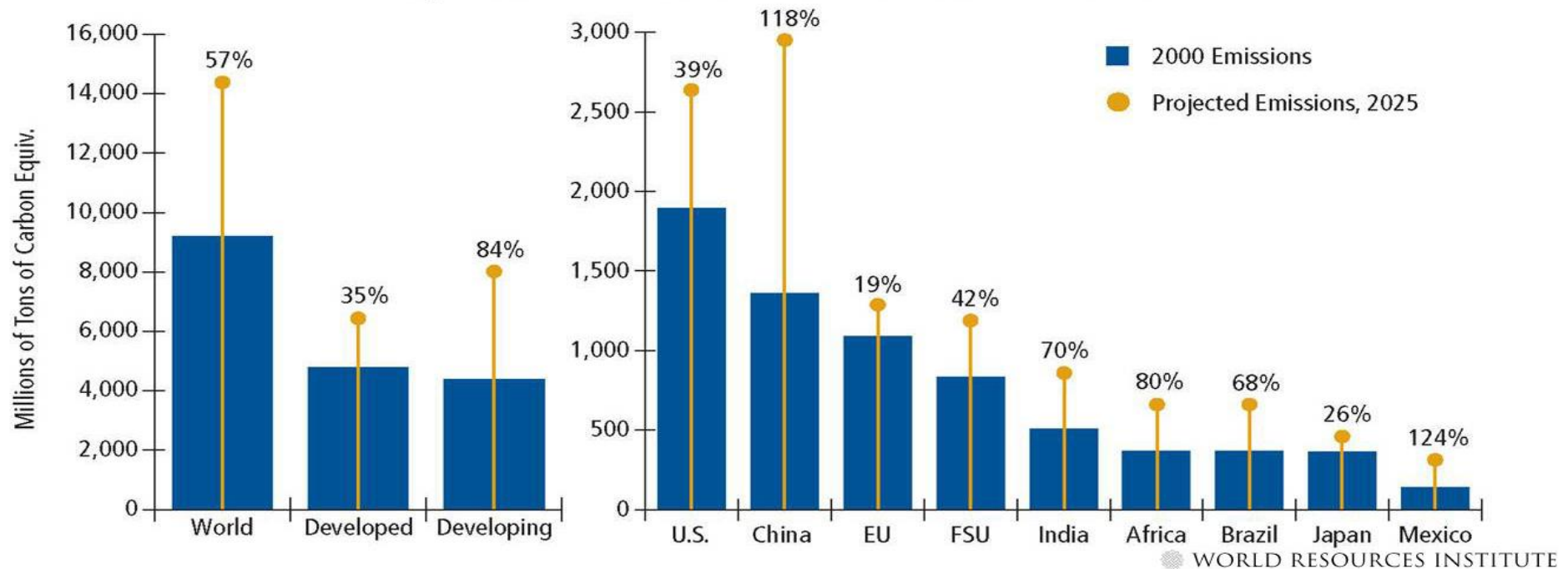
# The mitigation challenge according to IPCC

- **Without action - global CO<sub>2</sub> emissions will grow between 40 and 110% between 2000 and 2030**
- **To stay below 2 degrees global average warming and avoid major damages:**
  - global CO<sub>2</sub> emissions should start **declining** by 2015 and
  - be reduced with 50-85% below 2000 level by 2050



## Major Challenges

### GHG Emissions Projections for 2025



- Largest emitters were not included in the 1st commitment period
- Developed and developing country emissions currently about equal

# State and trends of emissions by G20 countries

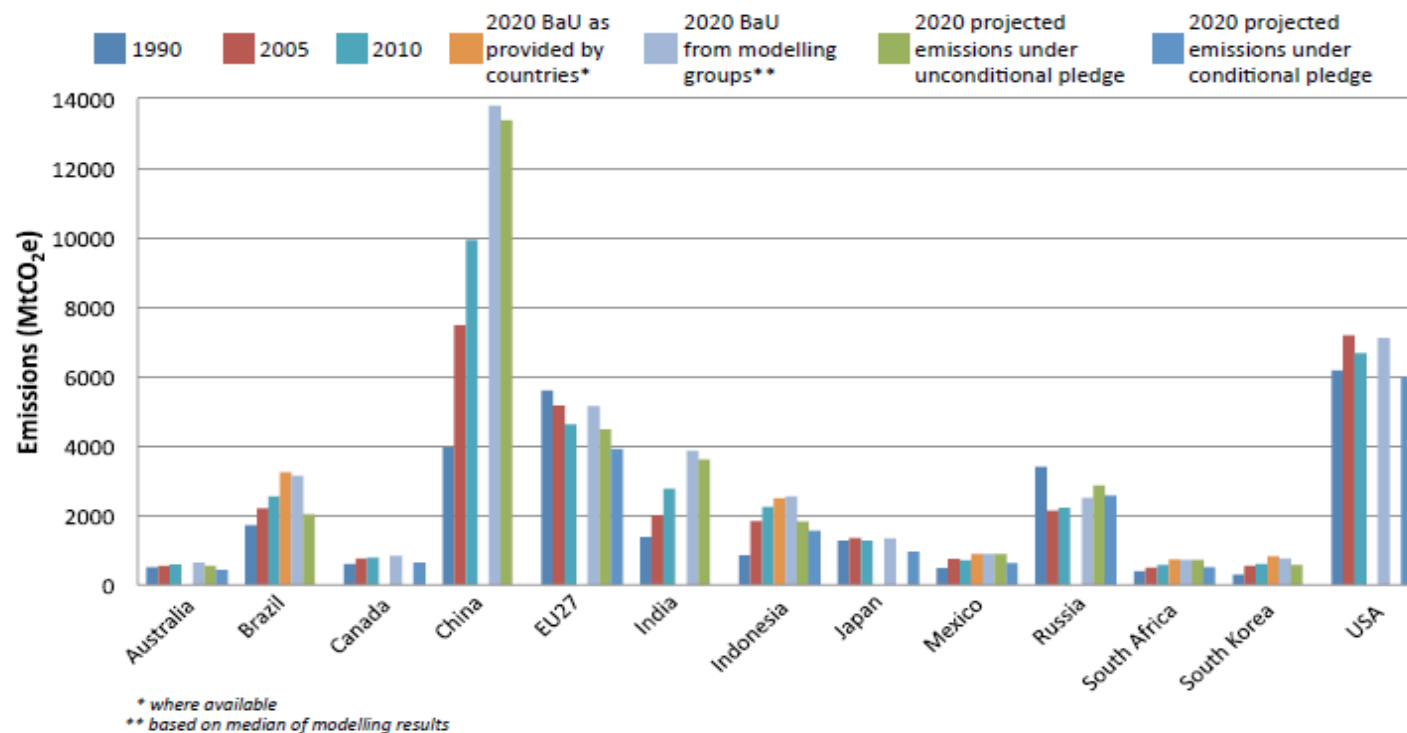
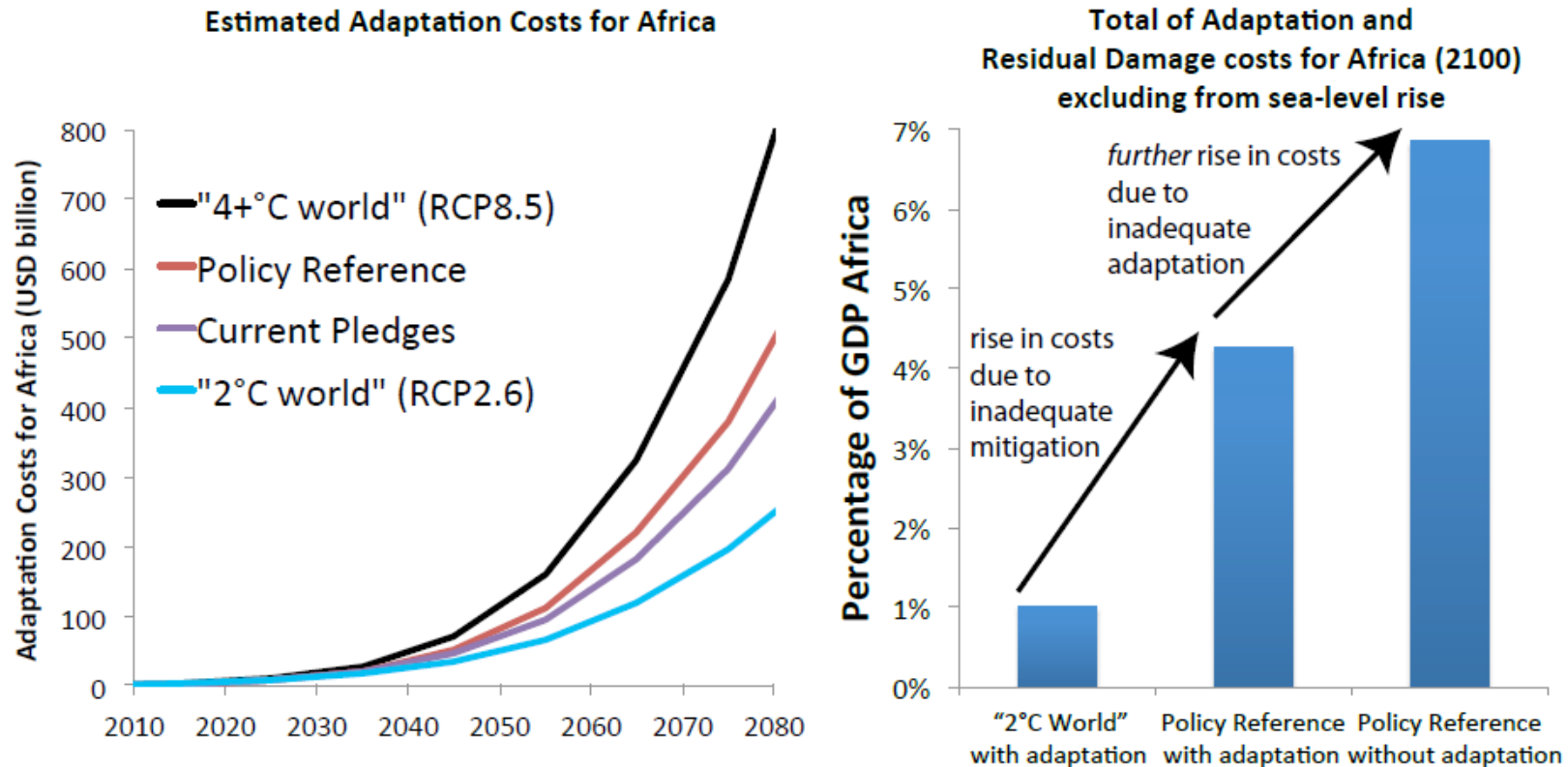


Figure 2.6. Year 1990, 2005, 2010 and 2020 greenhouse gas emissions for G20 countries that have made pledges. Note that European Union countries are taken as a group. Source: JRC/PBL (2012); Government of Brazil (2010); Indonesia Ministry of Environment (2010); Mexico The Ministry of Environment and Natural Resources (2009); South Africa Department of Environmental Affairs (2011); South Korea Ministry of Land and Environment Protection (2000).

Source: UNEP GAP report 2012

# Impacts of global warming – adaptation costs in Africa



Source: 'Africa's Adaptation Gap', UNEP 2013



# What is UNFCCC?

UN Framework Convention on Climate Change provides an overall framework for intergovernmental efforts to address climate change.

It establishes an objective & principles, commitments for different groups of countries, and a set of institutions all of which work to enable continued talks as well as *future* actions to address global climate change.





# UNFCCC Principles – Article 3

## Common but differentiated responsibilities

- Industrialized countries should take a lead in combating CC
- Recognize poor countries' rights to economic development
- Full consideration for developing country needs and circumstances

## Precautionary principle/approach

- to combat climate change even if there is a lack of “full scientific certainty” regarding a cause & effect relationship

## Principle of cost-effectiveness

- all policies and measures that deal with climate change are to be cost-effective.

## Principle of sustainable development

- Recognize “the parties have a right to, and should, promote sustainable development”

# Commitments under UNFCCC – Article 4

COUNTRY GROUP	ANNEX I	ANNEX II	NON-ANNEX I
Members	Developed country Parties incl. economies in transition (EITs)	Developed country Parties excl. EITs	Developing countries
Mitigation	<ul style="list-style-type: none"> <li>Adopt policies and measures with the aim of reducing their GHG emissions to 1990 levels by 2000</li> </ul>	<ul style="list-style-type: none"> <li>Provide financial resources to enable developing countries to <i>mitigate</i></li> </ul>	<ul style="list-style-type: none"> <li>All Parties take mitigation actions but no quantitative aims</li> <li>Least Developed Countries given special consideration</li> </ul>
Adaptation	<ul style="list-style-type: none"> <li>Implement strategies of integrating adaptation in development</li> </ul>	<ul style="list-style-type: none"> <li>Assist developing countries to adapt to climate change</li> </ul>	<ul style="list-style-type: none"> <li>Implement strategies of integrating adaptation in development</li> </ul>

## Emission reductions required for stabilising climate with fair distribution of effort

Scenario category	Region	2020	2050
<b>A-450 ppm CO<sub>2</sub>-eq<sup>2</sup></b>	Annex I	<b>–25% to –40%</b>	–80% to –95%
	Non-Annex I	Substantial deviation from baseline in Latin America, Middle East, East Asia ( <b>–15% to –30% from BAU</b> )	Substantial deviation from baseline in all regions
<b>B-550 ppm CO<sub>2</sub>-eq</b>	Annex I	–10% to –30%	–40% to –90%
	Non-Annex I	Deviation from baseline in Latin America and Middle East, East Asia ( <i>0 to –20% from BAU</i> )	Deviation from baseline in most regions, especially in Latin America and Middle East

# Kyoto Protocol

Emissionsreduction targets:

- u 5.2% reduction af emissions from Annex I in 2008-12 compared with 1990
- u 30% reduction compared to BaU

Implementation “mechanisms”

- u Clean Development Mechanism (CDM)
- u Joint Implementation
- u Emissions trading

# The Clean Development Mechanism (CDM)

# CDM Basics

**CDM allows Annex I countries meet part of their emission reduction requirements for first commitment period 2008-2012 at lower costs in non-Annex I countries than could be done domestically.**

**Annex I countries are allowed to acquire Certified Emission Reductions (CERs) by implementing GHG mitigating CDM projects in non-Annex I countries.**

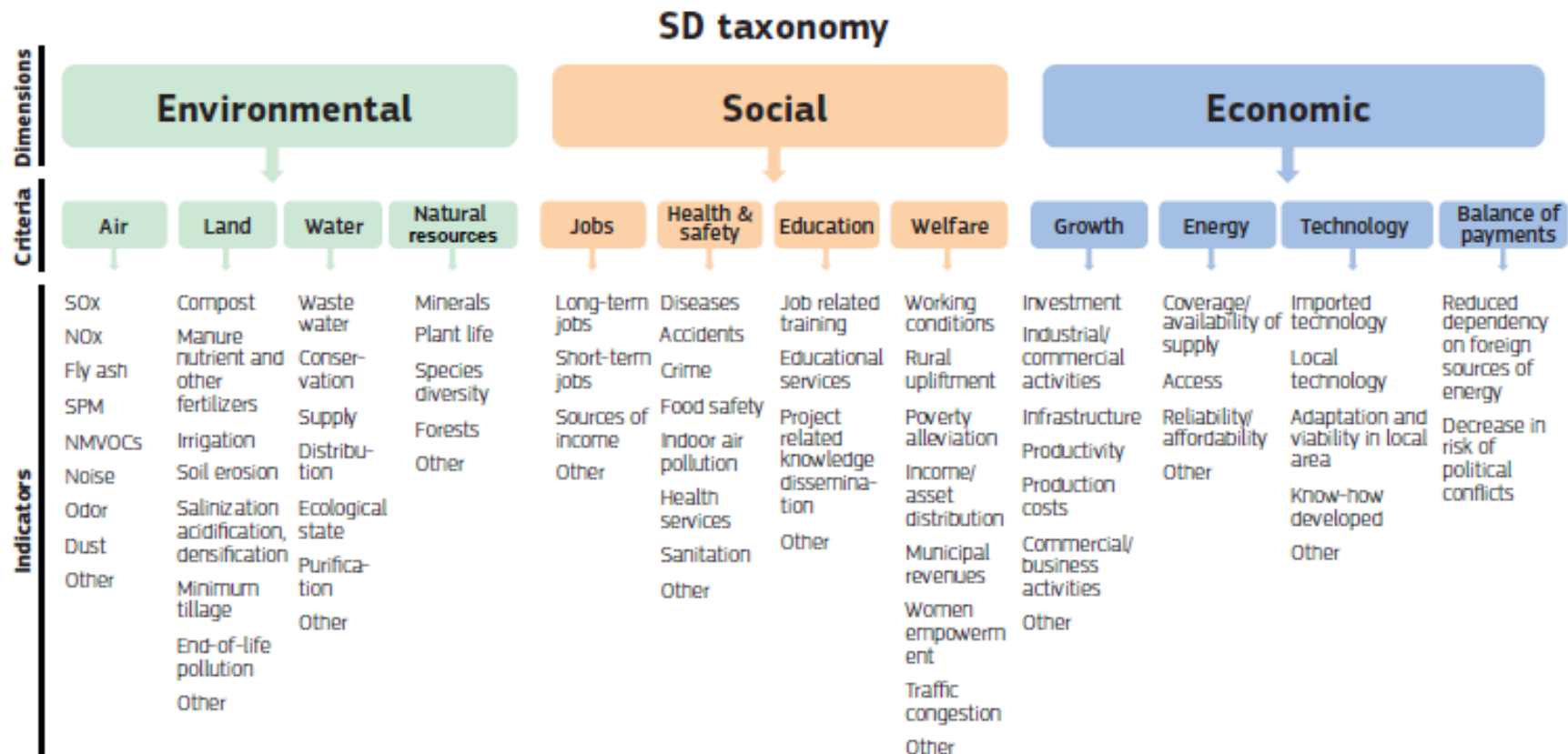
**Selling CERs is an additional stream of cash inflow to the project, which improves project economics.**

**ODA (Official Development Assistance) funds can not be used in CDM investments.**

**CDM projects shall support sustainable development in the host country**

**CDM is considered one of the major achievements of Kyoto**

# CDM sustainability assessment



UNEP Risø has developed the CDM SD tool together with the UNFCCC Secretariat. It was approved by CDM EB70 in Doha, 2012.

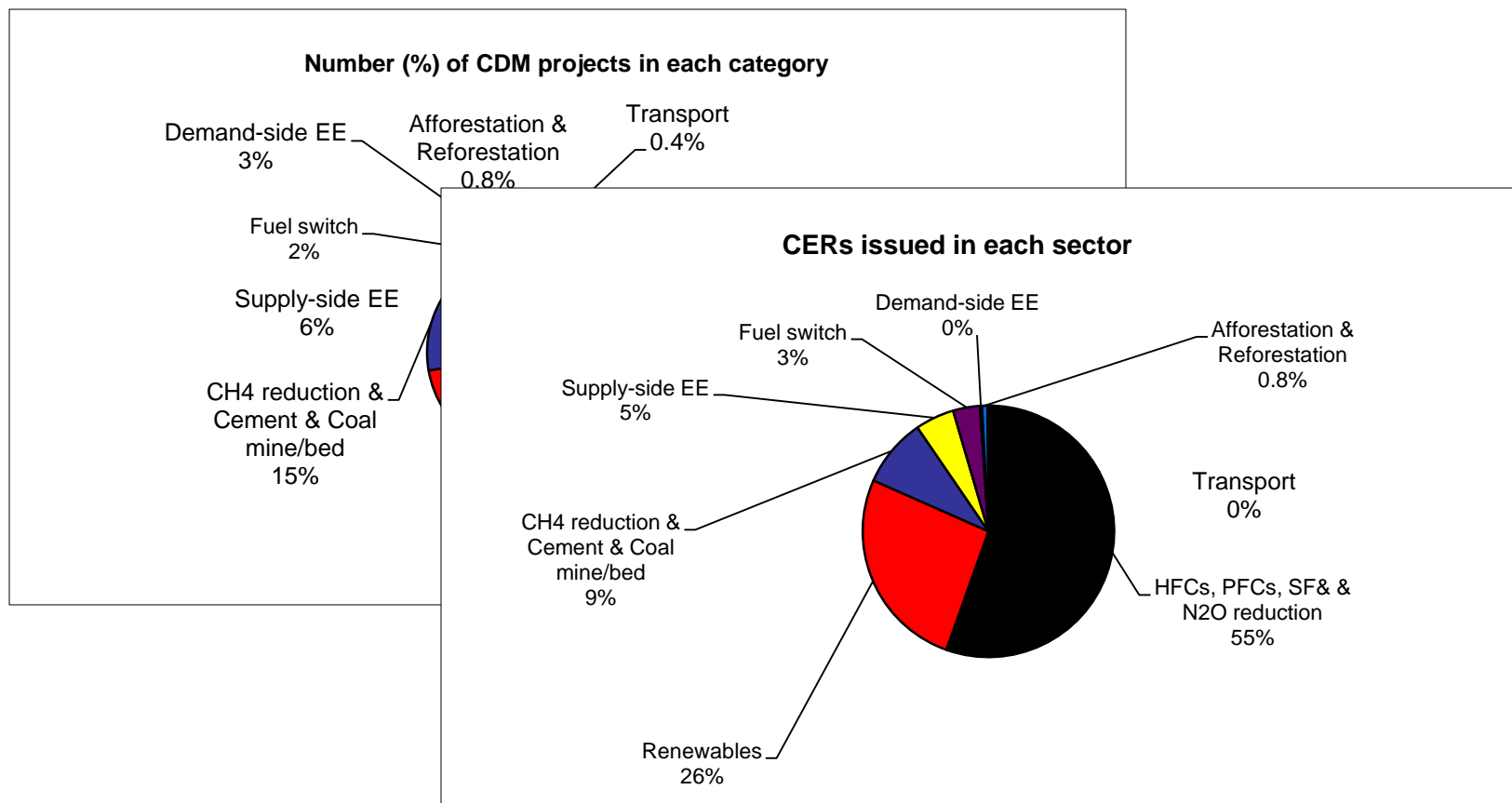


# The number of CDM projects

Status of CDM projects	Number
<b>At validation</b>	<b>1293</b>
Request for registration	16
Request for review	13
Correction requested	2
Under review	
<b>Total in the process of registration</b>	<b>31</b>
Withdrawn	61
Rejected by EB	267
Validation negative by DOE	264
Validation terminated by DOE	1758
Registered, no issuance of CERs	4887
Registered, CER issued	2539
<b>Total registered</b>	<b>7426</b>
Total number of different projects	11100
Replaced PDDs	1058
Total PDDs submitted	12158

Source: UNEP Risoe Centre CDM Pipeline dated 1 February 2014

# Types of CDM projects



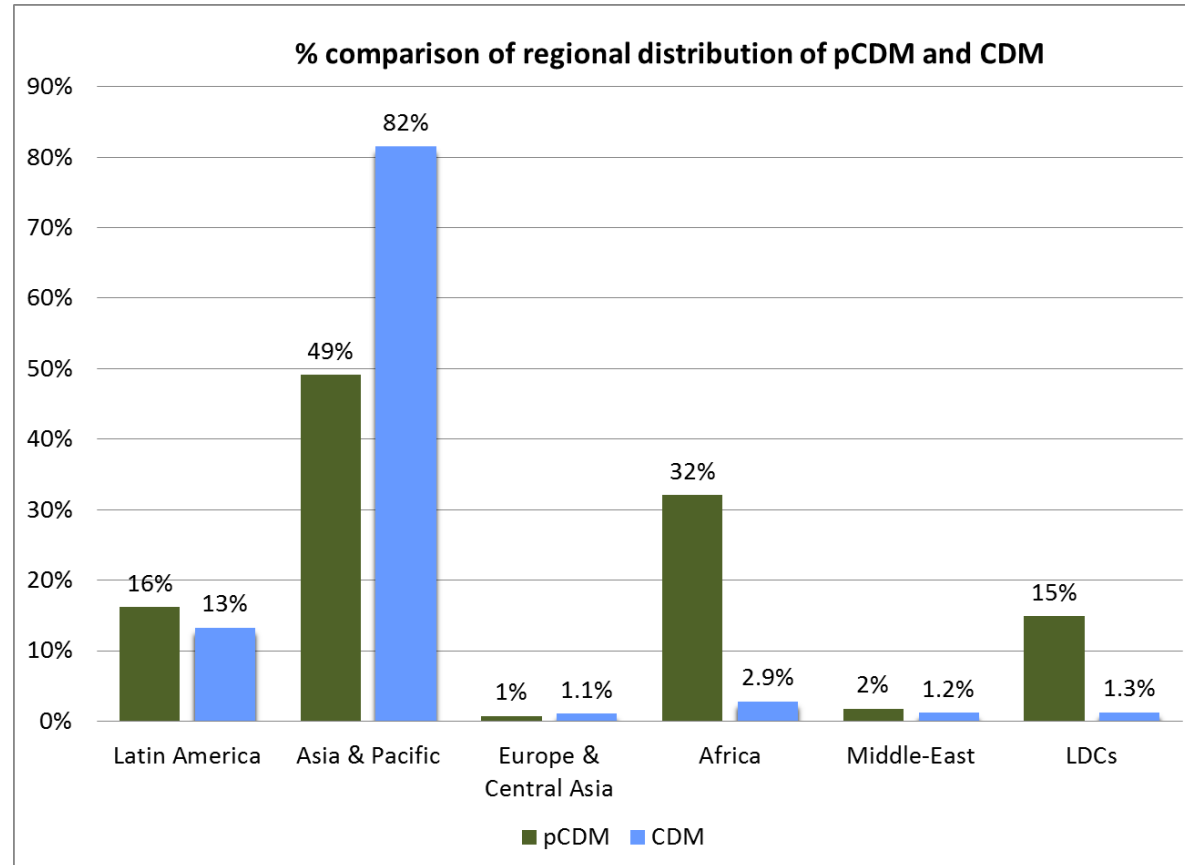
## A CDM project example: Rural electrification in Malawi

- The programme uses RE sources (e.g. solar and hydro) and will include electricity supply to health centres, dispensaries, households, grinding mills, street lighting, water supply and developing local business in the agricultural sector.
- Only 6% of the Malawi population has access to electricity.
- Many who are connected can only afford minimal use. This means there is an unfulfilled demand for electricity known as 'suppressed demand'.
- Reference:

[www.africacarbonforum.com](http://www.africacarbonforum.com)



# The regional distribution for Programmatic projects (PoAs) is much better



Source: UNEP Risoe Centre CDM Pipeline dated 1 February 2014

# Types of PoAs

	PoAs	PoAs%	Normal %
EE demand side	127	32.7%	3.3%
Waste	79	20.4%	13.1%
Solar	69	17.8%	4.7%
Hydro	38	9.8%	26.0%
Wind	25	6.4%	30.0%
Biomass energy	15	3.9%	9.4%
EE supply side	9	2.3%	6.4%
Coal Mine Methane	5	1.3%	1.2%
Transport	7	1.8%	0.4%
Fossil fuel switch	5	1.3%	1.6%
Forestry & Agriculture	5	1.3%	0.8%
Fugitive	3	0.8%	1.0%
Geothermal	1	0.3%	0.3%
Industrial gases			1.7%
Total PoAs	388	100.0%	100%

Source: UNEP Risoe Centre CDM Pipeline dated 1 February 2014

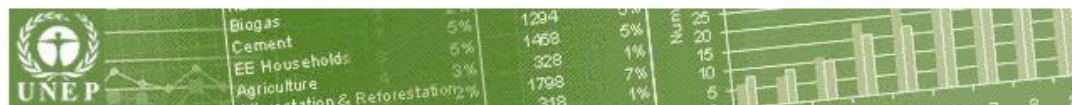


# The UNEP Risoe CDM/PoA/JI and Pledge-Pipelines are updated monthly

[www.cdmpipeline.org](http://www.cdmpipeline.org)

[www.namapipeline.org](http://www.namapipeline.org)

[unep.org/climatechange/pledgepipeline/](http://unep.org/climatechange/pledgepipeline/)



Last updated:  
1st January 2013

## Content of CDM/JI Pipeline

- » Home
- » Overview
- » CDM projects by type
- » CDM projects by host region
- » CERs
- » Approved CDM methodologies
- » JI projects
- » DOEs/AIEs

## Other websites of interest

**NEW NAMAcademy**  
Courses on NAMAs and low carbon development

## Welcome to the UNEP Risoe CDM/JI Pipeline Analysis and Database

The CDM/JI Pipeline Analysis and Database contains all CDM/JI projects that have been sent for validation/determination. It also contains the baseline & monitoring methodologies, a list of DOEs and several analyses. Almost all information is from [cdm.unfccc.int](http://cdm.unfccc.int) and [ji.unfccc.int](http://ji.unfccc.int).

This monthly newsletter shows a sample of the analysis in the Pipeline. If you want more information, then look into the left column and click on the links to sub-pages or click on the download for the full Pipeline, which contain tables with a line of key information for all CDM and JI projects. You can also download a rather old guidance document to the Pipeline.

» [Go to overview page](#)

Please cite as "UNEP Risoe CDM/JI Pipeline Analysis and Database, January 1st 2013".

Please do not put the spreadsheets on other web-sites, you may only put a link to them on this site.

## CDM news:

## Contact

If you have comments or questions please contact:

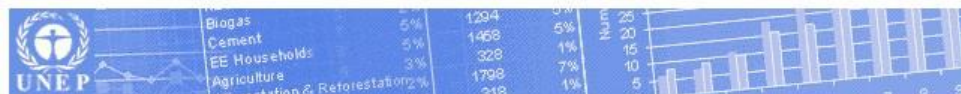
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## Downloads

- » [CDM Pipeline overview](#)
- » [PoA Pipeline overview](#)
- » [CDM project distribution within host countries by region and type](#)
- » [JI Pipeline overview](#)



Last updated:  
1st December 2012

Sister sites:

**NEW NAMAcademy**  
Courses on NAMAs and low carbon development

CDM/JI Pipeline

CDM Loan Scheme

CDM Methodologies

## Welcome to the UNEP Risoe NAMA Pipeline Analysis and Database

The NAMA Pipeline Analysis and Database contains all submissions to the UNFCCC from developing countries and countries in transition for Nationally Appropriate Mitigation Actions. Such submissions have not yet been finally formalized and succeed in a bottom-up process induced by the current developments in international climate negotiations. This site is a work in progress, therefore not exhaustive and the information contained on each NAMA may not be uniform. We welcome and would be thankful for all inputs provided by stakeholders and market participants to improve the level of information.

A NAMA registry is being prepared by the UNFCCC Secretariat. The NAMA Pipeline is not such a registry, but a

## Contact

If you have comments or questions please contact:

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## Downloads

- » [NAMA Pipeline overview](#)



United Nations Environment Programme  
environment for development



You are: [www.unep.org](http://www.unep.org) > [Pledge Pipeline](#) > [Home](#)

## PledgePipeline

[Introduction](#) | [Science](#) | [Tools](#) | [Partners](#)

[Home](#)  
Climate Change Home

## Pledge Pipeline

Dear Reader

The UNEP Risoe Centre at the moment publish the CDMPipeline, JIPipeline and the PoAPipeline on the site [www.cdmpipeline.org](http://www.cdmpipeline.org) and the NAMAPipeline on the site [www.namapipeline.org](http://www.namapipeline.org)

1. December 2012 update



# The role of carbon markets



# Global carbon markets

- fragmented market

## Allowance market (cap and trade system)

- Emission allowances are defined by regulations at the international, national, regional or firm level - Kyoto-ET, EU-ETS, Domestic: UK, Japan, Canada, Korea. Firms: BP, Shell
- Linkage between EU ETS and project-based mechanisms

## Project-based (baseline and credit system)

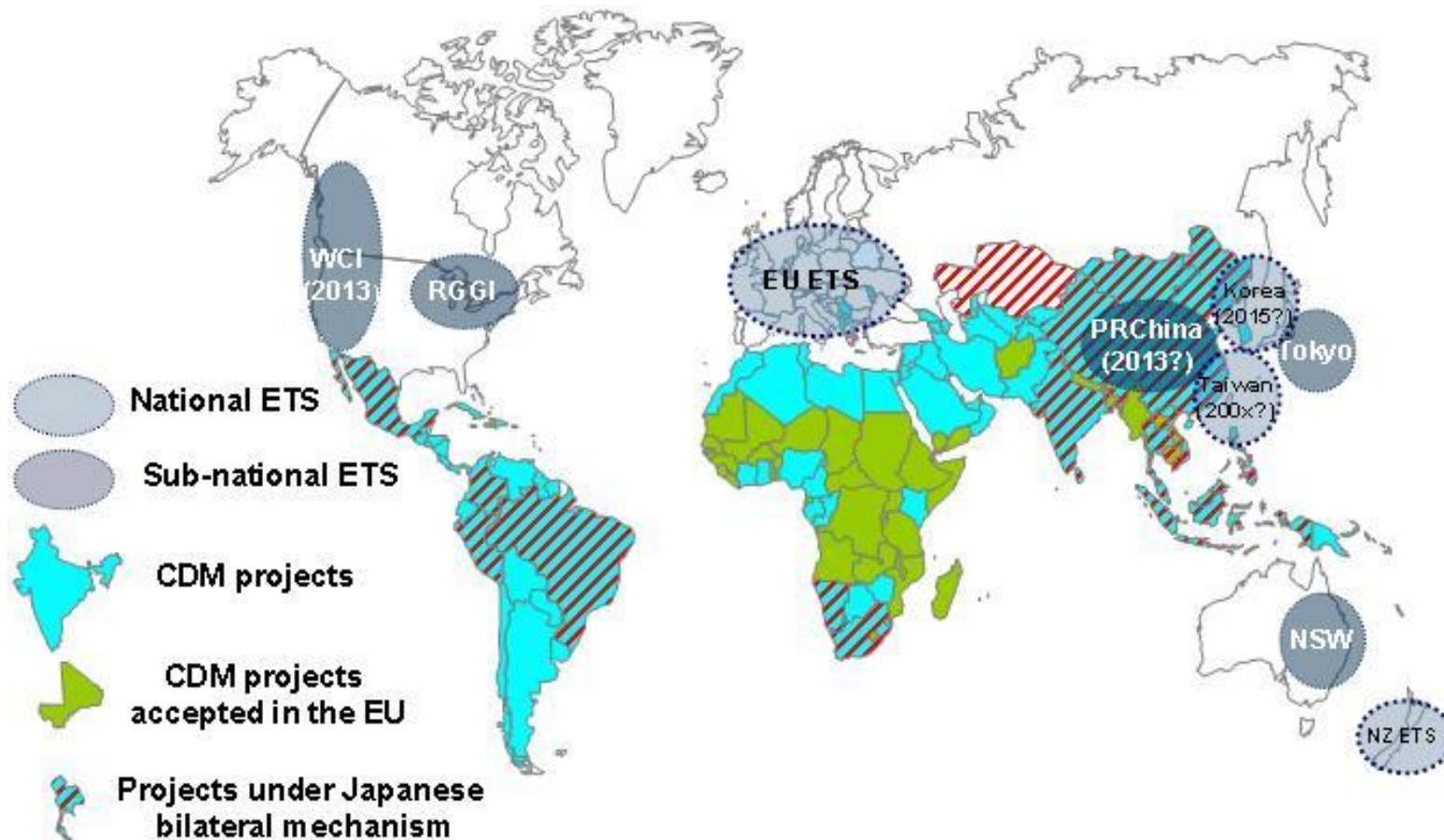
- Emission reductions are created and traded through a given project or activity (JI and CDM)

## Voluntary market

- Individuals and companies account and trade their greenhouse gas emissions on a voluntary basis (carbon compensation and travel compensation schemes)
- Several companies expressed interest in buying project-based credits (CERs and ERUs)

Domestic emissions trading schemes are emerging and may link globally

# Development of the carbon market



Source: Axel Michaelowa in *Perspectives* 2011.

# The price of CERs in 2012

Price



Volume

Source: <http://joannenova.com.au/2013/07/state-of-the-carbon-market-in-2013-is-so-sick-the-world-bank-cancelled-the-report/>

	Timetable	Target	Coverage
EU	2005 - 2020	20% below 1990 levels by 2020	11,500 Installations 40% of Total Emissions
Alberta	2007-Present	Annual intensity reduction of 12% below baseline	All industrial facilities
New Zealand	2008 - 2020	10-20% below 1990 levels by 2020	Forestry (2008). Energy Fuels and industrial (2010). Waste and Synthetic GHGs (2013)
RGGI	2009 - 2018	10% below 2014 levels by 2018	Power Sector
India	PAT Scheme: 2012-2015	20-25% intensity reduction below 2005 levels by 2020	Power, thermal, iron and steel, fertilizers, textiles, aluminum, pulp and paper, chlor-alkali
California	2013 - 2020	Reach 1990 levels by 2020	Energy, Industrial Sources (2013). Oil and gas (2015). Reaches 85% of Total Emissions
Québec	2013 - 2020	20% below 1990 levels by 2020	Energy, Industrial Sources (2013). Oil and gas (2015). Reaches 85% of Total Emissions

	Timetable	Target	Coverage
Australia	2013 - 2020	5% below 2000 levels by 2020 (Higher targets conditional on global agreement)	Energy, Industrial Process, Commercial Transport. 60% of Total Emissions
China	2013 - 2020 (National from 2015)	Intensity reduction of 40-45% below by 2020	Differs between pilots; National coverage unclear
Kazakhstan	2013-2020	7% below 1990 levels by 2020	Oil and gas; power; Mining and Metals; Chemicals; others being considered
Switzerland	2013-2020	20% below 1990 levels by 2020 (Higher targets conditional)	950 companies across multiple sectors
Tokyo	2013-2019	25% below 2000 levels by 2020	1400 Facilities, 20% of Total Emissions
Korea	2015 - 2026	30% below BAU by 2020	490 Emitters, 60% of Total Emissions

## The World's Carbon Markets

A CASE STUDY GUIDE TO EMISSIONS TRADING

[www.ieta.org/worldscarbonmarkets](http://www.ieta.org/worldscarbonmarkets)

## New market mechanisms and approaches for mitigation actions

# Towards a lightly regulated global carbon market

## Framework for various approaches

- Under the authority and guidance of the COP
- Common accounting elements
- Guidance on common standards
- Conformity checks to allow recognition of activities as eligible for meeting emission reduction commitments under the Convention

### New market-based mechanism

(para. 83 of decision 2/CP.17)

- Uses the guidance on common standards
- Contains in its modalities and procedures some additional features and instruments to the common standards

### Other market and non-market-based mechanisms

- Use the guidance on common standards
- Have passed successfully the conformity checks

16/11/2012: [EIG submission](#)

# Likely characteristics of NMMs

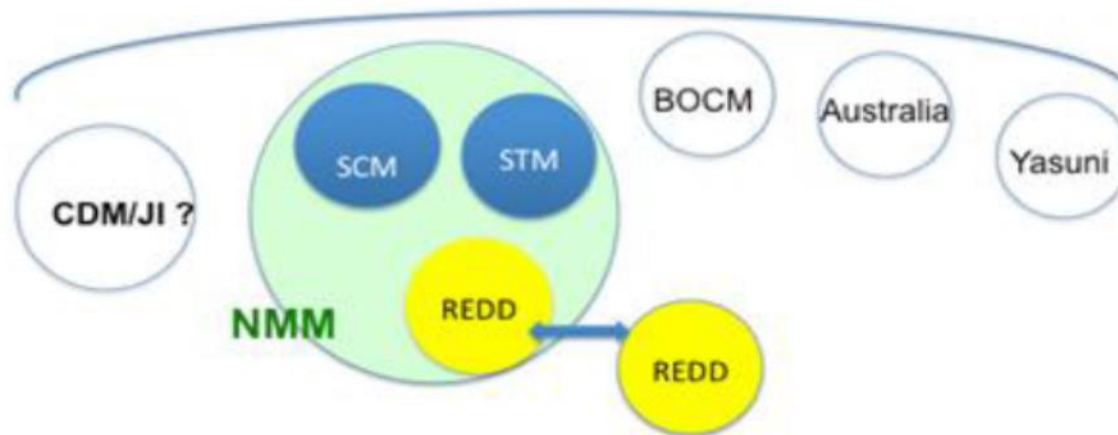
- NMMs will be developed under guidance of the COP, the regulator
- NMMs will include a Sectoral Trading Mechanism (cap and trade) and a Sectoral Crediting Mechanism (CDM like). REDD+ can be a NMM.
- The output of a NMM will be an international compliance unit (ICU) that can be traded internationally
- NMMs will operate at the national level in accordance with UN defined standards TBD. Issuance will take place at national level through National Registries linked to the ITL. The NR shall avoid double counting.
- Any liability for excess issuance due to improper operation will accrue to the Host Country. The Green Climate Fund could function as an insurance pool for backstopping, negotiated with the Host Country
- NMMs will automatically be part of the FVA whereas a DMM will need to be reviewed and/or approved for accession to the FVA

Source: CEPS submissions to UNFCCC on FVA & NMM, March and September 2013



# Scope of the FVA

Figure 1: Scope of the FVA  
**FVA**



SCM – Sectoral Crediting Mechanism  
BOCM – Japan Bilateral Offset mechanism  
STM – Sectoral Trading Mechanism

Source: CEPS submission to UNFCCC, September 2013

## Objectives, assumptions and characteristics of a FVA

- The global carbon market is purely regulatory, created to minimize the overall cost to society of reaching global mitigation targets. It is a price discovery mechanism. It sets a price on the reduction of a ton of CO<sub>2</sub> that is reduced in different jurisdictions
- There will be an end-of-compliance period inventory but no AAUs
- Some countries (A1 and NA1) will have economy wide caps or targets
- The FVA is only concerned with the transfer of units across jurisdictions for UNFCCC compliance
- The FVA is a set of components and rules to ensure that all approaches for mitigation meet certain Standards for Environmental Integrity (SEI)
- A Market Regulatory Body established by the COP will review DMMs according to a SEI for accession to the FVA
- A Pilot Phase for a step-by-step development of the components of a FVA and NMM is recommended to start at COP-19 in Warsaw

Sources: CEPS submissions to UNFCCC on FVA & NMM, March and September 2013

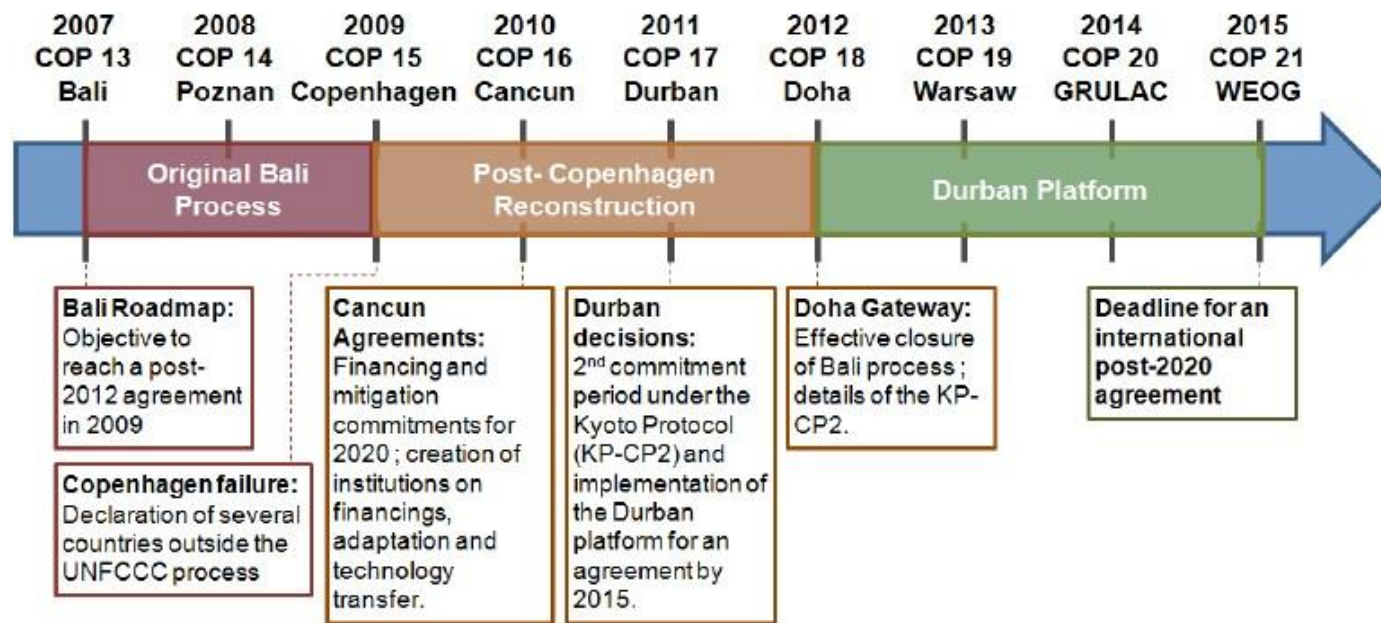
Movie: Banking on a Green Economy  
- examples of business opportunities in  
developing countries

Thanks!

## International Climate Negotiations

# The United Nations Framework Convention on Climate Change (UNFCCC) had 20 year birthday in 2012.

The three negotiation cycles between 2007 and 2015:



Notes:

GRULAC: Latin American and Caribbean States Group. WEOG: Western Europe and Other States Group.

Source: CDC Climat Research.

# Elements of a New Climate Agreement by 2015

## Two workstreams:

1. The new agreement by 2015
2. Pre-2020 ambition to achieve the 1.5 – 2.0 degree target

## Workstream 1 – elements:

- Mitigation,
- Adaptation
- Finance
- Technology development and transfer
- Transparency of action and support
- Capacity-building

## Key issues:

- The “firewall” between A1 and Non-A1 is gone in ADP
- Application of the CBDR principle – binary system outdated?
- Equity in a new agreement – ‘nationally appropriate’
- Submissions by Parties on *design* elements of a new agreement and *actions* for pre-2020 ambition



# Perspectives 2013

PERSPECTIVES SERIES 2013



## *Elements of a New Climate Agreement by 2015*



## **Selected elements:**

- Bridging the emissions gap
- International Aviation
- The role of market mechanisms
- The contribution from Green Growth strategies and actions
- REDD
- NAMAs