

GLOBAL ENVIRONMENTAL FACILITY: CLIMATE CHANGE IN INDIA

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Abstract - Climate change is no more an environmental concern. It has emerged as the biggest development challenge for the planet. Its economic impacts, particularly on the poor, make it a major governance issue as well. The debates and discussions building up for the next conference of parties (COP) in Copenhagen and beyond are an indicator of this. A GEF operational focal point (OFP) is designated by each country that receives GEF funding, and is responsible for operational aspects of GEF activities such as, endorsing project proposals to affirm that they are consistent with national plans and priorities and facilitating GEF co-ordination, integration, and consultation at the country level.

Key Words: climate change, financial instruments, funding, technical adequacy, UNFCCC, GEF.

1. Introduction:

1.1 History:-

The Global Environment Facility (GEF) was created in 1991, to serve as a consolidated financial mechanism for funding global environmental issues, and associated multilateral environmental agreements. Its mandate is to provide new and additional grants and concessional funding to cover the "incremental" or "additional" costs associated with achieving global environmental benefits [1].

1.2 Background:-

The GEF secretariat has also been entrusted with managing two Funds established under the convention to support adaptation activities: the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF). Together with the UNFCCC secretariat, the GEF secretariat acts as the interim secretariat of the Green Climate Fund (GCF). Over the years, it has experimented with many different approaches to financing climate change activities in developing countries, evolving in response to pressures from its diverse stakeholders. In recent years the GEF has taken many steps to strengthen its relevance and ways of working. Yet many of the lessons from the establishment, operation and

implementing record of the GEF are not well appreciated or understood [1].

1.3 Objectives:-

Currently, the objectives of climate change are to support adaptation and technology transfer projects and programmes that:

- Country-driven, cost-effective and integrated into national sustainable development and poverty-reduction strategies [9].
- Report on gender dimensions related to outcomes across projects in a systemic manner [3].
- Focus on technologies at the stage of market demonstration or commercialization where technology push is still critical [4].
- Focus on the technologies that are commercially available but face barriers and require market pull to achieve widespread adoption and diffusion [4].
- To devote to supporting enabling activities and capacity building under the conversion [4].

1.4 Motivation:-

Projects supported under these objectives will target the demonstration and deployment of innovative technologies that could have significant impacts in the long-run in reducing GHG and CO₂ emissions. GEF support may also involve the demonstration, development, and transfer of priority technologies identified by the recipient countries that are commercially available but have not been adopted in their particular markets [1].

2. Materials and Methods:-

The GEF secretariat has also been entrusted with managing two Funds established under the convention to support adaptation activities: the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF).

LDCF (Least Developed Countries Fund):-

Funded adaptation efforts are divided into two phases: Preparation and Implementation of national adaptation programmes of action (NAPAs). In the preparation phase, countries identify and prioritize their urgent and immediate adaptation needs. These activities are then designed, developed and effected during the

implementation phase. Since its inception, the LDCF has contributed to the preparation of 48 NAPAs; of which 46 have been completed (the remaining two are in the final stages of preparation). As of NOVEMBER 2011, 51 LDCF projects have been CEO endorsed/approved, of which 34 have started implementation [8].

SCCF (Special Climate Change Fund):-

Funding windows include:

- 1) Adaptation
- 2) Technology transfer
- 3) Energy, transport, industry, agriculture, forestry and waste management
- 4) Economic diversification [8].

In recent years, the GEF has made demonstrable progress in maintaining gender in the LDCF and SCCF. According to the 2008 GEF self-assessment 'maintaining gender at the GEF', 68 out of the 172 GEF projects reviewed contained examples of gender mainstreaming activities.

However, it was deemed to the result of "individual interest and efforts rather than a corporate approach backed by institutional systems and mechanisms" regarding gender similarly, the 2009 gender-mainstreaming evaluation of the GEF, prepared as part of the "fourth overall performance study", noted that gender mainstreaming at the GEF was at an "embryonic stage", relying mostly on its two main implementing partners (the world bank and UNDP) to mainstream gender in GEF-funded projects by the end of 2010, however the GEF had taken clear steps towards systematizing mainstreaming gender in its programmers in general and in the LDCF and SCCF in particular[1].

3. Discussion:-

3.1 Overall Climate Change:-

However, only the adaptation and technology areas are currently funded, with the bulk of funding committed to adaptation activities. SCCF activities are based primarily on NAPAs (in least developed countries) or national communities (reports by non-annex I countries summarizing a country's mitigation and adaption needs [9].

The LDCF/SCCF council is the main governing body of the SCCF. It functions as an independent board of directors, with primary responsibility for developing, adopting, and evaluating SCCF policies and programmers. It is comprised of 32 members who represent GEF member countries, 14 from donor constituencies and 18 from recipient constituencies. As decisions are made by consensus, two-thirds of the members of the council constitute a quorum [1].

3.2 Climate change is about the economy:-

Industrialized countries have managed to de-link sulphur dioxide emissions from economic growth. In other words, emissions have fallen even as national income has risen. But they have failed to do the same with carbon dioxide (CO₂) emission. Per capita CO₂ emissions remain closely related to a country's level of economic development, and thus standard of living. It is evident that as long as the world economy is carbon-driven by energy from coal, oil, and natural gas-growth can't de-linked substantially from CO₂ emissions [6].

The only way to avert change is to reduce emissions dramatically. But things are never quite this simple. The use of fossil fuels (the major reason for CO₂ emissions) is closely linked to economic growth and lifestyle. Every human being contributes to the CO₂ concentrations in the atmosphere. However, the person's lifestyle decides the amount that is emitted. The more prosperous a country's economy is higher is its fossil fuel consumption, resulting in higher greenhouse gas emissions [6].

Climate change in India

[1]Legislative Process:-

The Indian parliament is a bicameral legislature composed of a Lower House (the House of the People), and an Upper House (the Council of States). The legislature passes laws – also called "acts" – on constitutionally-specified matters, such as central government finances and constitutional amendments. The two houses have the same powers, but the Council of States' power in the legislative process is subordinate to the House of the People. All legislative proposals have to be brought in the form of Bills before Parliament. A Bill as a draft statute becomes law after it has received the approval of both Houses of Parliament and the assent of the President [3].

[2]Approaches to Climate Change

India is a non-Annex I country under the Kyoto Protocol and thus has no binding target for emissions reduction. It is an active participant in the Clean Development Mechanism (CDM) established by the Protocol. It had more than 1,479 registered CDM projects as of February 2014 [3].

In 2010 India released a GHG inventory for 2007 (not officially submitted to the UNFCCC), and stated that it would be the first developing country to publish its emission inventory in a two-year cycle going forward. In 2012, India published its second communication to the UNFCCC, which includes an emissions inventory for the year 2000. The communication also includes a section on vulnerability assessment and adaptation: it presents

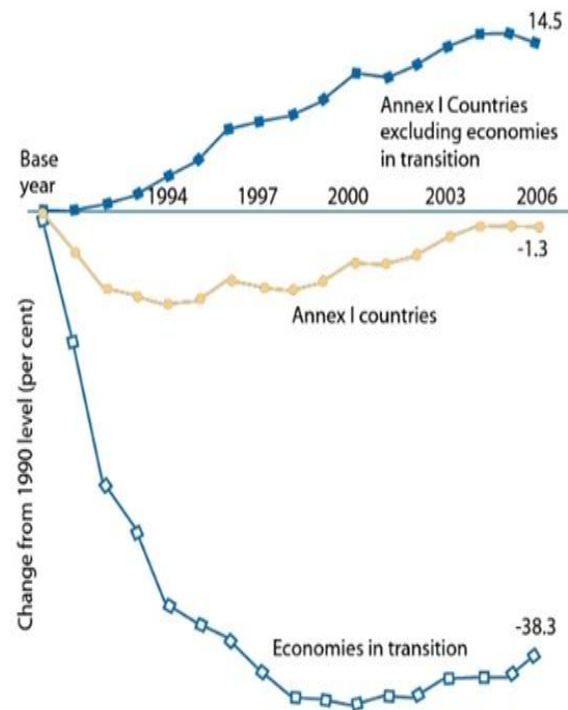
climate change projections and impact assessments on water, forests, agriculture and human health. Consultations are under way for a third communication [3].

Climate change is adopted a “National Action Plan on Climate Change” (NAPCC) in 2008 outlining existing and future policies and programmers directed at climate change mitigation, adaptation and knowledge management. The focus of the NAPCC is on promoting understanding of climate change, and action on adaptation, mitigation, energy efficiency, and natural resource conservation while pursuing overall economic growth. In 2010, the Ministry of Environment and Forests at the Government of India released India: Taking on Climate Change – Post Copenhagen Domestic Actions, which evaluates the progress of the policies announced in the 2008 NAPCC [8].

The COP has never provided explicit guidance for Stage III adaptation funding. However, in 2001 the COP identified fourteen adaptation-related activities to be supported under the GEF Trust Fund, including enhancing technical training for integrated climate change impact, vulnerability and adaptation assessments, promoting the transfer of adaptation technologies, establishing adaptation pilot projects and supporting systematic observation and monitoring networks and early warning systems in developing countries (UNFCCC Decision 5/CP.7). In UNFCCC Decision 6/CP.7 the COP decided that the GEF should provide financial resources to developing country Parties, in particular the least developed countries (LDCs) and the small island developing states (SIDS), for activities identified in UNFCCC Decision 5/CP[7].

[3] Inaction of the rich world:

A review by the secretariat of the UNFCCC1 has found that CO₂ emissions of all industrialized countries (classified as Annex 1 under the convention) declined by 1.3 percent during 1990-2006. This reduction was primarily due to the countries whose economies are in transition. The CO₂ emissions of the Annex 1 countries, excluding countries in transition, actually increased by 14.5 percent (see Graph 1:CO₂emissions of Annex I countries) [6].



Graph 1: CO₂ emissions of Annex I countries under the UN Framework Convention on Climate Change, without land use, land-use change, and forestry (LULUCF) [6].



Fig.1 Emission of CO₂

As yet, the rich world has found small answers to this existential problem. It does not only want to keep its coal power plants (even as it points fingers at China and India), it wants to build new ones. It believes it can keep polluting and keep fixing. This time, it has come up with the solution of carbon-capture and storage

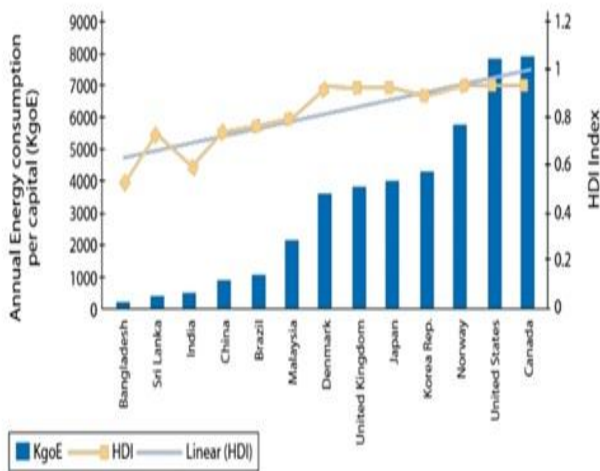
i.e. to store the emissions underground and hope the problem will just go away. In this way it can have its cake and eat it too [6].

[4]India development Challenges

India, one of the fastest economies of the world, faces the challenge of making available the energy needed to fuel this impressive economic growth. Of India’s more than one billion population1, more than 800 million people (79.9

percent of the population) still subsist on less than US \$ 2 per day. More than 700 million people still cook on traditional cook stoves using crop waste and animal residue [6].

More than 400 million people still don't have access to electricity. India stands at 128th position in the World Human Development Index. No country in history has improved its level of human development without corresponding increase in per capita use of energy (see Graph2: international comparison between Human Development Index and per-capita energy consumption). To expect India not to do so would be unrealistic [6].



Source: World Development Indicators Database

Graph 2: An international comparison between Human Development Index and per-capita Energy consumption

[5] India is an environmentally unsustainable economy

Strong environmental ethic is embedded in India's culture. This remains unchanged despite increased prosperity. In case of India and China, the CO₂ emissions from the food sector are below that of the developed countries. Most of the carbon emissions in food sector in developed countries come from packaging and processing. Indians prefer fresh produce to processed food. Irrespective of economic status Indians buy fresh produce every day thereby avoiding or minimizing refrigeration and packaging costs [6].

Consciousness and also enable public resources to be spent on environmental management. For example, estimates of the EKC turning points for India and a set of 32 countries for two key municipal wastewater parameters, the receiving waters are much less than that for the set of 32 countries. The estimated EKC turning points for several key urban air quality parameters are much lower than for the other setoff countries. In respect

of energy intensity of the GDP of all countries, the turning point in respect of India was at the lowest per capita income level (See Table 1) [6].

Table no.1: Energy Intensity of GDP: EKC turning points for India and several other countries:

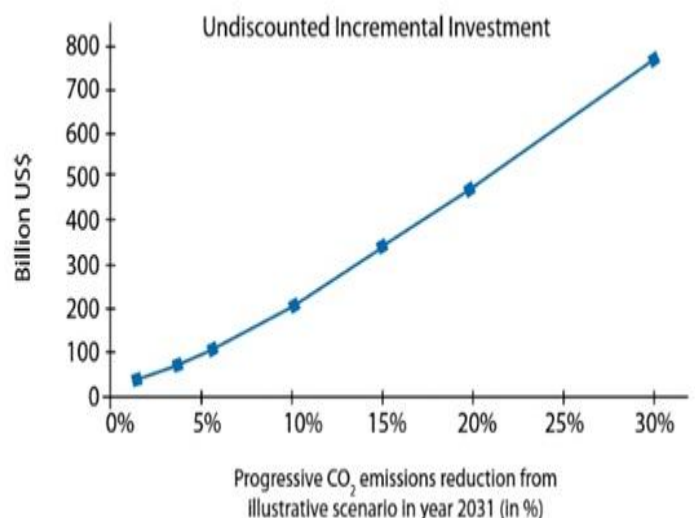
	Specification	Shape	Turning point	Current income*
Bangladesh	Quadratic	EKC	\$1,377	\$1,827
India	Country	EKC	\$501	\$3,072
Japan	Quadratic	U	\$22,675	\$27,817
Netherlands	Linear	Monotonically decreasing	-	\$29,078
Norway	Quadratic	EKC	\$10,274	\$36,849
Pakistan	Linear	Monotonically decreasing	-	\$2,109
Sri Lanka	Quadratic	U	\$4,092	\$4,088
Sweden	Linear	Monotonically decreasing	-	\$28,936
Switzerland	Quadratic	EKC	\$26,122	\$31,701
UK	Linear	Monotonically decreasing	-	\$29,571

*GDP per capita at constant 2000 international \$, PPP in 2005

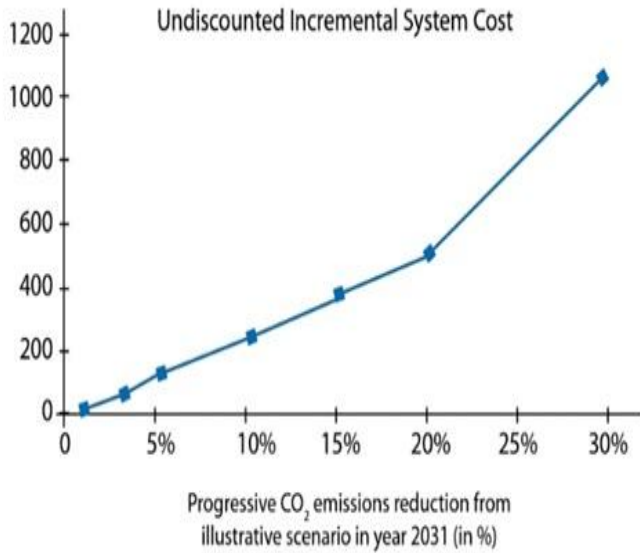
Note: Where the EKC curve is stated to be "monotonically decreasing" sufficient past data has not been available to estimate the turning points.
Source: TERI Study, 2008

[6] What is the fuss all about? Reducing GHG emissions pays for itself or, At best, is low cost?

According to results of simulations of the MARKAL model to evaluate the costs of CO₂ emissions mitigation through capital investments in all relevant energy sectors, (assuming that GDP growth rates given by the CGE model for the illustrative scenario are maintained) the undiscounted incremental investment costs are \$ 800billion and the undiscounted incremental energy system costs are in excess of \$ 1trillion for CO₂ reduction of 30 percent (See Graph 3 and 4) [6].



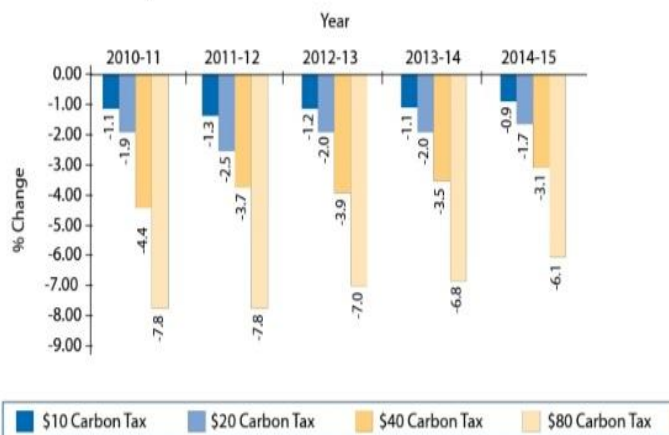
Graph 3: Undiscounted Incremental Investment Costs for GHG Reductions from Illustrative Scenario: 2011-2031: MARKAL Model Simulations



Graph 4: Undiscounted Incremental Energy System Cost for CO₂ Reductions from Illustrative Scenario: 2011-2031: MARKAL Model Simulations

However, the shifting of resources towards CO₂ mitigation from other physical and social infrastructure and production sectors would definitely lead to a reduction in GDP growth. These are captured in CGE model simulations involving the use of economy-wide carbon taxes (both revenue positive and revenue neutral) up to \$ 80 per tone of CO₂ tax (See Graph 5, 6 and 7) [6].

%Change in CO₂e Emission (Revenue Positive)

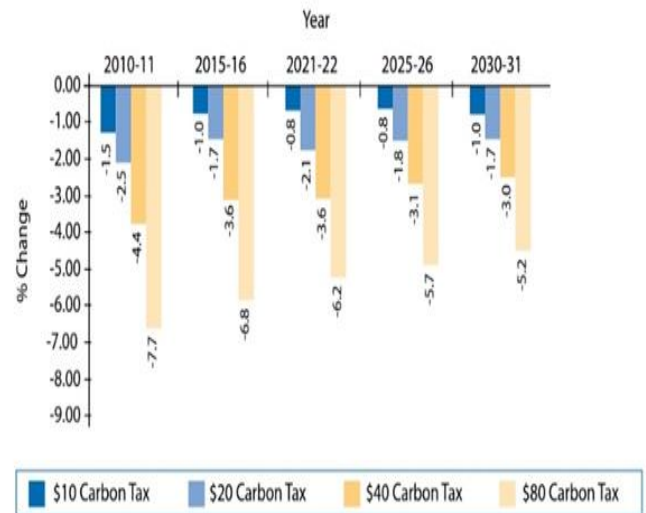


Graph 5: Percent change from in CO₂ emissions from Illustrative Scenario through imposition of Revenue positive carbon tax, 2011-2031, NCAER-CGE Model simulations

Even a draconian carbon tax of \$ 80 per tonne CO₂ does not result in more than 6.1% CO₂ reduction (revenue positive case) or more than 5.2 % (revenue neutral case) from the Illustrative Scenario in each instance! [6].

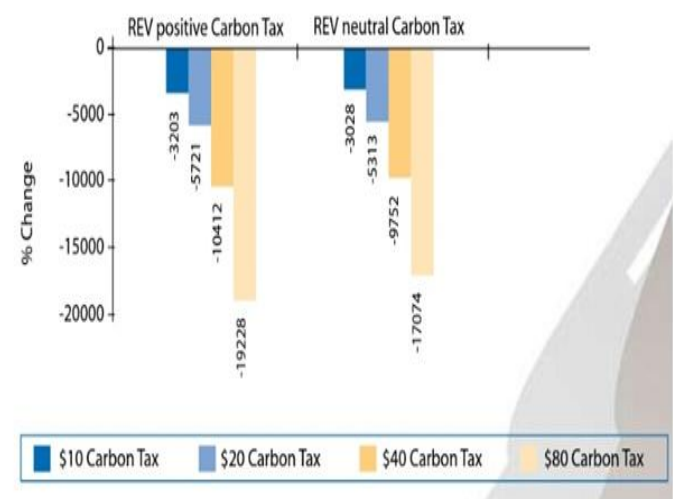
The cumulative GDP for the modest levels of CO₂ reductions given above involve cumulative undiscounted GDP losses exceeding \$ 19 trillion and \$ 17 trillion in there venue positive and revenue neutral cases respectively during 2011-2031[6].

%Change in CO₂e Emission (Revenue Neutral)



Graph 6: Percent change from in CO₂ emissions from Illustrative Scenario through imposition of revenue neutral carbon tax: 2011-2031: NCAER-CGE Model simulations.

Cumulative GDP Loss (Billion US\$)



Graph 7: Cumulative Undiscounted GDP losses 2011-2031 from imposition of carbon tax, NCAER-CGE model simulation.

4. CONCLUSIONS

1. If, for much of the Nineteenth and Twentieth Century's, the city was posited as a bounded space of sociological problems and infrastructural lack, in search of specialized and technological solutions, the urban condition today invites more philosophical reflections on the possibilities of life itself, in the city and outside it.
2. As the prospects of climate change are internalized ever more, the moves in this direction increase further, for what can be the 'outside' anymore when gases banished into the outer sky centuries ago return to haunt us, humans, and every other life form today. What, anymore, is an 'externality' when everything that we do, the way that we produce, transport, consume, and discard, has a carbon tag attached to it? Indeed the challenge is deep and fundamental.
3. Cities in developing countries like India confront climate change challenges in different ways. On the one hand, there is a huge and burgeoning population of extremely vulnerable groups living in equally vulnerable areas of cities that are directly affected by climate change. On the other hand, these very cities are becoming centers of rapid economic growth and development and have growing numbers of consuming classes raising the scales of GHG emissions. At the global level, the huge difference between the low per capita emissions of developing countries and high per capita emissions of the developed nations has played a highly political role in the deadlock in various international negotiations.
4. Interestingly the scenario which complicates the positions of developed and developing countries on the question of mitigation and adaptation (including issues such as equity, CBDRRC, finances, technology), also resonates at the level of cities in developing countries between the poor majority and the middle/upper classes, but often deep structural inequalities and issues concerning a wider political economy are not adequately acknowledged at the national level.
5. Strategies must be evolved for long-, medium- and short-term policies needed for substantial involvement of women not only in terms of beneficiaries but also in their say in decision making. Climate change strategy needs to focus on supporting design of policies and action plans, promoting early adaptation as well as long-term strategies like directing investment towards low carbon technologies and practices and finally integrating climate change broadly into development assistance at the global, regional and

national levels. The nexus between climate change and gender equality needs to be intensified so that the capacity of the national and local institutions can be strengthened in terms of resilience to climate change by involving wide range of stakeholders.

REFERENCES

- [1] *Report on "Climate change stagey" 1-21.*
- [2] *Jan Burck, Franziska, Martin, Christoph Bals (2015), "The Climate Change Performance Index (Result 2015)". Think and Think Research'*
- [3] *Michal Nachmany, Sam Fankhauser, Jana Davidova, Nick Kingsmill, Tucker Landesman, Hitomi Roppongi, Philip Schleifer, Joana Setzer, Amelia Shorman, C. Stolle Singleton, Jayarasundaresan, Terry Townshend (2015), "Climate Change Legislation In India an expert Form" India, 1-12.*
- [4] *Smita Nakhoda and Maya Forstater (2013), "The Effectiveness Of Climate Finance" (A Review of The Global Environmental Facility).*
- [5] *General District (2012), "Report of The Global Environmental Facility to the Conference of the Parties"*
- [6] *Sunita Narain, Prodipto Ghosh, NC Sexena, Jyoti Parikh, Preeti Son (2009), "Climate Change Perspectives from India" United Nations Development Programme, India Lasting Solutions for Development Challenges.*
- [7] *Annett Mohner and Richard J.J. Klein, (2007) "The Global Environmental Facility, Funding and Adapting To Funds?" Stockholm Environment Institute Kräftriket 2B 106 Stockholm Sweden*
- [8] *Report on "Accessing Resources the Least Development Countries Fund (LDCF) and the special Climate Change Fund (SCCF)" (exploring the gender dimensions of Climate finance mechanism).*
- [9] *Report on "Accessing Resource under the Special Climate Change Fund (SCCF)". (May 2011).*
- [10] *Report on "Accessing Resource under the Least Development Countries Fund (LDCF)" (May 2011).*