

Carbon Market in Africa

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Basis: Kyoto Protocol adopted in 1997 (COP3), into force on February 16, 2005. (90 days after ratification by 55 parties totaling 55% of emissions).

Quantified emission reduction of GHG for developed countries called annex I.

5,2 % of réduction compared to 1990 levels.

Countries have between 2008 and 2012 to achieve these quantified objectives.

Three regulatory compliance types

- Clean Development Mechanism CDM (between developing countries and developed countries)**
 - Joint Implementation (between developed countries and economy in transition of Eastern Europe countries)**
 - European Union Trading System (between developed countries)**
- (Marrakech agreements COP7 define eligibility criteria for CDM)**

Cycle of CDM Project

- Project Design and formulation Document(PDD)**
- Letter of approval by host country**
- Validation/ Registration**
- Project Monitoring**
- Verification/ Certification**
- Certified Emission Reductions delivery**

Important points in CDM Project

Additionality

Permanence

Leakage

All projects define baseline and monitoring methodologies approved by the CDM Executive Board.

Main GHG

- CO_2
- CH_4
- N_2O
- HFC
- PFC
- SF_6

Covert to CO₂ equivalent

Depending on radiative power of each gas

- 1 unit of CH₄ = 21 units of CO₂
- 1 unit of N₂O = 310 units de CO₂
- 1 unit of HFC 23 = 11 700 units de CO₂
- 1 unit of Sulphur Hexafluoride = 23 900 units of CO₂

(IPCC second assessment report)

For carbon sequestration only are eligible:

**Afforestation and reforestation of non forest lands since
December 31, 1989.**

**Five methodologies have been approved for agriculture,
11 for afforestation/reforestation (A/R) and six for
agricultural residues/biogas.**

Types of project

- **Sources Projects (decrease fossil fuel consumption,-
→ decrease GHG**
- **Sinks Projects, carbon sequestration
(Afforestation/reforestation)**
- **Substitution Projects (fuel wood)**

**Acquisition of CER based on emission difference
between reference scenario and project scenario.**

**Energy, industrial process and transport are
dominant in terms of registered projects.**

Currency

Carbon credit: Currency for trading carbon emissions. The unit for one carbon credit is equivalent to one ton of CO₂ emission.

Some countries have not legally accepted the Kyoto Protocol, but have other legally binding state and regional GHG reductions schemes

- **E.g. the Australian New South Wales Greenhouse Gas Abatement Scheme (NSW GGAS)**

- **US Regional Greenhouse Gas Initiative (RGGI) involving ten states from the East coast.**

In Overall, prices for forest carbon credits ranged from \$0.65/ tCO₂ to more than \$50/ tCO₂. Over time, the volume-weighted average price was \$7.88/ tCO₂. The compliance markets have commanded the highest prices overall, with a volume-weighted price average of \$10.24/ tCO₂ over time, followed by the voluntary OTC market at \$8.44/ tCO₂ and the CCX at \$3.03/ tCO₂.

Voluntary Market

mainly purchased by the private sector.

- Some enterprises NGOs and individuals to purchase carbon credits**
- Not ruled by CDM**
- VER (Verified Emission Reduction)**

This type of market can include sectors not included in CDM or needs non satisfied by CDM

Can follow CDM procedures or be more or less exacting than CDM

Market expansion with public and private investments funds in carbon actifs (World Bank Carbon Fund, European Carbon Fund,, Japan GHG Reduction Fund, etc.).

New cotation places (Carbon Powernext in France, ECX Amsterdam and London, Nordpool in Norway, EXAA in Austrai), and new register holder like « la Caisse des Dépôts en France ».

In 2008, on the regulated market US \$ 119 billion were traded, and on the voluntary market US \$ 704 million (Hamilton 2009).

Share of Africa

**CDM project pipeline: > 4200 of which:
2067 are registered with annual average CER
345,400,121**

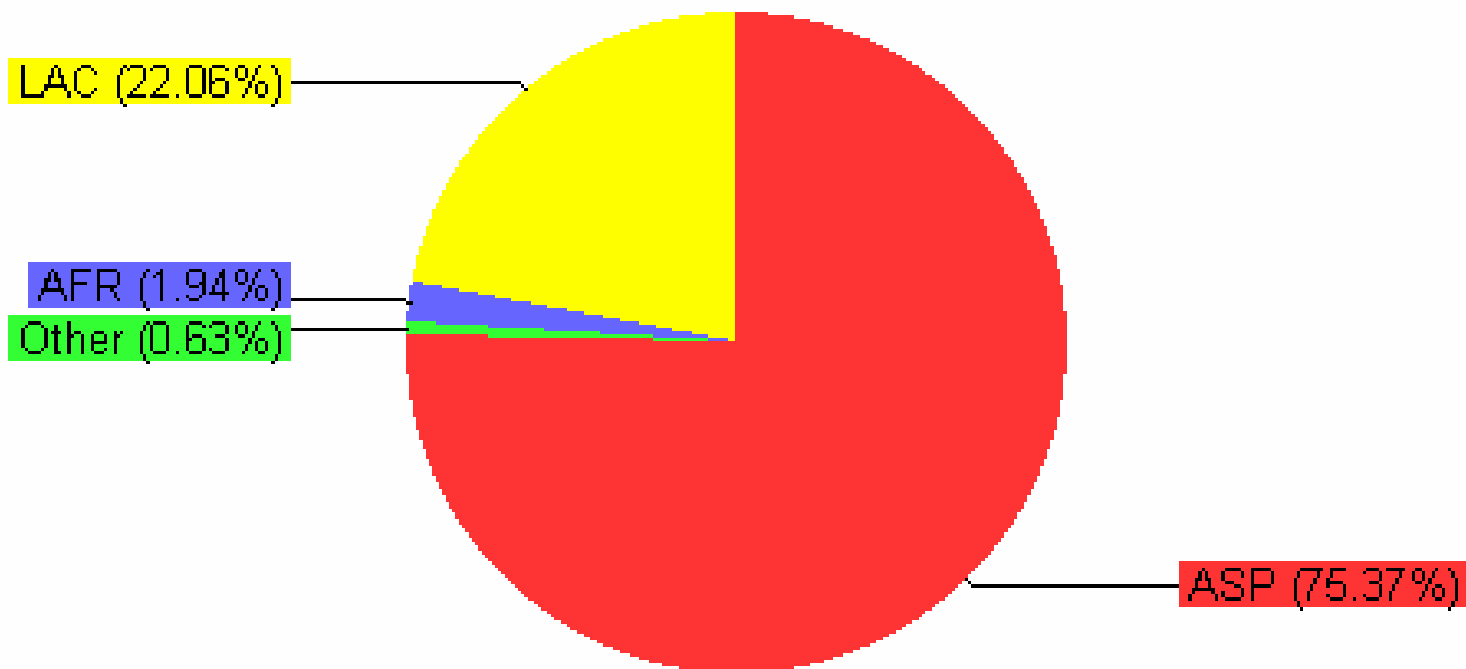
**Expected CERs until end of 2012
1,740,000,000**

**South Africa leads the continent with 16 projects,
followed by Egypt with 5 and Morocco with 4.**

< <http://cdm.unfccc.int/Statistics/index.html> >.

Registered Projects

Registered projects by region. Total 2067

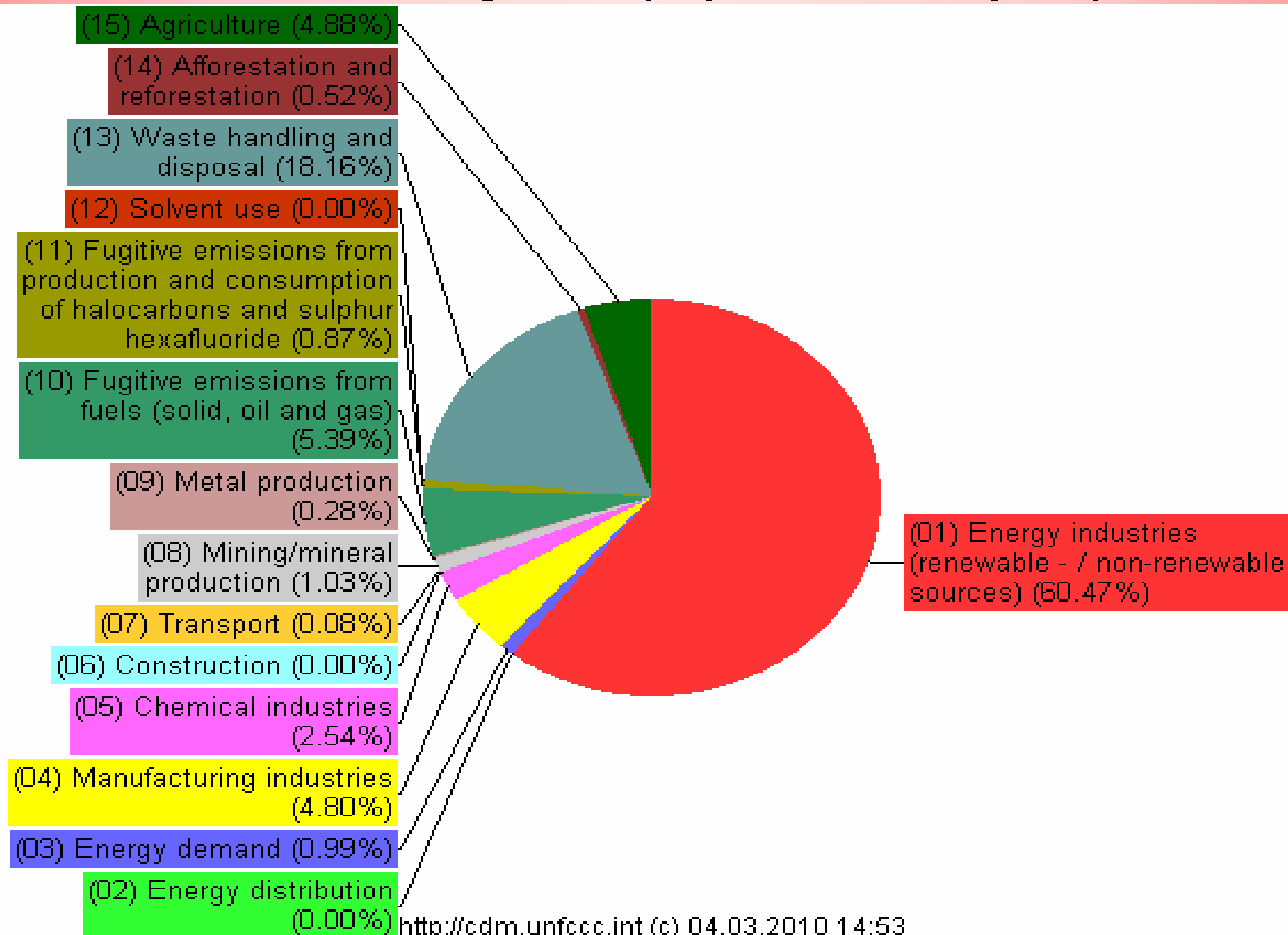


<http://cdm.unfccc.int> (c) 04.03.2010 14:53

Registered Projects

Region	Number of projects
NAI-Africa	40
NAI-Asia and the Pacific	1558
NAI-Other	13
NAI-Latin America and the Caribbean	456

Distribution of registered project activities by scope



Projects in the pipeline 2010

Africa	Number	kCER2012	
South Africa	32	19994	21,8%
Egypt	13	17161	18,7%
Uganda	12	1372	1,5%
Morocco	9	2582	2,8%
Kenya	15	2833	3,1%
Nigeria	8	34112	37,1%
Tanzania	5	2062	2,2%
Congo DR	5	1025	1,1%
Mali	1	240	0,3%
Tunisia	3	4131	4,5%
Ivory Coast	3	1560	1,7%
Senegal	2	402	0,4%
Mozambique	1	111	0,1%
Madagascar	1	210	0,2%
Zambia	1	387	0,4%
Ethiopia	1	179	0,2%
Swaziland	1	252	0,3%
Rwanda	3	401	0,4%
Cameroon	2	556	0,6%
Liberia	1	215	0,2%
Cape Verde	1	340	0,4%
Ghana	1	1553	1,7%
Mauritius	1	231	0,3%
Total	122	91910	100,0%

Examples of voluntary market

- **Voluntary Carbon Standards (VCS)**
- **Gold Standard**
- **(Climate Community and Biodiversity) CCB Standards.**
- **Plan Vivo (interested in lowest income farmers in marginalized areas)**

Gold Standard requirements

- 1. Human rights**
- 2. Population displacement**
- 3. Cultural Patrimoine**
- 4. Working conditions**
- 5. Children work**
- 6. Discrimination**
- 7. Health and security**
- 8. Precaution Principle**
- 9. Corruption**

Examples of voluntary market projects (FAO, 2010)

Uchindile and Mapanda Forest Projects in Tanzania:

10,814 hectares of degraded land will be reforested and 7,565 hectares put into conservation to protect local biodiversity

Generation of VERs over 99-years. Carbon revenues are locally reinvested and 10% is spend oncommunity projects

Acacia senegal Plantation Project in Mali.

It will reforest over 17,700 hectares of Acacia senegal over a five-year period. Intercropping is promoted. 10,000 families receive social benefits: additional revenues generated by Arabic gum, grains and forage & CER.

Barriers to CDM:

- Weak capacity in African countries;
- Complexity of methodologies;
- Lack of upfront fundings (consultancy and administrative fees could sum up to 200 000 \$)

Example of registration fee

Expected average annual emission reduction	Registration fee
10,000 t	-
15,000 t	\$ 1,500
30,000 t	\$ 4,500
100,000 t	\$ 18,500
1,000,000 t	\$ 198,500
1,757,500 t	\$ 350,000
3,000,000 t	\$ 350,000

Barriers to CDM (continued):

Sustainable forest management, agroforestry, avoided deforestation/reducing emissions from deforestation and forest degradation were not included in CDM. (REDD + is recently admitted)

The world's largest carbon market, the EUETS, does not sell or trade credits generated by carbon sequestration.

Barriers to CDM (continued):

This is due to uncertainty in the EU concerning the measurement and maintenance of carbon stocks sequestered in agricultural soils

Carbon revenue is a plus. Project shall be viable financially before requesting CDM credits.

Financial risks

The main sectors of carbon market are energy while land use, forestry, agriculture where Africa has huge potential for sequestration remain marginal.

Perspectives

- Inclusion of REDD + (Forest management, biodiversity) in a post Kyoto regime;
- AFOLU;

will particularly benefit Africa where more than 70% of emissions are based on forestry and agricultural activities.

CDM allows the development of many small projects as part of a larger CDM programme under a coordinating mechanism. This programmatic approach can be of special interest to Africa, since African countries often have potential for smaller scattered projects such as for renewable energy.

The demand for organically produced food (encourages carbon sequestration and other environmental goods and services from agriculture)

ENCOFOR has developed a toolkit for the design of sustainable CDM forest projects and provides a variety of tools, manuals and checklists:

<http://www.joanneum.at/encofor/index.html>

Carbon Finance Possibilities for Agriculture, Forestry and Other Land Use Projects in a Smallholder Context.

Food and Agriculture Organization of the United Nations (FAO), Rome, February 2010

The CDM is the icing on top of the cake. No matter how much icing there may be, it cannot be enjoyed if there is no cake to hold it.

Durando Ndongsok, First Climate



Plantation of gum tree , Acacia senegal



Green charcoal