

Climate Change and CDM Activities

Niger is a party to the UN Framework Convention on Climate Change (UNFCCC), and ratified the Kyoto Protocol in September 2004. Its activities in relation to the CDM are essentially contained within its programmes for implementing the UNFCCC and the Protocol.

On climate change as such, a national inventory of greenhouse gas emissions was drawn up by experts as part of Niger's first National Communication in 2000. A national strategy and action plan was adopted in 2002. The inventory was brought up to date in 2004. A workshop of national experts on climate change was organised between 2000 and 2004.

Specific CDM activities included two initial workshops at Niamey in October 2002 and September 2004, each comprising around 20 participants from the administration, the private sector and civil society. An information workshop was held in Niamey in December 2005 in order to increase awareness of the CDM amongst national actors.

Preparations for Niger's first CDM project, the *Acacia senegal* plantation scheme, started with support from the World Bank and two private companies in Niger and France. The project foresees a programme of investment up to 2009/2010, with purchase of carbon credits continuing until at least 2017.

Niger has also participated in workshops organised by the relevant international institutions. One of these was a workshop to reinforce capacities for the CDM in the sub-Saharan countries organised by the AGRHYMET Regional Centre in Niamey in April 2004, with support from the European Union. An international workshop to reinforce capacities for the CDM was held in Ouagadougou, Burkina Faso, in June 2003, with participation by 60 experts from 26 French-speaking countries, including Niger. A workshop to promote CDM development initiatives in French-speaking countries was held in Montreal, Canada in April 2005.

A project of support for adaptation to climate change by the countries of the Sahel region, and reduction of their vulnerability to such change, aims to reinforce the capacities of the AGRHYMET Regional Centre (acquisition of material, transfer of technologies, formation of a team of experts, compilation of impact studies, etc.), promote and reinforce the capacities of the Sahel countries, and instigate pilot projects of adaptation with the support of their populations.

Criteria for Sustainable Development

Under the Kyoto Protocol and the Marrakech Accords the host country has the right to decide whether or not a project constitutes a contribution to sustainable development. In order to do this, national criteria must be worked out as a basis for the evaluation of projects. Unfortunately, these criteria do not exist in Niger at present. The same applies to procedures for the approval of CDM projects. Work is proceeding to fill these gaps, but for the meantime it can be said that a CDM project in Niger will have to fulfil the following criteria:

- The project will have to accord with the main development principles laid down in the Strategy for the Reduction of Poverty and the Strategy for Rural Development.
- It will have to meet the priorities defined in the individual National Strategies for the relevant sectors as well as conform to the National Environment Plan for Sustainable Development.
- It will have to conform to current legislation, in particular that relating to the environment, to the studies on environmental and social impact, and to consultation with the public.
- It will have to allow the use of proven, clean technologies, and avoid the import of outdated technologies.
- It will have to contribute to the reduction of poverty amongst the local population in respect of creating employment and wealth, improving the quality of life, and reinforcing capacities in respect of a sustainable environment and clean development.
- The project might also improve the country's capacity to counter the negative effects of climate change as well as assisting adaptation in this respect.

Constraints to CDM Adoption

Although the CDM represents an opportunity to finance concrete development projects in developing countries, its implementation in Niger is confronted with several barriers, as follows:

- The CDM is a new tool that is not always fully understood by all of the relevant actors (including those involved in its promotion), to say nothing of those accustomed to the mechanism of financing classic projects.
- The absence of an institutional structure, the means of promoting the CDM in Niger (information, awareness, organisation and support of actors), and the procedures and criteria for the analysis and approval of projects.
- The procedural complexity and the costs involved in having a project approved must discourage certain actors in spite of the simplification applied to small-scale projects.
- The difficulty of obtaining the satisfactory information necessary for the elaboration of a CDM project document in the absence of an archive and system for updating the relevant statistics.
- The inadequate level of genuine national expertise capable of drafting the documentation for a CDM project; the bulk being composed of those who have taken part in workshops in Niger and elsewhere on CDM formation.
- The ponderous administrative procedures, and the institutional conflict over the establishment of a National CDM Authority.

National Stakeholders

In the public and semi-public sector there are the government ministries:
 Hydraulics, the Environment and Combating Desertification
 Mines and Energy
 Commerce, Industry and Promotion of the Private Sector
 Animal Resources
 Economy and Finance
 National Council on the Environment for Sustainable Development

Niger Energy Council

Research institutions include:

The Abdou Moumouni University at Niamey
The National Centre for Solar Energy
The National Institute for Agricultural Research

The private sector:

Chamber of Commerce, Agriculture, Industry and Employers
Niger Electricity Company (NIGELEC)
Niger Coal Company Anou Araren (SONICHAR)
Air Mining Company (SOMAIR)
Akouta Mining Company (COMINAK)
Niger Cement Company
Sahel Energy
Various independent research and consultancy institutions

NGOs include:

Nigerian Voluntary Organisation for the Preservation of the Environment (ONVPE)
Energy Environment for Rural Development (EDER)

Regional and international institutions:

Niger Office of the UN Development Programme (UNDP)
Niger Office of the World Bank
AGRHYMET Regional Centre (agrohydrometeorology)
International Institute for Research on the Cultures of Tropical and Semi-Arid Zones (ICRISAT)

CDM Potential in the Industrial and Energy Sectors

Niger's industrial structure is extremely underdeveloped, with the result that greenhouse gas emissions in this sector are negligible by comparison with those of other sectors. They are mostly exuded by cement, beer and gaseous drinks production plants.

Energy consumption in Niger rose by 15% between 2000 and 2004, but remains dominated to 87% by biomass (wood, agricultural residues and animal droppings). The remaining consumption consists of petroleum products (11%) and electricity (2%). Niger is heavily dependent on energy imports. All petroleum products come from abroad. 54% of electricity consumed comes from Nigeria, and the remainder is generated from imported diesel oil (9%) and coal (39%). Despite the country's considerable potential, renewable energy sources (hydro, solar, wind and biogas) presently play a very marginal role.

In view of this situation, the government's energy policy contains a list of overriding principles as well as individual strategies and action plans on renewable energy, rural electrification, domestic energy, and access to energy services by the rural and semi-rural populations.

As regards emissions, the principal sources are the energy (45%), transport (41%) and mining (6%) industries. Electricity generation by coal and gas-oil contributes to this situation, as does the rapid increase in the number of motor vehicles, many in poor mechanical condition, which have opened up the country. Increasing mobility will therefore lead to an increase in the consumption of energy. The national demand for electricity is forecast to increase from 250 GWh in 1990 to 1,691 GWh in 2025 with a capacity of 321 MW.

Emissions from the transport sector can be reduced by encouraging the development of public transport, the use of unleaded fuels, a statutory limit on the age of imported vehicles, and stricter technical checks on the latter.

It should be pointed out that CO₂ emissions from the combustion of biomass, especially by households, increased from 4,018 Gg in 1990 to 4,930 Gg in 2000, and are seven times higher than those arising from fossil fuels. All the relevant studies indicate a growing deficit in wood energy in Niger, and it is essential that alternative energy sources should be developed.

Reduction of emissions in the energy sector can best be carried out by exploiting Niger's considerable untapped hydro-electric potential. Studies carried out in the valley of the River Niger have identified three sites with a total potential installed capacity of 274 MW and an average output of 1,156 GWh. Other smaller potential sites are situated on seasonal watercourses. Wind power at 2.5 to 5 metres per second is sufficient for water pumping and irrigation, while solar power at 6 KWh/m² is available for 8 or 9 hours daily. Only 5% of the population presently have access to electrical power, which could be supplied on a decentralised basis by rural photovoltaic plants. The potential CDM projects that have so far been identified are:

- The National Programme for Solar Cooking
- The President of the Republic's Special Programme for Solar Marsh Drainage
- Wind power projects in the area north of the River Niger
- Recovery and recycling of kiln residues in the cement industry
- Substitution of existing fuels in the cement industry by coke or mineral carbon.
- Replacement of mechanical multi-cyclone dust extraction by electrostatic extraction
- Transport and handling of coal by conveyor belt instead of by motor vehicles
- Use of wind energy to improve working conditions in schools and health centres
- Production of biological fuels for power generation
- Production of bio-gas from animal and vegetable residues as well as town waste
- Production of combined coal and biomass briquettes as a wood substitute
- Replacement of the COMINAK mine's pumping system with a more efficient one
- Replacing cooling, air conditioning and lighting systems with more efficient models

Conclusions and Recommendations

Niger's industrial structure is weak and its energy consumption accordingly low and unbalanced. Energy carriers are to 87% biomass, while 54% of electricity and all petrochemical products are imported. The energy sector comes well behind agriculture, forestry and animal husbandry as a source of greenhouse gases. Niger nevertheless possesses considerable potential for the use of renewable energy in the

form of hydro, solar and wind generation as well as bio-gas. The government has therefore issued a Declaration of Energy Policy laying down strategic orientations for the sustainable development of the country:

- Preservation of the environment
- Ensuring the supply of energy
- Promoting the use of substitutes for wood energy
- Developing national energy resources
- Increasing accessibility to energy, by rural households in particular

There is considerable potential for CDM projects in Niger, primarily as regards energy, but also in the industrial sector. In order to realise this potential there will have to be a National CDM Authority to define the criteria for projects, carry out the evaluation, and generally promote the CDM in Niger.

Appeal is made to UNIDO and UNDP to play a more important role in the process of implementing the CDM in Niger. The principal actions recommended are:

- Assistance with reinforcing capacities
- A study of the potential CDM market covering all sectors in Niger
- Establishment of a donors' bank
- Development of specifications of projects
- Assistance with the creation of an Operational Entity in Niger

The French original report contains more detailed elaborations of these recommendations.