

United Nations Conference on Trade and Development UNCTAD

Project Proposal

CDM Challenges and Opportunities in The Rubber Commodity Sector

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Project Title	CDM Challenges and Opportunities in the Rubber Commodity Sector
Duration	8 months (2002-2003)
Participating countries	Malaysia, Indonesia (to be confirmed)
Implementing Agency	UNCTAD/Earth Council Institute Carbon Market Programme
Cooperating Agencies	International Rubber Group Secretariat (IRSG)

Objectives

The goal of this project is to promote the possibility of Clean Development Mechanism¹ (CDM) investment in the rubber commodity sector. The objectives are to:

1. Analyze the potential of CDM projects in the rubber commodity sector,
2. Dialogue with the stakeholders and potential investors in CDM projects in this sector in the participating countries, and
3. Identify possible next steps to promote and facilitate CDM investments in this commodity sector.

Project rationale

The project will focus on the CDM potential resulting from the possible introduction of new processes, technologies and practices that may result in additional reductions in greenhouse gases (GHG) in the rubber commodity sector, such as recent genetic engineering developments that promise more wood and latex in rubber trees. Since rubber trees are grown over long periods of time (20-30 years) as managed forests, the possibility of sequestering more carbon resulting from new genetic technology and forestry practices, for example, is at the onset a possibility worth exploring. The effect would be greater carbon sequestration in existing managed forests.

The introduction of *bagasse* energy technologies in some early CDM pilot projects in the sugar sector also points to other possibilities that may also exist in the rubber sector. Since,

¹ The Clean Development Mechanism is featured as one of three mechanisms under the Kyoto Protocol that allows for cooperation in reducing greenhouse gas (GHG) emissions and/or carbon sequestration through afforestation or reforestation (Ref. Decision 17/CP.7 in the Marrakech Accords in FCCC/CP/2000/13/Add.1&2). More information on CDM is found in the annex.

rubber production involves relatively inefficient use of large amounts of energy in its production, from the use of firewood in smallholdings to coal-fired energy plants in large plantations, energy-efficient technology can be applied.

The combination of both CDM possibilities - rubber plantations as carbon sinks and the introduction of more energy-efficient technology in rubber production – may present some innovative means of reducing the high transaction costs of CDM projects. The project will investigate both perspectives as well as the legal and institutional issues and barriers relevant to the eligibility of potential CDM projects in the rubber sector.

Depending on the results of the study, and in order to move from research to action, the project also proposes to organize stakeholder forums that will bring potential CDM investors and project hosts (buyers and sellers) together. The Market Forum will provide a venue to identify a plan of action to promote and facilitate CDM investments in the rubber sector.

Possible outcomes from this project include a feasibility study of CDM in the rubber sector, greater awareness by stakeholders (potential project investors and hosts) of their sectors' CDM potential, additional investments in the covered commodity sectors, and increased environmental protection and potential for more sustainable development.

Given the continued decline in real prices of rubber in the world market, it is worth exploring if CDM can be an additional incentive for investment in the rubber sector. CDM investment projects have great potential to promote sustainable development in the struggling rubber sector.

Project activities

The project will undertake the following activities in cooperation with the participating countries:

1. A CDM feasibility study in the rubber sector – The study will look at the full production cycle of the rubber commodity and identify both carbon sequestration or sink projects as well as energy efficiency projects. The study will be reported in a manner that can be shared with the rubber sector stakeholders in business terms. It would include:
 - a. Assessment of technologies, practices that can result in carbon credits in the rubber sector, identifying the most feasible and practical possibilities and potential projects; and
 - b. Assessment of the eligibility of the possibilities and potential projects for the CDM, analyzing the issues and barriers that may be involved in potential CDM investments and projects in the rubber sector;
2. Meetings and workshop with local stakeholders and potential buyers/investors in the rubber sector – The meetings will provide a process to solicit inputs in the implementation of the study. Inputs might include views and information on

promising technologies and practices that exist or in development in the sector, investment and resource issues, and market issues. The workshop will bring potential buyers and sellers in CDM projects in the rubber sector together. The study above will be presented and used as framework for discussion and planning. Ultimately, if the study points to the feasibility of CDM in the rubber sector, the dialogue with stakeholders will lead to the initial development of a CDM promotion plan of action.

Project implementation

The project will be implemented initially in Asia (Malaysia and Indonesia) and will involve the cooperation of the following institutions:

National/Sector level

- Rubber growers, plantations and processing entities
- Rubber genetic engineering research (Malaysia)
- National climate change focal points

International level

- International Rubber Group Secretariat (IRSG)
- UNEP/Risoe Collaborating Centre on Energy and Environment

The project will bring rubber stakeholders, technology experts, and CDM experts at the national and international levels. In order to ensure that the study is grounded and takes into account the conditions and situation faced by rubber stakeholders, the project will mobilize local teams to provide systematic inputs into the implementation of the study. The local teams will undertake bottom-up assessments as well as provide financial and other resource information with guidance from international team of experts assembled through the project.

Tasks and events	Month			
	1-2	3-4	5-6	7-8
Develop specific terms of reference for CDM study				
Assemble project team				
Mobilize local teams				
Undertake study				
Report & workshop				

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ANNEX

Background on the Kyoto Protocol Clean Development Mechanism (CDM)

The international context for CDM

Article 12 of the Kyoto Protocol allows developed countries and countries with economies in transition, so-called Annex I countries (see Table 1 below), to meet their greenhouse gas reduction commitments by engaging in what is called “Clean Development Mechanism (CDM) projects”. Developing countries that have ratified the Kyoto Protocol, or non-Annex I countries, can benefit from these CDM projects to promote sustainable development. Annex I countries receive certified emission reduction (CERs) credits for investing in projects that result in additional reductions in the emission of greenhouse gases (GHG) in developing countries. Ideally, CDM projects should involve the transfer of and investment in environmentally safe technologies and practices. Private, public organizations and individuals from the countries above can participate in CDM projects.

Table 1 – Annex I Countries

Annex I or Investor Countries ^a			Sectors ^b	Greenhouse Gases & Gas Classes
Australia	Greece	Poland	Energy	CO ₂ : carbon dioxide
Austria	Hungary	Portugal	Industrial processes	CH ₄ : methane
Belarus	Iceland	Romania	Solvent and other product use	N ₂ O: nitrous oxide
Belgium	Ireland	Russian Federation	Waste	HFCs: hydrofluorocarbons
Bulgaria	Italy	Slovakia	Land use, land use change, and forestry	PFCs: perfluorocarbons
Canada	Japan	Slovenia		SF ₆ : sulphur hexafluoride
Croatia	Latvia	Spain		
Czech Republic	Liechtenstein	Sweden		
Denmark	Lithuania	Switzerland		
EU	Luxembourg	Turkey		
Estonia	Monaco	Ukraine		
Finland	Netherlands	UK		
France	New Zealand	USA		
Germany	Norway			

^a These countries need to ratify the Kyoto Protocol in order to use the CDM mechanism. Entities in these countries – whether public or private – constitute the investors in CDM.

^b For specific activities see Table 2 below.

Table 2: Eligible Sectors and Sources

Sector	Source Category
Energy	Fuel combustion: energy industries; manufacturing industries and construction; transport; other sectors; other
	Fugitive emissions from fuels: solid fuels; oil and natural gas; other
Industrial processes	Mineral products; chemical industry; metal production; other production; production and consumption of halocarbons and sulphur hexafluoride; other

Solvent and other product use	Agriculture; enteric fermentation; manure management; rice cultivation; agricultural soils; prescribed burning of savannas; field burning of agricultural residues; other
Waste	Solid waste disposal on land; wastewater handling; waste incineration; other
Land-use, land-use change, and forestry	Afforestation and reforestation

Source: Kyoto Protocol, Annex A.

CDM projects

Greenhouse gases mix evenly in the atmosphere making it possible to reduce emissions at any point on the planet and have the same effect. This fact enables countries to pursue GHG reductions where ever they can be reduced at lower costs. CDM projects allow developed countries that have ratified the Kyoto Protocol to invest in projects that reduce GHGs in developing countries while contributing to sustainable development. Approved and certified projects can earn certified emissions reductions (CERs) that developed countries can use to meet their Kyoto Protocol GHG reduction commitments and to contribute to the overall goal of mitigating climate change. CDM projects help developed and developing countries work together to achieve sustainable development and decrease GHG emissions through the Kyoto Protocol.

Article 12 of the Kyoto Protocol set out three goals for the CDM:

- To help mitigate climate change
- To assist developed countries attain their GHG emission reduction commitments
- To assist developing countries achieve sustainable development

CDM projects must comply with the following criteria:

- Projects must be voluntary
- Projects must be able to show long-term climate change mitigation benefits
- Projects must contribute to emissions reductions above-and-beyond business-as-usual

Why CDM works

CDM projects offer opportunities for many actors. In general, CDM works because the amount of carbon that is released into the atmosphere needs to be controlled. In a carbon-constrained scenario, the “permit” to emit carbon becomes a valuable commodity that can be traded.

Table 3: Potential Actors and Reasons for Participation in CDM Projects

Actors	Reasons for participation
Developing country	Promote sustainable development through investment
Developed country	Meet Kyoto Protocol commitments at low costs
Non-governmental organizations	Promote the environment and development
Corporations	Offset emissions; hedge against regulation; investment opportunity

Niche company	Commercial opportunity; diffuse technology
Industry associations	New opportunities for members
Brokers	Commercial opportunity
Development banks	Promote sustainable development; create new markets
Institutional investors	Portfolio diversification; socially responsible investing

Source: Baumert, Kevin A., Nancy Kete, and Christiana Figueres, "Designing the Clean Development Mechanism to meet the needs of a broad range of interests," World Resources Institute, 2000: 11.

The benefits of participating in the CDM are inclusive and represent a win-win situation:

- For the hosting entity - Hosting entities stand to gain from the investment in their enterprise and the additional revenue stream that may result from carbon credits. Then benefits will vary with each case, but in general hosting entities will benefit from technology transfer, more efficient design, enhanced capabilities, and capital investment. The CDM concept was first proposed by Brazil and stands as a mechanism for developing countries to promote environmentally sound foreign investment that can promote sustainable development while reducing global climate change.
- For the hosting country - CDM projects are a potential source for foreign investment. CDM projects can augment existing development projects or provide the means for new projects. Both are opportunities to further sustainable development goals. Other benefits include cleaner air and water, biodiversity protection, and development through employment and poverty alleviation (Austin and Faeth 1999).
- For the investing entity - CDM projects enable private and other entities in developed countries to meet their commitments to GHG reductions mandated by domestic voluntary or mandatory regulations at lower costs. Credits resulting from CDM investment become assets that can be traded in emerging carbon markets.
- For the investing country - The acceptance of emission reduction credits resulting from CDM projects allow their regulated entities to comply with reduction targets at lower costs.
- For the planet - CDM is one of three flexibility mechanisms being used to achieve GHG reductions with the hope of eventually stabilizing global climate.

Some examples of CDM projects are:

- Renewable energy production projects from wind, biomass, and solar
- Energy efficiency projects such as replacing equipment or new design
- Switching fuels from coal to natural gas, or from oil to hydrogen
- Replacing lighting with fluorescent light bulbs
- Capturing methane gas from landfills
- Capturing and reusing wastewater

- Replacing transportation fleet with more efficient vehicles

Table 4: CDM Projects in developing countries

Sector	Project
Forestry	
Conservation	Protection of native forests
Silvicultural management	Selective harvesting; sustainable logging
Silvicultural practices	Pulp; sawlog; charcoal plantations; community woodlots;
Afforestation and reforestation	In open areas
Energy	
Power generation	Combined-cycle gas turbines; clean coal technology
Fuel switching	Natural gas; methane; biomass;
Cogeneration	Sugar cane; bagasse; chemical byproducts
Renewables	Wind; solar; biomass; hydro
Conservation	Efficiency improvements;
Industry	
Efficiency	Boilers; motors; lighting
Cogeneration	Chemical, paper, and metallurgy

Source: Austin and Paul Faeth 1999: 6; Seroa da Motta et al. 2000.

Who can enter into CDM projects

CDM projects can involve all sectors of society – government, non-profit, business, and private citizens – in cooperation between developing and developed countries. The private sector has the primary opportunity because it is here where the emissions cuts will be made. The private sector is also the recipient of increasing investment flows that can be coupled with CDM projects (Kete et al. 2001). Ultimately, CDM projects will be implemented through public and private partnerships, including the participation of local communities and groups where the projects take place.

Any Annex I country that has ratified the Kyoto Protocol can invest in CDM projects (see Table 3). It can receive credits for CDM projects if:

- Its commitment quota has been properly calculated and recorded;
- If it has a system of national accounting of GHGs in place;
- If it has submitted a proper national greenhouse gas inventory;
- If the amounts are in accordance with the Kyoto Protocol communication requirements.

If these countries authorize a CDM project they must remain in good standing and remain responsible for the fulfillment of these obligations under the Kyoto Protocol. The Secretariat will keep a list of Parties that are in good standing and will make this list public.

Where can CDM projects take place

CDM projects can take place in non-Annex I countries. As with any commercial venture, there can be many reasons why a particular country may be chosen – cost of technological upgrade or retrofit; potential return on investment; tax structure; openness to foreign investment; legal infrastructure; availability of financing; labor availability and costs; stability; and government cooperation. These criteria, and others, will have to be evaluated by the project participants and potential investors.

When can CDM projects start

CDM projects can start anytime after an investing country has ratified the Kyoto Protocol and the Kyoto Protocol has taken effect.

CDM Prompt start

While the rules are still being developed and simplified, CDM projects are "prompt start eligible" (Decision 17/CP.7 paragraph 1) meaning that if established procedures are followed, small-scale projects can get underway quickly if they meet the following criteria:

- Renewable energy projects of less than 15 MW capacity
- Energy efficiency improvement projects of less than 15 GWh/year
- Other project of less than 15 kilotonnes CO₂ equivalent emissions
- Land-use, land-use change, and forestry projects are limited to afforestation and reforestation projects, and are limited to 1% per year of the base year Annex I emissions

Operational entities will be provisionally designated and accredited for these projects.

How CDM projects are implemented

The CDM process consists of five steps (Table 6). Checklists for each step are provided below.

- The **project design** originates from the host country, and could be in cooperation with some other entity. Feasibility studies based on the project's potential and local conditions should be assessed as well as receiving approval from the host government.
- **Validation** by the operational entity can take place where the operational entity resides. Operational entities can be located anywhere as long as they qualify. The operational entity passes the validation report on to the Executive Board for **registration**.
- The project participants monitor the project according to the approved **monitoring** plan, which is approved in the validation and registration stages.
- The operational entity reviews and audits, including on-site visits, to **verify** the GHG reductions. The operational entity then delivers a report to the Executive Board **certifying** the reduction.

- Based on the certification report, the Executive Board will **issue** the CERs.

Table 6: CDM activity cycle process under the Marrakech Accords

Step	Definition	Responsible Entity
1. Project Design	A document with the information needed about the proposed CDM project.	Project participants
2. Validation and Registration (G35-52)	Validation is the process of independent evaluation of a CDM project (Annex G35). Registration is the formal acceptance of a validated project (Annex G36).	Operational entity Executive Board
3. Monitoring (H53-60)	The collection and archiving of all relevant data necessary for establishing GHG emissions by sources occurring within the project boundary during the crediting period.	Project participants
4. Verification and certification (I61-63)	Verification is the periodic independent review and determination of the GHG reductions that have occurred as a result of a registered CDM project activity during the verification period. Certification is the written assurance that a project activity achieved the GHG reductions during the specified time period.	Operational entity Operational entity
5. Issuance (J64-66)	Certified emission reductions (CERs) are issued to the Parties' account.	Executive Board