EXPLORING THE UK GOVERNMENT'S CLIMATE CHANGE ADAPTATION SUPPORT FOR DEVELOPING COUNTRIES

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Abstract

Adaptation is urgent and necessary to tackle the impacts of climate change especially in developing countries. Although tens of billions of US$ are required to support adaptation activities in developing countries, there is currently a huge funding deficit. At present adaptation financing has been running under two streams, one under the UNFCCC, which requires Annex 1 countries (developed countries) to provide funds and technology to support adaptation activities in developing countries out of their responsibility to pay for their historic greenhouse gas emissions. Secondly, funds are also being pledged by major donors through new bilateral and multilateral financing systems outside the UNFCCC. Donors claim the latter approach is a quick and effective way to mainstream adaptation into national development planning, and pilot adaptation actions on the ground when compared to the longer bureaucratic and project based UNFCCC approach.

This study researches the origins and rationale for the approach taken by donors (particularly the UK Department for International Development, DFID) to funding adaptation. The analysis is based on literature review, policy document analysis and detailed interviews with key experts in this relatively new and rapidly moving field of development donor activity.

The UK government, through DFID is one of the first and largest donors to support adaptation in developing countries. A close integration between poverty-development-adaptation has been found to be one of the main drivers. There are other policies, political and key actor drivers that have advanced the adaptation fund pledges from the UK government. The UK's adaptation initiatives are appreciated for contributing to fill the adaptation financing gap, mainstreaming adaptation into national development planning processes through a programmatic approach rather than as stand-alone adaptation projects, and actually testing adaptation activities on the ground. It also has met the following criticisms; that the approach is undermining the UNFCCC processes, it is a rebranding of existing ODA instead of new and additional fund, and a top-down donor controlled fund governance.

The December 2009 Copenhagen negotiations are hoped to reach a new global post-Kyoto climate deal, with a clear architecture for climate adaptation financing. It will therefore be interesting to see how the UK will change its adaptation support for developing countries in response to any Copenhagen deal. However, if the development agencies are to

successfully deliver development objectives they have no choice but to follow climate resilient development pathways, integrating adaptation to climate change.

Declaration

The dissertation entitled “Exploring the UK Government’s Climate Change Adaptation Support for Developing Countries” is an original research work. For material obtained from other sources has been duly acknowledged in the report.

I declare that no portion of the work referred to in this thesis has been submitted in support of an application for another degree or qualification of this or any other university or other institute of learning.

Prakriti Kashyap

MESPOM

26th May 2009.

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Abbreviations

ACP	African, Caribbean and Pacific countries
ADB	Asian Development Bank
AF	Adaptation Fund
AFB	Adaptation Fund Board
AFI	Adaptation Financing Index
AfDB	African Development Bank
BAP	Bali Action Plan
BAPA	Buenos Aires Plan of Action
BCCSAP	Bangladesh Climate Change Strategy and Action Plan
BOND	British Overseas NGOs for Development
CCAA	Climate change adaptation in Africa research and development programme
CCCCC	Caribbean Community Climate Change Centre
CCS	Carbon Capture and Storage
CDM	Clean Development Mechanism
CER	Certified Emission Reductions
CIFs	Climate Investment Funds
ClimDev	Climate Development
COP	Conference of Parties
CTF	Clean Technology Fund

DAC	Development Assistance Committee
DBERR	Department for Business, Enterprise and Regulatory Reform
DECC	Department of Energy and Climate Change
DEFRA	Department for Environment, Food and Rural Affairs
DEG	Development and Environment Group
DFID	Department for International Development
DRR	Disaster risk reduction
DTI	Department of Trade and Industry
ENTRP	Environment and Natural Resources Thematic Programme
ETF	Environment Transformation Fund
ETS	Emission Trading System
€	Euro
EU	European Union
FCO	Foreign and Commonwealth Office
FIP	Forest Investment Program
G8	Group of eight rich countries
GCCA	Global Climate Change Alliance
GNP	Gross National Product
GEF	Global Environment Fund
GBP (£)	Great Britain pounds
GHGs	Green House Gases

GOs	Government Organisations
HFCs	Hydro Fluoro Carbons
IATAL	International Air Travel Adaptation Levy on fuels
ICI	International Climate Initiative
IDA	International Development Association
IDRC	International Development Research Centre
IDS	Institute of Development Studies
IIED	International Institute for Environment and Development
IMERS	International Maritime Emissions Reduction Scheme
IPCC	Intergovernmental Panel on Climate Change
IPCC 4AR	IPCC Fourth Assessment Report
IPCC SAR	IPCC Second Assessment Report
IPCC TAR	IPCC Third Assessment Report
IPCC WG II	IPCC Working Group II
JI	Joint Implementation
JPYen	Japanese Yen
LDC	Least Developed Country
LDCF	Least developed Countries Fund
LULUCF	Land Use, Land-Use Change and Forestry
MDGs	Millennium Development Goals
NAPA	National Adaptation Programmes of Action

NGOs	Non Government Organisations
NWP	Nairobi Work Programme
OCC	Office of Climate Change
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
ORCHID	Opportunities and Risks of Climate Change and Disasters
PFCs	Per Flouro Carbons
PPCR	Pilot Programme on Climate Resilience
PRSP	Poverty Reduction Strategy Paper
SAWI	South Asia Water Initiative
SBI	Subsidiary Body for Implementation
SBSTA	Subsidiary Body for Scientific and Technological Advice
SCCF	Special Climate Change Fund
SCF	Strategic Climate Fund
SEI	Stockholm Environment Institute
SIDS	Small Island Developing States
SREP	Scaling-Up Renewable Energy in Low Income Countries
SST	snowball (or chain) sampling technique
TA	Technical Assistance
TERI	The Energy and Resources Institute
UK	United Kingdom

UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
US	United States
USAID	United States Agency for International Development
US $	United States Dollar
WB	World Bank
WWF	World Wildlife Fund for Nature

1. Chapter One: Introduction and Overview

The thesis entitled "Exploring the UK Government's Climate Change Adaptation Support for Developing Countries" is an explorative study that reviews the importance of mainstreaming adaptation in development, and examines the development and rationale for the UK government's current adaptation support to developing countries. The study further aims to analyse the key drivers and approaches for the UK's policy towards increasing international assistance on climate change adaptation in developing countries.

This first chapter contains a brief background on the rise of adaptation issues in global climate policy, from the perspective of mainstreaming development and climate change. It also illustrates recent increases in adaptation support from international development communities to developing countries, particularly the United Kingdom (UK) Government. The thesis therefore explores the drivers for proactive support of the UK government in adaptation, followed by a critique of the current approach and post-Kyoto adaptation policy direction of the UK government. Chapter one further contains research aim, objectives, methodology and outline of the thesis structure.

Climate change is real and its impacts are already being felt. There is no place for scepticism about anthropogenic causes of climate change and their associated impacts. Supportive scientific evidences are well expressed in the Intergovernmental Panel on Climate Change (IPCC) reports and various other studies. Climatic vulnerabilities and climate induced disasters have triggered adaptation activities as an urgent and unavoidable option to live with the changing climate in both developed and developing countries. IPCC, 2007 defines adaptation as "the adjustments in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities."Unlike initial years of global climate discussions, the adaptation agenda is getting its foothold along with mitigation in the global, regional and national climate change policy discussions. Adaptation has been identified as a necessary part of global policy response to climate change. Traditional contesting views on adaptation as admitting defeat in mitigating climate change have changed with time (Burton, 1994, cited in Tol, 2005, p. 572). The IPCC supports adaptation as a "complement" to mitigation efforts (Watson *et al.*2001). This integration has been possible also because no matter whether a significant reduction in Green House Gas (GHG) emission is achieved, impacts of climate change from the historical emissions cannot be altogether avoided (Parry *et al.* 1998; Wigley, 1997). Huq, *et al.* 2003 also agrees that even if emissions of all greenhouse gases stopped today, some degree of climate change would still occur and Least Developed Countries (LDCs) would suffer the most. The IPCC and many other studies have also underscored that developing countries, particularly those LDCs with least human, institutional, and financial capacity are disproportionately vulnerable to climate change, as they lack capacity to anticipate and respond to the impacts of climate change. Hence they have to be provided with special support for adaptation.

1.1 Adaptation: a response by development communities to the impacts of climate change

A need to adapt to the impacts of climate change has also been accepted outside of climatic science communities by development assistance communities, and the adaptation agenda is now in their development paradigm (AfDB *et al.* 2003). Furthermore adaptation is not only seen as the fixation of climatic disasters but an attempt to build an overall climate resilient development effort. Development and adaptation to climate change have become a twin issue because many development activities are known to have impacts on climate change or are impacted by the changing climate. Up to 40% of Official Development Assistance (ODA) is sensitive to climate risks (Burton *et al.* 2006) and more than 60 percent of all ODA could be relevant to building adaptive capacity and facilitating adaptation (Levina, 2007). Therefore, donor countries are now concerned not only with the "Whats" of development activities but also the "Hows" of the development activities, by considering climate change in development planning. The "climate ignorant" development approaches of the past are now being targeted for "climate proof" development, basically analysing impacts of climate on development objectives and also identifying and minimizing negative impacts of development activities on the climate. Even simple climatic consideration to account potential sea level rise while building road networks along coastal region into development planning could be barely seen before. Development agencies advocate mainstreaming of the climate adaptation agenda into national development planning as the sustainable approach to deal with the changing climate; however, there are arguments both for and against such approach. Such financing of climate adaptation are important but definitely not enough alone and are not the supplementary of climate specific funds under the UNFCCC mechanisms, but a complimentary aid. Huq and Ayer (2008) also advocate for distinguishing the role of development institutions from the formal climate change institutions of the UNFCCC, but that development funds must support "mainstream adaptation" rather than "stand-alone adaptation", which separates adaptation from development agenda.

Adaptation to climate change comes with a price-tag, incurring large costs to implement adaptation efforts. Because adaptation activities are closely interlinked with development activities, there are practical difficulties in separating additional cost required for adaptation only. Therefore there are a range of estimates of adaptation cost. However, studies show that it costs billions of dollars a year in developing countries alone to adapt to climate change impacts. The UNFCCC secretariat estimated the additional investment and financial flows needed worldwide to be $60–182 billion in 2030 (UNFCCC, 2007), $28–67 billion of which would be needed in developing countries. The UNFCCC secretariat also estimated that an additional $52–62 billion would be needed for agriculture, water, health, ecosystem protection and coastal-zone protection, most of which would be used in developing countries (UNFCCC, 2007). The World Bank (2006) estimates the costs to be in the order of $9–41 billion per year in developing countries, while Oxfam International (2007) estimated this number to be over $50 billion per year. The most pessimistic figure of $86–109 billion per year by 2015 comes from the UNDP estimates (Watkins, 2007). Since most developing countries are adversely affected by the impacts of climate change, are least responsible for damage caused, and have the least adaptive capacity, it is required that the developed countries to support adaptation efforts in developing countries.

The climate adaptation activities of rich and developed countries are basically justified by two reasons. The first one being the common but differentiated roles of the industrialised Annex 1 countries of the UNFCCC, where rich countries responsible for emission of GHGs are bound to compensate for the damage they caused to the climate by helping the non-annex 1 developing countries, based on the polluter pays principle. Identified close links between climate change, development and poverty is the second reason for the developed countries (donor countries) to (re)view their development assistance investment so as to facilitate poverty alleviation and development in a climate friendly ways in developing countries.

Understanding closer link between climate change and overall sustainable development the developed countries are supporting climate adaptation activities in developing countries either through direct climatic funds under the UNFCCC or ODA funded bilateral or multilateral assistance outside the UNFCCC.

UNFCCC adaptation funds: There are three specific funds under the UNFCCC that targets adaptation. The Least Developed Countries Fund (LDCF), and the Special Climate Change Fund (SCCF), and the Adaptation Fund (AF) were established in 2001.

Bilateral adaptation support: There are some voluntary bilateral funds dedicated to adaptation support for developing countries. Some examples are; The Japanese Cool Earth Partnership, the European Commission's Global Climate Change Alliance (GCCA), UK government's Environment Transformation Fund-International Window (ETF-IW), Government of Germany's International Climate Initiatives etc (Porter *et al.* 2008).

Multilateral adaptation support: World Bank administered Pilot Programme for Climate Resilience (PPCR) under the Strategic Climate Fund (SCF), and UNDP administered MDG Achievement Fund-Environment and climate change thematic window also has provisions for adaptation under multilateral financing structure (climatefundsupdate.org, 2009a).

1.1.1 UK government support for adaptation

The UK has a long history of development assistance to alleviate poverty in developing countries and has become the largest contributor to the International Development Association (IDA), which provides credits and grants to around 80 of the poorest countries in the world. UK's commitment for the three years 2008/09 to 2010/11 is £2.134 billion (DFID, 2009a). Similarly, the UK government is focussing its resources and strategies towards laying down careful adaptation strategies at both domestic and international scales. The UK has shown proactive initiation in strengthening the climate change adaptation support, both through direct climatic funds to build adaptive capacity of the developing countries and also supporting the climatic adaptation through ODAs in recent years. The UK White paper on International Development of 2006, entitled 'Eliminating world poverty: making governance work for the poor' realises that climate change could undermine poverty alleviation attempts, hence included the need to tackle climate change as one of its response to international development. The White paper aims to work internationally to tackle climate change by helping developing countries to participate in international negotiations on climate change and to integrate adaptation to climate change impacts into their development programmes.

The UK government's development programmes are climate aware in many senses. The Department for International Development (DFID) is committed to ensure all of its development activities in developing countries take account of climate change and help poor communities to adapt to a changing climate, hence linking climate adaptation with development. Research, information sharing, and capacity building and funding climate adaptation actions in developing countries are the current focus areas of UK's support. An announcement of a £800 million as an international element of the Environment Transformation Fund (ETF) is one of the major financial pledges made by the UK government. The ETF was announced by the Chancellor as a joint Department for International Development (DFID) and Department for Environment, Food and Rural Affairs (DEFRA) budget, [now after October 2008 to the Department of Energy and Climate Change (DECC)] in 2007 aiming at poverty reduction and environmental protection, and help developing countries to tackle climate change. A £50 million of the £800 million ETF was earmarked to protect the forests of the Congo basin. The UK has made available this ETF money to the World Bank (WB) administered Climate Investment Funds (CIFs) joining a multi donor global effort to help tackle climate change and poverty (DEFRA, 2008a). Similarly, the UK government has made investments in scientific research and adaptation activities in Africa, Asia and Latin America. Some of the specific investments are;

- £5 million to improve scientific understanding of climate change in Africa
- £100 million to research and improve adaptation to climate change in Africa, Asia and Latin America
- Up to 10% of DFID humanitarian aid on reducing the impacts of disasters
- £59 million to tackle climate change and speed up investment in cleaner energy
- £20 million through the UN to help poor countries adapt to climate change (DFID, 2009b).

Chapter three will further discuss DFID's programmes on climate adaptation intervention in developing countries.

1.2 Research hypothesis

1.2.1 Research aims and objectives

This thesis is stimulated by the fact that the UK government is heavily (much more than other donors) supporting developing countries in adapting to the changing climate through new bi/multilateral funds in addition to the UNFCCC mechanisms. The UK's role in global climate negotiations through the European Union (EU) position and within the UNFCCC mechanisms has equally been very influential. Emergence of climate change issues as the prominent development issue in the G8 Gleneagles meeting in June 2007 under the presidency of the UK and the announcement of £800 million ETF, followed by other climate adaptation fund pledges, and climate proofing of their development objectives are further evidences of the UK support for adaptation activities. Therefore this research "Exploring the UK Government's Climate Change Adaptation Support for Developing Countries" aims to **identify, analyse and review the key drivers** influencing the UK's increasing assistance to support climate change adaptation in developing countries, **critique** the current approach, and discuss the role of UK in the 15th Conference of Parties (COP-15) in Copenhagen for its **post Kyoto adaptation approaches**.

The specific objectives of the research are to:

- map and consolidate a database for existing UK support for climate adaptation in developing countries,
- identify and underpin the key drivers (factors, actors and circumstances) behind the UK's international climate adaptation support,
- critique the UK's current adaptation activities, and
- discuss the UK's draft proposal for the post-2012 adaptation direction in Copenhagen negotiation.

1.2.2 Research methodology

This is a qualitative study based on analysis of publically available literature on the adaptation theories and international components of the UK adaptation support programmes. The literature review is complemented by an expert consultation with key informants using a semi-structured interview, which explored information and gaps found in the existing literature. Since the aim of the qualitative research interview is to understand the research topic from the perspectives of the interviewee (King, 2004), insights from the key informant interviews form the centre of the thesis. The UK and international policy environment on climate change is moving rapidly, it is relatively new to development agencies and responding to great pressures to reach international agreements in Copenhagen at the 15th conference of the parties. The study is therefore heavily reliant in the results of interviews as there is very little formally published literature tracking this process.

- ***Review of the literature***

The literature review is focused on the components of development and climate linkages, UK government's support on the climate change adaptation programmes in developing countries in order to develop a clear understanding of the concept of adaptation and development-climate nexus. The specific objective of the literature review is to examine theory and practices related to adaptation, both within and outside the UNFCCC framework with a particular focus on the UK government's activities. The published literatures and online sources are categorised and analysed into subsets of;

  - The history of the emergence of the climate change adaptation agenda in global climate change policy and the linkage between climate and development.
  - Literature analysing the UK's move into adaptation regime, analysis of drivers, a critique of the approach, and the probable future directions.

- ***Expert consultation***

Gaps in the existing literature are explored through a number of semi-structured interviews with key stakeholders who have good background knowledge of the issues relevant to UK government's climate adaptation activities. The informants were selected from a spectrum of stakeholders representing the UK government organisations, non-government organisations and the independent research institutes and academia working in the area of climate change adaptation and development (Please refer to Annex 1 for the list of interviewees). The interview is based on the non-probability qualitative approach of purposeful sampling (Patton, 1990). Purposeful sampling selects and targets the rich information sources. This is followed with snowball (or chain) sampling technique (SST), beginning with the influential authors whose articles were cited during the literature review, asking the first respondent in a chain to suggest additional information sources and interviewees. A database of the key informants was created, and they were approached via email and asked to participate in the interview. Interviews lasted 45 minutes and were conducted on the telephone, with one face-to-face interaction. Respondents who asked for the interview questions prior were provided with the list of core focus questions (please refer to Annex 2 for the interview questions), however, a brief study-note was circulated in email to all respondents which described the study and focus area of the interview. Conversation was kept flexible to allow informants to share more background information on the issues they thought were important and relevant to the research context (Ghauri and Gronhaug, 2002; Yin, 2003). The research was limited to 12 telephone interviews, and two informal discussions because of the difficulties securing respondents as the thesis period coincided with respondents' busy schedules participating for various preparatory discussions for the Copenhagen negotiations. However, a full range of stakeholders are consulted in the process.

- ***Data analysis***

Primary data was collected through interviews with key personnel. Since the data obtained are individual perceptions of the representative key stakeholders, these were also verified with published secondary information wherever possible. The data from interviews was recorded digitally, and a transcription of each of the interviews was made. Information from these transcriptions were subsequently analysed and clustered according to the emerging themes, focusing on the research questions.

- ***Research ethics***

Each interview participant was informed about the purpose of the research. The direct quotation was made after the consent from the interviewee. Any confidential information regarding sensitive issues were not included in the report. Copies of thesis will be provided to each interviewee after the completion of research.

1.2.3 Scope and limitations

This thesis is based on qualitative opinion based interviews and review of publically available literature. Utmost care is given to make as many interviews as possible; however within the given timeframe only 12 interviews and two informal conversations were possible. These numbers may not be statistically significant, but provide a robust coverage of respondents from all the important stakeholders: the UK Government perspective (Department for International Development-DFID); NGO perspectives (British Network of Development Organisation-BOND representation, Practical Action, Christian Aid, Action Aid International, World Wildlife Fund for Nature-WWF UK); and academia, policy research and think tank institutions (Institute of Environment and Development-IIED, Institute of Development Studies-IDS, Overseas Development Institutes-ODI, Stockholm Environment Institution-SEI and German Development Institute). Furthermore, an informal conversation with OXFAM-South Asia Region, New Delhi India and DFID-

Nepal Country office was made to understand on the ground experience and perspectives from developing countries.

Despite many attempts, appointments from the Department for Environment, Food and Rural Appraisal (DEFRA), and the Department for Energy and Climate Change (DECC) could not be scheduled. Their perspectives could have added more views from UK government departments. Unavailability of expert interview from the DECC affects my ability to put forth the UK government's draft proposal for Copenhagen negotiation, however, this information gap has been filled from interviews with respondents who talked about the possibilities and recommended policy directions for post-2012 adaptation strategies for the UK government.

The word 'adaptation' in the text hence forth means 'climate change adaptation, and 'UK support' as the support from the UK government at international scale, i.e. developing countries. The Environment Transformation Fund (ETF) is used interchangeably as International Window of the ETF (i.e. ETF-IW). It is out of scope of the thesis to explore the UK activities on climate change adaptation within the country; also, it is not within the scope of the research to explore adaptation support from private and business sectors of the UK, but only the UK government support to developing countries. This is also not a comparative study between the UK and other countries' support. This is an interest of the researcher to explore why has the UK government been motivated to announce bilateral and multilateral adaptation funds and extend adaptation activities in developing countries.

1.2.4 Thesis structure

The thesis is divided into six major parts; following the introduction is Chapter 2 which analyses existing literature on mainstreaming of climate and development agenda within and outside the UNFCCC frameworks. In Chapter 3 the various climate adaptation support programmes being executed by the DFID are collated. Chapters 4 to 6 comprise outcomes of interviews. Chapter 4 is the analysis and discussion of the key drivers for the UK government's support to adaptation in developing countries, followed by the critiques of the current UK approach in Chapter 5; Chapter 6 focuses on the UK's post Kyoto adaptation position in the Copenhagen negotiation. The conclusions are within the Chapter 7.

2. Chapter Two: Adaptation Theory and Policy

This chapter contains a summary of academic and public literature on international discourse on climate adaptation theories and policies both within the United Nations Framework Convention on Climate Change (UNFCCC) and also in the development communities outside the UNFCCC.

2.1Defining adaptation

This sub-section presents review of adaptation literature defining adaptation and various interrelated concepts of adaptation theories.

To *adapt* / əˈdapt/ “is to make (something) suitable for a new use or purpose” (The Oxford Pocket Dictionary of Current English, 2009). In specific context of climate change, adaptation is hence to take actions to the changing set of climatic attributes to cope and live with the changing climate. The literature on adaptation has evolved with time defining and distinguishing different attributes, types and concepts of adaptation. Burton, 1992 (cited in Schipper 2004, p. 76) defines adaptation to climate as “the process through which people reduce the adverse effects of climate on their health and well-being and take advantage of the opportunities that their climatic environment provides.” Here adaptation is also considered as opportunities that may arrive out of new circumstances and conditions presented by changes in climate. According to Stakhiv, 1993, (cited in Smit *et.al,* 2000, p. 228) adaptation is the “means of any adjustment, whether passive, reactive or anticipatory, that is proposed as a means for ameliorating the anticipated adverse consequences associated with climate change.” This definition mentions different forms of adaptation.

The IPCC Third Assessment Working Group II Report (IPCC TAR, WG II) defines adaptation broadly as “the adjustments in ecological, social or economic systems in response to actual or expected climate change stimuli, their effects or impacts to reduce vulnerability, to moderate damages and to realise opportunities.” The IPCC Fourth Assessment Report (IPCC 4AR) retains the same definition.

Pielke (1998, p. 159) defines adaptation as “adjustments in individual, group and institutional behaviour in order to reduce society’s vulnerabilities to climate”. Equating adaptation as vulnerability reduction, Smit (1993, p.vi) defines adaptation as, “involving adjustments to enhance the viability of social and economic activities and to reduce their vulnerability to climate, including its current variability and extreme events as well as longer term climate change.”

Basic idea behind all definitions of adaptation is the reduction of adverse impacts of climate change, however these definitions introduces many associated climate attributes and concepts complementing the understanding of climate adaptation, some of which are; *climate variability, extreme weather event, vulnerability, disaster risk reduction, adaptive capacity, resilience, and forms* and *scale of adaptation*.

According to Houghton *et al.* 2001, *Climate variability* is the temporal and spatial scale variations in the mean state of the climate beyond that of individual weather events. Variability may be due to natural internal processes within the climate system or anthropogenic external forcing. Houghton, *et al.* 2001 defines an *extreme climate event* as an average of a number of weather events over a certain period of time, an average which is itself extreme (e.g. rainfall over a season).

McCarthy *et al.* 2001 in the Third Assessment Report of the Intergovernmental Panel on Climate Change (IPCC, TAR) defines *vulnerability* to climate change as a function of the character, magnitude and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity.

"*Resilience is* the capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure" (ISDR, 2003).

Adaptive capacity is the ability of a system to respond to a change (in this case, climate change), through technological options, economic resources and their distribution, human and social capital, and governance (Tol, 2005). The IPCC defines adaptive capacity as the "ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences" (IPCC, 2007). Adaptive capacity depends on many factors such as society's stock of infrastructure, human resources, economic structure, technology base, research capacity, natural resource base etc (Svendsen and Kunkel, 2009). Adaptive capacity is considered to be one of the characteristics (or "determinants") of a system that would influence the occurrence and nature of adaptations (Smit *et al.* 2000: 236), along with other determinants; sensitivity, vulnerability, susceptibility, coping range, critical levels, stability, robustness, resilience, and flexibility (Smit *et al.* 2000). *Mal-adaptation* is defined by the IPCC as "any changes in natural or human systems that inadvertently increase vulnerability to climatic stimuli; an adaptation that does not succeed in reducing vulnerability but increases it instead" (IPCC WG II, 2001, p. 80). In sum, adaptation reduces resilience and enhances resilience (White *et al.* 2001; Adger, 2000), "the more resilient, the less vulnerable" (Handmer and Dovers, 1996, p. 487).

Forms of Adaptation: Smit *et al.*1999, p. 208 define different forms of adaptation, including *anticipatory* and *reactive adaptation*, and *planned* and *autonomous adaptation*. Reactive adaptation, "responsive" or "ex post" is carried out in response to observed impacts. On the contrary, anticipatory adaptation "proactive" or "ex ante" is action taken before impacts are observed. Autonomous adaptation does not necessarily require any greater external stimulus (laws or policy) and it can also be called "spontaneous", "passive", "natural" or "automatic". Planned adaptation on the other hand is "purposeful", "intentional", "policy", "active" or "strategic."

Scale of Adaptation: Adaptation measures are also distinguished on the basis of time-scale and spatial scale into; *tactical or strategic* and *localised or widespread* (Smit *et al.*1999) or *national and international* (Fankhauser, 1998; Smit, 1993) respectively. Tactical adaptations are short-term (daily or weekly) management decisions in response to immediate stimuli, and strategic actions are larger-scale, often anticipatory actions made with a longer-term view.

2.2Adaptation in the context of the UNFCCC and Kyoto Protocol

This outlines the history of adaptation to climate change under the UNFCCC. This section highlights the important Conference of parties (COP) events addressing the issues of adaptation. It also contains the relevant UNFCCC and Kyoto protocol articles on adaptation.

The United Nations Framework Convention on Climate Change (UNFCCC) is the internationally accepted framework dealing with global climate change. The UNFCCC was adopted in May 1992, and entered into effect in March 1994. The UNFCCC has been described as a "remarkable legal and political achievement" (Gupta, 1997: 16). The Conference of the Parties (COP) is the "supreme body", the highest decision-making authority in the Convention, reaching a global deal through negotiations in each of the COP. Countries ratifying the UNFCCC are the Parties to the Convention. The UNFCCC now has 192 parties. There are two permanent subsidiary bodies: the Subsidiary Body for Scientific and Technological Advice (SBSTA) and the Subsidiary Body for Implementation (SBI) to give advice to the COP. COP is an annual event, until now 14^{th}

COP has been organised and COP-15 in Copenhagen is scheduled in December 2009. The table below summarises the COP events and key elements.

Table 1 The climate change, UNFCCC and Kyoto Protocol events

Date	Event	Main Outcomes/Comments
1995	COP-1, Berlin, Germany	Berlin Mandate adopted to develop a Protocol on emissions Reductions (decision 1/CP.1).
1996	COP-2, Geneva, Switzerland	Geneva Ministerial Declaration supporting climate change science and endorsing the IPCC Second Assessment Report
1997	**COP-3, Kyoto, Japan**	**Kyoto Protocol adopted**
1998	COP-4, Buenos Aires, Argentina	Buenos Aires Plan of Action (BAPA) on negotiations to prepare the Kyoto protocol to come into force
1999	COP-5, Bonn, Germany	
2000	COP-6, The Hague, Netherlands UN Millennium Summit adopts Millennium Declaration.	Final decisions on BAPA; negotiations failed to conclude and COP-6 suspended
2001	**COP-6 (part 2), Bonn, Germany** **COP-7, Marrakesh, Morocco**	**Bonn Agreements adopted on final details of BAPA, apart from the land use, land-use change and forestry (LULUCF) issue. Established three new funds: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund and the Adaptation Fund.** **Marrakesh Accords to the Bonn Agreements adopted.**
2002	**COP-8, New Delhi, India** **World Summit on Sustainable Development, Johannesburg**	**Adaptation moves into the spotlight; Delhi Declaration on Climate Change and Sustainable Development adopted. It called for policies and measures to integration of climate change objectives into national sustainable development strategies.**
2003	COP-9, Milan, Italy	Decision on LULUCF adopted, final piece of BAPA negotiations completed.
2004	**COP-10, Buenos Aires, Argentina**	**also nicknamed as "the adaptation COP", as it was the first time that adaptation was featured equally to mitigation**
2005	COP-11, Montreal, Canada (2005) first Meeting of the Parties (MOP1) after the coming into force of the Kyoto Protocol.	Finally adopted the Marrakech Accords, which enable the operation of the LDCF, SCCF and the Adaptation Fund. Issue of raising funds for adaptation through other flexible mechanisms besides 2 percent levy on CDM was discussed.
2006	COP-12, Nairobi, Kenya	
2007	**COP-13, Bali, Indonesia**	**a roadmap for a post-2012 climate regime was agreed, comprising the Bali Action Plan (BAP)**
2008	COP-14, Poznan, Poland	Focussed on paving a road from Bali to Copenhagen, details on operationalisation of Adaptation Fund discussed.

Source: Compiled from UNFCCC website, and Schipper, 2004.

Some of the major COP events were namely; the COP-3, where an agreement, the Kyoto Protocol was adopted on 11 December 1997, opened for signature on 16 March 1998, and enforced on 16 February 2005 with 184 parties. The Kyoto Protocol is a binding commitment for the developed countries (Annex I parties) to reduce their overall emission of six greenhouse gases: carbon dioxide, methane, nitrous oxide, HFCs, PFCs and sulphur hexafluoride by an average of 5.2% below 1990 levels between 2008-2012 (the first commitment period), with specific targets varying from country to country. The enforcement of the Protocol was achieved with the (1) the ratification by at least 55 Parties, and (2) the ratification by enough Annex I Parties to account for at least 55% of their combined total 1990 carbon dioxide emissions. The Protocol has established three flexible mechanisms to assist Annex I Parties in meeting their targets through an emission trading system (ETS), joint implementation (JI) of emissions reduction projects between Annex I Parties, and the Clean Development Mechanism (CDM) in non-Annex I Parties.

Looking at history of the UNFCCC and the Kyoto Protocol, climate adaptation has emerged as a recent negotiation agenda, while mitigation was always on the top negotiation agenda since the beginning of the framework. Though the UNFCCC has no single article on adaptation, the adaptation agenda seems to have been surfaced with stronger voice since the 6th COP, which established three new funds: the Special Climate Change Fund (SCCF), the Least Developed Countries Fund (LDCF), and the Adaptation Fund (AF).

COP-7 in Marrakech, Morocco continued with setting out objectives for three new funds. The SCCF to finance activities relating to climate change in the areas of adaptation, technology transfer, energy, transport, industry, agriculture, forestry and waste management. The LDC Fund will support the preparation of National Adaptation Programmes of Action (NAPAs) for LDCs. Lastly, the Adaptation Fund (financed from the 2% charged on all Clean Development Mechanism projects) to finance adaptation initiatives. The LDC Expert Group was also formulated to support LDCs to the development of NAPAs (Burton and Lim, 2005).

COP-8 in New Delhi India was remarkable in terms of getting the adaptation agenda into the spotlight, with the adoption of the Delhi Ministerial Declaration on Climate Change and Sustainable Development noting urgent attention to adaptation and linking adaptation with sustainable development agenda.

COP-9 in 2003 furthered the discussion on adaptation. The Working Group II of the IPCC TAR assessed vulnerabilities of and adaptation possibilities for major sectors and regions of the world, defining adaptation and related concepts, which backed the importance of adaptation in the COP-9 discussions.

At that time, the COP requested the SBSTA to initiate work on scientific, technical and socioeconomic aspects of, and vulnerability and adaptation to, climate change (decision 10/CP.9), reaching a decision 1/CP.10, known as the Buenos Aires Programme of Work on Adaptation and Response Measures in COP-10. COP-10 set up two complementary tracks for adaptation: the development of a structured five-year programme of work on the scientific, technical and socioeconomic aspects of vulnerability and adaptation to climate change under SBSTA, which was adopted at COP 11, and the improvement of information and methodologies, implementation of concrete adaptation activities, technology transfer and capacity building under the Subsidiary Body for Implementation. The COP-10 brought to light the difficulties of funding adaptation projects in the context of development, looking for possibilities of integrating finances from development and donor agencies for funding adaptation activities.

COP-11 in Montreal, Canada finally adopted the Marrakech Accords enabling the operation of different international funds for adaptation (the LDCF, the SCCF, and the AF under the UNFCCC).The Montreal meeting was also the first Meeting of the Parties (MOP1) after Kyoto's coming into force. Discussions were held to develop new and flexible mechanisms for raising finances for adaptation besides adaptation levy on the CDM.

COP-12, in Nairobi renamed the SBSTA five-year work programme the Nairobi Work Programme (NWP) on Impacts, Vulnerability and Adaptation to Climate Change. The work programme aims to assist developing countries, including the LDCs and Small Island Developing States (SIDS), to improve their understanding and assessment of impacts, vulnerability and adaptation; and assist countries in making informed decisions on practical adaptation actions and measures to respond to climate change on a sound, scientific, technical and socioeconomic basis, taking into account current and future climate change and variability.

At COP-13, held in Bali, Indonesia, in December 2007, a roadmap for a post-2012 climate regime was agreed, comprising the Bali Action Plan (BAP), with adaptation as one of the four building blocks (along with mitigation, finance and technology). The BAP identified the need for enhanced action on adaptation by Parties to the Convention.

At COP 14, held in Poznań in December 2008, details and modalities of the Adaptation Fund (AF) was developed. A new post-2012 climate agreement is expected to be concluded at Copenhagen in 7-18 December 2009.

In sum, it can be clearly seen that mitigation was always pivotal to the UNFCCC discussions, whereas the focus on adaptation as a policy response to global climate change was prominent from the 2001 Marrakesh Accords to the Bonn Agreements under the UNFCCC (UNFCCC, 2001). Emerging scientific understanding and consensus on the fact that climate change is happening and even if emission of GHGs is reduced now, impacts from past emissions will remain, hence adaptation was felt necessary. It was also a result of great push from developing countries, LDCs and SIDS and non-governmental organisations that the adaptation agenda was able to enter the global climate discussions with more-or-less equal priority as a policy response (Huq, *et al.* 2003).

2.2.1 Relevant UNFCCC and Kyoto Protocol articles and funding mechanism on adaptation

Adaptation is now a cross-cutting theme under the UNFCCC and is referred to in different articles, particularly Article 2 and 4 (4.1(b,e,f), 4.8 and 4.9). Article 2 defines *"the objective of the Convention and the ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner"*.

Article 4 defines the commitments under the UNFCCC. Convention Article 4.1 states that *"all Parties, taking into account their common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances, shall:*

(b) Formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse

gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change;

(e) Cooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods;

(f) Take climate change considerations into account, to the extent feasible, in their relevant social, economic and environmental policies and actions, and employ appropriate methods, for example impact assessments, formulated and determined nationally, with a view to minimizing adverse effects on the economy, on public health and on the quality of the environment, of projects or measures undertaken by them to mitigate or adapt to climate change"

Article 4.8 In the implementation of the commitments in this Article, the Parties shall give full consideration to what actions are necessary under the Convention, including actions related to funding, insurance and the transfer of technology, to meet the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures, especially on:

(a) Small island countries;

(b) Countries with low-lying coastal areas;

(c) Countries with arid and semi-arid areas, forested areas and areas liable to forest decay;

(d) Countries with areas prone to natural disasters;

(e) Countries with areas liable to drought and desertification;

(f) Countries with areas of high urban atmospheric pollution;

(g) Countries with areas with fragile ecosystems, including mountainous ecosystems;

(h) Countries whose economies are highly dependent on income generated from the production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products; and

(i) Land-locked and transit countries.

Article 4.9. The Parties shall take full account of the specific needs and special situations of the least developed countries in their actions with regard to funding and transfer of technology."

Also the Kyoto Protocol Articles 2.3 and 3.14 illustrates impacts of response measure. Article 2.3 reads: "The parties included in Annex I shall strive to implement policies and measures under this article in such a way as to minimise adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties and in particular those identified in Article 4, paragraphs 8 and 9, of the Convention, taking into account Article 3 of the Convention. The Conference of the Parties serving as the meeting of the Parties to this Protocol may take further action, as appropriate, to promote the implementation of the provisions of this paragraph." Kyoto Protocol Articles 3.14 reads: "Each Party included in Annex I shall strive to implement the commitments mentioned in paragraph 1 above in such a way as to minimise adverse social, environmental and economic impacts on developing country Parties, particularly those identified in Article 4, paragraphs 8 and 9, of the Convention. In line with relevant decisions of the Conference of the Parties on the implementation of those paragraphs, the Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session, consider what actions are necessary to minimise the adverse effects of climate change and/or the impacts of response measures on Parties referred to in those paragraphs. Among the issues to be considered shall be the establishment of funding, insurance and transfer of technology."

Adaptation work under the UNFCCC is directed at three main areas: planning, reporting, and funding.

Planning

Convention Article 4.4 focuses on the preparation and planning of adaptation strategies asking developed country parties to "assist the developing country parties that are particularly vulnerable to the adverse effects of climate change in meeting the costs of adaptation to those adverse effects." The National Adaptation Action Plan (NAPA) for the LDCs is also a part of planning and preparing the national governments to identify their urgent adaptation needs. The purpose of NAPAs is to "communicate priority activities, including projects, integration into other activities, capacity building and policy reform, addressing the urgent and immediate needs and concerns of the LDCs relating to adaptation to the adverse effects of climate change"(decision 28/CP.7, Annex, paragraph 1).

Reporting/communication

The UNFCCC decision 4/COP.5 asks for a national communication including information on the expected impacts of climate change and an outline of the action taken to implement Article 4.1(b) and (e) with regard to adaptation. The Kyoto Protocol Article 10 (b) reads: "All Parties…shall…formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change and measures to facilitate adequate adaptation to climate change: (i)…adaptation technologies and methods for improving spatial planning would improve adaptation to climate change; (ii) Parties included in Annex I shall submit information on action under this Protocol…and other Parties shall seek to include in their national communications, as appropriate, information on programmes which contain measures that the Party believes contribute to addressing climate change and its adverse impacts, including the abatement of increases in greenhouse gas emissions, and enhancement of and removals by sinks, capacity building and adaptation measures." Article 12.8 continues: "The Conference of the Parties serving as the meeting of the Parties to this Protocol shall ensure that a share of proceeds from certified project activities is used to cover administrative expenses as well as to assist developing country Parties that are particularly vulnerable to the adverse effects of climate change to meet the costs of adaptation."

Financing

The final area of adaptation work under the UNFCCC is the financing aspect. The major funds assisting adaptation activities within the UNFCCC frameworks are; the Least Developed Countries Fund (LDCF), the Special Climate Change Fund (SSCF) and the Adaptation Fund (AF). Adaptation measures included in national communications are thereby eligible for funding.

Table 2 Funds related to adaptation under the UNFCCC

Name of the fund	Date proposed	Funds pledged/deposited	Administrating organisation	Objectives
Least Developed Countries Fund (LDCF)	Fund proposed at COP-7 and fund made operational at COP-8.	As of October 2, 2008, 19 contributing participants have pledged a total amount of US$ eq. 172.44 million. In addition, on 25th February 2009, the US announced a donation of US$ 10 million to the LDCF[1], totalling 182.44 million. 17 out of 19 contributing participants have deposited US$ eq. 131.20 million.	Global Environment Facility (GEF)	is to address the special needs of the 48 Least Developed Countries (LDCs), by supporting them to prepare and implement National Adaptation Programmes of Action (NAPAs) to identify urgent and immediate adaptation needs.
Special Climate Change Fund (SCCF)	Fund proposed at COP-7 and fund made operational at COP-8.	As of October 2, 2008, 13 contributing participants have pledged contributions to the SCCF. The total amount pledged to date is US$ eq. 106.57 million. 11 out of 13 contributing participants have deposited US$ eq. 94.40 million	Global Environment Facility (GEF)	is to implement long-term adaptation measures that increase the resilience of national development sectors to the impacts of climate change. Projects must focus on long-term planned response strategies, policies, and measures, rather than short-term (reactive) activities.
The Kyoto Protocol Adaptation Fund (AF)	Fund proposed at COP-7, expected to be operational by at least 2010.	2% of certified emission reductions (CERs) issued for a CDM project activity.	Adaptation Fund Board	is to finance specific adaptation activities. As of December 2008, guidance on specific eligibility criteria for the AF has yet to be fully developed.

Source: Compiled from climatefundsupdate.org, 2009b. Available at Source: http://www.climatefundsupdate.org/listing

[1] The United States announced on the FY 2009 Omnibus Appropriations Act that up to $10,000,000 shall be made available for a contribution to the Least Developed Countries Fund, For more information, visit the page 196 of the **FY 2009 Omnibus Appropriations Act, Division H - State, Foreign Operations, and Related Programs Bill**

Observing the fund governance, the LDCF and SSCF are governed by the Global Environment Facility (GEF) but the AF has a different governance structure with a significant majority for developing countries unlike any other development financing hence opening a more representative space for the developing countries over the fund governance; direct access to resources and donor independency in fund collection and disbursement (Harmeling, *et al.* 2008).

Since adaptation costs in developing countries are in the magnitude of billions of dollars but what the rich countries have so far pledged is a mere $182 million to international funds for developing-country adaptation – less than 0.5 percent of the minimum amount that is needed overall (Oxfam, 2007), and mere 2 percent levy on CDM for the AF fall short of meeting the actual adaptation costs. Therefore, many innovative proposals for additional and flexible climate funds are being proposed and discussed in the UNFCCC to draw the money for climate adaptation and mitigation and make up the short fall. These funds will be collected beyond the conventional ODAs, hence providing new and additional funds. These proposals are based on auctions of emissions allowances, carbon-market based levy, charges, levies or taxes on emissions or specific activities, defined budgetary contributions from developed countries, and hybrids.

Table 3 New innovative proposals to climate financing

Proposal	Purpose	Sources of funds
Auctions of emissions allowances		
Norway's auctioning of allowances	Adaptation	Annex I allowances withheld, auctioned by international body
Carbon market-based levies		
Extending the levy to Joint Implementation (JI) and/or IET (proposed by LDCs)	Adaptation	Levy on JI and/or IET
Pakistan's CDM levy	Adaptation	3-5% levy on CDM
Charges, levies or taxes on emissions or specific activities		
The International Air Travel Adaptation Levy on fuels (IATAL)	Adaptation, Mitigation	\$7/€5 per ticket fee or 2% levy on airline travel
The International Maritime Emissions Reduction Scheme (IMERS)	Adaptation	Emission charge, 'cap and charge' for Annex-I
Tuvalu's Burden Sharing Mechanism	Adaptation, Mitigation	0 .01% levy on int'l airfares, maritime transport freight charges operated by Annex II 0.001% levy on int'l airfares, maritime transport freight charges operated by non-Annex I (LDCs / SIDS exempt)
Swiss Global Carbon Adaptation Tax	Adaptation, Mitigation	Tax (\$2/t CO2) on emissions from fuels, ≤1.5 t CO2/capita exempt
Defined budgetary contributions from developed countries		
Group of 77 and China	Adaptation, Mitigation	0.5–1 per cent of GNP of Annex I Parties
Hybrids		
Mexico's World Climate Change Fund	Adaptation, Mitigation	Contributions based on GDP, GHG and population and possibly auctioning permits in developed countries, levy on disbursement of mitigation funds for adaptation

Source: climatefundsupdate.org, 2009b. http://www.climatefundsupdate.org/listing/new-innovative

These new and innovative proposals for climate financing if agreed by the UNFCCC parties will add a new dynamics for new, additional, predictable and sustainable sources of funding. These proposals are under discussions as preparation for Copenhagen negotiation, however, choice of one specific proposal or a combination or a completely new set of proposal is dependent on the political consensus by all parties within the UNFCCC.

2.3 Climate adaptation in the international development context

The chapter concludes with description of development and adaptation mainstreaming, and bi/multilateral development community initiatives in such mainstreaming.

2.3.1 Mainstreaming adaptation into development

Mainstreaming adaptation is basically taking into account climate change in development planning (Huq *et al.*2003).Until recently climate change and development were seen as two independent things, both in research and policy terms (Swart *et al.* 2003). The climate change discipline was looked after by the natural sciences as an environmental problem and development problem by the social sciences (Cohen *et al.* 1998). The UNFCCC negotiations had also traditional focus on mitigation efforts and less attention was given to adaptation measures, however, with time and increasing inter-linkages, adaptation has become increasingly important in the UNFCCC processes too. The Delhi Ministerial Declaration was one of the early calls for climate change policies to be integrated with national development programmes (UNFCCC, 2002). Since COP8 the UNFCCC has seen a marked major shift in climate-development nexus, with the establishment of funds like LDCF dedicating to implement the NAPA projects, and the AF, and also the adaptation issue being a prominent part of the global negotiations.

A consensus among development communities on the need for taking climate adaptation issues along with their development assistance has evolved in recent time. More recently the links between adaptation to climate change and development have been increasingly highlighted (Adger *et al.*2003). Some of the key factors supporting such integration are; increasing evidence of the effects of climate change on environment, human health, food security, water resources, natural and physical infrastructure, and hence posing serious threats to sustainable development. Such linkages between climate change and development issues is growing and co-evolving with various activities with time. Huq, *et al.* 2006 explains the co-evolution of climate science/policy and development/climate/environment domain in the figure below. The figure illustrates growth of these climate science/ policy, and development/environment domains with time along the horizontal axis starting 1990, and the vertical axis represents how these domains interacted from the inputs from each other.

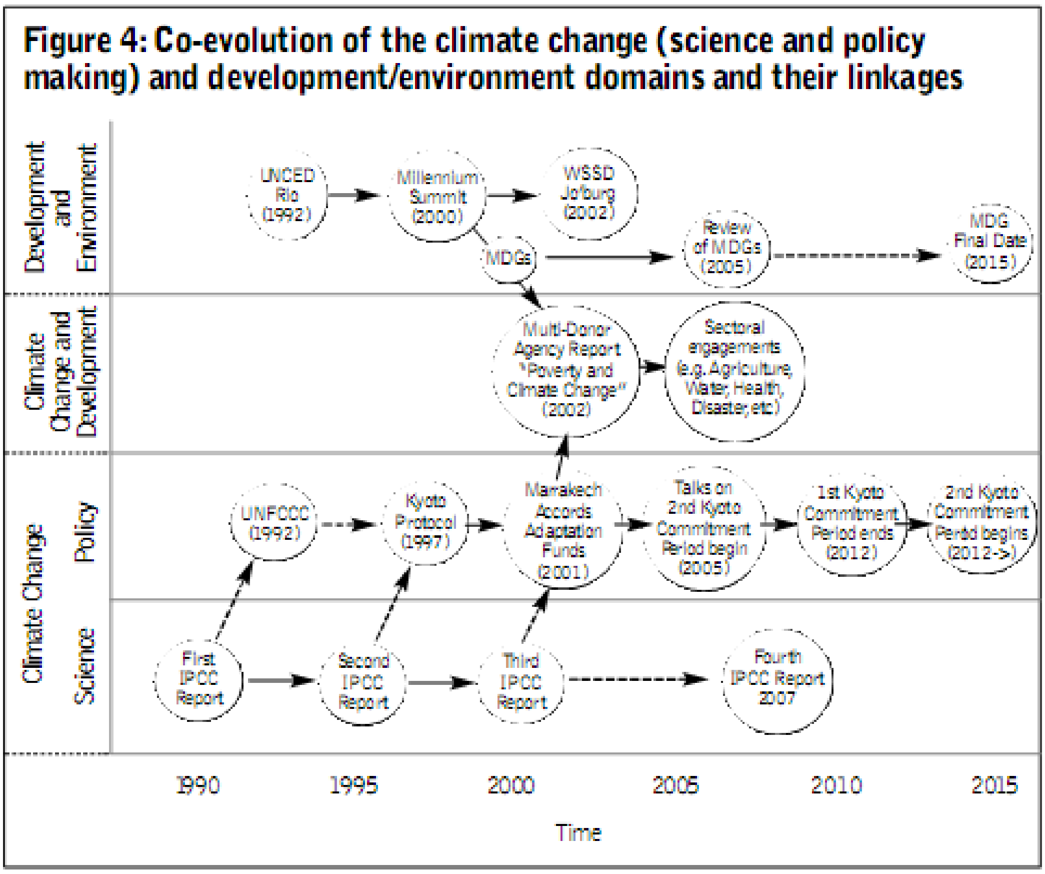


Figure 1 Co-evolution of the climate change (science and policy making) and development/environment domains and their linkages. Source: Extracted from *Huq, et.al,* 2006.

The above figure explains how the IPCC in its journey from the publication of the first report in 1990 to the fourth Assessment report in 2007 has been able to bring climate change as an urgent issue and gradually getting a strong scientific consensus negating the climate scepticism. Climate policy growth at the same time can be observed with the establishment of the UNFCCC in 1992, the Kyoto protocol (1997) and now looking for a new global deal for the post-Kyoto arrangements. It can be seen that the climate change science and policy has been growing since early 1990s, however, development and climate linkages started only in early 2000, especially after the publication of a multi-donor agency report on poverty and climate change (2002). Similarly, the 1992 United Nations Conference on Environment and Development, Millennium Development Goals (MDGs) in 2000 and World Summit on Sustainable Development in 2002 all have been useful in linking climate change and sustainable development. Poverty, development and climate change linkages and its impacts in achieving the MDGs seems to have drawn development communities towards mainstreaming climate and development. Institutions like the UNDP and other development communities have realised that climate change is a constraint to reaching poverty reduction, MDG achievement and overall sustainable development objectives.

Year 2001 can be seen as a take-off period for development and climate change mainstreaming discussion, with the COP-8 Delhi Ministerial Declaration on climate and sustainable development. In 2001 and 2002 some significant publication advocating development and climate linkages were published, which added momentum to the mainstreaming issues. The multi-donor agency report on "Poverty and Climate Change: reducing the vulnerability of the poor through adaptation" by 10 of the leading bilateral and multilateral development funding agencies is one of the prominent publications defining and addressing mainstreaming of development and climate change with the consideration of climate issues in decision-making processes such as planning and budgeting (Sperling, 2003). The publication of the third Assessment IPCC with explicit mention of adaptation (in 2002) was also useful in mainstreaming discussions. Development communities have entered into tackling climate activities along with their development objectives through climate specific screening of their development portfolio, integrating adaptation activities and even exploring low carbon development pathways to climate proof development pathways. Adaptation is also increasingly moving to the centre of an emerging research agenda (Burton *et al.*2002). Research organisations such as the Climate Change Knowledge Network, The Energy and Resources Institute (TERI), the Stockholm Environment Institute (SEI), the Institute of Development Studies (IDS) and the International Institute for Environment and Development (IIED) contributed to improve the thematic links between poverty, climate vulnerability.

2.3.2 Development assistance support for adaptation

Prior to 2001, climate change had traditionally received little attention from international donor organisations and governments. It was only after the studies on impacts of climate change on development sector in many studies, such as the Delhi Ministerial Declaration climate change and development, and a multiagency report in 2003 "Poverty and Climate Change: reducing the vulnerability of the poor through adaptation" which identifies linkage between climate issues in decision-making processes such as planning and budgeting of national development plans (Sperling, 2003).A review of 136 projects in Africa funded by the German donor (GTZ) found no references to climate (Klein, 2001).

However, in recent years, donor organisations and governments have increasingly begun to incorporate climate change into their development programmes (Agrawala, 2004), the links between climate change and development are becoming increasingly apparent (Klein, *et al.* 2007), and adaptation strategies are linked to the development of poverty reduction strategies (Halsnæs and Trærup 2009). With such gradual co-evolution of development and climate change linkages, leading key development communities and donors such as the Organization for Economic Cooperation Development Assistant Committee (OECD-DAC) framework, the Danish Climate Action Programme, and the United States Agency for International Development (USAID) and UK Department for International Development (DFID) are linking climate change and development assistance (Huq, *et al.* 2006). The Danish Development Assistance (Danida) was one of the first international donor agencies to initiate the integration of climate change in its assistance (Danida, 2005).The key donors within the OECD are now engaging themselves into adapting to climate impacts, and targeting climate friendly development. Major activities involve; climate screening of the development portfolio, realigning their ODAs into climate adaptation and low carbon development pathways, and also pledging funds to the UNFCCC climate funds. 12 donors Canada, Denmark, Finland, Germany, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom have pledged financial support for the SSC Fund. Similarly, for the LDCF, donors Australia, Austria, Canada, Denmark, Finland, Germany, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Spain, Sweden and Switzerland have signed the amendments for the LDCF. As of February 2009, the governments of Australia, Denmark, Finland, France, Japan, Norway, Sweden, Switzerland and U.K. and UNEP have made contributions for the administrative expenses for operating the Adaptation Fund and paid in donations of US $3.548 million (the Adaptation Fund Board, 5th meeting, AFB/B.5/7February 25, 2009, Agenda item 12).

There are few other bilateral and multilateral funds outside the UNFCCC mechanism to supporting adaptation in developing countries. Such funds are announced by rich and developed countries to fill the existing climate financing (adaptation) gap within the UNFCCC. Following table 4 demonstrates those funds;

Table 4 Adaptation related existing bilateral and multilateral funds

Bilateral funds				
Name of the fund	**Date of fund proposed**	**Amount proposed**	**Administrating organisation**	**Objectives**
The Japanese Cool Earth Partnership	January 2008	US$ 10 billion (JPYen 1,250 billion) over 5 years US$ 8 billion (JPYen 1 trillion) for mitigation of climate change. to US$ 2 billion (JPYen 250 billion) for adaptation	Japanese Ministry of Finance.	grant aid, technical assistance for assisting adaptation to climate change and improved access to clean energy in developing countries (e.g. African and Pacific island counties).
The Global Climate Change Alliance (GCCA)	September 2007	earmarked € 60 million in additional funding from the Environment and Natural Resources Thematic Programme (ENTRP) for the GCCA over the period 2008 – 2010 (with an allocation of €10, 25 and 25 million over the three years).Under the 10th European Development Fund, intra-ACP (African, Caribbean and Pacific countries) funding of €40 million is allocated to the GCCA in priority for regional action, in addition to €180 million for Disaster Risk Reduction. Sweden pledged an additional € 5.5 million in 2008.	The European Commission	Development of adaptation plans in vulnerable countries other than LDCs; supporting implementation of NAPAs developed with GEF support; financing pilot adaptation projects in the water and agricultural sectors and on sustainable natural resource management (NRM). Also plans to be a clearinghouse mechanism to coordinate the international adaptation initiatives of EU member states.
The International Climate Initiative (ICI)	December 2007, fund made available from the	€ 120 million/year is earmarked for developing countries and countries in transition. Of this, half is intended for sustainable energy projects and the other half for adaptation to climate	The Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) of the	€ 30 million was committed in 2008 for adaptation.

	fourth quarter of 2008	change impacts and biodiversity projects. In 2008, the ICI supported approximately 100 projects in developing, newly industrialising and transition countries with a total of around € 110 million.	German Government.	
The Environmental Transformation Fund – International window (ETF-IW)	In 2007	£800 million was pledged in the 2007 UK Budget. The deposits will be made over the financial years 2008-11, by the DFID and DECC (100 million, 200 million, and 500 million) to the World Bank-administered Climate Investment Funds	Department for International Development (DFID) and (DEFRA), [and since October 2008, the Department of Energy and Climate Change (DECC)].	focus on poverty reduction; environmental protection and helping developing countries tackle climate change. For adaptation specific activities a £ 225 million has been allocated to Pilot Programme for Climate Resilience (PPCR).
Multilateral funds				
MDG Achievement Fund – Environment and Climate Change thematic window	December 2006, fund made operational from first quarter of 2007	Spain pledged a total of € 528 million to the Fund through the UN system, with US$ 90 million allocated to the Environment and Climate Change thematic window. Has deposited US$90 million.	United Nations Development Programme	to help reduce poverty and vulnerability in eligible countries by supporting interventions that improve environmental management and service delivery at the national and local level, increase access to new financing mechanisms and enhance capacity to adapt to climate change
Pilot Program for Climate Resilience (PPCR) is part of the World Bank administered Strategic Climate Fund (SCF)	February 2008.	As of November 17, 2008, 12 countries have pledged US $ 6.3 billion, of which $ 240 million has been pledged for the PPCR. According to DFID sources, out of 800 million ETF, 225 million has been pledged for the PPCR.	The World Bank	A pilot program for climate resilience is proposed to 10 countries for integrating consideration of climate resilience in national development planning consistent with poverty reduction and sustainable development goals.

Source: Compiled from Porter, *et al.* 2008 and climatefundsupdate.org, 2009a. Available at http://www.climatefundsupdate.org/listing

Portfolio screening

Understanding of the linkages between development and climate requires screening of development portfolio to analyse the impacts of climate change in achieving development objectives and impacts of development into the climate. Klein, *et al.* 2007 (p.1) explains the increasing recognition by several bilateral and multilateral development agencies for portfolio screening and mainstreaming adaptation to climate change into development planning and ongoing sectoral decision-making. Klein, *et al.* 2007 defines portfolio screening as the systematic examination of an agency's set of policies, programmes or projects, with the aim (i) to ascertain the extent to which existing development projects already consider climate risks or address vulnerability to climate variability and change, and (ii) to identify opportunities for incorporating climate change explicitly into future projects. Many donor agencies have formulated and tested their own project screening tools, some of which are presented in the table below:

Table 5 Climate screening tools

Agency	**Screening tool**	**Remarks**
DGIS, The Netherlands	Climate quick scans	draws quick expert advice to screen programmes/projects in order to establish adaptation priorities and raise awareness about climate risks with partner countries.
Red Cross/Red Crescent	Preparedness for Climate Change	aimed at disaster management, health and the water & sanitation sectors, assessing key climate change related risks to vulnerable people.
USAID	Climate Change Adaptation Guidance Manual	assist in the mainstreaming of climate change adaptation in all projects, with helping project designers to understand whether their project may be vulnerable to climate variability or change.
DFID-UK	Opportunities and Risks of Climate Change and Disasters (ORCHID) ORCHID was piloted in DFID Bangladesh and India programmes.	study the opportunities and risks of climate change and disaster in the DFID programmes. Aims to raise awareness of climate risk management among staff, to integrate disaster risk reduction and climate change adaptation policies and activities.
UNDP	Integration of climate risks into country programming	provides guidance to improve the capacity of UNDP country offices to incorporate climate risks during the formulation of Common Country Assessments and UN Development Assistance Frameworks.
World Bank	ADAPT	undertakes a sensitivity analysis and flags activities that are sensitive to climate change as well as gives advice on adaptation activities.

Source: IISD, WB and IDS, 2007. Available at: http://www.iisd.org/pdf/2007/sharing_climate_adaptation_tools.pdf

ODA for climate specific activities

Development perspectives to climate change adaptation can be linked to the development assistance funded climate adaptation activities, where the rich countries are integrating adaptation into their development programmes through ODA. It is different to the Convention perspective of adaptation where fund for adaptation is collected under the UNFCCC. As mentioned by Burton and Van Aalst in 2004, different views on "Convention Perspective" and "Development Perspective" to adaptation could present a barrier to mainstreaming, because of differing views on ODA funded "development" perspective of adaptation. The debate centres on the fund governance issues; collection and disbursement of the funds. Convention perspectives seek climate financing to be treated separately from development aids. Other issues being;

- Convention perspective to financing is an obligation for developed (Annex 1) countries to compensate for the damage caused to the environment out of their GHGs emissions, while development perspective is taken as a voluntary aid contribution from the donors

- The ODA monies spent on climate activities are also seen as the divergence of the development fund required for basic development goals such as education, health etc.

- There is also an issue of double counting of ODAs as fulfilling both development and also the climate financing responsibilities.

- Also, the ODAs being voluntary contribution depending upon the donor's national budget, challenges the new and additional climate financing obligations to the rich countries as assigned under the UNFCCC.

- Some extremist views also see this ODA integration into climate financing as undermining the UNFCCC processes.

However, commitments and declarations to mainstream adaptation into ODA as the right pathway for adapting to climate change and achieving climate resilient development are justified by the donors on the following grounds;

a) specific adaptation funds is underfunded than the estimated costs of adaptation (World Bank, 2006; Stern, 2007),

b) operationalisation of fund under bureaucratic UNFCCC processes takes longer time while adaptation actions are urgent, and

c) adaptation activities are closely associated with development hence difficult to separate what is development activity and what is pure adaptation act, thus integrating adaptation activities with the regular development assistance.

This is an on-going debate between the North-South/developed-developing countries for decades now. There are many such criticisms for climate financing through ODAs, however, it is not the purpose of this section to dwell into such discussions. It will be followed up later in the thesis in a chapter to discuss critique to the UK's bi/multilateral climate adaptation support outside the UNFCCC.

A middle-way is being searched in the forms of new and innovative financing proposals based on carbon levy, auctioning of emission allowances etc. It is upfront in the agenda of the COP-15 negotiation to seal a global post-Kyoto deal in Copenhagen addressing these issues.

Despite some opposing (and some supportive justifications), developed countries are facilitating adaptation action in developing countries through ODA. In 2006 the OECD Development Assistance Committee (DAC) and the Environment Policy Committee (EPOC) launched a process to work in partnership with developing countries to integrate environmental factors efficiently into national development policies and poverty reduction strategies. OECD member states agreed on a Framework for Common Action Around Shared Goals, as well as a Declaration on Integrating Climate Change Adaptation into Development Co-operation (OECD, 2006). New multilateral, regional, bilateral and even unilateral funds are being administered by development agencies, such as e.g. the Climate Investment Fund (CIF) of the World Bank as important sources for financing climate adaptation policies and programmes (Porter *et al.* 2008). ODAs are not only restricted for technology support required to reduce vulnerability to climate change, but also funding the non-technical measures (e.g., training and capacity building, institutional support) for increasing adaptive capacity of the vulnerable countries. In sum, development agencies are trying to facilitate developing countries towards low-carbon growth while reducing the urgent adverse impacts of climate change through immediate adaptation.

3. Chapter Three: The UK Government's Action on Climate Change

This chapter supports the thesis hypothesis that the UK government has been taking forward climate activities through the integration of adaptation into its development portfolios as a cross-cutting theme. It provides a full description of the UK government's development-climate interventions; primarily being executed by the Department for International Development (DFID), and the Department for Environment Food and Rural Affairs (DEFRA). DEFRA basically deals with climate change adaptation within the UK. Most international scale climate adaptation programmes are run by DFID. The climate mitigation responsibilities of DFERA are now shifted to the Department of Energy and Climate Change (DECC). DECC was created in October 2008, bringing together energy policy (previously with BERR - the Department for Business, Enterprise and Regulatory Reform) with climate change mitigation policy (previously with DEFRA). DECC is working on behalf of the UK to prepare for the Copenhagen negotiations. The chapter also highlights a few other climate specific fund pledges from the UK government to support the UNFCCC. This work consolidates information, from a number of sources, concerning UK support for adaptation in developing countries in one place and builds a background to the analysis of key drivers that drove the UK government to take those proactive actions to climate proof its development portfolio.

3.1 Integration of development and climate in DFID interventions

This section contains a background on history of DFID, and then a list of DFID programme interventions that has embedded climate (adaptation) activities in meeting its development objectives as a part of the British government's response and commitment to support developing countries to climate proof development. Information in this section is primarily collated from the DFID, DEFRA websites and publications, and interview with Dr. Yvan Biot (Senior Policy Advisor, Climate Change, Policy and Research Division) and personal email communication with Ms. Judith Whiteley, Climate Change Adaptation-Policy and Research Division, DFID.

3.1.1 History of the department for international development (DFID)

DFID was set up in May 1997 with a remit to fight world poverty. Until the establishment of DFID, the British aid programme was focused into economic development. DFID became a full-fledged government department led by a cabinet minister from Overseas Development Administration, a wing of the Foreign and Commonwealth Office that managed the aid. Poverty elimination has always been the focus of DFID, since the publication of its first white paper for international development in 1997 with recent White papers also reinforcing the message of poverty elimination (DFID White papers, 1997, 2000, 2006).

Poverty has always been a top agenda for the DFID, but it also understands that climate change is a major development issue too. DFID is concerned that unless climate change is tackled, achievement of the MDGs are challenged. Climate change surfaced as another priority area of DFID since the publication of the UK White paper on International Development of 2006, entitled 'Eliminating world poverty: making governance work for the poor.' It realised that climate change could undermine poverty alleviation attempts, hence included the need to tackle climate change as one of its response to international development. New UK White paper on international development (which will be published this summer) furthers this importance by identifying the economic crisis, food security, climate change, energy insecurity, conflict, rising population as challenges to the world's poorest and most vulnerable communities. Therefore DFID has committed itself to helping poor countries to develop in a climate-smart way by making sure DFID's programmes in developing countries take account of climate change.

3.1.2 DFID programmes

The UK government focuses actions to tackle climate change on two important fronts: preventing dangerous climate change by reducing emissions and building low carbon economies, and preparing poor countries for the impacts of climate change by adapting to climate change. DFID integrates adaptation within its development objectives as the most effective way to reduce vulnerability. The UK government's actions on climate change are focussed on:

Preventing the worst impacts

The UK, as part of the EU, is pushing for post-2012 agreement on climate change with a clear stabilisation target and deep emission cuts. It is also concerned with ensuring an effective and fair global climate deal and helping developing countries to take part in international negotiations through the European Capacity-Building Initiative, which supports negotiators from developing countries in engaging effectively in the negotiations process.

Getting a global agreement and ensuring a coherent, coordinated, integrated international response

The UK government is working on the realisation of the EU's Framework for Action on Adaptation[2] that recognises that effective adaptation is a shared challenge that requires partnerships and mutual responsibilities between developed and developing countries. It therefore seeks to ensure that the international response treats adaptation as integral, rather than separate, to development, and is properly co-ordinated under developing country leadership. It is also working on ensuring coherence with the Hyogo Framework for adaptation on Disaster Risk Reduction

Increasing resources for adaptation

The UK government has made the following financial contributions to adaptation

- £225 million of the £800 million Environmental Transformation Fund (ETF) will be allocated to adaptation through the Pilot Programme for Climate Resilience (PPCR).
- £22 million donated to UN Special Funds (LDCF and SCCF) to help developing countries adapt to climate change. UK is one of the largest donors.
- Key supporter of the Adaptation Fund, including providing funding for its start-up.
- £13 million to help multilateral development banks move the Energy Investment Framework forward - adaptation is a key part
- Disaster risk reduction (DRR) spending increased – about 10% of funding for each response to a natural disaster is allocated to DRR.[3]

Knowledge, information and tools

DFID is investing on building international knowledge system and enhancing the capacity of developing countries to deal with climate change by supporting the development of data and observation systems, research, innovation and decision making tools. The support programmes are as follows:

[2] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

[3] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

- **<u>data and observation systems</u>** includes:

- Design support and £3.8 million for the inception phase of the Climate Development for Africa **(ClimDev)** programme, to assist developing countries in Africa to enhance their climate data and observation systems;
- A scoping study to design a similar initiative in support of the countries under the South Asia Water Initiative (SAWI);
- A £7.2 million commitment in support of a Regional Climate Change Programme in Southern Africa to ensure that climate change information is readily available and easily accessible.

- **<u>research and innovation</u>** includes:

There are still important gaps in understanding about the regional impacts of climate change. The UK government supports researches to fill those information gaps. Such information is very essential for countries to plan adaptation activities. DFID therefore invests resources on climate change researches so that the countries could be better informed with new information and be capacitated to design climate friendly development and adaptation pathways. Helping improve Africa's capability to do research into how to adapt to climate change has been DFID's research focus. DFID has 16 research programmes in 20 countries (DFID Research Strategy 2008-2013). DFID is also working with the World Bank to help developing countries work out the cost of adaptation and to use research to shape policies and national budgets. DFID stresses the importance of increasing knowledge of climate science nationally and regionally, utilising research knowledge on likely scenarios, impacts and vulnerabilities to tackle the impacts of climate change in regions of Africa, Asia and Latin America (DFID Research Strategy 2008-2013).The research targets four priorities; climate science, specially in Africa, embedding climate change in national and international policy frameworks, adaptation strategies, mitigation and low carbon growth strategies to;

• develop and test options for adapting to climate change across sectors; agriculture, health, water resources etc.

• investigate how climate change will affect vulnerable people; and

• researching the link between adaptation, mitigation and poverty and equality.

The DFID Strategy has pledged to increase spending to £1billion over five years across six thematic areas: Growth, Governance in Fragile States, Health, Agriculture, Climate Change and Forward-looking research (Research for Development, 2009). Britain has increased its spending on research to £100 million, which is an increase on the £75 million DFID was spending on research. The DFID research budget on social, political and environmental change for the year 2008/09 was £25,000,000 which is increased up to £26,000,000 for the year 2010-11[4], but yet to be approved. The UK is jointly funding a research study with the World Bank, the Netherlands and Switzerland on the Economics of Adaptation to calculate additional cost that may incur while integrating adaptation within development. This study is important in the context when there are uncertainties regarding the additional cost of adaptation.

Climate change adaptation in Africa research and development programme (CCAA) is the flagship climate research programme of DFID. This is a joint venture (providing £32 million over five years; £24 million from DFID) of DFID and Canada based International Development Research Centre (IDRC), which assists African researchers and policy makers to identify practical ways to adapt to climate change. This programme was started in 1 May 2006 and will end on 30 April 2011. The objectives of the programme are to;

- strengthen the capacity of African scientists, organizations, decision-makers and others to contribute to adaptation to climate change.
- support adaptation by rural and urban people, particularly the most vulnerable, through action research.
- generate a better shared understanding of the findings of scientists and research institutes on climate variability and change.
- inform policy processes with good quality science-based knowledge.

Centre for Climate Change and Development DFID has recently announced the establishment of a centre for Climate Change and Development, and has asked for expression of interest from interested parties as a service provider. The cost of the centre will be in between £40-50 million[5]. The centre has been conceived with a purpose 'to form a network of expertise across the world deploying the best climate change researchers, practitioners and institutions, providing better access to developing countries to help them

[4] http://www.research4development.info/PDF/Outputs/Consultation/DFID_Research_Budget_2008-2011.pdf.

[5] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

design and implement effective low carbon and climate resilient development strategies. **decision making tools** includes:

DFID is developing tools to assess climate change risks and identify adaptation options for bilateral development portfolios, and applying these in Bangladesh, China, India and Kenya. Similarly, with United Nations Development Programme (UNDP), country fact sheets on climate change and impacts on the least developed countries are being developed.

Capacity-building and incentives

Developing country governments need to develop the capacity to address climate change adaptation in their national development planning processes. DFID's view is that the best way to address adaptation is for developing countries to integrate 'climate resilience' into their existing processes and plans. In order to achieve this they need:

- capacity to understand, collect and apply climate science, weather data and vulnerability and risk assessments;
- improved capacity and governance in key affected sectors, such as agriculture, water and irrigation, health and disaster management;
- appropriate institutional structures to plan for, and implement, integration of climate resilience into development plans and activities, and
- the ability to monitor and evaluate climate impacts and the effects of measures to build climate resilience.

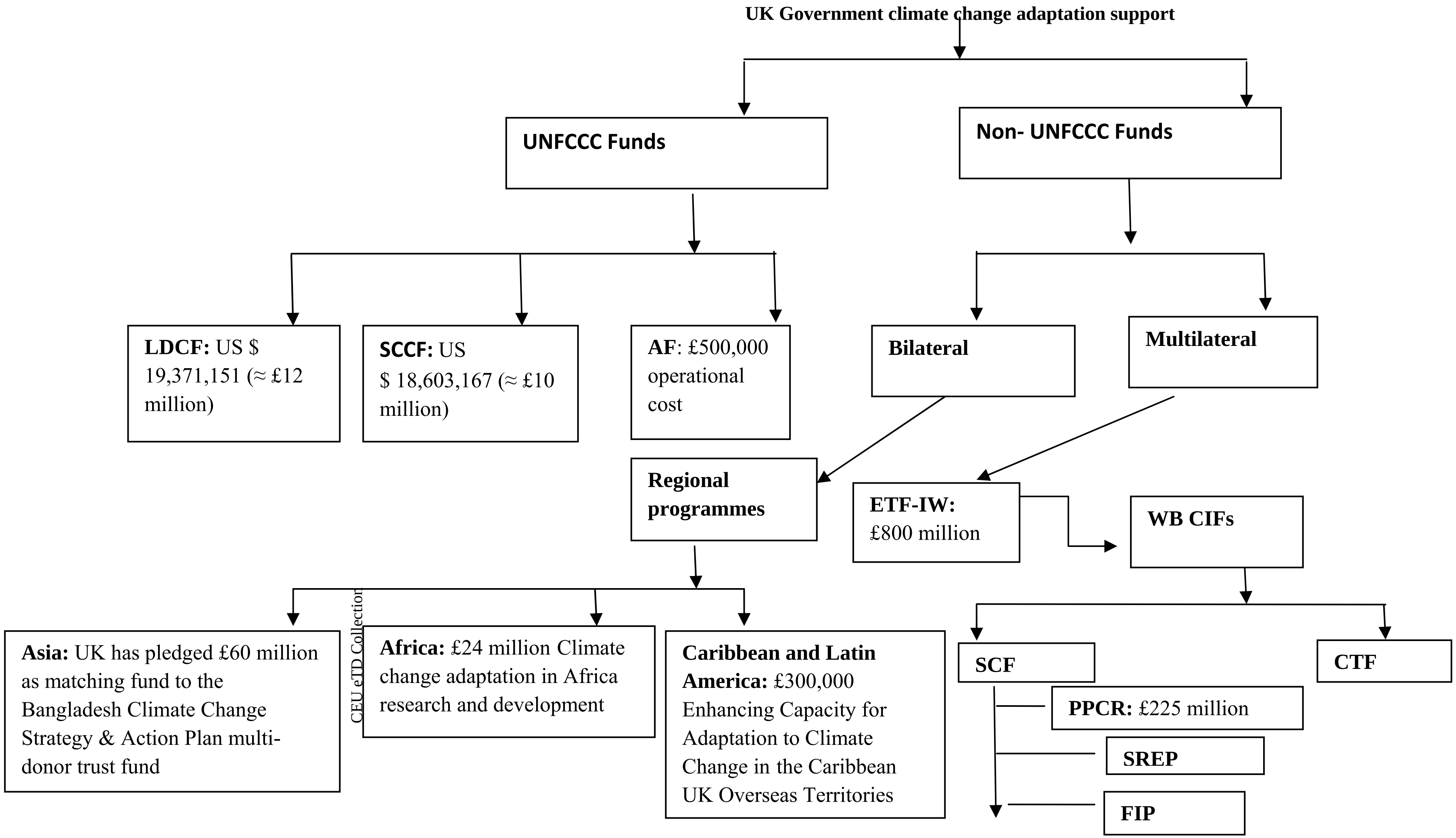
DFID is supporting countries to develop all the capacities identified above through the Pilot Programme for Climate Resilience.

3.1.3 Schematic diagram of DFID funding routes for adaptation

The figure 2 below is a diagrammatic representation of the UK government funded adaptation support in developing countries. The UK support has been categorised into the funds within the UNFCCC and bilateral and multilateral funds[6] outside the UNFCCC.

[6] Bilateral flows are provided directly by a donor country to an aid recipient country. Multilateral flows are channelled via an international organisation active in development (e.g. World Bank, UNDP). Source: http://www.oecd.org/glossary/0,3414,en_2649_33721_1965693_1_1_1_1,00.html#1965442

Figure 2 UK government's climate change adaptation funding routes



1. Multilateral Funds

The Climate Investment Funds (CIFs)

An announcement of £800 million by the Chancellor in the 2007 as a joint budget of the DEFRA and DECC (then to DEFRA) to focus on poverty reduction and environmental protection, and help developing countries to tackle climate change is a major announcement from the British government as a response to the growing recognition of climate change and development linkages The ETF was announced as a joint DEFRA/DFID budget. The total budget of the ETF is £1.2 billion over the three year period, of which £800 million is an international element of the fund. Out of which, £50 million has been earmarked to help safeguard the forests of the Congo basin. The remaining £400 million is the UK element of the ETF to build new low carbon energy and energy efficiency technologies in the UK, which is jointly administered by DEFRA and BERR (DEFRA, 2009a).

After the announcement of the ETF, the DFID, DEFRA and other Whitehall departments had consultations on how to use this £800 million[7]. As a result it was decided to spend the ETF money to stimulate a bigger global effort to help tackle climate change and poverty through a multilateral initiative called the Climate Investments Funds (CIFs) administered by the World Bank (WB). The CIFs was created on 17 November 2008, with Australia, Canada, Germany, Japan, Netherlands, Norway, Switzerland, UK, France, Sweden and the United States pledging a total of US $ 6.3 billion until 26 September 2008 (climatefundsupdate.org, 2009a). The CIF has two trust funds; Clean Technology Fund (CTF) to help developing countries grow in cleaner, more efficient ways, for example by using new and innovative technologies that cut down on carbon emissions, and the Strategic Climate Fund (SCF).

Pilot Programme for Climate Resilience (PPCR) is a programme under the multi-donor Climate Investment Funds (CIF), managed by the World Bank and Regional Development Banks. It will support 10 developing countries as pilots to integrate climate risk and resilience into their core development planning, and then provide substantial programmatic resources to public and private sector investments identified through the planning process. Until 30th January 2009, the World Bank announced that the following countries have been invited to participate in the PPCR: Bangladesh; Bolivia; Cambodia; Mozambique;

[7] Biot, Y (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

Nepal; Niger; Tajikistan; and Zambia. According to the World Bank's Organizational Meeting of the SCF Sub-Committee for the Pilot Program for Climate Resilience held on October 16, 2008, the selection of these countries are supposed to be based on vulnerability to climate change, preparedness to move to strategic approach and distribution across regions and hazards. An expert group nominated by the Adaptation Fund Board was established to provide advice on country selection. There will also be regional pilots in the Caribbean, Pacific, and a further country pilot in the Middle East and North Africa. The Pilot Programme on Climate Resilience (PPCR) under the SCF is said to be complementing the UNFCCC Adaptation Fund, by mainstreaming climate resilience building on National Adaptation Programs of Action (NAPAs). Out of the $6.3 billion, donors have pledged: Australia (26 million US $), Canada (67 million US $), Germany (65 million US $) and Japan (50 million US $) respectively (Climatefundsupdate.org, 2009a), and UK has allocated £225 million from the UK (DFID communication with Yvan Biot, and Judith Whitely). Other donors have declared their support to the PPCR specifically;

The Forest Investment Program (FIP) and the Program for Scaling-Up Renewable Energy in Low Income Countries (SREP) are also being designed within the SCF. These programmes will mobilize reducing deforestations and forest degradation and promote improved sustainable forest management, leading to emission reductions and the protection of carbon reservoirs, and economic social, and low carbon development pathways by increasing energy access through the use of renewable energy respectively.

Spending the ETF money in the World Bank's CIFs is criticised heavily by the civil society and NGO groups, interviewed for this project, for being concessional loans rather than grants and for the involvement of World Bank (WB), due to its past record of climate unfriendly environmental performance, which is also infamous for its conditionality. This will be discussed further in Chapter five as critique to UK approach. However, the UK government justifies its pledging of the ETF money into the SCF as the pushing for urgent actions to cut global emissions and to help developing countries prepare for the impacts and build low-carbon economies. It also wants the SCF to help bridge funding gap until a new global deal is achieved for post 2012, and to pilot new programmes giving developing countries real 'on the ground' experience of translating climate adaptation ideas into practice.

2. **Regional examples of DFID's adaptation support**

Besides this multilateral initiative to join global fight against climate change, the British Government has invested its resources through other unilateral and bilateral initiatives. An example is DFID's spending on climate integration into development which is focussed in regions like Africa, Asia, and Latin America. Climate research has been one of the important components of the UK support. Each of these will be discussed in turn

a. Africa

The UK understands that vulnerability of Africa's development (agriculture, health and infrastructure etc) to unpredictable climatic changes is threatening efforts to reduce poverty. DFID with an overall objective of eliminating poverty has chosen Africa to address continent's profound development needs, and tackling climate change.

- DFID is assessing the potential impacts of climate change on key sectors of the economy (e.g. agriculture, water and health) in Kenya, Rwanda and Burundi; it is also reviewing cost options for adaptation and mitigation, making policy recommendations and increasing government, private sector and civil society awareness of economic dimensions of climate change.

- DFID supports the Climate Change Adaptation in Africa Research Programme, which supports African organisations investigating how to help rural and urban communities to adapt, such as coping with more extreme weather in agriculture and shifting patterns of disease such as malaria.

- DFID has also funded insurance for Malawi to purchase and distribute international grain in the event of significant drought. DFID has also helped upgrade Malawi Met Office weather stations to provide weather data that can be used by local farmers.

b. Caribbean and Latin America

The Caribbean UK Overseas Territories are priorities of DFID as these areas are also vulnerable to the adverse effects of climate change including climate variability and severe weather events, such as tropical storms, melting of glaciers in the Andes, and rising temperatures in the Amazon, and sea level rise. DFID therefore seeks to increase the capacity of poor people, communities and governments in Latin America to reduce disaster risk and vulnerability to climate change and adapt to the impacts of climate change. It has also budgeted £5 million per year for new research on climate change and ecosystems in Latin America[8]. A three year program on **Enhancing Capacity for Adaptation to Climate Change in the Caribbean UK Overseas Territories** was started in 1 May 2007. Total cost borne by the DFID is £300,000, covers the regions of Caribbean, Latin America and the Caribbean Countries: Anguilla, British Virgin Islands, Cayman Islands, Montserrat, Turks and Caicos Islands. This project seeks to facilitate the participation of the UK Overseas Territories in the Caribbean in the ongoing regional adaptation activities largely funded by the GEF and managed by the Caribbean Community Climate Change Centre (CCCCC), and integration of the outputs of these into national development planning processes. It is expected that by the end of the project all participating territories will have developed national climate change adaptation strategies and initiated the implementation of these. The project provides necessary financial resources to the CCCCC to enable it to facilitate the process.

- DFID is supporting an economic review of climate change impacts in the Latin American region using the 'Stern' approach. Covering 24 countries, this study will enhance the evidence base for policy.

- DFID Caribbean is supporting the Caribbean Comprehensive Disaster Management Framework to improve resilience in the region to climate impacts by converging adaptation with existing disaster risk reduction efforts as the first line of defence.

- DFID Caribbean is also providing practical 'bottom up' assistance to produce tourism climate risk profile maps for two important tourist destinations: Eleuthera (Bahamas) and Ocho Rios (Jamaica), along with action plans, strategies and protocols.

c. Asia

In South Asia DFID is working with the WB and AusAid to develop the South Asia Water Initiative (SAWI) to improve the management of water resources in the Indus, Ganges and Brahmaputra river basins. Through better managing shared rivers, the initiative seeks to

[8] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

reduce the vulnerability of poor people today and enable adaptation to climate change tomorrow.

UK-Nepal

- The £19 million *Livelihood and Forestry Programme* in Nepal (DFID Nepal Programme) has reduced the vulnerability of three million people, lifted 50,000 families out of poverty and captured three million tonnes of CO_2 each year.[9]

- DFID Nepal country office is supporting development of climate scenarios and impact and adaptation assessment in synergy with the Asian Development Bank (ADB) technical assistance (TA) programme. The first phase (January-May, 2009) of the 'Regional climate scenarios and community climate impacts assessment in Nepal study' aims to synthesise existing climate modelling data and scenarios at a regional level in order to ascertain consistency among available data. Community adaptation and climate impacts gap analysis will support the scenario modelling process through identification of key knowledge, methodological and capacity gaps on climate data, impacts assessments and adaptation within ecological zones. Results from the initial phase of the study will provide input to National Adaptation Plan of Action (NAPA) summary reports, Nepal's second national communication to the UNFCCC, and Pilot Climate Change Resilience Programme (PCCR)[10].

UK-India

- DFID's *rural livelihoods programmes* in Madhya Pradesh (£45 million), Orissa (£43 million) and West Bengal (£36 million) helps communities strengthen their resilience to drought. In Orissa, the programme has supported almost 800,000 tonnes of carbon dioxide to be captured through activities that have also raised US$1 million in income for poor households[11].

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[9] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication.

[10] Shakya, C. (17th April, 2009). Senior Regional Environment and Water Adviser, South Asia Policy Team, DFID-Nepal Office. Interview

[11] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

UK-China strategic partnership

The UK is working in partnership with the Chinese government to help China to shift to a low carbon economy , and to help China adapt to the impacts of climate change. The British government is supporting China to develop a national adaptation strategy. DFID and DEFRA had funded and given technical support to a major project from 2005-2008 on the impacts of climate change on Chinese agriculture, both nationally and in Ningxia. DFID is supporting the development of a methodology to assess the long-term viability of domestic infrastructure investments (such as roads) which will be impacted by climate change.

UK-Bangladesh

The UK government realises that climate change is a major development challenge in Bangladesh. Climate change in Bangladesh threatens livelihoods of Bangladeshi people, mainly due to the risks of flooding in the Asian mega-delta like Bangladesh. The UK's development programme currently has therefore identified climate change as one of the focus areas, through reducing extreme poverty hunger, climate change adaptation and disaster management.

- The UK government has pledged £75 million in grants over the next five years to the **Bangladesh Climate Change Strategy and Action Plan (BCCSAP, 2009-2018)** at the United Kingdom–Bangladesh Climate Change Conference held in London on 10 September 2008, to prepare for the impacts of climate change. BCCSAP is a 10-year program to build capacity and resilience within the country to meet climate change challenges over the next 20–25 years, with six thematic areas: (i) food security, social protection, and health; (ii) comprehensive disaster management; (iii) infrastructural development; (iv) research and knowledge management; (v) mitigation and low-carbon development; and (vi) capacity building and institutional strengthening. To focus mainly on adaptation measures, the Government also established the National Climate Change Fund and allocated about US $45 million to it in the FY2009 budget. In addition, the Multi-Donor Trust Fund was established to pool funds from donors to implement a long-term strategy to mitigate adverse impacts of climate change in Bangladesh (ADB, 2009). However, an estimated $500 million is needed over the next 1–2 years to support immediate action initiatives, such as those to strengthen disaster management capacity, research, and knowledge management; launch public awareness programs; and fortify coastal embankments and cyclone shelters. The total cost of these initiatives for the subsequent 5 years is then estimated to rise to about $5 billion).The UK government provided £60 million as a matching fund to the multi-donor climate trust fund, will provide another £12 million for different projects funded by UK agencies and £3 million for research. The UK is one of the biggest contributors to the multi-donor trust fund, with other European countries such as Denmark and the Netherlands, as well as the World Bank, expected to contribute to the new Bangladesh fund[12]. It is however unclear that whether this fund is over and beyond the overseas development assistance already pledged to Bangladesh or a part of it. Also, according to those interviewed for this research project, the multi donor trust fund is opposed by the Bangladeshi civil society for the involvement of World Bank in its management,

- By the end of 2009, the £50 million *Chars* (riverine and coastal areas of Bangladesh) Livelihoods Programme will have reduced the vulnerability of half a million poor people to climatic and economic shocks. Through raising homesteads and providing assets to 50,000 women headed households, families are protected against floods and their incomes and assets double in value[13].

UK-Indonesia

A Memorandum of Understanding between the UK and Indonesia was signed on 11 December 2008 at the United Nations Climate Change Conference in Poznan, Poland for improving forest conservation, develop renewable energy supplies, promote energy efficiency measures and work with communities to establish how they can adapt to the impacts of climate change.

3.1.4 UK Support in the UNFCCC

Besides the British government's own development-climate integration interventions, it has also supported the following fund arrangements under the UNFCCC:

[12] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

[13] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID). Email communication

- **The UNFCCC Special Climate Change Fund (SCCF):** The Special Climate Change Fund (SCCF) supports the implementation of long-term adaptation measures that increase the resilience of national development sectors to the impacts of climate change. It was proposed at the seventh session of the Conference of the Parties to the UN Framework Convention on Climate Change held in Marrakesh in 2001 (COP-7). The GEF administers the SCCF. As of October 2, 2008, 13 contributing participants have pledged US$ eq. 106.57 million contributions to the SCCF. And, the UK alone has already pledged and paid US $ 18,603,167 to the fund.
- **The Least Developed Countries Fund (LDCF):** managed by the GEF LDCF aims to address the special need of the LDCs in preparing National Adaptation Programmes of Action (NAPAs). The LDCF was also proposed at the Cop-7. As of October 2, 2008, 19 contributing participants have pledged a total amount of US$ eq. 172.44 million. In addition, on 25th February 2009, the US announced a donation of US$ 10 million to the LDCF, totalling 182.44 million. The UK contribution to this fund is equivalent US $ 19,371,151.
- **The UNFCCC Adaptation Fund:** As of February 25, 2009, the governments of Australia, Denmark, Finland, France, Japan, Norway, Sweden, Switzerland and the U.K. and UNEP have made contributions for the administrative expenses for operating the Fund and paid in donations of US $3.548 million, while a loan of US $ 700,000 has been received from the Least Developing Country Fund to cover costs of the operation of the Adaptation Fund before pledged amounts from donors have been credited. The UK government has provided a loan of £500,000 to the administrative trust fund for the Board and Secretariat of the Adaptation Fund; however, these contributions must be repaid to the donor or transferred to a different fund once CERs have been monetized (Source: Adapted from claimtefundsudate.org, 2009a).

3.2 Summary

The UK contribution to climatic activities in developing countries have been categorised as UNFCCC climate specific fund pledges, multilateral climate funds such as World Bank administered Climate Investment Funds (CIFs), and many other bilateral regional programmes in Asia, Africa and Latin America. Similarly, international development programmes administered through DFID country offices are following climate friendly pathways by focussing on strengthening adaptive capacity of societies and reducing the vulnerability of the poor. The UK support ranges from research, capacity building, specific activities/interventions, to mitigation strategies, however, adaptation to climate change is a cross-cutting theme and hence interwoven in all work-streams of the UK's international development support.

4. Chapter Four: What Motivates the UK Government to Support Climate Adaptation in Developing Countries?

The previous chapter outlined various interventions made by the UK government to support developing countries with climate change adaptation. Chapter four builds upon that and identifies key drivers which prompted the UK government support for those adaptation interventions. Driving forces here are the various actors and factors that motivated emergence of various climate change adaptation funding and activities by the UK government in developing countries. There is also a gap in existing literature about such drivers; therefore the study explored the driving forces that have made the UK announce more and more support on adaptation activities in recent times. The drivers were explored through semi-structured qualitative interviews with key stakeholders; the government, non-government sectors, academia, policy research and think tank institutions. It is hence to be noted that the drivers outlined in this section are the perspectives from these major stakeholders. Interviewees identify a number of drivers, most of which are consensus views, which are discussed in the section below.

4.1 Key drivers

This section outlines the different actors, factors and circumstances that helped bring the issue of adaptation as a priority of the UK government, both in the delivery of its international development objectives in developing countries and a global response to tackling climate change. It begins with the identification of driving forces that led to issues on adaptation to emerge with importance in climate change as well as development sectors. There are five basic driving forces identified in the text; ***Political drivers, Policy drivers, Institutional drivers, Drivers for key actors and Front runner driver.*** There are few other ***Additional drivers*** that the DFID justifies the UK government's interventions.

- **Political driver**

Climate change is high on political agenda both in developed and developing countries. Developing countries especially LDCs and SIDS are backing the issue of climate change as international political agenda for their highest vulnerabilities to impacts of climate change. They want to be vocal in global political venues like UNFCCC negotiations to raise adaptation support from developed countries whose emissions are responsible for the impacts of climate change they are facing. Similarly, increased political understanding of climate change has risen in developed countries as they realise impacts of climate change are enormous and that to tackle global climate change requires a global political commitment, and supporting vulnerable developing countries is a part of the commitment. Even domestically, the developed countries are now seeing a direct links between climate change and voting preferences (Porter *et al.* 2008). In the United Kingdom, the Local Government Association (LGA) recently found that 62 percent of respondents in a survey were more likely to vote for a candidate with policies to tackle climate change (LGA, 2008, in porter *et al.* 2008). Issues of climate change have started to be inclusive in mandates of major political parties, so are being covered in media in the United States and the United Kingdom as well as in other European countries (Boykoff, 2007).

Political drivers are absolutely important to not only to raise the importance of the issue but also to translate any talks into reality. The interviewees share that in context of the UK, the Labour government seems to have acknowledged severity of climate change issues and committed itself to tackling climate change. However, they also believed that it was not only because of the Labour government but it was the need for an urgent actions against climate change, which required the Labour party in the government to make some influential climate change related decisions. At the G8 meeting at Gleneagles under the presidency of UK, then Prime Minister Tony Blair raised issues of climate change for the first time in an international political podium other than UNFCCC. The Gleneagles G8 focussed on Climate change and Africa issues. Africa and debt relief stole the show; nevertheless it was an attempt to bring the issue of climate change into G8, it is now followed in other political venues like the G20 summits and others, and interviewees think the UK has to be credited for its attempt.

Dr. Yvan Biot says, "*the Stern Report on economics of climate change largely spurred the political momentum to declare climate change as one of the priority issues*."[14] One of the strongest messages from the Stern report is about the urgency to take up adaptation activities, especially in developing countries that will be hit hardest and soonest by climate change (Stern, 2007). Other interviewees also agree that the commissioning of the Stern review by the Her Majesty Treasury and an announcement of £800 million ETF-IW immediately after the Stern report by then Chancellor Gordon Brown himself to be associated as political drivers for the climate change as priority issue for the British government. Because ETF-IW was announced as loans and not as grants, and the budget was announced without prior consultation and decisions on how and where to send that money, ETF is highly criticised, which will be discussed in detail in chapter 5; it is

[14] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

however, a big political commitment, agreed the respondents. Climate change is a great political podium for any political parties to 'green' their image and gain popularity among national and international public, media, and civil society. Thomas Tanner defines it as a *political sexiness* of the climate change topic[15]. Other respondents hinted the relation between politics, power and climate change through the recent political change in the United States, and how the victory of Barack Obama as American President has all eyes on the US to bring a positive shift in the post-2012 global climate change deal.

- **Policy driver**

Policy drivers are one of the strongest mechanisms to advance any goal. Establishment of the UNFCCC and subsequent Kyoto protocol and their policies are an important global driver to lead rich and developed nations to fulfil their obligation to support developing countries to cope with the impacts of changing climate. The UNFCCC is an internationally accepted agreement in combating climate change through twin weapons of mitigation and adaptation. The UK like any other annex 1 country is and has to be driven by the UNFCCC obligations in taking initiatives to support adaptation in developing countries. "*It is a call from the UNFCCC,*" respondents voice their opinion. UNFCCC has specific funds allocated for adaptation activities such as LDCF, SCCF and the AF, of which the UK is one of the early donors to put money into. Besides these international policy drivers, the UK has its domestic policy drivers that support climate change adaptation and mitigation both at domestic and international scales, for example, the Climate Change Act 2008, energy white papers and development white papers addressing the importance of inclusion of adaptation strategies both within UK and at international scale. The importance of climate change is thus reflected as a national agenda for the UK. With the Climate Change Act, UK becomes the first nation to pass legislation for a long term legally binding framework to addressing both the causes and consequences of climate change through: setting ambitious targets, taking powers to help achieve them, strengthening the institutional framework, enhancing the UK's ability to adapt to the impact of climate change, says Yvan Biot[16].

One of the biggest policy drivers for supporting adaptation issues in developing countries is also because the UK and other Annex 1 countries understand the importance of

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[15] Tanner, T. (19th March 2009). Research Fellow and Programme Convenor MA Development Studies, Institute of Development Studies (IDS), University of Sussex. Interview

[16] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

adaptation issues if a good global post-Kyoto climate change deal is to be achieved. So to keep developing countries on board with a new global climate deal the rich countries are putting in monies and efforts towards supporting adaptation. Past failures of fulfilling financial and technological obligations from the developed countries to support adaptation in developing countries has increased distrust, however, it is still a big driver for the rich nations like UK to show its commitment.

- **Institutional driver**

Institutional arrangements are necessary to implement any policy decision. Sometimes, it works the other way too, where the established institutions drive new policy directions. *"Talking about international institutional drivers, we can not forget the role of IPCC to raise awareness of the climate change science, adaptation and mitigation strategies for combating climate change. IPCC as an institution has an undoubted credibility in its publications"* says Natasha Grist[17]. IPCC TAR is acknowledged for bringing the issues of adaptation to prominence and feeding the subsequent UNFCCC COP meetings and decisions on adaptation, other respondents joins the opinion. Similarly, in the specific case of UK, DFID gets the credit of being an institutional driver to bring adaptation into spotlight through its development activities and advising the UK government for taking climate change as priority issue. This is typified by the following statements from the interviewees;

> *"I think DFID has been relatively early in understanding about adaptation. I do not think this is because of the UK government sense of duty to do something on adaptation within the climate change arena. I think it's coming from within DFID's internal understanding of the issue"* (Rachel Berger, Practical Action).[18]

> *"In the UK's case, the lead on climate change has been through what used to be DEFRA now DECC, but even from the early days of the UNFCCC negotiations, DFID has been represented in the UK negotiating team. So, the UK government and the DFID in particular has quite relatively been proactive compared to many other development agencies on this issue"* (Saleemul Huq, IIED)[19].

[17] Grist, N. (17th March, 2009). Research Fellow - Climate Change and Development- Climate Change, Environment and Forests Programme. Overseas Development Institute. Interview

[18] Berger, R. (16th March, 2009). Climate Change Policy Advisor, Practical Action- Policy and Programmes. Practical Action. Interview

[19] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

"The DECC is responsible for preparing the proposal for COP-15 in Copenhagen, but DFID also shares close working relationship with the DECC giving inputs to the negotiation team" (Yvan Biot, DFID)[20].

DFID has evolved with years of experience in development field, and slowly and continuously picked up that climate and development are linked closely, therefore, DFID though is a development agency has to incorporate climate issues if the development objectives are to be delivered effectively in the context of changing climate. Because of DFID's internal awareness and initiatives, adaptation was in their agenda fairly early. *"DFID as an institution has grown from two people climate change team to now a 25 people team in London office, DFID country offices are also extending human resources in handling climate issues*" adds Yvan Biot. Richard Klein[21] supports this claim of DFID, "*4-5 years ago, DFID had one person working in climate adaptation, has been replaced now with 20 other people, enormously large group. Other donors are also considering scaling up its organisational resources on climate change issues, but it is nothing like the increase the DIFD has invested in*."

Respondents expressed their views that DFID has certainly been a successful institutional driver to bring forth the issues and actions on climate changes adaptation as the UK government's priority. Similarly, other UK government departments and institutions are also driving the issue of adaptation and mitigation. DEFRA, DECC, Office of Climate Change (OCC), HM Treasury, and even British embassies are strategically positioning issues of climate change as a foreign policy objective (Thomas Tanner, IDS)[22].

- **Drivers for key actors**

DFID has definitely played an important role in surfacing adaptation as government's priority work areas; however, this transformation has been accompanied by few other influential key actors, such as NGOs and media in particular. Respondents believe that UK has a strong NGO and science/knowledge base which drives the issue relatively more strongly than in other countries. An external push for adaptation in the UK government has come from lobby and advocacy from *NGO community*, pressure groups and media. NGOs like Action Aid, Christian aid, Tear fund, Oxfam, WWF etc were amongst the first ones to

[20] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

[21] Klein, R.J.T. (8th April 2009). Senior Research Fellow. Stockholm Environment Institute (SEI). Interview

[22] Tanner, T. (19th March 2009). Research Fellow and Programme Convenor MA Development Studies, Institute of Development Studies (IDS), University of Sussex. Interview

advocate for the mainstreaming of climate and development, says Saleemul Huq and Kit Vaughan[23]. These NGOs are not only giving inputs to the UK government but are also closely observing the modality and processes of delivery of such support from the UK government. NGOs had been the key actors in climate-development integration, as these were the first ones to experience the close link between their development works on the ground and hence advocating and supporting mainstreaming efforts. In the context of UK, British Overseas NGOs for Development (BOND), a membership body for non-governmental organisations (NGOs) working in international development, established in 1993 promotes, supports, represents and, on occasion, leads the work and interests of the UK international development sector. BOND now has over 340 member organisations, from large organisations with a world-wide presence to smaller, more specialist organisations working in specific regions or with specific groups of people. BOND facilitates campaigns and collective actions with its members to influence the UK government's policies and practices, even at Europe and international level. BOND also advocates on behalf of, and with, UK NGOs on the regulatory and funding environment in which BOND members operate. In doing so, BOND works in close association with DFID as it is the department that manages Britain's development aid and development policies (BOND, 2009). However, in terms of working with environmental aspects of development funding the Development and Environment Group (DEG) within the BOND engages itself in policy dialogue and advocacy with several other UK departments such as the Foreign and Commonwealth Office (FCO), Her Majesty's Treasury, the Department for Environment, Food and Rural Affairs (DEFRA) and the newly established Department of Energy and Climate Change (DECC). In regard to climate specific development expenditures, DEG-BOND works in two specific sub-groups; one with Climate Change Negotiations, advocating for fair deal in the UNFCCC negotiations, another closely views climate financing aspects for the fund pledged by the UK government both in and outside the UNFCCC mechanisms. DEG-co-chair Maria Arce says, voice of NGOs was not easy to penetrate the government decisions in earlier days, the acceptance of NGOs voice has been smoothening with time[24]. These days NGO views/perspectives are asked by the government departments. There is more openness between government departments and NGOs. Respondents from NGOs agree that in many instances NGOs have been able to

[23] Huq, S (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview, and Vaughan, K. (17th March, 2009). Climate Change Adaptation Adviser. WWF-UK. Interview

[24] Arce, M. (16th March, 2009). Policy advisor and co-chair DEG/BOND. Interview

change some of the government decisions too, but due to other administrative issues, hands of government institutions are tied. For example, the fact that ETF was announced as loans from the Treasury there was very little that DFID could do about it. So, the ETF money went to the CIFs as concessional loans but some significant changes were made possible in the CIFs, renaming the fund, and its structure and functioning. However, Richard Ewbank[25] shares a different impression here, *"my impression from our discussions with DFID has been that they have not been particularly willing to actively seek a change. I think this is mainly due to their reluctance to tackle Prime Minister Gordon Brown and International Development Secretary Douglas Alexander (the most enthusiastic cheer-leaders for the Bank) with any real vigour."* But he also feels that NGO effort had some impact in promoting equal developing country participation in the governance of CIFs, ensuring that CIFs are (at least described as) bridging funds from now to post 2012-UNFCCC arrangements, do not undermine adaptation processes within the UNFCCC and share experiences and lesson learning from piloting CIFs to the UNFCCC Adaptation fund.NGOs are also facilitating voices of civil society from developing countries to their own government but also the voices of developing countries in international forums. It is also because of the NGOs and pressure groups that have helped developing countries to bring their issues into the international climate forums, through different groups such as G77, SIDS, LDCs etc.

Besides NGOs, role of different *media* are also commendable in raising the issues on climate change and following up with the UK government's activities regarding the same to a wider audience. Media therefore helped to seek support from public for the UK government to take a lead in international action to instigate mitigation and assisting developing countries to adapt (Doulton and Brown, 2007). The Tyndall study on *Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press* in 2007 has analysed how the coverage of issues in newspapers like the Guardian, the independent, the Times, and the Telegraphs and many more has shifted through time in delivering different climatic news from different discourses and hence shaped public sentiments. Previous discourses proposed climate change as a low development priority, to now with a perception of how developing countries are facing climatic catastrophe and require support from the Western world to adapt. Such shift in media discourse has implications for public understanding of, and government responses

[25] Ewbank, R. (6th April, 2009). Climate Change Programme Coordinator, Christian Aid. Interview

to, climate change and international development. However, the role of media is not completely free from criticism. Media are criticised for failing to convey scientific uncertainty regarding climate change accurately, and raising sensationalism (Ladle *et al.* 2005; Weingart *et al.*2000; Smith, 2005). Nevertheless, media plays a critical role in influencing public opinion, thus it can not be ruled out from being a key actor in driving the whole issues of climate-development nexus and shaping the role of rich and developed countries to support developing countries with climate adaptation and mitigation.

- **Front runner driver**

Proactive initiatives taken by the UK government towards adaptation support stems from an understanding that climate change is threatening development goals; hence working on climate adaptation is essential to deliver development and poverty alleviation objectives in developing countries in a climate friendly manner. It is also the wish of the UK to be become a climate forerunner that has motivated the UK government to pledge funds, according to respondents. UK also shares a long standing history of development and is one of the biggest OECD donors which hints at the wish of the UK government to become a pioneer in the climate change field too. UK had pledged funds beyond Kyoto commitments and is one of the few early countries to do so. It was again in the presidency of the UK that it brought the climate change agenda to the G8 meetings in Gleneagles, opening international political avenues for discussing climate change beyond UNFCCC. Similarly, UK's involvement in multilateral climate forums like CIFs, and other unilateral flagship activities in developing countries such as being the first one to put matching fund of £60 million in Bangladesh climate strategy funds and investing on climate change researches in Africa support UK's desire to be a leader in global climate change activities. Similarly, the British desire to support post-colonial development seems to have chosen climate change activities in Africa, India, Bangladesh and other commonwealth countries, though the choice of these countries is supported by the prominent evidences of climate vulnerability in these regions[26].

- **Additional Drivers**

Links between development and adaptation: A strong linkage between climate change and development as evidenced from multi donors report "Poverty and Climate Change: reducing the vulnerability of the poor through adaptation" and subsequent scientific

[26] Klein, R.J.T. (8th April 2009). Senior Research Fellow. Stockholm Environment Institute (SEI). Interview

(improved knowledge on climate science, its causes and impacts) and development scholarly publications on the links between climate change and MDGs, and sustainable development has played a major role in shaping the global climate change agenda. It is therefore one of the important drivers not only for the UK but all the donors to include adaptation activities as a cross-cutting theme into their development portfolio. Yvan Biot also shares the similar view, "*we don't see adaptation as something different from development, as a development agency we are rigorously addressing climate adaptation issues. Therefore a close linkage between development and adaptation is driving us to mainstreaming adaptation in our development programmes"*[27].

Desire to achieve more immediate impacts: *"The UK government is committed to urgent action on addressing impacts of climate change. UK has therefore announced these supports to pilot adaptation activities on the ground and gain practical experience and learn lessons for future, in anticipation of the UNFCCC funds becoming operational*", says Yvan Biot[28].

Preference for programmatic approach over project-based funding modalities*: "DFID is keen to pilot a programmatic approach through the integration of adaptation into national development planning and processes, an approach which is not yet adopted by the UNFCCC funds. Therefore UK is motivated to fund programmatic approach to adaptation than project based adaptation activities through bilateral or multilateral financing options"*, views Yvan Biot[29].

[27] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

[28] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

[29] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

5. Chapter Five: Critical Review of UK Actions on Climate Change Adaptation Support

This chapter presents a critical review of UK approaches to delivering climate adaptation support in developing countries. This material is based on discussions with key stakeholders whose perspectives can be clustered according to the type of organisation. DFID endorses the UK government's rationale behind each of its approaches; the NGO community is critical of the UK Government approach; and a mixture of criticism and constructive feedback came from policy research and think tank institutions. The review focuses on four areas. The first area discussed is the UK government's flagship fund pledge through the Environmental Transformation Fund (ETF), and the World Bank administered Climate Investment Funds (CIFs) where the ETF money has been channelled. Both the ETF and CIF are heavily criticised for the nature, delivery and governance of the fund. Adaptation support within UNFCCC or within development budget (ODA) is a second bigger component of the critique, with concerns raised on collection, disbursement and delivery, and governance. Relationship between UK's bilateral and multilateral funds and the UNFCCC process is discussed as third component of concerns. Finally, the role of UK in coordinating with other multi-donors for multilateral financing mechanisms has been explored. In midst of all these criticisms the UK government gained credit for being relatively proactive in addressing issues on adaptation, testing and piloting programmes on the ground, and as an opportunity to internalise learning from these interventions for future.

5.1 What are the concerns over the Environment Transformation Fund (ETF) and Climate Investment Funds (CIFs)?

An £800 million ETF is the flagship announcement of the British government support to developing countries, and the CIF is where the money is channelled, respondents have hence built criticism around these interventions.

Scale of fund

The first criticism is that scale of funds pledged for the ***Pilot Programme for Climate Resilience (PPCR)*** demonstrates that developed countries are biased towards funding mitigation rather than adaptation. Out of a total CIF budget of \$6.3 billion, donors have pledged about \$204 million to the PPCR: Australia (26 million US\$), Canada (67 million US\$), Germany (65 million US\$) and Japan (50 million US\$) respectively (cliamtefundsupdate.org, 2009a), and the UK has allocated £225 million out of the £800 million ETF-IW[30].The PPCR is a programme under the Strategic Climate Fund (SCF) supporting 10 developing countries as pilots to integrate climate risk and resilience into their core development planning. By contrast, the financial for the Clean Technology Fund (CTF), another trust fund under the CIF, which is more focussed on innovation and transfer of technologies supporting mitigation strategies, is pledged with US $4.15 billion of the 6.3 billion CIF. These pledges have been made by Australia, France, Germany, Japan, Norway, Spain, Sweden, and the United States (as of January 23, 2009)[31]. This was viewed by the NGO communities as demonstrating existing biases that developed countries have for mitigation when compared to adaptation. Since the CTF brings business opportunities for donor countries to promote their mitigation technologies, most of the donors are interested in CTF rather than the SCF/PPCR. Adaptation funds are already inadequate, estimates for adaptation are in order of magnitude of billions per annum, while both the ODA funded and the UNFCCC available funds are in millions of magnitude. In such deficit, developed countries unwillingness to pledge more money in adaptation funds opens a debate of preference of mitigation over adaptation actions by the developed countries.

Nature of fund: Loan not grants!

A criticism to emerge both from interviews and the existing literature is the issue of ETF money being loan and not grants. This was explained by respondents as a question of principle, the principle of compensation under the UNFCCC which asks the annex-1 countries including UK to pay for damages caused to the climate by their emission. Respondents described the situation as something like offering the victim to repair the damage caused by the polluter with the loans. Respondents saw this as conditionality from the donor's end. Tom Sharman[32] calls it an issue of justice *"it's like asking the poor countries to spend larger proportion of their national wealth allocated for basic development to clear the mess created by rich countries. It is asking the poor countries to pay twice for the damages done to them and paying the loans back for clearing the mess.*

[30] Whiteley, J. (5th May 2009). Climate Change Adaptation- Policy and Research Division-UK Department for International Development (DFID), personal email communication

[31] Source: "Meeting of the SCF Trust Fund Committee, Washington, D.C., January 27, 2009. http://www.climatefundsupdate.org/listing/clean-technology-fund

[32] Sharman, T. (19th March, 2009). Climate Justice Coordinator, Action Aid International. Interview

And, this is inappropriate." Saleemul Huq[33] backs the same idea saying this is objectionable and unacceptable to the UN Convention framework to ask the victims to pay back for clearing the mess created by polluter countries.

However DFID has been justifying loans as new avenues for innovative ways of financing, loan as revolving funds is an opportunity to finance many recipients. Another explanation in favour of loan came from the perspective of ownership by recipient partners, making them responsible to effectively use the fund, and delivering aid effectiveness. *"One of the advantages of such concessional lending is that the responsibility of managing the fund remains with the recipient because its their money, they have to pay it back, and recipient countries will feel more responsible for the money, that's why we like lending,"* says Yvan Biot[34].The loan nature of the fund will likely influence the choice of potential recipient countries, as the United Kingdom has a number of bilateral agreements not to increase the debt burden of some its poorest partner countries (Porter *et al.*2008), but DFID defines the subsidised interest rate of the lending as almost equal to grant assistance. Nevertheless, NGOs still have negative response saying if the concessional lending meant practically no interest and purposes the same as grants, why there is resistance to announce the UK contribution to CIF as grants, and it is not just a matter of interest rate but a question of principle.

Governance of funds

Respondents raised issues about involvement of the World Bank and/or direct access of the fund as prominent governance issues of climate finance. The fact that the UK overlooked UNFCCC structures and gave money to the World Bank is one of the biggest criticisms from both NGOs and developing countries. NGOs criticised the ETF for being top-down donor driven governance. The ETF also met a strong negative response from developing countries which are in the UNFCCC negotiation process to negotiate with Annex 1 countries to put money into the UNFCCC mechanisms, says Saleemul Huq. The UK went arbitrarily on its own to give money to the World Bank, which was criticised by them on the basis that the WB is not a party to the UNFCCC and hence has no locus standi at all. This step was criticised for undermining the UNFCCC processes, explains Saleemul Huq.

[33] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

[34] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

Respondents from NGOs however give benefit of doubt to DFID saying that DFID's hands were tied by the Treasury to have announced the ETF as loan. The UNFCCC could not accept loan finance and hence the money had to go to an institution like the WB which could accept loans. With huge resistance, some cosmetic changes, (changing the name from CIF Pilot Adaptation Fund, which gave a competing sense to the UNFCCC Adaptation Fund) and some substantial changes (linking PPCR with the AF) were announced in the PPCR. Involvement of the WB has been scrutinized by the respondents because of its poor environmental track record. The World Bank has been infamous for financing 'coal' fuelled development projects rather than renewables. Donor conditionality and undemocratic governance structure of the Bank are some of the concerns that developing countries and NGO are unhappy about and hence doubting credibility of the WB to be involved in climate resilient development process. Richard Ewbank[35] recalls a recent incident of the US Congress withdrawal of the funding for the CTF on the ground that, as the CTF includes coal-fired power generation as an eligible category for investment, it cannot be a suitable vehicle for funding "clean" technology, which adds the inappropriateness of the World Bank as the implementing agency of the CIFs. The British government's favouritism to the WB was not limited to the ETF but it also pushed World Bank into the Bangladesh Climate Change Strategy and action plan multi-donor Trust Fund, which has raised eyebrows of the civil society in Bangladesh, says Maria Arce[36]. This could be a strategic preparation from donors like UK to position the WB as an inevitable part of the UNFCCC climate financing in future, she adds. Richard Ewbank[37] shares similar concern over the involvement of WB. He adds, *"it would be naïve to think that the WB will quietly retreat from being a major player of new climate financing architecture that might be established under the UNFCCC post-2012".*

Saleemul Huq[38] also feels that involvement of the WB in the CIFs, PPCR could be a preparation for the WB to get its hands into climate adaptation activities and presenting it as an essential part of future climate change (adaptation) finance architecture. He adds that the UK and other major donors are not ready for any new institution and of the existing institutions the WB is their favourite. Earlier, the GEF under the UNFCCC was supported

[35] Ewbank, R. (6th April, 2009). Climate Change Programme Coordinator, Christian Aid. Interview

[36] Arce, M. (16th March, 2009). Policy advisor and co-chair DEG/BOND. Interview

[37] Ewbank, R. (6th April, 2009). Climate Change Programme Coordinator, Christian Aid. Interview

[38] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

by developed countries but anticipating the scale of climate finances into the magnitude of billions, UK and other developed countries doubt the ability of the GEF to manage that amount of money, hence preparing the WB.

Another important governance issue is about fund disbursement. Developed countries doubt the capability of developing countries to handle direct access of funds, hence support fund disbursement through existing aid-channels, which is in opposition to the wish of developing countries to keep climate finance out of regular donor-recipient relationship, calling climate financing an obligation rather than voluntary aid. The aid-channel of UK's adaptation support is criticised by NGOs as the donor's wish to have a complete control over the fund. This control of fund is justified by the UK government as ways to increase effectiveness of the fund support. It fears that if the developing countries are given direct access to money, it may lead to ineffective use of money and a culture of 'do-nothing' by the recipient countries to avoid further climate change and only depend on the compensation money from rich countries. DFID fears recipient countries will not integrate climate adaptation activities into national development planning if they are given a direct access. Failures of developed countries to fulfil their development assistance as promised and much donor conditionality is also adding distrust between developed and developing countries. Mistrust from both sides has existed for decades now, and unless this distrust is worked out, new designs and hence the success of new climate financing is challenged.

5.2 Development budget (ODA) versus the Convention funds for adaptation

Connections between climate and development can no longer be ignored, and mainstreaming climate into development is the most preferred pathway for climate resilient development. Similarly, many adaptation activities can not withstand alone and there is a large degree of overlap between adaptation and development. *"Development agencies can not avoid the subject of reducing climate vulnerability otherwise they run a risk of maladapted development strategies,"* says Imme Scholz[39]. Be it because of adaptation-development co-benefits, or inadequacy of the UNFCCC funds for adaptation (under LDCF and SCCF, and even with the establishment of the AF, mere 2 percent levy on CDM is/will be far from adequate to meet adaptation needs), ODA remains as important funding

[39] Scholz, I. (17th March, 2009). Head of Department, Environmental Policy and Management of Natural Resources. German Development Institute, Bonn. Interview

source for adaptation action. Bilateral contributions for adaptation is estimated to have been in the order of USD 100 million per year between 2000 and 2003 (UNFCCC, 2007).

Respondents made their point that it is not the idea to negate linkage between development and adaptation, but shares reservation for rebranding ODA as climate financing obligation. The reservations are based over the issues of double counting, additonality of adaptation fund, and access and control over the finance.

Climate financing is not development financing

One of the major debates is about defining development and climate financing. Developing countries and NGOs express the view that climate financing is not a voluntary benevolence of the rich and developed countries but an obligation under the 'polluter pays for pollution' principle. Climate financing should therefore be ***above and over existing official development assistance*** **(ODA),** explains the respondents.

- *Climate financing should be over and above the exiting ODA*

The United Nations in 1990 has established a well-known rule in 1970 that all rich countries should provide at least 0.7% of their GNP in external aid[40]. This was also re-affirmed at the UN International Conference on Financing for Development held in Monterrey in 2002 – one element of the so-called 'Monterrey Consensus[41]'. The debate for additionality is therefore based on the 0.7 percent GNP target for ODA. Respondents argue that when that target was set, there was no mention of climate change, also in present context where none of the developed countries have fulfilled that 0.7 percent GNP target for ODA support, anything that comes for climate change adaptation activities should be above that ODA target. The G77 and China has proposed the UNFCCC Secretariat for this call for views regarding the work under the Bali Road Map, a need for channelling funding

[40] The General Assembly Resolution, affirmed by UN member states in 1970, was as follows: 'In recognition of the special importance of the role which can be fulfilled only by official development assistance, a major part of financial resource transfers to the developing countries should be provided in the form of official development assistance. Each economically advanced country will progressively increase its official development assistance to the developing countries and will exert its best efforts to reach a minimum net amount of 0.7% of its gross national product at market prices by the middle of the decade' (UN, 1970: 43). The precise figure of 0.7% was recommended by the Commission on International Development in its 1969 report Partners in Development: Report of the Commission on International Development. The Commission was set up by Robert S. McNamara, then President of the World Bank, to review the previous 20 years of development assistance, assess the results, and make recommendations for the future, and was chaired by former Canadian Prime Minister Lester B. Pearson. Copies of the report are available in the World Bank's Joint, Fiscal, and Translation and Interpretation Services Libraries, as well as the Sectoral and IT Resource Centre. (Source: Anderson and Waddington, 2006)

[41] 'We urge developed countries that have not done so to make concrete efforts toward the target of 0.7% of gross national product (GNP) as ODA to developing countries, and 0.15% to 0.20% of GNP of developed countries to least developed countries.' (Source: Anderson and Waddington, 2006).

in the order of 0.5% of the developed countries´ GDP to developing countries (source of funds are left open) in addition to existing ODA, amounting to US $185 billion per annum for both mitigation and adaptation. It is estimated to be US $46 billion (25%) of the fund to be allocated as upper limit for adaptation (Müller, 2008).

- *Issues of double counting of ODA*

Respondents and existing literature criticise rebranding of existing ODA to cause a problem of ***double counting***, where the money spent will be counted as both development and climate financing assistance. This is inconsistent with the Bali Action Plan 2007 which strictly states that the developed country parties should provide improved access to *adequate, predictable and sustainable* financial resources and provision of *new and additional* resources to developing countries. Saleemul Huq says, "w*ell, there are clear messages from a number of annex 1countries to make the claims that anything they give for climate change should also account as ODA whether or not they meet their 0.7 percent ODA target"*. He adds, *"there was a recent meeting where the development minister form Luxemburg very clearly acknowledged that they prefer double counting and that's what they wanted to do. So, every penny they give from now, they want to count both as ODA and as fulfilling obligations under climate change. This is clearly a position in general the developing countries will not accept. And, decision is remained to be seen in the UNFCCC negotiation*"[42].

There remains an unanswered question about who is the certifying authority? Saleemul Huq further adds, *"so far the only venue of where such certification can take place in under the UNFCCC. The developed countries have to make their claim in the UNFCCC, and developing parties need to agree upon that. If failed to get an agreement in the UNFCCC, developed countries can not arbitrarily decide how the ODA will be counted as climate financing. Unless an agreement is achieved, there is no credibility to such unilateral announcements. Whether an agreement will be achieved remains to be seen. However, developing countries clearly said that any funding for climate change has to be over and above the development assistance at the level of 0.7 percent. So if the country*

[42] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

hasn't reached the 0.7 percent GNP then it can't claim that climate change money is additional.[43]*."*

- *Diversion of basic development goals*

Similarly, spending regular development resources on climatic activities is unwelcomed for it diverts spending from basic development goals. But development agencies feel close linkage between adaptation and development derived co-benefits. For example diversifying agricultural practices in climate variable communities, supporting crop diversification, or transferring new skills to cope in climate extreme zones improves livelihood of poor and vulnerable communities. If this requires ODA to be rebalanced then the developed countries should want to count their ODA spending as fulfilling its climate financing responsibilities too.

- *Issues of direct access of the climate funds*

Developing countries wish to have ***direct access*** to funds rather than it to be controlled by the developed countries as donors. Since climate finance is not a donor's benevolence but an obligation for paying compensation as understood by the developing country parties to the UNFCCC, they oppose treatment of climate financing as equivalent to development financing. However, the developed countries on the other hand are reluctant to channel climate adaptation money only through the UNFCCC channel as they prefer existing aid-channels. This kind of resistance to allow direct access of funds to recipient countries are because of distrust about capability of the recipient countries to use money effectively, and also the development agencies are concerned if the money that is put into the UNFCCC basket will go to the poorest countries, as DFID as a poverty alleviation agency wants to make sure that money goes to poor and vulnerable. DFID adds, unless the UNFCCC processes integrate adaptation into country's national development planning, aid-channel is the best way to deliver climate financing. Thomas Tanner[44] also makes similar concern, "*unless the UNFCCC agreements on adaptation finance can openly prioritise the needs of the poorest and the most vulnerable people then they will find it very difficult for the*

[43] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

[44] Tanner, T. (19th March 2009). Research Fellow and Programme Convenor MA Development Studies, Institute of Development Studies (IDS), University of Sussex. Interview

development agencies like DFID to commit climate money through the UNFCCC system, if it knows that it can be spent by Saudi Arabia, Malaysia and other countries that have GDP per capita greater than many of the EU countries".

However, Saleemul Huq disagrees with it saying UNFCCC is not against the money invested to poor and vulnerable countries, per say the LDCF and SSCF are entitled to support adaptation activities in LDCs and SIDS. It is an easy excuse for the donors to bypass the UNFCCC channel. Though Clean Development Mechanism (CDM) in past has funded project-based stand alone adaptation activities the UNFCCC is not against the principle of mainstreaming adaptation into national development planning, joins the other respondents. They point out that climate finance is not a development aid but a compensatory finance from high-emissions countries to those most vulnerable to climate change impacts. Therefore, it is the right of sufferer and not a choice of donor to decide who will receive it. "*If it would have been development assistance which is under donor's control, they can do whatever they want. They can give money to X country and not to Y, everybody has preferred countries, they have preferred areas, and they have their blacklisted countries that they won't give money to. They can make all these decisions as it is their money. But under the framework convention they can't. There is an obligation they have to put the money in the pot, and there is a collective decision on who gets what and where it goes. They don't like it. If they are giving money they want to control it. So they will fight this, but nevertheless they have lost this battle in the Kyoto Protocol Adaptation Fund, they fought for giving it to the GEF, which they manage and control. There were several rounds of very heated negotiations and then eventually they lost that and we got a new democratically structured governance board under the framework convention*", acclaims Saleemul Huq[45]. One possible route for disbursement of funds would be for eligible countries which are parties to the UNFCCC to assign one of its national institution/ministry/department to come up with an adaptation strategy, the adaptation fund board decides on the eligibility of fund distribution and then its up to the country to decide where and through which national mechanism it wants to spend that money. Failure of development aid effectiveness in the past tells that there is no guarantee that donors can preach developing countries for how to do things. Rather a country government with participatory process with its stakeholders can decide country-driven adaptation strategies and make most of the adaptation fund, views most of the respondents.

[45] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

Whilst the mechanisms through which money is to be spent is an undisputed issue that needs to resolved through an international agreement in the UNFCCC, the real question however is about how to raise funds in the first place. It is therefore important to find ways to integrate ODA financing and new and innovative ways of financing to meet the huge fund deficit.

New Climate financing architecture

Actual dilemma is not whether adaptation should or can be kept strictly away from development activities but to what extent and under what condition the ODA measures will be politically accepted as contribution to adaptation action under the UNFCCC. A solution would to integrate such development assistance contribution for adaptation into convention financing obligation. Integration could be accepted if the support is above and beyond 0.7 percent GNP target of ODA support, there could be ways to measure and verify the percentage of ODA contribution to specific adaptation activities and count that percentage as climate finance, respondents from research institutions suggest. Most respondents opined the importance of ODA funded adaptation support and said that we can't be too rigid to say whether or not to use ODA monies for adaptation. Richard Ewbank[46] drew attention to the need for careful integration of development and climate fund. He referred to a study by Jessica M. Ayers and Saleemul Huq which talks difficulties in co-financing and distinguishing 'additional' costs of climate change impacts from baseline development needs. He quotes an example from the study, a project identified by the NAPA of Tuvalu for coastal infrastructure to protect the shoreline from erosion. The example reads, *"since coastal erosion is a problem to Tuvalu regardless of climate change (and so an existing development need), but one exacerbated by climate change (so also an additional cost). The NAPA project team, even with the help of a UNDP consultant to assist, had extreme difficulties calculating the 'adaptation' component of the infrastructure needs. Further, being a poor country, the 'baseline' infrastructure is not yet in place and funding is not available to pay for it. Thus, the offer to fund, as it were, the 'top section' of the infrastructure required to respond to 'additional' impacts of climate change, is absurd in light of the fact that co financing to pay for the lower section cannot be found. The project is currently in limbo while co financing is sought* (Ayers and Huq, 2008, p. 4).[47]

[46] Ewbank, R. (6th April, 2009). Climate Change Programme Coordinator, Christian Aid. Interview

[47] Ayers, A.M and Huq, S. (2008). Supporting Adaptation to Climate Change: What role for Official Development Assistance? Available at: http://www.eed.de/fix/files/doc/DSA%20conf%2008%20paper%20Ayers&Huq1.pdf

Respondents from policy research and think tanks offered ways to integrate development with climate adaptation not at the source of fund collection but at the delivery end. They call it a hybrid system, with two parallel sources of fund for adaptation; ODA funds and the new carbon market based financing, keeping both as separate as possible at the fund collection end, but funnelling money at the delivery end for development-adaptation activities on the ground. Richard Klein[48] adds, wherever possible, ODA funds could be dedicated to supporting effective adaptation, such as capacity building and institutional reforms etc, while the carbon market based funds should be spent on designing and delivering concrete adaptation strategies and actions.

There are questions and uncertainties about what and how much additional money is required for adaptation activities alone, and what would be the mechanisms for new climate finance operation. But there exists proposals for innovative ways of financing climate activities (discussed in chapter two) which are new and additional in the true sense and not a part of national budget of any country, but are the finances generated from carbon market based levies, taxes and auctioning emission units, and over which no particular country will have control. Respondents are hopeful that a new global deal can be achieved in Copenhagen this year or in subsequent Copenhagen plus(s) negotiations resolving the above mentioned dilemmas. They are however clear that the acceptance of ODA in the UNFCCC processes is dependent upon whether it is;

- new and additional: in particular, over and above ODA;
- predictable: in particular, not subject to the 'domestic revenue problem', hence not dependent on their tax collection or other national budget deficits, for example carbon market based funding;
- appropriate: in particular, neither (voluntary) grants, nor (reimbursable) loans;
- equitable: in particular, reflecting the principle of common but differentiated responsibility and respective capabilities
- adequate: in the magnitude of billions (Müller, 2008).

[48] Klein, R.J.T (8th April 2009). Senior Research Fellow. Stockholm Environment Institute (SEI). Interview

5.3 Are UK's bilateral supports undermining the UNFCCC process?

Respondents shared that they had concerns over accepting multilateral moves like CIFs, for the obvious reasons mentioned before; the WB involvement, loan nature, existing ODA money etc. "*Even the name CIF pilot Adaptation Fund gave an impression of competition to the UNFCCC Adaptation Fund*" says Maria Arce[49]. Richard Klein[50] adds, "*Initially I was lot more sceptical than I am now*." But they have made a lot of changes as a response to a call from NGOs. They have made some cosmetic and some substantial changes (changed the name to PPCR), a linkage was sorted between PPCR and AF, and PPCR was designed up to 2012, hence eliminating the fear of undermining the UNFCCC. However such proliferations of adaptation funds are still feared to divert attention and energy, creating confusion and overlaps, and not offering the UNFCCC mechanisms the opportunities to learn things by doing. But at the same time, respondents believe that complementarities could be sorted between both mechanisms and could benefit from information and experience exchange. "*No system is perfect. NAPAs are criticised for being a shopping list of adaptation projects that are not well integrated to other national development strategies like the Poverty Reduction Strategy papers (PRSPs), and yes that's valid. But there is something to build on. Hopefully PPCR will be building on NAPAs, it won't just be going back to square one and starting from the beginning,*" says Richard Ewbank[51]. Other respondents also share that UNFCCC may have weaknesses in terms of fund collection, management and disbursement, but suggest to work on those weaknesses to make them the strengths with new institutional set up or building the institutional capacity of the existing ones. However, development agencies seem to prefer existing aid channel for financing adaptation activities. "*We agree there is need for money for adaptation actions. But it won't be acceptable for us to put all monies through the UNFCCC channel only. We are looking for Norwegian and Mexican proposals too. We may probably end up with a combination of two; UNFCCC and outside the UNFCCC frameworks for channelling the adaptation money. However, we are very much focussed not to go against the principle of mainstreaming adaptation with development,*" says Yvan Biot[52]. It shows that the UK is looking for other avenues to deliver adaptation funds, existing aid-mechanism being the most preferred. The UK is also widening its options by

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[49] Arce, M. (16th March, 2009). Policy advisor and co-chair DEG/BOND. Interview

[50] Klein, R.J.T. (8th April 2009). Senior Research Fellow. Stockholm Environment Institute (SEI). Interview

[51] Ewbank, R. (6th April, 2009). Climate Change Programme Coordinator, Christian Aid. Interview

[52] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview

supporting the UNFCCC (AF operatioanlisation support, money in LDCF and SCCF etc) and investing through bilateral interventions too. "*At this time where no clear consensus is made whether to count ODA as UNFCCC obligation, UK is a sovereign country to invest its money even through bilateral or multilateral mechanisms but it can not pat its shoulders and self congratulate saying it is fulfilling the UNFCCC obligations while spending regular ODA money on adaptation activities, remaining outside the UNFCCC*", says Saleemul Huq[53]. What is needed is a convergence for ODA and convention financing for adaptation, and Copenhagen negotiation is mainly about this; raising funds, finding institutions to manage the fund, and modus operandi for fund disbursement, and respondents are hopeful to achieve a political consensus among the developed and developing country parties in the UNFCCC negotiation for this integration.

5.4 The UK in a coordinating role

UK is proactively leading multilateral climate change initiatives, such as CIFs. When respondents where asked how well the UK government is performing at coordinating with other donors to pledge funds into such multilateral initiatives, they were not sure if it was a role for the UK to play a coordinator, but most of them answered that the UK has been initiating coordination with other donors. UK is successful in bringing in more donors for the CIF, especially into the CTF. But there are cases like the Bangladesh climate change strategy and action plan multi-donor trust fund where the UK is the only country to pledge to fund until now, says respondents. Respondents suggest UK could work better in bringing coherence among climate adaptation programmes in a region as a part of aid harmonisation among various donor funded activities in a region or country. Natasha Grist[54] drew attention to the mid term review of the DFID climate change in Africa programme[55], which suggested the programme needed far stronger linking with other projects and networks in the region, and a longer term approach to capacity building. Similarly, DFID's new centre for climate change and development as a unilateral activity is welcomed by all respondents, however, is suggested

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[53] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

[54] Grist, N. (17th March, 2009). Research Fellow - Climate Change and Development- Climate Change, Environment and Forests Programme. Overseas Development Institute. Interview

[55] Watkinson, A., Khennas, S., Misselhorn, A. and Footitt, A., 2008. *Mid-Term Review of the DFID/IDRC Climate Change Adaptation in Africa (CCAA) Research and Capacity Development Programme*. Final Report. On behalf of IDRC Canada and DFID

to widen its horizon by eventually opening to a multilateral venue for others to participate. Within the EU, respondents believed that UK has certainly help to raise issues on adaptation but can do a lot to push some concrete actions from the EU considering its influential strategic position within the EU. However, they also believed that with the accession of new members to EU, consensus is not easy, there are internal disputes. New member countries with less familiarity with climate change and being less wealthy are less proactive as compared to the UK and other Nordic countries, so UK can not push anything much on its own. But it can definitely continue pursuing the EU for a leadership in the global climate change deal, according to respondents. Role of UK in raising issues of climate change in international political venues other than the UNFCCC, such as G8 is also appreciated by the respondents.

5.5 Summary

Overall it can be concluded from the interviews that despite above mentioned criticism on UK approaches, the UK is credited for being proactive in taking issues of adaptation at international scale. The ETF is also considered as a big political commitment from the UK government. UK's investment in creating a knowledge base on adaptation researches and piloting adaptation activities on the grounds through PPCR and other bilateral initiatives are certainly helpful to gather more learning on adaptation, as adaptation is a relatively new field. UK's development support has a long history, and it is trying to create a leadership in the field of climate adaptation too. In the context of a lack of resources for climate adaptation, and urgency of the issue such resources are welcomed. However, things could have been approached in better ways. Supporting the UNFCCC mechanisms with such funds would have created a good momentum to the whole UNFCCC negotiation and hence facilitated a fair global climate deal. A successful global post-2012 climate deal depends on delivery of climate adaptation funds based on the essence of Bali Action Plan where new funds are additional, sustainable, predictable and equitable. Unless developed countries are able to do so, it will be difficult to bring developing countries within the UNFCCC spirit to mitigate climate change, which requires new and emerging polluters to join the emission reduction targets and actions.

In sum, the UK's programmes are supported for its proactive lead in delivering climate resilient development in developing countries. But are also criticised for; using regular ODA money for adaptation activities (despite promises of new and additional fund), funds being donor-driven, money made available as loans instead of grants, and the possibility of competing and undermining the adaptation fund under the UNFCCC and the Kyoto Protocol. It however will be useful to closely observe the PPCR functioning, which will operationalise soon. If UK can internalise learning from these processes and replicate good practices in future and correct what has seemed to be inappropriate then the UK definitely takes credit for pioneering some real adaptation actions up and running. Also, fate of such ODA driven adaptation is heavily dependent on what the Copenhagen negotiation or further UNFCCC negotiations will decide, until then UK's support can be taken in a positive spirit to piloting adaptation support in developing countries.

6. Chapter Six: UK Government on the Road to Copenhagen

This chapter discusses adaptation regime within the post-Kyoto global climate deal. With the Kyoto Protocol's first phase of implementation coming to an end in 2012, 192 parties to the UNFCCC are meeting for the 15th Conference of Parties in Copenhagen from 7-18 December 2009 to agree upon a successor global climate agreement. The negotiation is hoping to find a consensus on the fundamental issues of; *emissions reduction targets*, also preparing the major developing countries (China, India and Brazil) to limit the growth of their own emissions, *financing clean technology and adaptation efforts* in developing countries through international cooperation, and *reforming governance structures* to make the UNFCCC more participative for developing countries. The fate of development budget funded adaptation activities (UK's current adaptation activities are ODA funded) is also expected to depend on what the new financing architecture will be agreed in Copenhagen. An initial plan for the thesis was to consult the UK Department of Energy and Climate Change (DECC) for a detailed discussion on the UK's preparation for Copenhagen negotiation, as it is the responsible UK government authority for leading UNFCCC negotiations. DFID also supports the process by providing advisory support to the team. But an appointment could not be scheduled, so instead this chapter presents a discussion of important considerations the UK government has to take for a successful negotiation in Copenhagen from the perspective of DFID, NGO, and research institution and policy think tank stakeholders who were interviewed. Specifically, respondents discuss UK's role in the EU proposal for Copenhagen, UK's domestic emission target and continuation of climate adaptation support in developing countries.

6.1 Adaptation policy directions for the UK

6.1.1 The EU proposal for Copenhagen negotiation

Tackling climate change calls for international commitment and co-operation. But who should pay how much for adaptation is an important question of climate financing. The UNFCCC addresses the need to protect the climate system 'on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly the developed country Parties should take the lead in combating climate change and the adverse effects thereof' (Oxfam, 2007).

Under the UNFCCC, rich countries within the EU too have an obligation to financing developing countries. EU countries do not have a unilateral position in the UNFCCC process, but the negotiation is made on behalf of the EU position. The EU with its high historic GHG emission has a responsibility to support countries affected by climate change. Even if only emissions since 1992 are taken into account, the EU 25 is responsible for almost 20% of global greenhouse gas emissions. If accounted for on a per capita basis, the EU25 average is almost double the global average annual per capita emissions. If the concepts integrating capability and historical responsibility attribute are to be used then the EU as the second largest contributor after the USA, has to provide 25% to 32% of the total financing needed in developing countries (German Watch, Christian Aid, WWF and IIED, 2009). This number is based on the adaptation financing index (AFI) framed by Oxfam, which gives a broad indication of which countries should take that responsibility for financing adaptation. The index is constructed on the basis of four principles: responsibility, equity, capability, and simplicity. The AFI gives equal weight to a country's responsibility and capability (50 per cent of the score each), and produces a broad indication of the share that each country should contribute to financing adaptation in developing countries. 17 of the EU's 27 member states are included in the index (the other ten have Human Development Index (HDI) scores below 0.9 and so do not qualify), with the total adaptation finance index (percent) for the EU-17 to be 31.6 percent. The top five European contributors should be (in order): Germany (7.1 percent), the UK (5.5 percent, Italy (4.6 percent), France (4.5 percent), and Spain (3.1 percent): together they account for over three-quarters of Europe's share (Oxfam, 2007).

Considering its higher share of adaptation financing responsibility, and also considering its influential position within the EU, the UK has a greater responsibility to push the EU for a fair global climate change deal. UK's role however is felt to be weakened in recent years as the accession of new EU members joining the Commission have increased internal disputes.

The EU has always been considered to be progressive in addressing climate change issues, but out of internal disagreements, and may be recent economic downturn, it is losing its leadership in committing to tackling climate change. An example of this is the European Commissions proposal 'Towards a comprehensive climate change agreement in Copenhagen' released on 28th of January which is considered to be weak in terms of the adaptation agenda. The EU proposal addresses three key challenges: targets and actions; financing; and building an effective global carbon market. The EU is still progressive in terms of an emission target, as it commits to a 20% reduction in its emissions compared to

1990 levels by 2020, irrespective of whether or not an international agreement is concluded, by far the most ambitious commitment by any country or group of countries in the world for the post-2012 period (Commissions of the European communities, 2009). The EU expresses its willingness to go further and sign up to a 30% reduction target if other developed countries are ready and appropriate actions are taken by developing countries too (developing countries as a group should limit the growth of their emissions to 15 to 30% below business as usual). The EU understands that if developing countries are to come onboard for such emission reduction, developed countries are to provide financial resources. EU identifies the sources of financing from three different sources; from domestic sources, from the global carbon market, and also by contributions from developed countries. However, the EU proposal does not specifically quote the amount of climate financing that the EU is considering to pledge in the Copenhagen negotiation. This has been criticised by the respondents as a step back from the EU climate leadership. This could be observed as a negotiation game that EU is playing by not wanting to lay its cards on the table too early, or may be the EU is waiting and watching for others to release the actual amount first. Yvan Biot[56] shares, *"the EU has not yet finalised whether the climate financing should be through additional ODA, or whether it should be solely through the UNFCCC mechanisms or whether it could be a combination of UNFCCC and aid-channel. They are also considering the Norwegian proposal as a very constructive proposal and the Mexico proposal too. They are sympathetic and not against the UNFCCC structure totally. We do not want to lead that discussion but we want to be able to respond to it. There are parties who are claiming that all funding should go through UNFCCC, they don't accept funding to go through any other mechanism that we will not accept, that is something the EU finds difficult to accept."*

Lack of EU consensus also is visible because the EU proposal could not quote a specific amount for adaptation support to developing countries even at the Spring Council meeting of the EU in late April. This highlights internal dispute between reactionary parties and progressive thinkers within the EU to pledge an amount of support to adaptation in developing countries, loss of enthusiasm by the EU from being a leader as it is saying other rich regions should first commit to clear goals and pave the way for a successful deal. It can be demonstrated in the following statements form the respondents.

[56] Biot, Y. (12th March, 2009). Senior Policy Advisor, Climate Change, Policy and Research Division-DFID. Interview.

"Within the EU there are countries which are simply dragging everybody back, particularly Poland, Czech Republic and Italy. The countries that are more forward thinking like the UK, Sweden and to some extent Germany and France are not as pushy and vocal anymore, also because of economic recession. So, the EU has lost its championship. Everybody is now looking at the US to see what happens with the global climate negotiation with the new administration from the US." Saleemul Huq[57].

"The UK is influential within the EU, but not as influential as it was because of new EU member countries. EU is not being as coherent on adaptation and mitigation, as new countries are not agreeing to the emerging EU policies" Thomas Tanner[58].

It is clear that without money for adaptation on the negotiation table, a global climate deal in Copenhagen is difficult. Adaptation financing is the bargaining chip to bring developing countries to join in emission reduction in the post-Kyoto framework; otherwise developing countries like China, Brazil and India will be reluctant to join the global deal. Similarly, without adequate money on the table the other parties in the G77 will not be willing to force the big brothers 'China, and India' to committing to emission cuts. Therefore respondents call on the UK to use its influence with other EU member states to ensure support for financial commitments is more clearly stated in the EU proposal.

6.1.2 UK's domestic emission reduction target

To prove a leader in fighting global climate change, UK has to prove its commitment for timely and significant cuts in its domestic emission. This will send a good signal in the international community for the UK's commitment to take its share of responsibility and hence gain acceptance of its adaptation interventions in developing countries, and coordinate with other developed countries within and beyond EU, says all respondents. According to the Kyoto commitment, UK has to reduce emissions of six different greenhouse gases by an average of 12.5% compared with 1990 levels over the years 2008 to 2012. The UK government went further to commit to a domestic goal of cutting carbon dioxide emissions by endorsing world's first legally binding framework to tackling climate change, the Climate Change Act 2008. The Climate Change Bill was introduced into Parliament on 14 November 2007 and became law on 26th November 2008. The Climate Change Act has a legally binding target of Green house gas emission reductions through action in the UK and abroad of at least 80% by 2050, and reductions in CO2 emissions of at least 26% by 2020, against a 1990 baseline. On the adaptation front, there is a provision

[57] Huq, S. (16th April, 2009). Senior Fellow, Climate Change Group. International Institute for Environment and Development. Interview

[58] Tanner, T. (19th March 2009). Research Fellow and Programme Convenor MA Development Studies, Institute of Development Studies (IDS), University of Sussex. Interview

in the Act for the government to report at least every five years on the risks to the UK of climate change, and publish a programme setting out how these impacts will be addressed. An Adaptation Sub-Committee of the Committee on Climate Change is formed to advise the government's adaptation work. The Act was initiated to prepare for a low carbon economy in the UK, and to demonstrate strong UK leadership internationally**,** signalling their commitment taking their share of responsibility for reducing global emissions in the context of developing negotiations on a post-2012 global agreement in Copenhagen (DEFRA, 2008b). As to meet the UK's emission reduction target, it has considered use of *international credits,* and *domestic trading schemes,* measures on *bio fuels* etc. The UK government's 2003 Energy White Paper- our energy future-creating a low carbon economy, and the 2007 Energy White paper –meeting the energy challenge also sets out international and domestic energy strategy to meet energy demand and establish an international framework to tackle climate change (DTI, 2003; DTI, 2007).

Despite these efforts, UK's domestic emission reduction is criticised for not being substantially declined in reality in the national and international context. UK emissions are higher if carbon pollution linked to imported goods is included. "*The UK's apparently virtuous carbon cuts have only been achieved because we are getting countries like China to do our dirty work.*"[59] Similarly, UK's actions such as the expansion of coal fired power plant or the expansion of third runway at Heathrow airport gives wrong signal to the world, as these activities further increase emission, say respondents. There had been opposition from green groups within the UK for these expansions. Aviation already accounts for 13% of UK global warming emissions and is the fastest-growing contributor to climate change. The introduction of a third runway at the airport would see the number of flights increasing to 600,000 by 2030 (Stop Heathrow expansion, 2007). The government's plans to expand Heathrow, and many other airports across the country, is inconsistent with UK government's objective to reduce climate change emissions. Similarly, the UK decision to build four new coal fired energy clusters in east coast of Britain (Thames Gateway, on the rivers Humber and Tees and in the Firth of Forth in Scotland, with a possible fifth on

[59] Harabin, R. (2008). *UK in 'delusion' over emissions.* BBC News, Science and Environment section, http://news.bbc.co.uk/1/hi/sci/tech/7536421.stm (last updated at Thursday, 31 July 2008).

Merseyside) has met similar opposition. But the UK government is defending these activities as needed for economic progress of the country, meeting the energy needs, and are considering emission reduction technologies, such as at least one major coal fired power station to use carbon capture and storage (CCS) which could trap and bury the CO2 emitted in geological formations. But there are hesitations for the efficiency of CCS, as CCS is a new technology which is yet to be proved at a large scale and there are also concerns over for e.g. costs and an associated energy penalty. New coal fired plants have to be carbon capture ready, and have CCS fitted within 5 years of it being commercialised. Household electricity bills could increase nearly 2% and involves investment of billions of pounds to execute (Energy Business Review, 2009).

In terms of renewable energy, UK is behind other EU countries. In 2000 the UK government set a target of 10% of electricity supply from renewable energy by 2010, while it has to meet its share of the EU target to source 20% of the EU's energy from renewable sources by 2020. Renewable energy use grew by 8.4% in 2007 and is now over five times the level it was at in 1990. Renewables accounted for 5.0% of electricity generated in the UK in 2007, up from 4.5% in 2006 (BEER, 2008). UK still needs a substantial push on renewables if it has to achieve its target, stress respondents. "*The danger is that an expansion of coal fuelled technologies in the UK could give wrong message to a coal-based economy like China, which is called on for joining the new emission reduction target in new climate deal*," says Tom Sharman[60]. Therefore if the UK is to prove its commitment to tackling climate change, it has to send positive and encouraging signals to international communities through climate friendly in-house decisions, starting with cuts in domestic emissions and supporting renewable energy etc.

6.1.3 Ways forward for UK adaptation support after 2012

When respondents were asked how they see the UK adaptation programmes shaping up in future, all of them reiterated that fate of such ODA supported adaptation (PPCR and other bilateral or multilateral support) will largely depend on outcomes of Copenhagen negotiation on new climate financing and governance. However, developed countries/donors are clearly expressing their interest to account existing ODA funded adaptation into UNFCCC climate financing systems or for this aid-channel of climate funding to be in parallel to the UNFCCC. But the decision will be based on the outcome of Copenhagen negotiation. Programmes like PPCR will be judged against its performance up

[60] Sharman, T. (19th March, 2009). Climate Justice Coordinator, Action Aid International. Interview

to 2012 and depending upon the political climate, further decisions might be taken, say the respondents. They also feel that development integrated adaptation activities being delivered through DFID country offices, and its climate research activities might well be continued. UK's interest in climate change is a long term interest; hence it will keep working in the same line. Respondents suggests that the UK should concentrate its immediate attention and energy for initiating a broader international process for reaching consensus for an ambitious climate deal at Copenhagen by; engaging consultations with developing countries, pushing the EU for a clearer position on its commitments particularly to finance adaptation activities in developing countries, and as an immediate action supporting the UNFCCC Least Developed Country Fund (LDCF), which requires at least around $2 billion for the implementation of the most urgent actions identified in the NAPAs by the Least Developed Countries.

7. Chapter Seven: Conclusions

This section draws conclusions from the research including the key drivers and critique of the UK government support for climate change adaptation in developing countries. It also suggests opportunities for further research.

The impacts of climate change are already being felt; therefore adaptation strategies to cope with those impacts are required. Climate variability and possibly emerging climate change has impacted almost all sectors of livelihoods; agriculture and food security, health, infrastructure, natural resources, water resources etc., thus challenging overall sustainable development and achievement of the Millennium Development Goals. For these reasons, climate change is also an important subject matter for development agencies. This need has opened a new paradigm of development-adaptation mainstreaming in national and international development planning and processes. Discussions on linking adaptation and regular development activities started in early 2000 when major development agencies realised the unavoidable impacts of climate change on development programmes. The importance of climate change adaptation and development has been stressed after the realisation that development can no more be decoupled from climate change. It is now proven that climate change is very much an outcome of unsustainable and rampant development in the past, and also the impacts of climate change are now affecting sustainability of the present development. Development agencies have taken the lead in understanding this linkage and put in place activities on the ground to mainstream adaptation into their regular development activities. Major donors/development agencies are therefore investing their knowledge and financial resources to support adaptation in developing countries.

This thesis explored such support from the UK government (particularly through the Department for International Development-DFID), because the UK is one of the first and largest donors investing in climate adaptation activities in developing countries and working towards building a strong knowledge base on adaptation and development through research on climate science and their impacts in Africa, Asia and Latin America. Besides research, DFID's country offices are integrating adaptation activities in their regular rural development, natural resource management and livelihood programmes to better equip development strategies with climate resiliency and thus increasing livelihood of poor people. The UK government has also pledged £800 million Environment Transformation Fund money into the multilateral financial mechanism- the World Bank administered

Climate Investment Funds (CIFs). A £225 million of which is specifically assigned to the Pilot Programme on climate Resilience (PPCR), a component of the CIF, to support adaptation activities in 10 pilot developing countries. Within the UNFCCC framework, UK has also pledged fund support for the LDCF and SCCF, though the scale of fund support is smaller as compared to other bilateral and multilateral funds.

Through a series of independent key stakeholder interviews with DFID, development NGOs and research and policy research think tank institutions, this thesis has identified some of the important factors that drove the UK government towards proactive initiation for international development supported adaptation actions in developing countries. Development agencies are interested in adaptation issues because of the close integration between poverty-climate change-development; this has been one of the main drivers for the institutional start of climate integration in UK government's international development activities. International negotiations like the UNFCCC are another policy driver. As enshrined in the UNFCCC, the UK is fulfilling its responsibilities to support developing countries. Based on international policy and the strong domestic political support for climate change action, the UK has been developing its domestic climate and development policies to take forward the climate adaptation agenda. Increased political understanding of the issues of climate change and the emerging climate science knowledge are also driving the need to make adaptation a priority. DFID-the institution has pushed internally to make the climate adaptation agenda a UK government priority. A strong NGO base and media coverage on the impacts of climate change in developing countries, especially weather induced disasters like flooding, sea level rise etc and the moral obligations of the rich countries like the UK have been other key actor facilitating the process. Among all these diving factors, willingness of the UK to become a front runner in promoting adaptation support has driven it to showcase flagship interventions.

The UK's initiatives are acclaimed by respondents for being an early and proactive start, and piloting adaptation strategies on the ground to guide future adaptation strategies. There are also criticisms for the way these interventions are approached, particularly around the issue of fund governance. Rebranding of the existing ODA support for climate adaptation activities is seen as against the spirit of the UNFCCC Bali Action Plan to have new and additional funds. Provision of adaptation funds in the form of loans is criticised for being against the compensatory nature of climate change liability for the developed countries to pay developing countries for the damages caused to the global climate by past emissions of those rich and industrialised countries. Top-down, donor driven and donor controlled access to the funds is another criticism of UK adaptation support. Since climate funds are compensatory money and not voluntary aid, developing countries want to have direct access and less control from the developed countries on it. The UK's preference to multilateral financing structures outside the UNFCCC are feared by the developing countries and NGO sector as undermining the UNFCCC processes, increasing distrust and creating confusion with proliferation of similar fund structures. Involvement of the World Bank (WB) is equally contested topic as it is infamous for supporting dirty 'coal' fuelled development instead of renewables, and Bank's undemocratic governance structure. Promotion of the WB as a vehicle for climate adaptation funding is seen as donor countries preparation to outdo the new institutional arrangement in the UNFCCC, which is more democratic and allows equal stakes from the developing country parties.

For such UK support to be more welcomed by all stakeholders, and gain political recognition within the UNFCCC, the UK has to at least complement the UNFCCC processes and objectives and do not compete with the UNFCCC mechanisms. It is equally essential to create a trustworthy momentum to the UNFCCCC for facilitating a fair global climate deal. Because a successful global post-2012 climate deal depends on participation from developing countries to mitigate climate change, which requires new and emerging polluters to join the emission reduction targets and actions. This will only be possible if the developed countries like the UK fulfil their obligations on adaptation financing, respecting the essence of Bali Action Plan by providing new, additional, sustainable, predictable and equitable funds. Unless adaptation funds come over and above the existing ODA, developing countries will still have political reservations against counting the support as fulfilment of the UNFCCC obligation. UK therefore has to internalise learning from the current approach, PPCR and other initiatives and replicate good practices in future in accordance with the new political climate of the UNFCCC negotiation. The UK as an immediate action can pledge money into the LDCF under the UNFCCC arrangement to implement NAPAs in Least Developed Countries. Considering the close linkage between development and adaptation, development agencies like DFID can not avoid the subject of adaptation; neither can development assistance be decoupled from adaptation initiatives. Development agencies funded adaptation has definitely pushed mainstreaming development and adaptation, but the problem is not around how to spend adaptation money but agreeing upon the sources of fund, and the support to be additional to the existing ODA. Since it was out of the scope of the thesis to explore the potential success of the

Copenhagen negotiation, it is difficult to judge if the Copenhagen negotiation will be successful in defining all the unanswered questions of ODA funded adaptation financing; new and additional fund, governance of the fund; within or outside the UNFCCC or a combination of both, and develop new climate adaptation architecture with political consensus amongst all the UNFCCC country parties. However, observing current trends such as economic downturn and climate leaders like the EU backing off from being vocal about its adaptation support, concerns are raised over whether Copenhagen 2009 will seal a new global climate change deal. It is to be noted that the Copenhagen negotiation are not only about the adaptation financing, but certainly are a major bargaining chip for getting developing countries on board for a new deal. Therefore, clarity on the adaptation financing from the developed countries will help facilitate the negotiation. Considering that negotiation processes are required to have a political consensus from all UNFCCC parties, and negotiations are unpredictable, it is difficult to anticipate the result yet, but given the urgency of the climate change problem, it is essential that the Copenhagen negotiations devise a new fair climate deal. Next six months from now until the Copenhagen negotiations in December 2009 are crucial in terms of how further preparatory discussions for the COP-15 will shape up. A marrying point for ODA funded adaptation and the UNFCCC climate financing is very necessary to drive the future of such support.

In sum, this thesis has explored the drivers behind UK funding for adaptation activities in developing countries, and presented a critique of the present approach, which can best be described as a learning opportunity for similar future adaptation efforts. It concludes that it is the combination of institutional drivers such as DFID and development NGOs, with political drivers (coming from increasing political awareness of the importance of adaptation support for developing countries), and policy drivers that have led the UK to become a front runner in adaptation support activities to developing countries. However, the loan nature of such adaptation support, the rebranding of existing ODA rather than providing additional money for adaptation and the bypassing of the UNFCCC structure and mechanisms for multilateral structure have been criticised from various perspectives. Nevertheless, the UK can, with its strong domestic emission reductions policies, send a good signal in the international communities to demonstrate that it is proactive in tackling climate change. The UK can also influence the EU to clarify its financial commitment for adaptation in developing countries, and can facilitate adaptation related funds within the UNFCCC to give momentum to the UNFCCC.

Building on this research, it would be interesting to follow through the UK government's future support for adaptation depending upon the new climate financing architecture, which is to be decided in UNFCCC negotiation of a post-Kyoto framework. Also, a comparative study among OECD donors to discuss the extent and approach of adaptation support in developing countries and a comparison of the drivers for each country in their specific context, and harmonisation among similar adaptation activities from various donors can be of further research interest.

References

ADB (Asian Development Bank) (2009). *People's republic of Bangladesh: supporting implementation of the Bangladesh climate change strategy and action plan*. Technical assistance report. Project no. 42478-01. Available at: http://www.adb.org/Documents/TARs/BAN/42478-BAN-TAR.pdf [Accessed 13 May 2009].

Adger, W.N. (2000). Social and ecological resilience: are they related?' *Progress in Human Geography*, **24** (3), 347-364.

Adger, WN., Huq, S. Brown, K., Conway, D. and Hulme, M. (2003). Adaptation to climate change in the developing world. *Progress in Development Studies,* **3** (3), 179-195.

AfDB (African Development Bank), Asian Development Bank, UK Department for International Development, European Commission Directorate-General for Development, German Federal Ministry for Economic Cooperation and Development, The Netherlands' Ministry of Foreign Affairs Development Cooperation, Organization for Economic Cooperation and Development, UNDP, UNEP, The World Bank (2003). *Poverty and climate change - reducing the vulnerability of the poor through adaptation.* [pdf] Washington D.C.: World Bank. Available at: http://ec.europa.eu/development/icenter/repository/env_cc_varg_poverty_and_climate_change_en.pdf [Accessed 4 February 2009].

Agrawala, S. (2004). Adaptation, development assistance and planning: challenges and opportunities. *IDS Bulletin*, **35**(3), 51–53.

Anderson, E., and Waddington, H. (2006). *Aid and the MDG poverty target: How much is required and how should it be allocated?* Working paper 275. London: Overseas Development Institute (ODI).

BEER (Department for Business Enterprise & Regulatory Reform) (2008). *UK energy in brief July 2008*. A national statistics publication. [pdf] Available at: http://www.berr.gov.uk/files/file46983.pdf [Accessed 11 May 2009].

BOND (British Overseas NGOs for Development) (2009). [Website] Available at: http://www.bond.org.uk/pages/about-us.html [Accessed 6 May 2009].

Boykoff, M. T. (2007). *Flogging a dead norm? Newspaper coverage of anthropogenic climate change in the United States and United Kingdom from 2003 to 2006*. [pdf] Available at: http://www.eci.ox.ac.uk/publications/downloads/Boykoff07-flogging.pdf [Accessed 14 May 2009].

Burton, I. (1992) cited in Schipper, E.L.F. (2004). *Exploring adaptation to climate Change: a development perspective.* A PhD thesis. Norwich University of East Anglia.

Burton, I. (1994) cited in Tol, S.J.R. (2005). Adaptation and mitigation: trade-offs in substance and methods. *Environmental Science & Policy,* ***8****,* 572-578.

Burton, I. and van Aalst, M. (2004). *Look before you leap: a risk management approach for incorporating climate change adaptation in World Bank operations*. Final Draft, February 2004. Washington, D.C.: World Bank.

Burton, I., and Lim, B. (2005). Achieving adequate adaptation in agriculture. *Climatic Change*, **70**, 191–200.

Burton, I., Diringer, E., and smith, J. (2006). *Adaptation to climate change: international policy options*. PEW Centre on Global Climate Change. [pdf] Available at: http://www.pewclimate.org/docUploads/PEW_Adaptation.pdf [Accessed 30 January 2009].

Burton, I., Huq, S., Lim, B., Pilifosova, O. and Schipper, E.L.F. (2002). From impacts assessment to adaptation policies: the shaping of adaptation policy. *Climate Policy*, **2**, 145-159.

Climatefundsupdate.org (2009a). *Climate Funds*. [Online] Available at: http://www.climatefundsupdate.org/listing [Accessed 26 February 2009].

Climatefundsupdate.org. (2009b). *New and innovative funds for climate change*. [Online] Available at: http://www.climatefundsupdate.org/listing/new-innovative [Accessed 26 February 2009]

Cohen, S., Demeritt, D., Robinson, J. and Rothman, D. (1998). Climate change and sustainable development. *Global Environmental Change*, **8**(4), 341-371.

Commission of the European Communities (2009). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. *Towards a comprehensive climate change agreement in Copenhagen*. Brussels:{SEC(2009) 101} {SEC(2009) 102} COM(2009) 39 final.

Danida (2005). *Danish climate and development action programme*. Ministry of Foreign Affairs of Denmark, Copenhagen: Danida.

DEFRA (Department for Environment Food and Rural Affairs) (2008a). *Funding: international environmental transformation fund and climate investment funds* [Online] (Updated 28 Nov 2008) Available at: http://www.defra.gov.uk/environment/climatechange/internat/devcountry/funding.htm [Accessed 2 February 2009].

DEFRA (Department for Environment, Food and Rural Affairs) (2008b). *Climate change act 2008-key provisions/milestones.* [Website] Available at: http://www.defra.gov.uk/environment/climatechange/uk/legislation/provisions.htm [Accessed 9 May 2009].

DEFRA (Department for Environment, Food and Rural Affairs) (2009). *Adapting to climate change.* [Website] Available at: http://www.defra.gov.uk/environment/climatechange/adapt [Accessed 3 May 2009].

DFID (Department for International Development) (1997). *Eliminating world poverty: a Challenge for the 21st century*. DFID White Paper 1997. London: DFID.

DFID (Department for International Development) (2000). *White Paper: making globalisation work for the world's poor*. [Online] (Updated 13 July 2006) Available at: *http://www.dfid.gov.uk/Documents/publications/wp2000intro.pdf* [Accessed 2 February 2009].

DFID (Department for International Development) (2006). *Eliminating poverty: making governance work for the poor*. DFID White paper 2006. [pdf] http://www.dfid.gov.uk/Documents/publications/whitepaper2006/whitepaper-printer-friendly.pdf [Accessed 2 February 2009].

DFID (Department for International Development) (2009a). *Key achievements.* [Online] Available at: http://www.dfid.gov.uk/About-DFID/Quick-guide-to-DFID/Key-achievements/ [Accessed 3 February 2009].

DFID (Department for International Development) (2009b). *What DFID is doing?* [Online] Available at: http://www.dfid.gov.uk/Global-Issues/How-we-fight-Poverty/Climate-and-Environment/Climate-Change/What-DFID-is-doing/[Accessed 3 February 2009].

DTI (Department of Trade and Industry) (2003). *Our energy future creating a low carbon economy*-a white paper on energy. Available at: http://www.berr.gov.uk/files/file10719.pdf [Accessed 16 may 2009].

DTI (Department of Trade and Industry) (2007). *Meeting the energy challenge*-a white paper on energy. Available at: http://www.berr.gov.uk/files/file39387.pdf [Accessed 16 may 2009].

Doulton, H. and Brown, K. (2007). *'Ten years to prevent catastrophe? Discourses of climate change and international development in the UK press*. Working paper 111. Norwich: Tyndall Centre for Climate Change Research.

Energy Business Review (2009). *UK energy secretary declares that new coal-fired plants must capture carbon emissions and bury them under the North sea*. Energy Business Review (April 24). [Online] Available at: http://www.energy-business-review.com/news/uk_energy_secretary_declares_that_new_coalfired_plants_must_capture_carbon_emissions_and_bury_them_under_the_north_sea_090424 [Accessed 14 May 2009].

Fankhauser, S. (1998). *The costs of adapting to climate change*. GEF Working Paper No. 16. Washington, D.C.: Global Environment Fund.

German Watch, Christian Aid, WWF and IIED (2009). *Financing adaptation to climate change in developing countries – a call for EU action.* A joint briefing paper for the European Parliament. [pdf] Available at: http://forum.europarl.europa.eu/jiveforums/servlet/JiveServlet/download/20-455-773-225/WWF%20GW%20EP%20Financing%20adaptation%20to%20climate%20change.pdf [Accessed 2 May 2009].

Ghauri, P. and Gronhaug, K. (2002). *Research methods in business studies: a practical guide.* 2nd edition. Harlow: Pearson Education Ltd.

Gupta, J. (1997). *The climate change convention and developing countries: from conflict to consensus*? Dordrecht: Kluwer Academic Publishers:

Halsnæs, K., and Trærup, S. (2009). Development and climate change: a mainstreaming approach for assessing economic, social, and environmental impacts of adaptation measures. *Environmental Management,* 43(5), 765-78.

Handmer, J.W., Dovers, S.R. (1996). A typology of resilience: rethinking institutions for sustainable development. *Industrial and Environmental Crisis Quarterly*, **9** (4), 482-511.

Harmeling, S., Bals, C., Windfuhr, M., Hirsch, T. (2008). *Making the adaptation fund Work for the most vulnerable people*. A Germanwatch and „Brot für die Welt" Discussion

Paper. Stuttgart: Germanwatch. [pdf] Available at: http://www.germanwatch.org/klima/adfund08.pdf [Accessed 1 March 2009].

Houghton, J.T., Ding, Y., Griggs, D.J., Noguer, M., van der Linden, P.J., Dai, X., Maskell, K., and Johnson, C.A. (2001). (eds.) *Climate Change 2001: the scientific basis, IPCC WG I contribution to the TAR.* Cambridge: Cambridge University Press.

Huq, S. and Ayer, J.M. (2008). Supporting adaptation to climate change: what role for ODA? In: DSA Annual Conference, *Development's invisible hands: development futures in a changing climate*. London, United Kingdom 8 November 2008. [Online] Available at: www.devents.org.uk/**Climate**-AyersHuq-pres-11-08.ppt. [Accessed 3 February 2009].

Huq, S., Rahman, A., Konate, M., Sokona, Y. and Reid, H. (2003). *Mainstreaming adaptation to climate change in least developed countries (LDCs)* [pdf]. Nottingham: IIED, BCAS, ENDA and Shell Foundation Sustainable energy programme Available at: http://www.un.org/special-rep/ohrlls/ldc/LDCsreport.pdf [Accessed 21 February 2009].

Huq, S., Reid, H., and Murray, L.A. (2006). *Climate change and development links*. Gatekeeper Series 123, London: IIED:

IISD (International Institute of Sustainable Development), WB (World Bank), and IDS (Institute of Development Studies) (2007). *Sharing climate adaptation tools: improving decision-making for development.* Geneva Workshop, 11-12 April 2007. Available at: http://www.iisd.org/pdf/2007/sharing_climate_adaptation_tools.pdf [Accessed 2 March 2009].

IPCC (Intergovernmental Panel on Climate Change) (2007). *Glossary of terms used in the IPCC fourth assessment report* [pdf]. Available at: http://www.ipcc.ch/pdf/glossary/ar4-wg2.pdf [Accessed 27 January 2009].

IPCC (Intergovernmental Panel on Climate Change) (2001). *Third assessment report of the IPCC.* Cambridge: Cambridge University Press.

IPCC (Intergovernmental Panel on Climate Change), WG II. (2001). *Summary for policymakers, climate change 2001: impacts, adaptation, and vulnerability*. Cambridge: Cambridge University Press.

ISDR (International Strategy for Disaster Reduction) (2003). *Terminology of disaster risk reduction*. [Website] Available at: http://www.unisdr.org/eng/library/lib-terminology-eng%20home.htm. [Accessed 20 April 2009].

King, N. (2004). Using interviews in qualitative research, in *Essential guide to qualitative methods in organisational research*. Catherine, C., and Gillian S. (eds.). London: Sage publication.

Klein, R.J.T. (2001). *Adaptation to climate change in German official development assistance—an inventory of activities and opportunities, with a special focus on Africa*. Eschborn: Deutsche Gesellschaft für Technische Zusammenarbeit.

Klein, R.J.T. Klein, Eriksen, S.E.H., Næss, L.O, Hammill, A., Tanner, T.M., Robledo, C., and O'Brien, K.L. (2007). *Portfolio screening to support the mainstreaming of adaptation to climate change into development assistance.* Tyndall Centre for Climate Change Research Working Paper 102.

Ladle, R. J., Jepson, P. and Whittaker, R. J. (2005). Scientists and the media: the struggle for legitimacy in climate change and conservation science. *Interdisciplinary Science Reviews*, **30**(3), 231-240.

Levina, E. 2007. *Adaptation to climate change: international agreements for local needs* [pdf] Paris: OECD/IEA. Available at: http://www.oecd.org/dataoecd/15/11/39725521.pdf [Accessed 5 February 2009].

LGA (Local Government Association), United Kingdom (2008) cited in Porter, G., Bird, N., Kaur, N. and Peskett, L. (2008). *New finance for climate change and the environment.* Washington D.C.: The Heinrich Böll Foundation and WWF. [pdf] Available at: http://www.odi.org.uk/resources/download/2980.pdf [Accessed 3 May 2009].

McCarthy, J.J., Canziani, O.F., Leary, N.A., Dokken, D.J. and White, K.S. (eds.) (2001). *Climate change 2001: impacts, adaptation and vulnerability*. Contribution of Working Group II to the Third Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge: Cambridge University Press.

Müller, B. (2008). *International adaptation finance: the need for an innovative and strategic approach*. Oxford: Oxford Institute for Energy Studies.

OECD (Organisation for Economic Co-operation and Development) (2006). *Declaration on integrating climate change adaptation into development co-operation adopted by development and environment ministers of OECD member countries*. Paris: OECD.

Oxfam International (2007). *Adapting to climate change: what's needed in poor countries, and who should pay*. Oxfam Briefing Paper 104. [pdf] Oxford: Oxfam International. Available at: http://www.oxfam.org.uk/resources/policy/climate_change/downloads/bp104_adapting_to_climate_change.pdf [Accessed 3 February 2009].

Parry, M.L., Arnell, N.W., Hulme, M., Nicholls, R.J., Livermore, M. (1998). Adaptation to the inevitable. *Nature* **395**, 741.

Patton, M.Q. (1990). *Qualitative evaluation and research methods*. London: Sage Publications.

Pielke, Jr., R.A. (1998). Rethinking the Role of Adaptation in Climate Policy. *Global Environmental Change*, **8** (2), 159-170.

Porter, G., Bird, N., Kaur, N. and Peskett, L. (2008). *New finance for climate change and the environment.* Washington D.C.: The Heinrich Böll Foundation and WWF. [pdf] Available at: http://www.odi.org.uk/resources/download/2980.pdf [Accessed 3 May 2009].

Research for Development (2009). *DFID research strategy launch*. Available at:http://www.research4development.info/ResearchStrategyAnniversary.asp [Accessed 13 May 2009].

Research Strategy 2008-2013 (2008). DFID. [pdf] Available at: http://www.research4development.info/PDF/Outputs/consultation/DFID_ResearchStrategy2008LOWRES.pdf [Accessed 5 May 2009].

Schipper, E.L.F. (2004). *Exploring adaptation to climate Change: a development perspective.* A PhD thesis. Norwich: University of East Anglia.

Smit, B. (1993). *Adaptation to climatic variability and change: report of the task force on climatic adaptation*. Occasional Paper, Department of Geography, University of Guelph: Canadian Climate Program.

Smit, B., Burton, I., Klein, R.J.T., and Street, R. (1999). The science of adaptation: a framework for assessment. *Mitigation and Adaptation Strategies for Global Change*, **4** (3-4), 199-213.

Smit, B., Burton, I., Klein, R.J.T., and Wandel, J. (2000). An anatomy of adaptation to climate change and variability. *Climatic Change*, **45** (1), 223-251.

Smith, J. (2005). Dangerous news: Media decision making about climate change risk. *Risk Analysis,* **25**, 1471.

Sperling, F. (managing ed.) (2003). *Poverty and climate change: reducing the vulnerability of the poor through adaptation*. Washington D.C.: World Bank:

Stakhiv, E. (1993) cited in Smit, B., Burton, I., Klein, R.J.T., and Wandel, J. (2000). An anatomy of adaptation to climate change and variability. *Climatic Change*, **45** (1), 223-251.

Stern, N. (2007). *The economics of climate change: the Stern review*. Cambridge: Cambridge University Press.

Stop Heathrow Expansion (2007). *Why oppose expansion?* [Online] Available at: http://www.stopheathrowexpansion.com/why [Accessed 8 May 2009].

Svendsen, M., and Kunkel, N. (2009). Adapting to hydrologic impacts of climate change: an international development perspectives. *Irrigation and Drainage,* **58**, S121–S132.

Swart, R., Robinson, J. and Cohen, S. (2003). Climate change and sustainable development. *Climate Policy,* **3**S1, S19-S40.

The Adaptation Fund (AF) (2009). *Status of the administrative trust fund resources*. Agenda item 12 AFB/B.5/7. The Adaptation Fund fifth meeting (Report from the Trustee), March 24-27, 2009. Bonn: Adaptation Fund Board.

The Oxford Pocket Dictionary of Current English (2009). Oxford: Clarendon Press. [Online] Available at: http://www.encyclopedia.com/doc/1O999-adapt.html [Accessed 30 April 2009].

Tol, S.J.R. (2005). Adaptation and mitigation: trade-offs in substance and methods. *Environmental Science & Policy,* ***8***, 572-578.

UNFCCC (United Nations Framework Convention on Climate Change) (2001). The Marrakesh Accords. In *report of the conference of the parties on its seventh session*, held at Marrakesh from 29 October to 10 November 2001. Addendum. Part Two: Action Taken by the Conference of the Parties', decisions 1/CP.7-39/CP.7 Document Nos. FCCC/CP/2001/13/Add.1-4. Bonn: UNFCCC.

UNFCCC (United Nations Framework convention on Climate Change) (2002). *Delhi Declaration on climate change and sustainable development*, decision 1/CP.8, Document No. FCCC/CP/2002/7/Add.1. Bonn: UNFCCC.

UNFCCC (United Nations Framework Convention on Climate Change) (2007). *Investment and financial flows to address climate change*. United Nations Office at Geneva:

Switzerland. Available at: http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf [Accessed 3 May 2009].

UNFCCC (United Nations Framework Convention on Climate Change) (2009). [Website] Available at: http://unfccc.int/cooperation_and_support/financial_mechanism/items/2807.php) [Accessed 13 March 2009].

Watkins, K. (ed.) 2007. *Fighting climate change: human solidarity in a divided world.* Human Development Report 2007/2008 of the United Nations Development Programme, Basingstoke, UK and New York, NY: Palgrave Macmillan. Available at: http://hdr.undp.org/en/media/HDR_20072008_EN_Overview.pdf [Accessed 2 February 2009].

Watson, R.T., (ed.) (2001). *Climate change 2001: synthesis report* [pdf] Geneva: Intergovernmental Panel on Climate Change. Available at: http://www.ipcc.ch/pdf/climate-changes-2001/synthesis-spm/synthesis-spm-en.pdf. Accessed [6 February 2009].

WB (World Bank) (2006). *Clean energy and development: towards an investment framework*. ESSD-VP/I-VP. April 5, 2006. Washington D.C.: World Bank.

Weingart, P. and Engels, A. *et al. (*2000). Risks of communication: discourses on climate change in science, politics, and the mass media. *Public Understanding of Science*, **9**(3), 261.

White, G.F., Kates, R.W. and Burton, I. (2001). Knowing better and losing even more: the use of knowledge in hazards management. *Environmental Hazards*, **3** (3-4), 81-92.

Wigley, T.M.L. (1997). Implications of recent CO2 emission-limitation proposals for stabilization of atmospheric concentrations. *Nature*, **390**, 267-270.

Yin, R. K. (2003). *Case study research: design and methods*. 3rd edition. Thousand Oaks: Sage Publications.

Annexes

Annex 1 List of interviewees

Stakeholders	Name of Organisation	Name of interviewee	Location	Designation
Government	Department for International Development (DFID)	Dr. Yvan Biot	London, UK	Senior Policy Advisor, Climate Change, Policy and Research Division
Non-Government Organisations	Practical Action	Ms. Maria Arce Moreira	Rugby, UK	Policy Adviser and Co-Chair BOND/DEG
	Practical Action	Ms. Rachel Berger	Rugby, UK	Climate Change Policy Advisor, Practical Action-Policy and Programmes
	World Wildlife Fund for Nature (WWF-UK)	Dr. Kit Vaughan	Surrey, UK	Climate Change Adaptation Adviser
	Christian Aid	Mr. Richard Ewbank	London, UK	Climate Change Programme Coordinator
	Action Aid International	Dr. Tom Sharman	Johannesburg, South Africa	Climate Justice Coordinator
Academia, policy research and think tank institutes	Institute of Development Studies (IDS), University of Sussex,	Dr. Thomas Tanner	Brighton, UK	Research Fellow and Programme Convenor MA Development Studies
	International Institute for Environment and Development(IIED)	Dr.Saleemul Huq	London, UK	Senior Fellow, Climate Change Group
	Stockholm Environment Institute (SEI)	Dr. Richard J.T. Klein	Stockholm, Sweden	Senior Research Fellow
	Stockholm Environment Institute (SEI)	Dr. E. Lisa Schipper	Bangkok, Thailand	Fellow Research
	Overseas development Institute (ODI)	Dr. Natasha Grist	London, UK	Research Fellow - Climate Change and Development-Climate Change, Environment and Forests Programme
	German Development Institute, Bonn	Dr. Imme Scholz	Bonn, Germany	Head of Department, Environmental Policy and Management of Natural Resources
Informal conversation	Department for International Development (DFID), Nepal Country Office	Ms. Clare Shakya	Kathmandu, Nepal	Senior Regional Environment and Water Adviser, South Asia Policy Team
	OXFAM GB- South Asia RMC	Dr. Steve Jennings	New Delhi, India	Manager-Adaptation and Risk Reduction

Annex 2 Semi-structure interview questions

The objective of the research is to analyse and review the **key drivers** for the UK's international adaptation support, **critique** the current approach, and discuss the **UK's preparation in Copenhagen negotiation.** I would like to keep the conversation *flexible*, however, focus on the following issues:

a. Identification of the drivers for the UK's adaptation role:

1. What are the **key drivers** for the emergence of the climate adaptation agenda in the UK Government's international development priorities?
2. Where will you rate the efforts of the UK government on international climate adaptation?
3. Your say on the following major international adaptation support activities by the UK government.
   - Environment Transformation Fund (ETF)
   - CIFs (PPCR through World Bank)
   - Climate change research activities in Asia, Africa and Latin America

b. Critique of the UK's current role (if any):

4. Your views 'for and against' current approach
   - **Funding**: source and governance structure, and
   - **UK working outside the UNFCCC mechanisms:** is it undermining the Convention mechanisms?
   - Reflection of the lesson learnt on subsequent programmes
5. How do you relate the increasing UK international support on adaptation in relation to its domestic mitigation targets/actions?
6. Please comment on the UK's coordinating role with other parties (G8, G20, Annex 1 countries) to get onboard with the multilateral adaptation efforts. Your suggestions for better coordination.

c. Policy directions: UK on the road to Copenhagen

7. What and where is/should be the focus of the UK government in Copenhagen for the post-2012 global climate adaptation deal?
8. Your views on the EU's proposal on the Copenhagen negotiation
9. Will/should the UK government still take its bi/multilateral adaptation activities in parallel to the UNFCCC mechanisms after post 2012?