Overseas Development Institute

Climate financing and Development
Friends or foes?

Jessica Brown, Nicola Cantore, Dirk Willem te Velde[1]

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Executive summary

There are clear overlaps but also important differences between the objectives and activities classified under Official Development Assistance (ODA) and financial flows to help developing countries address climate change (i.e. climate finance). The extent to which ODA is diverted from traditional development activities towards mitigating and adapting to climate change in developing countries has important implications. Such implications include how countries are able to reduce poverty and achieve economic growth through development but also how countries are able to cope with a changing climate. Are there implicit tradeoffs between responding to climate change and addressing poverty? How can each type of flow (development assistance and climate finance) meet their stated purposes without compromising others?

Most types of climate finance could be presented as ODA-eligible. Adaptation assistance, as primarily a local good, would benefit developing countries directly. Mitigation provides a global public good, and can promote economic development. The lack of adaptation and mitigation in developing countries will make reaching Millennium Development Goals (MDG) more difficult and could erase gains already made. Both adaptation and mitigation (targets of climate finance) are needed to reach development objectives (targets of aid). Adaptation to climate change can mitigate the adverse impacts, and direct measures to reduce climate change will benefit the poor who would otherwise be made more vulnerable. However, given resource scarcity, donors and their partners must set priorities for the activities that will most efficiently and effectively achieve development goals.

There is a heated debate in climate negotiations on the concept of additionality. In this paper we distinguish between two broad types of additionality according to whether one considers the origin or the ultimate effect of the particular resource, ie additionality in instruments (donors or providers of aid) and additionality in resources (a recipient's point of view).

Using a quantitative analysis of current aid spending, MDG finance gaps and expected future adaptation costs we conclude that there are clear geographical and sectoral overlaps between current aid allocations and future adaptation finance needs, but also differences. Thus if part of aid was diverted to finance adaptation activities this would have sectoral and geographical implications for how aid was distributed. Overall, if aid is diverted to finance future adaptation needs, sectors such as health, education and aid for trade would lose out, whilst aid to the water sector should increase. Moreover, if aid was allocated according to future adaptation needs it is also likely to lead to a relative shift of resources into Asia, Latin America and Middle East and away from (sub Saharan) Africa. Thus without explicitly mentioning the additionality of climate finance and aid, increased climate finance activities might lead to less aid flows to Africa and lower aid flows to sectors such as education, health or aid for trade thereby putting development efforts in jeopardy.

We present and categorise 26 proposals from developed and developing countries, from small island state and big countries put forward at recent UN led climate change negotiations, from groups and individual countries, in relation to additionality of climate finance. Roughly half of the proposals call for 0.5% (or up to 2%) of developed country gross domestic product (GDP) or gross national income (GNI) to be spent on climate action, and additional to ODA. Some elaborate and say 1% of GDP in total (0.7% plus). A few proposals mention a specific value for an adaptation fund (e.g. US$ 67bn or € 100bn) but are less clear on whether this can be paid out of ODA, or say explicitly that aid can be used. A few proposals call for new and additional channels to fund the additional climate finance (using a Multilateral Climate Technology Fund). Some proposals include the principles underlying finance such as the polluter pay principle, using a green or carbon levy, air passenger duty.

We then develop, on the basis of the UNFCCC proposals, two sets of scenarios for the future provision of aid and climate finance. From a recipient's point of view it is crucial to distinguish between:

- Climate finance (at least 0.5% of GNI, others suggesting US$ 67 billion) provided additional to aid (0.7% of GNI), and
- Aid at 0.7% of GNI which would in part be used for climate finance

From a donor's point of view it is crucial to distinguish between:

- Climate finance and aid using same mechanisms
- Climate finance using separate channels involving public transfers
- Climate finance through private channels

The scenario analysis (ES1) suggests that additional mechanisms to secure additional climate finance can help to provide a measure of additionality (e.g. when raising climate finance through carbon taxes), but depending on the source of additionality might lead to some misalignments with development finance (and hence sectoral and geographical effects, or even volume effects in the case of private sector reliance). Climate finance needs and development needs differ by sector and geographical area. If climate finance follows the priorities of adaptation needs, finance to address climate change is, compared to traditional aid allocation, more likely to lead to relatively more finance for water in Middle East, Asia and Latin America, rather than support for education, health or aid for trade in Africa. Hence a diversion of aid to climate finance (e.g. if traditional aid was used to address climate change needs) involves reallocations across priority sectors and areas and this would hit education and Africa hardest). Whilst it is more risky to rely on private sector sources of climate finance, there could be larger developmental effects (e.g. impact of foreign direct investment (FDI) vs ODA, depending on local institutions and policies), although there will also be distributional consequences.

The review of the relevant literature, the calculations on aid spending and adaptation costs and the scenario analysis show that development and adaptation are complementary concepts involving great synergies. But while development and adaptation aims often overlap, additional funds are needed to meet specific challenges for global warming. Whereas traditional ODA funding can improve the capability of developing countries to cope with global warming through strengthening social and economic development, specific climate change impacts call for further resources addressed to poor countries. Different proposals imply different consequences for recipients and donors in terms of funds required and channels through which funds can be collected.

It is crucial to underline the importance of additionality of climate finance to aid. If this is not explicitly stated and implemented, the possibility of aid diversion allocated according to adaptation needs is likely to lead to the neglect of aid to Africa and aid to the education sector and aid for trade generally.

Table ES1 Aid and climate finance scenarios

	Volume of finance	Sectoral distribution of finance	Geographical distribution of finance	Quality of finance
Recipient's perspective				
Climate finance (0.5% of GNI) additional to aid (0.7% of GNI)	Large additional volumes	Distribution according to adaptation needs would mean scaling up of support especially for water, but less so for education, health and aid for trade	Distribution according to adaptation needs would mean scaling up of support especially for Asia, Latin America and less to in Africa	Transfers of up to 700 billion to poor countries likely to lead to Dutch disease issues, without innovations in governance to counteract its effects
Aid at 0.7% of GNI in part diverted to climate finance	Aid diverted to climate finance causes changing the composition of finance	Increases in resources for water, but cuts for education, health and aid for trade	Increases in Asia, Latin America and Middle East and cuts in resources for Africa	
Donor / provider's perspective				
Climate finance and aid use same mechanisms	Difficult to measure additionality	Donors tend to emphasise social sectors rather than supply side sectors.		Strongly coordinated, but issues of speed of disbursement and Dutch disease.
Climate finance using separate channels involving public transfers	Easy to measure additionality compared to existing aid.	Mechanisms earmarked for certain sectors		Fragmentation in development assistance and increase in transaction costs
Climate finance through private channels	Easy to measure additionality, but risks in reaching required aid volumes when relying on markets (e.g. carbon price).	Relative increase in resources in those sectors more ready for private ownership and transfers	Relative increases in resources in those countries with better prospects for investment (e.g. not in poor countries in Africa)	Potential issues of alignment with public sector funding, but private finance may have larger development externalities

1. Introduction

Climate finance took centre stage in the climate change negotiations in the run-up to and during the Copenhagen conference.[2] Climate finance is crucial to help developing countries adapt to climate change and adjust to a new low-carbon development path, i.e. a path that is consistent with global warming of no more than 2 degrees Celsius from current levels. At the same time, Official Development Assistance (ODA) is provided to help countries grow, develop and reduce poverty and is often discussed in the context of meeting development goals such as the Millennium Development Goals. There are clear overlaps but also differences between the objectives and activities classified under ODA and climate finance to help developing countries adapt to climate change: how can each type of flow meet their stated purposes without compromising others?

This paper will focus on the concept of additionality in the context of development assistance and climate finance, especially adaptation (Section 1); analyse the synergies amongst the traditional development activities and adaptation programmes and their complementarity in terms of objectives (Section 2); lay out some working definitions of additionality and its practical implications (Section 3); identify the potential sectoral and regional overlaps between ODA and climate finance (based on current spending and future costs) (Section 4); identify different UNFCCC policy proposals on additionality (Section 5); discuss options for achieving additional resources for climate finance (Section 6); and define the scenarios arising from the range of definitions on additionality (Section 7). The paper will then assess the various additionality scenarios on the basis of a number of criteria (Section 8). Section 9 concludes.

2. Objectives and definitions of development aid and climate finance

Climate and aid objectives differ but also share characteristics. Climate finance and aid flows go to common activities but also involve different country and sector priorities.

2.1 Objectives and definitions of aid

The flow of finance for aid is structured as a transfer of wealth from North to South is aimed to promote development and welfare. Official Development Assistance is defined as (DAC Statistical Reporting Directives, OECD):

Those flows to countries and territories on the DAC list of ODA recipients[3] and to multilateral development institutions on the condition that they are:

[2] For example, the Commonwealth Heads of Government Meeting in Trinidad at the end of November 2009 saw the launch of a new climate finance fund worth US 10 billion, backed by France and the UK.

[3] How does the DAC list of ODA recipients compare with the non-Annex I (developing countries) countries of the UNFCCC?

- Six ODA recipients are not included in non-Annex I countries: Mayotte, Montenegro, Montserrat, St. Helena, Turkey, Iraq, Ukraine and Somalia.
- 13 Non-Annex I countries are not eligible to receive ODA: Bahamas, Bahrain, Brunei Darussalam, Cyprus, Israel, Kuwait, Malta, Qatar, Republic of Korea, San Marino, Saudi Arabia, Singapore, and the United Arab Emirates.

1. Provided by official agencies, including state and local governments, or by their executive agencies; and

2. Each transaction of which
    a. Is administered with the promotion of the economic development and welfare of developing countries as its main objective; and
    b. Is concessional in character and conveys a grant element of at least 25% (calculated at a discount rate of 10%)

ODA objectives have been further defined in the context of MDGs (derived from the UN Millennium Declaration).

The eight MDGs (and associated targets) are (UN 2005):

Goal 1: Eradicate extreme poverty and hunger
- Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day
- Halve, between 1990 and 2015, the proportion of people who suffer from hunger

Goal 2: Achieve universal primary education
- Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling

Goal 3: Promote gender equality and empower women
- Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015

Goal 4: Reduce child mortality
- Reduce by two thirds, between 1990 and 2015, the under-five mortality rate

Goal 5: Improve maternal health
- Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio

Goal 6: Combat HIV/AIDS, malaria and other diseases
- Have halted by 2015 and begun to reverse the spread of HIV/AIDS
- Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases

Goal 7: Ensure environmental sustainability
- Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources
- Halve, by 2015, the proportion of the people without sustainable access to safe drinking water and basic sanitation
- By 2020, to have achieved a significant improvement in the lives of at least 100 million slum-dwellers

Goal 8: Develop a global partnership for development
- Address the special needs of the least developed countries, landlocked countries and small island developing states
- Develop further an open, rule-based, predictable, non-discriminatory trading and financial system
- Deal comprehensively with developing countries' debt
- In cooperation with developing countries, develop and implement strategies for decent and productive work for youth
- In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries
- In cooperation with the private sector, make available the benefits of new technologies, especially information and communications

2.2 Objectives and definitions of climate finance

While developed countries (Annex I Parties) are primarily responsible for the greenhouse gas emissions that have caused climate change, developing countries are likely to be worst affected by changing climate. While current emissions in developing countries now account for around half of global emissions, their per capita emissions are far lower. The UNFCCC recognises that Parties should protect the climate system 'on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities'.

At its thirteenth session in Bali in 2007, the Conference of the Parties (COP) decided under the Bali Action Plan that a comprehensive approach to enable the full, effective and sustained implementation of the Convention should include, inter alia:

> *"Enhanced action on the provision of financial resources and investment to support action on mitigation and adaptation [including] improved access to adequate, predictable and sustainable financial resources"*

The primary objective of climate change finance is to provide financial flows from industrialised to developing countries to (a) adapt to climate change and/or (b) reduce GHG emissions.

There is no formal definition of climate finance. Finance for climate change related objectives in developing countries can come from the following sources:

- ODA – Official Development Assistance. According to the OECD Glossary of Statistical Terms ODA represents flows of official financing administered with the promotion of the economic development and welfare of developing countries. ODA include funds from bilateral donors and multilateral institutions.
- CDM – Clean Development Mechanisms defined in Article 12 of the Protocol, allows a country with an emission-reduction or emission-limitation commitment under the Kyoto Protocol (Annex B Party) to implement an emission-reduction project in developing countries. Such projects can earn saleable certified emission reduction (CER) credits, each equivalent to one tonne of CO2, which can be counted towards meeting Kyoto targets. The carbon market is playing an important role in shifting investment flows in developing countries. However, this shift is limited in several ways. Firstly, CDM investment flows are for mitigation activities exclusively. Secondly, the overwhelming majority of CDM investments flow to Emerging Economies rather than to LDCs. For example, China, India and Brazil host 71% of CDM projects (UNEP Risoe, 2009). Despite efforts for the development of CDM projects in Africa, only 2% (27 projects, as of September 2009) are located in the region.
- FDI – Foreign Direct Investments representing foreign ownership of productive assets. FDI and CDM can overlap as financial transfers from rich countries towards developing countries to gain emissions offsets through specific projects are substantially FDI, but FDI for mitigation or adaptation purposes could be implemented outside a carbon market context.
- International debt, including loans provided by commercial banks and bonds sold in the capital market
- Other Official Flows (OOF) – includes loans without a sufficiently large grant elements
- Philanthropy
- Domestic government investment
- Domestic private investment

2.3 Overlaps between climate finance objectives and development objectives

The OECD's definition of ODA is broad enough to suggest that in principle most types of climate finance presented by donors as ODA eligible. Adaptation assistance, as primarily a local good, would benefit developing countries directly. Mitigation provides a global public good, but would also benefit growth and development in developing countries. The lack of

adaptation and mitigation in developing countries will make reaching MDG goals more difficult.

Both adaptation and mitigation (targets of climate finance) are needed to reach development objectives (targets of aid). For example, a report by the GEF (reporting the impact of all its activities on MDGs) suggests that climate change will increase the vulnerability of the poor. Nordhaus (1998) estimates that African countries are likely to show the highest damages of future climate change among world regions and suffer a 3.9% GDP loss 2100 for a 2.5 degrees temperature increase and that most part of these damages (around 3%) come from health impacts. Adaptation to climate change can mitigate the adverse impacts, and direct measures to reduce climate change will therefore directly benefit the poor who would otherwise be made more vulnerable[4].

However, given resource scarcity, donors concerned with development and poverty reduction will need to set priorities for the activities that will most efficiently and effectively achieve the MDGs. While there may be significant overlaps between climate change objectives and MDG goals, climate change related activities may not have the highest potential impacts on poverty reduction.

Linkages between climate *adaptation* and MDGs are often thought to be clearer – both address social vulnerabilities of the poor. It can be difficult, however, to distinguish adaptation activities from development activities.

3. Definitions of additionality

There is a heated debate on the concept of additionality. Pickering (2009) distinguishes between two broad types of additionality according to whether one considers the origin or the ultimate effect of the particular resource. The first concept of additionality involves providing *additional resources*, rather than diverting existing resources intended for the same or similar beneficiaries. This concept of 'additionality of resources' is commonly used in aid discussions but is distinct from 'additionality of action' which involves providing a good that would not have otherwise been provided but could be diverted from existing funding purposes. Both types of additionality are relative to a baseline (i.e. what would have happened otherwise). It has been argued that additionality of resources is the more important concept of the two as it relates to the broader discussions on how additionality of climate finance could be ensured in a post-2012 climate agreement (Pickering, 2009; Brown, 2009). In practice, it might be difficult to monitor and estimate whether additionality has indeed been achieved. For example, several countries have pledged to increase ODA (e.g. Gleneagles commitments) in the near future; if donors announce both an increasing ODA and new funds for climate finance, it might only later emerge that some climate finance had replaced ODA plans.

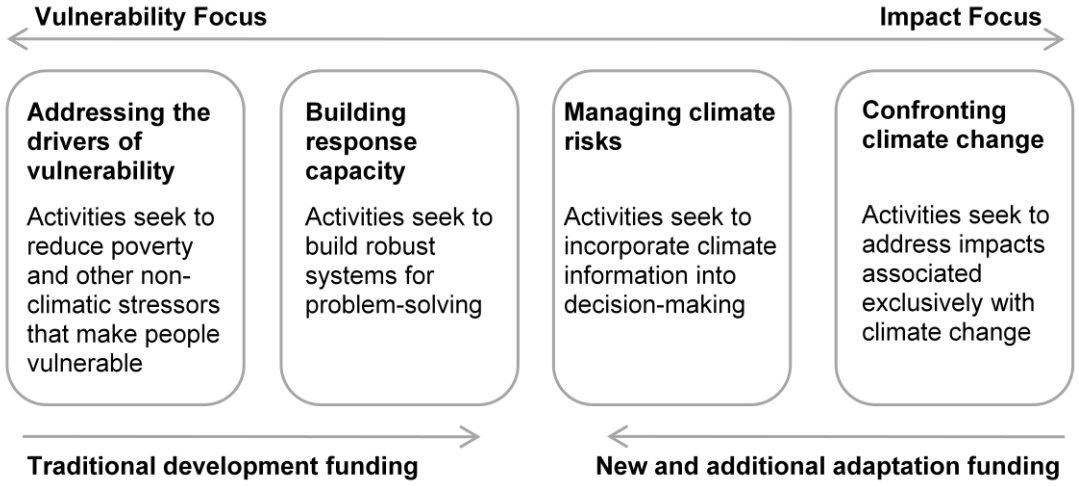
At an operational level, adaptation interventions are often quite similar and cannot be separated from ongoing sustainable development interventions (Keane et al, 2009). Indeed, the close relationship between adaptation and development has been emphasised by the expert/academic community (see e.g. Sperling et al. 2003; Burton et al. 2002; Adger et al. 2003; Klein et al. 2007; Kelly and Adger 2000; O'Brien et al. 2004, Persson et al, 2009; Keane et al, 2009). For example, it is particularly challenging to identify the incremental or additional cost of adaptation actions. Adaptation activities can be viewed on a continuum –

[4] For example, renewable energy can be more easily introduced in remote areas than fossil fuel energy supplies. New renewable energy supplies can increase agricultural productivity, improve health, facilitate learning, and reduce drudgery for women and children.

from explicit adaptation measures where the incremental cost can be clearly identified and quantified, to activities aimed at increasing coping capacity, and therefore resemble 'pure' development activities.

Bapna and McGray argue that 'At one end of the continuum, the most vulnerability-oriented adaptation efforts overlap almost completely with traditional development practice, where activities take little or no account of specific impacts associated with climate change. At the opposite end, activities are designed to target distinct climate change impacts, and fall outside the realm of development as traditionally defined' (Bapna and McGray, 2008).

Table 1: The adaptation-development continuum



Source: adapted from McGray et al. (2007) in Klein and Persson (2008).

The contribution from Tol et al. (2004) is useful to explain previous conclusions. Vulnerability to climate change is typically determined by socio – economic indicators such as income per capita and the share of the economy depending on the agricultural sector. In this case adaptation and development agenda clearly overlap. As a result, a number of development agencies advocate for the integration or 'mainstreaming' of adaptation into ODA activities (e.g. Kok et al. 2008). In other cases adaptation depends on specific geographical conditions (e.g. exposition to sea level rise) and can be identified through specific impacts. In this case adaptation does not fall into development as traditionally intended. Overlapping may still persist as adaptation avoids future climate change damages and helps preserving growth rates in developing countries. However in this case the link between adaptation and development is not always evident. Floodings from climate change are uncertain events and in case the catastrophic event did not happen the contribution of adaptation costs to preserve growth would be nonexistent.

This adaptation continuum is an empirical rather than theoretical construct, emphasising the overlap in activities. This spectrum helps to highlight issues around how to define 'adaptation additionality'. While the adaptation activities are across the spectrum, there has been a tendency to focus on the side of the continuum where activities clearly address the 'additional costs' of solving problems directly created by climate change. The other side of the continuum, which includes addressing issues not exclusively caused by climate change, is often overlooked and assumed a scaling up of BAU development activities and therefore non-additional (or non-incremental). However, failure to address this side of the spectrum would leave significant holes in a community's ability to respond to climate change.

An OECD-DAC paper (OECD, 2009) points to key differences between investments for climate change adaptation and mitigation:

- From a purely technical point of view, climate change **adaptation** assistance to developing countries or assistance that helps fulfil UNFCCC obligations (including through technical assistance to help compile GHG inventories), has been reported as ODA as a matter of course, since it meets the basic ODA definition of having "the economic development and welfare of developing countries" as its main objective.

- Assistance for **mitigation** activities is more ambiguous. Insofar as mitigation activities are basically development projects (e.g. activities investing in clean energy distribution and generation or sustainable forestry), donor financing can count as ODA, as adaptation does. However, if the promotion of economic development and welfare of developing countries is not the main objective, such activities would not meet the development test, and would therefore not count as ODA. The purchase of certified emission reduction units generated under the CDM, for example, does not qualify as an ODA transaction as it is part of private finance and transactions. However further to the simple distinction between private and public finance the crucial point is to examine whether mitigation policies can achieve development goals as it is more intuitive for adaptation purposes. As stressed by the World Development Report (2010) and the European Commission Blueprint mitigation activities imply large costs for developing countries, and appropriate climate finance policies are needed to compensate their abatement efforts in the short term. However in the long term effective international emissions stabilising policies in which developing countries are also involved will reduce climate change damages for the poorest regions and this helps development goals. In other words mitigation and development may reconcile but only in the long run and this makes mitigation less consistent with traditional ODA aims in the short-run.

4. Overlaps between ODA and climate finance, by region and sector

We concentrate on the costs for adaptation by sector and region, and contrast these data with current ODA spending (using data for 2005 - 2007) and needs by sectors and regions. Ideally we would compare future sectoral adaptation needs with *future* sectoral ODA, but we do not have sufficiently precise data apart from the MDG cost estimates which we present at the end of the section.

We break out cost estimates according to the following five sectors (originally identified by the Working Group II contribution to the Fourth Assessment Report of the IPCC):

1. Agriculture, forestry and fisheries (AFF);
2. Water supply;
3. Human health;
4. Coastal zones;
5. Infrastructure.

We acknowledge that adaptation interventions might be needed in other fields. Nordhaus and Boyer (1999) aggregate climate change impacts in 7 main sectors: beyond health, agriculture, infrastructure, they include sea level rise, extreme weather events and catastrophes, and non-market amenity impacts. For those impacts, adaptation costs are also needed to avoid global warming damages. In this paper we only include those items for which we can provide (to the best of our knowledge) reliable estimates. We also include

adaptation to natural ecosystems (both terrestrial and marine); however, there are limited data on adaptation in this sector and investment needs estimates are not available. Instead, the need for investments to protect ecosystems from all current threats was assessed, in line with the 2007 UNFCCC analysis. The ODA data presented below are taken from the OECD Creditor Reporting System. Adaptation cost estimates presented in this section are derived from two main sources: the UNFCCC 2007 report 'Investments and Financial Flows to Address Climate Change' and the World Bank's 2009 'Economics of Adaptation to Climate Change' (EACC) report. The same source is also used for the analysis further down.

The EACC report uses two climate change scenarios – the National Centre for Atmospheric Research (NCAR) and the Commonwealth Scientific and Industrial Research Organization (CSIRO). We use CSIRO figures for the analysis in Section 4. CSIRO represents the drier scenario and requires lower total adaptation costs than the wetter scenario (NCAR), mainly due to lower costs for infrastructure, which outweigh higher costs for water and flood management. In both scenarios, infrastructure, coastal zones, and water supply and flood protection account for the bulk of the costs.

Box 1 Estimated costs of adapting to climate change in developing countries.

Economists identify many sectors for which countries are vulnerable to climate change. What are the costs of adaptation? A variety of estimates exist around what costs are for developing countries to adapt to climate change:

Table 2 : Annual Adaptation Costs in Developing Countries

Assessment	Annual Cost	Year
UNDP 2007	$ 86 billion	2015
UNFCCC 2007	$ 28-67 billion	2030
World Bank 2006	$9 - 41 billion	Present
Oxfam 2007	$ 50 billion +	Present
Stern Review 2006	$4-37 billion	Present
World Bank 2009	$75-100 billion	2010-50 p.a

There is a wide variation in these estimates. The World Bank 2006 estimate is based on the need to 'climate proof' development investments (including ODA and concessional finance, FDI and gross domestic investment). This figure has been criticised for 'not taking into account the costs of climate proofing existing supplies of natural and physical capital where no new investment is planned, the costs of financing new investments specifically to deal with climate change, or the costs to households and communities to fund their own adaptation needs' (IIED, 2008). More recent estimates by Oxfam that do acknowledge these factors put the costs of adaptation around US$ 50 billion annually. The UNDP estimate suggests costs between US$ 86-109 billion annually by 2015. The most recent cost estimates for adaptation to climate change in developing countries (and one of the more pessimistic scenarios) is presented in the World Bank's 2009 EACC report, data from which are presented below. Overall, the EACC report estimates the costs of adaptation in developing countries at $75-100 billion per annum over 2010-50, depending on the aggregation rule used and the climate scenario.

Costs of mitigation in developing country are equally variable. According to the UNFCCC, the *global* additional investment required in 2030 to keep below 2°C warming is between USD 200-210 billion annually of which USD 92-97 billion is for developing countries (UNFCCC, 2007). Recent analysis by McKinsey and Co. has shown that developing countries would require financing of the order of USD 80-120 billion annually in 2020 to mitigate climate change (Project Catalyst, 2009), and a recent EU publication estimates mitigation in developing countries only would cost USD 140 billion (European Commission, 2009).

The World Development Report reports the following estimates of the financing for mitigation in developing countries. Values are expressed at 2005 US$ constant prices. The same Report stresses that financing needs are higher than mitigation costs as benefits for mitigation only materialise over time. Most recently the World Bank has estimated that by 2030 around US$475 billion per annum would be needed for mitigation and adaptation in developing countries (World Bank 2009:23).

Agriculture, Forestry and Fisheries

Many actors ranging from individual private actors (such as farmers, ranchers, loggers, fisherpeople) to governments, international research organisations and corporations will be involved in the climate change adaptation process in the agricultural, forestry and fisheries sector. Some major adaptation interventions for these sectors will include changes in the mix of crop forage and tree species; changes in the mix of livestock and fish breeds; changes in the management of crops, forests and fisheries; pest, disease and fire management; changes in land and sea use; increasing extension and training services; and infrastructure development (UNFCCC, 2007).

Current ODA spending on AFF by region: According to the OECD, Creditor Reporting System, ODA for AFF totalled USD 4.1 billion in 2007. See table below for a regional breakdown.

Table 3: ODA gross disbursements by region for AFF (in current USD millions)

	2005	2006	2007
Sub Saharan Africa	1227	1341	1688
South Asia	556	529	534
East Europe and Central Asia	127	145	188
Middle East and North Africa	189	235	239
Latin America and Caribbean	443	459	718
East Asia and Pacific	295	320	399
Specified	2837	3029	3766
Unspecified	321	279	299
Total	3158	3308	4065

Source: OECD, CRS

Costs of adaptation in AFF: According to the UNFCCC 2007 data, adaptation to climate change in AFF in developing countries is estimated at about USD 7 billion. About 75 per cent of this amount will be required for investment in physical assets (capital formation related investment) and 25 per cent will be required in the form of financial flows for research and extension activities (UNFCCC, 2007). This assumes an arbitrary 10% increase in research and extension funding and a 2% increase in capital infrastructure costs. Using a more

detailed biophysical model of crop growth under climate change, the World Bank EACC report estimates the following adaptation costs for agriculture and fisheries[5]:

Table 4 Annual net cost of adaptation for agriculture (counteracting the effects of CC on children's nutrition levels), by region, 2010-2050 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
NCAR (wettest scenario)	1.0	0.2	1.2	0.2	1.7	3.3	7.6
CSIRO (driest scenario)	1.1	0.2	1.3	0.3	1.7	3.2	7.7

Table 5 Annual cost of adaptation for fisheries – loss in landed catch values, by region, 2010-50 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
Less intensive	1.05	0.03	0.20	0.08	0.08	0.08	1.52
More intensive	1.70	0.15	0.35	0.13	0.20	0.15	2.68
Overexploitation	1.18	0	0.18	0.10	0.08	0.10	1.64

Water sector

Adaptation measures for the water sector span across both the supply and demand sides of the sector. Some of the main adaptation measures needed in the water resource sector include (Kundzewicz, et al. 2007):

Supply side:

- Extraction of groundwater
- Increasing storage capacity by building reservoirs and dams
- Desalinisation of sea water
- Expansion of rain water storage
- Removal of invasive non-native vegetation from riparian areas

Demand side:

- Improvement of water-use efficiency by recycling water
- Reduction in water demand for irrigation by changing the cropping calendar, crop mix, etc
- Reduction in water demand for irrigation by importing agricultural products
- Promotion of indigenous practices for sustainable water use
- Expanded use of water markets to reallocate water to highly valued uses

[5] The EACC report includes an analysis of adaptation costs on forestry, but has grouped this with ecosystem services. However, the report does not provide specific adaptation costs associated with the forestry and ecosystem services sector by region.

Table 6: ODA gross disbursements by region in water sector (supply and sanitation) (millions of current US$)

	2005	2006	2007
Sub Saharan Africa	958	1081	1378
South Asia	320	356	404
East Europe and Central Asia	166	189	187
Middle East and North Africa	1487	1230	946
Latin America and Caribbean	328	348	304
East Asia and Pacific	169	314	325
Specified	3429	3518	3545
Unspecified	88	98	157
Total	3517	3616	3702

Source: OECD, CRS

According to the UNFCCC 2007 study, the additional investment and financial flows needed for adaptation in the water sector would be around USD 9 –11 billion in 2030. About 85% of the investment (USD 8 – 9 billion) is estimated to be needed in non-Annex I Parties, roughly the same order of magnitude as the additional investment and financial flows needed to meet the MDG target related to clean water access and sanitation (UNFCCC, 2007).

It is unclear whether most of these costs are expected to come from international public finance. According to 1999 and 2005 data, about 90% of costs for water resource use are covered by domestic funding and 10% by external funding.[6]

According to the World Bank EACC report, adaptation costs associated with water supply and flood prevention are estimated to be between USD13-17 billion per annum, and broken down by region as follows:

Table 7 Net annual adaptation costs for water supply and riverine flood protection, by region, 2010-50 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
NCAR	1.1	2.3	5.5	-0.2	-1.3	6.2	13.3
CSIRO	2.2	0.3	3.2	0.1	4.0	7.1	16.9

Based on World Bank cost estimates, and assuming the increase in spending (USD13-17 billion per annum) is to come entirely from ODA (~USD 4 billion in this sector in 2007), then *ODA would need to more than triple to meet the additional costs*.

[6] One could take the moral stance that nearly all finance for adaptation in developing countries needs to be additional because developed countries have caused most of the pollution.

Human health

The main need for the health sector in relation to climate change is to improve the capacity of the public health system to address the predicted increased incidences of infectious and diarrhoeal diseases, increases in air and water pollution in many locations, increases in intensity and frequency of many extreme events, and increased risks of malnutrition (UNFCCC, 2007). This will help developing countries reduce vulnerability to climate change.

ODA spending on human health: Total ODA for health reached USD 6.8 billion in 2007. Africa received the largest share of health aid in 2007, with Asia second. Although aid in the health sector is still dominated by multilateral and bilateral sources, NGOs such as the Bill and Melinda Gates Foundation are becoming a relatively more important source of funding and research.

Table 8: ODA gross disbursements by region in health sector (millions of current US$)

	2005	2006	2007
Sub Saharan Africa	2069	2388	2737
South Asia	882	941	1110
East Europe and Central Asia	274	194	202
Middle East and North Africa	633	644	471
Latin America and Caribbean	356	354	379
East Asia and Pacific	296	344	379
Specified above	4511	4865	5278
Unspecified	656	777	1513
Total	5167	5642	6790

Source: OECD, CRS

Additional finance needed for adaptation in the human health sector: According to the UNFCCC 2007 report, the estimated additional financial flows needed for the health sector (to treat the additional number of cases of diarrhoea, malnutrition and malaria) due to climate change in developing countries are around **USD 4 – 5 billion.** In countries where private individuals cannot cope with the additional cost of treatment (particularly LDCs that currently rely on external sources for health care), new and additional public financing will be necessary.

According to the World Bank EACC 2009 report, the regional breakdown of additional finance needed for adaptation in the health sector is as follows:

Table 9 Average annual adaptation costs for human health, by region, during the decade 2030-39 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
NCAR	0.1	0	0	0.1	0.3	0.7	1.2
CSIRO	0.1	0	0	0	0.3	0.6	1.0

The EACC cost estimates for human health are lower than the UNFCCC. Unlike the UNFCCC estimates, the World Bank study includes adaptation costs that cover only the additional costs to cope with *future* climate change. Thus, the costs of measures that would have been undertaken without future climate change are not included in the World Bank EACC adaptation costs.

Coastal Zones

Hazards relating to human development in coastal areas are likely to increase with climate change. Climate change will lead to higher sea levels, increased intensity of coastal storms, and destruction of coastal wetlands (UNFCCC, 2007). This, combined with expansion of human settlements in coastal areas, will require increased protection from coastal hazards.

The overall level of ODA investment in coastal adaptation is difficult to assess as there is no single agency with published information in any one country. Additional investment in worldwide coastal infrastructure of about USD 10 – 11 billion will be required in 2030 for adaptation for coastal areas due to sea level rise. About half of this (USD 5 billion) is needed in non-Annex I Parties (UNFCCC, 2007). While the split between international and domestic public funding is unclear, adaptation of coastal resources to climate change is highly dependent on public sources of funding.

The World Bank EACC report offers higher and more detailed estimates of costs associated with adaptation for coastal zone protection. The EACC report builds on the UNFCCC study in several ways. It considers adaptation costs of more intense storms as well as rising sea level, includes maintenance and construction costs, and adds the costs of port upgrade. These significantly raise the cost of adaptation to climate change for coastal zones over the UNFCCC estimate.

Table 10 Annual cost of adaptation for coastal zone protection, by region, during the decade 2030-39 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
Total adaptation cost	9.2	2.8	10.6	1.3	1.9	4.2	30.0

Infrastructure

The UNFCCC 2007 report states that there are two main types of climate change adaptation in infrastructure. This includes making modifications or changes in operations of infrastructure that would be affected by climate change (for example, increasing coastal defences to respond to more intense coastal storms) as well as creating new infrastructure needed to support activities to cope with climate-affected sectors or resources. This would include providing public health services, agriculture extension, disease monitoring systems, etc.

The cost of adapting infrastructure to cope with climate change is estimated at 5-20% of its costs (Noble, 2007), which equates to 2.4-41 billion in non-Annex I Parties, of which 80% will be in developing Asia. While it is unclear how much of private and public infrastructure is vulnerable to climate change, the amount is likely to be financed by all types of sources, including domestic, external, public and private.

According to estimates by the Stern Review, the share of ODA and concessional finance sensitive to climate change will be higher (20%) than the global average (2-10%). They have estimated that the annual cost of adapting infrastructure to the impacts of climate change at 2000 USD 1-4 billion, *equivalent to a 30% increase in ODA infrastructure spending between 2005 and 2030* (Stern et al, 2006).

The World Bank EACC report falls in the middle of the UNFCCC 2-41 billion range:

Table 11 Annual cost of adaptation for infrastructure, by region ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
NCAR	10.6	3.3	3.5	1.4	7.5	3.4	29.5
CSIRO	4.1	1.4	1.7	0.9	4.0	1.5	13.5

Current ODA in infrastructure is around USD 13.6 billion in 2007. Asia was the biggest ODA recipient, followed closely by Africa. See table below.

Table 12 ODA gross distributions in infrastructure (economic infrastructure and services) (in current USD millions)

	2005	2006	2007
Sub Saharan Africa	2513	2652	3826
South Asia	2338	1951	2588
East Europe and Central Asia	837	1169	1162
Middle East and North Africa	2761	2980	2464
Latin America and Caribbean	379	416	638
East Asia and Pacific	1578	1400	2109
Specified	10405	10569	12786
Unspecified	334	606	796
Total	10739	11175	13583

Source: OECD, CRS

Natural ecosystems

While it is unclear whether human intervention can significantly improve the impacts of climate change on natural ecosystems, adaptation could reduce some of the most harmful impacts. The IPCC asserts that human intervention to assist ecosystem adaptation should involve reducing impacts of other threats to ecosystems, such as habitat degradation, pollution and introduction of alien species. The UNFCCC 2007 report places adaptation for natural ecosystems into the following categories:

- Reduce and manage stresses from other sources and activities, such as pollution; over harvesting, habitat conversion, and species invasions;
- Restore habitats;
- Increase size and/or number of reserves;
- Increase habitat heterogeneity within reserves, for example, by including gradients of latitude, altitude, and soil moisture;
- Maintain ecosystem structure and function as a means to ensure healthy and genetically diverse populations able to adapt to climate change;
- Increase landscape connectivity using corridors and stepping stones to link areas of habitat or reserves;
- Increase landscape permeability through reduction of unfavourable management practices and increasing area for biodiversity;
- Translocate and reintroduce species, especially those having essential functions such as pollination;
- Conserve threatened and endangered species ex situ, for example, using seed banks or collecting germplasm and zoos, including captive breeding for release into the wild.

Current spending on ecosystem protection in developing countries: ODA for ecosystem protection is currently two orders of magnitude below what is needed. Between 1991 and 2000, the GEF provided about USD 1.1 billion in grants and leveraged an additional USD 2.5 billion in co-financing for biodiversity-related projects. Most of these grants were channelled through developing-country governments and NGOs. OECD data show only USD 198 million in biodiversity projects from the World Bank system (including the GEF) in 2000 and USD 267 million in 2005 (ODA 2007 data for ecosystem protection could not be found). Taking the annual average of GEF direct and co-financed resources of

USD 1.1 billion over 10 years, we assume ODA at roughly **USD 360 million** per annum for ecosystem protection[7].

Investment needed for ecosystem protection: Estimates in the literature suggest that ecosystem protection (including expanding the network of protected areas and compensating local communities currently depending on resources from fragile ecosystems) could be achieved for an increase of USD 12-22 billion per annum. It is unclear what percentage should be allocated to developing countries. It is also unclear what percentage of these costs should be covered by international public financing as opposed to other financial flows and investments. However, it is important to note that private sector investment in ecosystem protection has been relatively limited and focused in areas such as ecotourism, agroforestry and conservation of medicinal and herbal plants (UNFCCC, 2007). Therefore, the majority of finance for ecosystem protection is likely to come from domestic or external public funding.

The World Bank EACC study does not include cost estimates for ecosystem protection.

Extreme weather events

Climate change is going to involve much more extreme weather events. While the UNFCCC 2007 report does not include this as a category or sectoral focus for investment, the World Bank EACC highlights this as an important area to focus adaptation funding and estimates the following costs by region:

Table 13 Average annual cost of adaptation for extreme weather events, by region, in 2030 ($ billions at 2005 prices, no discounting)

	East Asia and Pacific	Europe and Central Asia	Latin America and Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	Total
NCAR	1.48	0.82	1.34	0.26	2.00	1.18	7.08
CSIRO	1.53	0.47	0.70	0.37	3.37	1.13	7.57

ODA data does not exist for extreme weather events.

Summary and analysis

The table below summarises the information collected in this section on current (2005-2007) ODA spending and climate adaptation needs (based on the World Bank EACC study), as well as MDG needs in Africa, for each of the sector. In this way we can examine whether aid and adaptation needs would go to similar or different sectors.

Roughly speaking, if adaptation finance needs were met out of aid flows it would mean a reallocation of aid towards purposes such as agricultural, coastal areas, and the water sector, a similar allocation to infrastructure (although adaptation costs range from low to high), and less funding for health, education and items such as aid for trade.

[7] In total, current annual spending for ecosystem protection is roughly USD 7 billion from both public domestic and external funding, with roughly USD 1 billion spent in developing countries (UNFCCC, 2007).

Table 14 Summary ODA spending and adaptation costs, by theme

Sector	2007 ODA gross disbursements by sector– USD billion	Additional financing needs to meet MDGs (Africa)	Additional spending needed for adaptation in developing countries (using World Bank EACC data), USD billion
Agriculture, Forestry, Fisheries	4.1	8	7.6
Water Supply	3.7	5.8	13-17
Human health	6.8	32	1.2
Coastal zones	Unknown	N/A	30
Economic infrastructure and services	13.6	17.9	13-30 (Stern says 30% increase of ODA for infrastructure)
Ecosystem protection	0.4	N/A	12-22
Extreme weather events	Unknown	N/A	7
Education	8.9	8.3	Not mentioned

Source: text; Note: percentage breakdowns by region are not available for all sectors.

Table 14 compares current ODA funding with adaptation funding needs in each sector. In most sectors, ODA is lower than the annual adaptation funding need and this could be an argument for additional aid especially in those countries where the private finance sector is weak and where development and new challenging adaptation needs cannot be appropriately tackled. There are very few cases where ODA is high enough to cover future adaptation needs but a careful analysis would be needed to verify if other development needs could be satisfied by the remaining funds for aims that are not strictly related to adaptation (e.g. inputs availability for production). Further reflection is needed on the sectoral allocation of ODA. If adaptation is considered a crucial priority in the development agenda certain sectors suffer an “under provision” of ODA.

The following tables provide a sectoral and geographical breakdown of ODA funding (in 2007) and future adaptation needs (generally, by 2030).

Table 15 Agriculture, Forestry and Fisheries: Breakdown of ODA spending and adaptation costs

	ODA share (2007)	Adaptation costs share
Sub Saharan Africa	0.30	0.36
South Asia	0.20	0.19
East Europe and Central Asia	0.09	0.02
Middle East and North Africa	0.19	0.04
Latin America and Caribbean	0.05	0.16
East Asia and Pacific	0.16	0.23

Source: OECD, CRS, EACC

Table 16 Water Supply and Sanitation: Breakdown of ODA spending and adaptation costs

	ODA share (2007)	Adaptation costs share
Sub Saharan Africa	0.39	0.42
South Asia	0.11	0.24
East Europe and Central Asia	0.05	0.02
Middle East and North Africa	0.27	0.01
Latin America and Caribbean	0.09	0.19
East Asia and Pacific	0.09	0.13

Source: OECD, CRS, EACC

Table 17 Breakdown of ODA spending and adaptation costs for human health

	ODA share (2007)	Adaptation costs share
Sub Saharan Africa	0.52	0.60
South Asia	0.21	0.30
East Europe and Central Asia	0.04	
Middle East and North Africa	0.09	
Latin America and Caribbean	0.07	
East Asia and Pacific	0.07	0.10

Source: OECD, CRS, EACC

Table 18 Breakdown of ODA spending and adaptation costs for infrastructure

	ODA share (2007)	Adaptation costs share
Sub Saharan Africa	0.30	0.11
South Asia	0.20	0.30
East Europe and Central Asia	0.09	0.10
Middle East and North Africa	0.19	0.07
Latin America and Caribbean	0.05	0.13
East Asia and Pacific	0.16	0.30

Source: OECD, CRS, EACC

Tables 15 – 18 bring out regional differences by sector. With respect to agriculture and fisheries, ODA provides relatively more spending to Middle East and North Africa (MENA) and less to Latin America and East Asia compared to future adaptation needs. Similarly, with respect to the water sector, ODA provides relatively more spending to Middle East and North Africa (MENA) and less to Latin America and South Asia compared to future adaptation needs. Concerning health, ODA provides relatively more spending to Latin America and MENA and less to South Asia and sub Saharan Africa compared to future adaptation needs. On the other hand, ODA spends relatively much more on SSA than on SA Latin America and East Asia, compared to adaptation needs. The following observations can be made about

the geographical and sectoral overlaps and differences between current purposes of aid and future needs for adaptation finance:

- Adaptation needs place a greater emphasis on the water sector than aid does (table 14). If increased aid were to meet the adaptation needs this would therefore mean a relative shift of aid resources towards the water sector (compared to current aid spending priorities). Similarly, from table 16 we learn that if adaptation needs in the water sector are met, this would lead to relatively less spending in Middle East and North Africa (MENA) and more in Latin America and South Asia.

- Adaptation needs place a relatively smaller emphasis on **agriculture** than current aid spending (although the overall levels of aid are not that large compared to other sectors). From table 15 we can see that if climate finance does meet the adaptation needs in the agriculture sector, this would imply a relatively greater share of sources for Latin America and Asia compared to current traditional aid spending (and less in MENA).

- Aid spending places a relatively greater emphasis on the **health** sector than adaptation needs. Hence, the health sector (in aggregate) might suffer from relatively fewer resources if aid was used to meet adaptation needs.

- Aid spending places a relatively greater emphasis on **infrastructure** than adaptation needs. If adaptation needs were used as a way to allocate ODA resources to infrastructure across countries, this would imply a larger share of finance to Asian and Latin American countries rather than African countries, compared to current aid spending on infrastructure. Sub Saharan Africa in particular would lose out.

- Overall, because of the importance of infrastructure in both aid and adaptation needs, the overall share of ODA to SSA (38%) is higher than the share of adaptation needs covering SSA (22%), and the opposite applies to LAC, SA and EAP). So if adaptation needs were covered by aid, it would imply a shift away from sub Saharan Africa (table 19),

Table 19 Share of Aid and Adaptation needs (EACC, NCAR scenario) in the sectors covered in this section.

	Aid	Adaptation needs
Sub Saharan Africa	0.38	0.22
South Asia	0.18	0.13
East Europe and Central Asia	0.07	0.12
Middle East and North Africa	0.16	0.05
Latin America and Caribbean	0.08	0.22
East Asia and Pacific	0.13	0.26
Total	1.00	1.00

Concluding there are clear overlaps between the relative sectoral and geographical allocation of current aid and the relative sectoral and geographical allocation of future adaptation finance activities. But there are also differences. Thus if part of aid was used to finance future adaptation activities this would have sectoral and geographical implications. Overall, if aid was allocated according to future adaptation needs, sectors such as health, education and aid for trade would lose out, whilst aid to the water sector should increase. Moreover, if aid was allocated according to future adaptation needs it is also likely to lead to a relative shift of resources into Asia, Latin America and Middle East and away from (sub Saharan) Africa.

5 Overview of different UNFCCC policy proposals in relation to additionality of climate finance

The section examines proposals in relation to additionality of climate finance on the basis of documents submitted to the UNFCCC. Appendix I includes 26 proposals from developed and developing countries, from small island state and big countries, from groups and individual countries.

Key areas of interest to the proposals include

I. Budgetary contributions:
   a. **G77 and China group**: 0.5 to 1% of developed countries' GDP on top of existing ODA (it is not clear in the proposal if this means 'existing ODA flows' or 'existing ODA commitments')_
   b. **Mexico Green Fund: c**ontributions from national governments based on emissions, GDP and population.
   c. **India**: 0.5% of developed countries' GDP on top of 'existing or likely resources, including ODA'
   d. **Africa group**: Financial flows to support adaptation in developing countries must be $67 billion/year by 2020 on top of existing ODA (aligned with G77 and China, similarly ambiguous)

II. Carbon Markets
   a. **Norway**: Auctioning of Assigned Amount Units (AAUs)
   b. Auctioning permits in domestic cap and trade systems (i.e **Germany**'s ICI fund and The **US** Auction Levy)
   c. Levy on the issuance of CDM credits – and extend to JI and emissions trading (i.e Adaptation Fund – 2% of CDM).
      Pakistan proposes to increase the current levy on the issuance of CDM credits from 2% to 3-5%.

III. Taxation
   a. **Switzerland**: taxation on all global carbon emissions - a basic tax exemption of 1.5tCO2-eq per inhabitant, to take into account the principle of common but differentiated responsibility.
   b. **G77 and China group**: 5% levy to carbon-intensive products and services in Annex I Parties, 5% profits participation of carbon-intensive patented processes, 2% overprice on fossil fuels to be contributed by Annex I Parties.
   c. **Least Developed Countries:** argues for a levy on civil aviation (International Air Passenger Adaptation Levy - IAPAL) and maritime transport except journeys to and from the LDCs;
   d. **Tuvalu** (Burden Sharing Mechanism): 0.01% levy on international airfares and maritime transport freight charges operated by Annex II countries; a 0.001% levy on international airfares and maritime transport freight charges operated by non-Annex I countries; and exemptions would apply to all flights and maritime freight to and from LDCs and Small Island Development States (SIDS).
   e. **Nigeria, Liberia**: The International Maritime Emissions Reduction Scheme (IMERS)
   f. **Madagascar**: International tax on global monetary transactions

IV. Other innovative funding mechanisms:

a. Issuance of Bonds (i.e **EU**'s Global Capital Fund Mechanism (GCFM)
b. The Currency Transaction Tax (CTT)
c. **Nicaragua**: Innovative financial instruments such as capital risk or climate safety funds.

Roughly half of the proposals included in Appendix I call for 0.5% (or up to 2%) of developed country GDP (or GNI) to be spent on climate action, and additional to ODA. Some elaborate and say 1% of GDP in total (0.7% plus). A few proposals mention a specific value for an adaptation fund (e.g. US 67bn or €100bn) but are less clear on whether this can be paid out of ODA, or say explicitly that aid can be used. A few proposals call for new and additional channels to fund the additional climate finance (using a Multilateral Climate Technology Fund). Some proposals include the principles underlying finance such as the polluter pay principle, using a green or carbon levy, air passenger duty.

Related proposals also come from the academia. Stern (2009) calls for substantial assistance in adaptation, the necessary additional support (over and above existing commitments on official development assistance) is likely to be in the region of $100bn per annum by the 2020s. This proposal inspired the recent commitment of the British Prime Minister Gordon Brown calling for $100 billion by 2020. However Brown specifies that "It would come, as I have set out, from a combination of the carbon market, new and additional sources of predictable finance and a limited amount of development aid". In Brown`s view there is a partial overlapping between ODA and climate change finance. Brown specifies the share of ODA that should be addressed to climate change that "In the UK we will limit such expenditure to up to 10% of our official development assistance. And we will work towards this limit being agreed internationally up to 10% of our official development assistance". This means that 90% is to come from other sources.

Brown`s proposal is clear about the additionality of public finance transfers, at least when aid is at 0.7% of GNI:

"I can therefore announce that as part of a comprehensive international agreement in which all countries play their part, the UK will contribute our fair share to climate financing separately from and in addition to our promises on aid and the Millennium Development Goals. That means that even when we have achieved our 0.7% target of national income we will also be contributing additional finance on top. I believe that additionality to aid in this way is an important principle to which all developed countries should commit"

and

"This will ensure both that sufficient aid is directed at achieving the Millennium Development Goals in the poorest countries, and that, while some climate finance is clearly aid, this is not used to undermine the principle of additionality".

Subsequently, Brown announced a US 10 billion climate change fund (November 2009), with Britain set to spend around US 1 billion which it has already pledged to the Climate Investment Funds (as capital) and which counts towards the 0.7% target.

The CHOGM (Commonwealth Heads of Government Meeting) meeting in Trinidad and Tobago has agreed the need to reach an agreement during Copenhagen negotiations to tackle immediately adaptation challenges with appropriate financial transfers especially for the poorest and most vulnerable developing countries.

Operationally, such proposals do not clarify to what extent climate finance would come out of ODA (grants or loans), OOF or private sector and other finance.

The Dutch Proposal is more specific about this aspect. It specifies that as part of the Dutch ODA target of 0.8% of Gross National Income, 0.1% is reserved for environment and development. The global 0.8% target includes additional aid to the 0.7% of GNI that had been promised at international level for development initiatives.

The collective commitment enshrined in the Copenhagen Accord included a pledge for new and additional financial resources to developing countries for the period 2010-2012 of US 10.6 billion (EU), US 11 billion (Japan) and US 3.6 billion (US), shared between adaptation and mitigation.

6 Options for achieving additionality of climate finance

It is difficult to measure additionality of resources. Additionality at source might more visibly contribute to additionality than additionality of resources. This perspective would suggest that when new mechanisms are developed, generating new finance, new and additional resources would be generated at the same time, e.g.by raising climate finance from carbon taxes. A number of bilateral and multilateral proposals have been put forward in the international climate change negotiations to raise additional revenue to address adaptation (and some mitigation activities, such as reducing emissions from deforestation) in developing countries. These proposals aim to generate income by tapping into some of the revenue from the carbon market, or more broadly through carbon or international travel-related taxes or levies, rather than from conventional ODA funding sources. At present, most international climate funding instruments, with the exception of the Kyoto Protocol's Adaptation Fund, which is financed through a 2% levy on CDM proceeds, rely on ODA. So a mechanism which generates resources additional to ODA might be seen as additional, although in practice the overall flows will be important to determine additionality.

The following proposals are distinct and noteworthy because they involve a degree of automaticity and autonomy. Innovative financing proposals can be grouped into five categories (Brown, 2009)[8]:

i. **Auctioning of assigned amounts or emission allowances:** Each Annex I country receives a number of greenhouse gas units to release and/or trade (assigned amount units, AAUs), in accordance with the Kyoto Protocol, during the 2008-2012 commitment period. The underlying principle of this scheme is to auction a certain share of AAUs to generate revenue, rather than giving them out for free to Annex I domestic firms that have to comply with emissions reductions. This plan to auction AAUs is represented in the Norwegian proposal.

ii. **A uniform global tax on CO_2 emissions:** Funds are raised by placing a global tax on all carbon emissions, but with a per capita exemption for least developed countries (LDCs). This revenue raising mechanism is the basis for the Swiss Global Carbon Adaptation Tax.

[8] For more information, please see:
http://www.africapartnershipforum.org/dataoecd/29/56/43551050.pdf

iii. **Levies on emissions from international maritime transport and on air travel:** Funds are raised by charging individuals and companies, based on their responsibility for climate change and/or their capability to pay. The charges or levies could be applied to international aviation and maritime transport or air travel. Charge/levy schemes include:
   - The International Air Passenger Adaptation Levy on fuels (IAPAL);
   - The International Maritime Emissions Reduction Scheme (IMERS); and
   - Tuvalu's Burden Sharing Mechanism (BSM) (Adaptation Blueprint).

iv. **Carbon market-based levies:** Funding can be generated by applying a levy to the Kyoto Protocol's tradable units generated from the CDM, Joint Implementation (JI) or emissions trading (a form of "climate currency", with each tradable unit representing one metric tonne of CO_2 equivalent). The 2% CDM levy mechanism used to raise funds for the Kyoto Protocol's Adaptation Fund is an example of a carbon market-based levy. There is interest in extending or increasing the levy to other aspects of the carbon market. Proposals include:
   - Extending the levy to JI and/or International Emissions Trading (IET); and
   - Pakistan's proposal to raise the CDM levy from 2% to 3-5%.

v. **Issuance of bonds:** Funds can be raised through bonds issued on the international markets available for immediate use. The EU's Global Capital Fund Mechanism (GCFM) proposes such a mechanism.

7 Mapping out scenarios for future provision of aid and climate finance

This section will map out two sets of possible scenarios on how aid and climate finance can be provided in the future. The scenarios are based on the UNFCC proposals discussed in the previous section. We are not necessarily describing the most likely scenarios, but those that bring out the relevant issues. As in many other studies in the field (eg Cantore and Padilla, 2009), scenario analysis can be used to understand the advantages and disadvantages associated with each scenario.

To set up the key scenarios, we begin by considering a benchmark in which developed countries spend 0.7% of their incomes on aid (ODA). The financial flows in this scenario are composed of ODA / public resources. In the scenarios assuming additionality we assume that additional funding can be covered by both public and private resources. In the scenario in which there is no additionality (diverting aid scenario) we assume that a share of ODA finance is used for environmental purposes.

As recently suggested in the EC blueprint climate change finance can come from international public finance in rich regions, carbon market and private domestic investments especially for emerging economies. The proposals outlined in the previous sections can involve different hypotheses about the distribution of the source of finance.

Aid recipient perspective

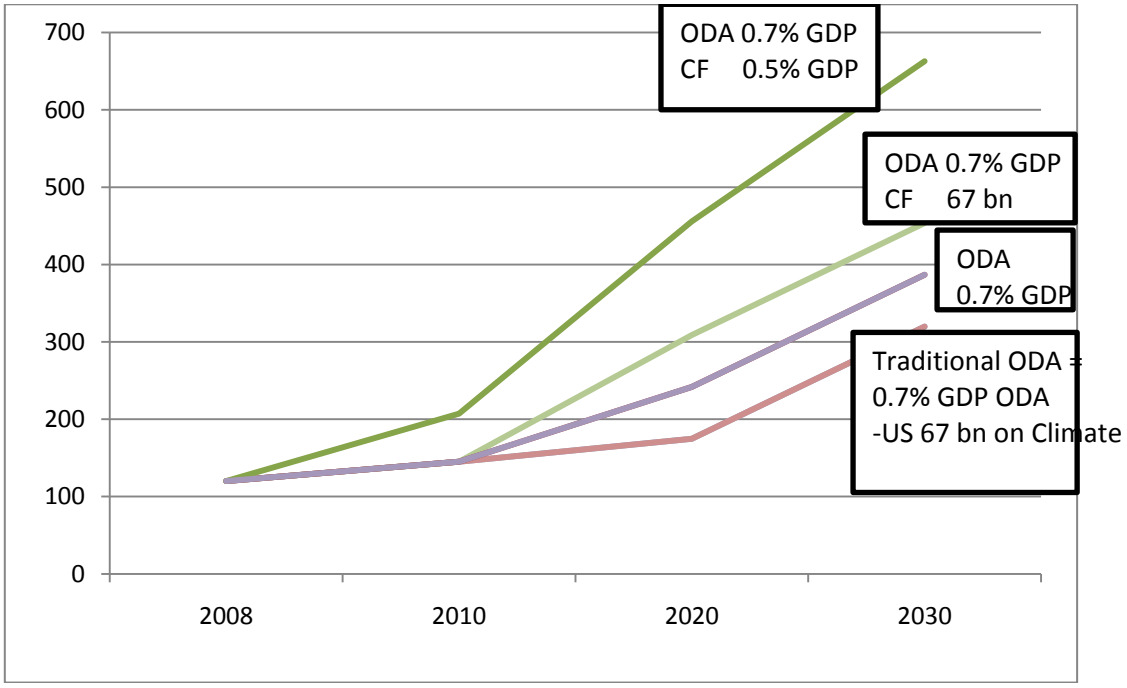
The following scenarios could be distinguished from an aid recipient perspective:

- **BAU.** Baseline scenarios (BAU)– ODA at 0.7% of GDP (or GNI) by 2030 (nearly USD 400 bn at 2008 prices assuming GDP increases by around 2%). This is the purple line in figure 1 below.
- **ADD1.** Climate finance additional to traditional ODA (e.g. an additional 0.5% of GDP) but could be counted as ODA and use similar disbursements mechanisms – this is the top line in the figure below (ADD1).
- **ADD2.** Climate finance should be additional to traditional ODA (0.7% of GNI) (e.g. an additional USD 67 bn as suggested by the Africa group) but could be counted as ODA and use similar disbursements mechanisms – this is the line below the top line in the figure below (ADD2). In this context the UN would/.should raised the ODA goal from 0.7 of GNI to a higher composite figure
- **DIVERT.** Diverting aid scenario – ODA at 0.7% of GDP (or GNI) by 2030 but some US 67 billion taken out of aid to spend on environmental purposes (and not "traditional" aid). This is the bottom line in the chart below (DIVERT).

Figure 1 shows the hypotheses underlying different scenarios strongly influence the flow of transfers from rich to poor regions. From an aid recipient perspective the magnitude of the additional transfer is the main variable. In terms of financial flows the DIVERT scenario and the BAU scenario overlap as they imply the same amount of transfers. The scenario ADD1 and ADD2 imply a financial transfer that is higher than in the baseline scenario. Interestingly a 0.5% proposal implies a higher impact for the aid recipient than the US 67 billion proposal. Of course here we do not comment how additional funds from private or public funds could generate different impacts on developing countries according to the macroeconomic context.

Figure 1 Projections on ODA flows to meet traditional and climate objectives

US$ billion



Aid providers' perspective

However, there is also the aid provider's perspective. From an aid provider perspective both substantial and operational definitions of additionality are important. For the provider it is important to decide the appropriate amount of funding and to use the right channels to leverage the resources.

An OECD-DAC paper (OECD, 2009) illustrates the various views on the basis of four stylised policy positions:

- **There should be complete separation between ODA and climate-change related financing on grounds of reparations due for harm done**. Provided that the amount of ODA does not decrease, this would imply a pure additionality perspective in which funds for climate finance are provided beyond ODA. This situation is compatible with scenario ADD1 and ADD2.
- **The amount of climate change related aid that can be reported as ODA should be limited in order to avoid diversion from "MDG-related" ODA**. This relates to Brown`s 10% of ODA perspective. In this case there is partial diverting of funds from ODA to climate finance purposes. However from a substantial point of view additionality is still preserved if other funds are addressed to developing countries beyond the "climate proof" portion of ODA.
- **All donor support for climate change should be reported as ODA, and indeed this is a necessary condition for mobilising taxpayer support**.
- **All ODA targets and commitments should be adjusted upwards to take account of climate change financing needs**. In this case as for the previous claim climate finance money is risen through ODA and public finance, but the claim clearly states that ODA for climate finance should be additional to traditional development purposes.

From a donor perspective additional funds can also be sourced from private sources (section 6). Those channels will strongly depend on the successful implementation of post Kyoto agreements about flexible mechanisms such as emissions trading schemes and CDMs. The setting up of appropriate emissions targets to rich countries that are well below a Business as Usual projection of emissions will guarantee a better functioning of the emissions market. Firms using carbon inputs in developed countries will try to implement emissions reducing projects where abatement costs are lower, and this can take place especially in developing countries (WDR 2010). Poorest regions will be able to gain from foreign direct investments and trade in services stimulated by CDMs. They could also get additional funds in the case they were involved in an emissions trading scheme but they were not subject to binding emissions constraints. If they were not subject to emissions constraints developing countries could be remunerated for every emissions reduction from a baseline scenario and at the same time they would not be obliged to satisfy growth reducing emissions constraints. The European commission blueprint estimates that the climate finance need for developing countries is around 100 bn euros per year and that 40% of these funds should come from carbon markets. This would be an interesting way to raise funds for climate in developing countries. Private flows could also generate some interesting spillover effects as developing countries could enjoy modern technologies and stimulate local entrepreneurship especially in new green sectors. In other words additional funding from private sources could also generate a positive leverage effect. But it will also have distributional consequences as private flows tend to go to larger emerging markets, not the poorer countries.

8 Scenario analysis

We assess two sets of scenarios on additionality (from a recipient and provider's perspective) against three criteria including the volume, distribution (geographical as well as sectoral) and quality of finance.

- The *volume of finance* is a crucial variable for both donor and recipient perspectives. We examine how the various scenarios relate to the measurement and likelihood of achieving additional climate finance.
- The *distribution of finance* across sectors and regions will be affected by the extent to which adaptation costs or aid objectives are met
- The *quality of finance* examines the effectiveness by which funds can be transferred to and used by developing countries.

Table 17 undertakes the scenario analysis. It suggests that additional mechanisms to secure additional climate finance might help to achieve additionality but depending on its source might lead to some misalignments in development finance (e.g. sectoral and geographical effects, or even volume effects in the case of private sector reliance). It also suggests that additional finance to address climate change is more likely to lead to relatively more finance for water in Middle East, Asia and Latin America compared to education, health or aid for trade support in Africa. Whilst it is more risky to rely on private sector sources of climate finance, there could be larger developmental effects (e.g. impact of FDI vs ODA) depending on local institutions and policies, although there will also be distributional consequences.

Table 17 Aid and climate finance scenarios

	Volume of finance	**Sectoral distribution of finance**	**Geographical distribution of finance**	**Quality of finance**
Recipient's perspective				
Climate finance (0.5% of GNI) additional to aid (0.7% of GNI)	Large additional volumes	Distribution according to adaptation needs would mean scaling up of support especially for water, but less so for education, health and aid for trade	Distribution according to adaptation needs would mean scaling up of support especially for Asia, Latin America and less to in Africa	Transfers of up to 700 billion to poor countries likely to lead to Dutch disease issues, without innovations in governance to counteract its effects
Aid at 0.7% of GNI in part diverted to climate finance	Aid diverted to climate finance causes changing the composition of finance	Increases in resources for water, but cuts for education, health and aid for trade	Increases in Asia, Latin America and Middle East and cuts in resources for Africa	
Donor / provider's perspective				
Climate finance and aid use same mechanisms	Difficult to measure additionality	Donors tend to emphasise social sectors rather than supply side sectors.		Strongly coordinated, but issues of speed of disbursement and Dutch disease.
Climate finance using separate channels involving public transfers	Easy to measure additionality compared to existing aid.	Mechanisms earmarked for certain sectors		Fragmentation in development assistance and increase in transaction costs
Climate finance through private channels	Easy to measure additionality, but risks in reaching required aid volumes when relying on markets (e.g. carbon price).	Relative increase in resources in those sectors more ready for private ownership and transfers	Relative increases in resources in those countries with better prospects for investment (e.g. not in poor countries in Africa)	Potential issues of alignment with public sector funding, but private finance may have larger development externalities

9 Conclusions

There are clear overlaps but also important differences between the objectives and activities classified under ODA and financial flows to help developing countries address climate change. The extent to which ODA is diverted from traditional development activities towards mitigating and adapting to climate change in developing countries has important implications. Such as how countries are able to reduce poverty and achieve economic growth through development, but also how countries are able to cope with a changing climate. Are there implicit tradeoffs between responding to climate change and addressing poverty? How can each type of flow (development assistance and climate finance) meet their stated purposes without compromising others?

Most types of climate finance could be presented as ODA-eligible. Adaptation assistance, as primarily a local good, would benefit developing countries directly. Mitigation provides a global public good, but would also benefit growth and development in developing countries. The lack of adaptation and mitigation in developing countries will make reaching MDG more difficult. Both adaptation and mitigation (targets of climate finance) are needed to reach development objectives (targets of aid). Adaptation to climate change can mitigate the adverse impacts, and direct measures to reduce climate change will therefore benefit the poor who would otherwise be made more vulnerable. However, given resource scarcity, donors must set priorities for the activities that will most efficiently and effectively achieve the development goals.

There is a heated debate on the concept of additionality. In this paper we distinguish between two broad types of additionality according to whether one considers the origin or the ultimate effect of the particular resource, ie additionality in instruments (donor's providers) and additionality in resources (recipient).

Using a quantitative analysis of current aid spending, MDG finance gaps and expected future adaptation costs we conclude that there are clear geographical and sectoral overlaps between current aid allocations and future adaptation finance needs, but also differences. Thus if part of aid was diverted to finance adaptation activities this would have sectoral and geographical implications for how aid was distributed. Overall, if aid is diverted to finance future adaptation needs, sectors such as health, education and aid for trade would lose out, whilst aid to the water sector should increase. Moreover, if aid was allocated according to future adaptation needs it is also likely to lead to a relative shift of resources into Asia, Latin America and Middle East and away from (sub Saharan) Africa.Thus without explicit mentioning of additionality of climate finance and aid, increased climate finance activities might lead to less aid flows to Africa and lower aid flows to sectors such as education or aid for trade putting development efforts in jeopardy.

We described and categorised 26 UNFCC proposals from developed and developing countries, from small island state and big countries, from groups and individual countries, in relation to additionality of climate finance. Roughly half of the proposals call for 0.5% (or up to 2%) of developed country GDP (or GNI) to be spent on climate action, and additional to ODA. Some elaborate and say 1% of GDP in total (0.7% plus). A few proposals mention a specific value for an adaptation fund (e.g. US$ 67bn or € 100bn) but are less clear on whether this can be paid out of ODA, or say explicitly that aid can be used. A few proposals call for new and additional channels to fund the additional climate finance (using a Multilateral Climate Technology Fund). Some proposals include the principles underlying finance such as the polluter pay principle, using a green or carbon levy, air passenger duty.

We then develop, on the basis of these UNFCCC proposals, two sets of scenarios for the future provision of aid and climate finance. From a recipient's point of view it is crucial to distinguish between:

- Climate finance (at least 0.5% of GNI, others suggesting US$ 67 billion) provided additional to aid (0.7% of GNI), and
- Aid at 0.7% of GNI which would in part be used for climate finance

From a donor's point of view it is crucial to distinguish between:

- Climate finance and aid using same mechanisms
- Climate finance using separate channels involving public transfers
- Climate finance through private channels

The scenario analysis suggests that depending on the source of additionality of climate finance there may be some misalignments with development finance (e.g. sectoral and geographical effects, or volume effects in the case of private sector reliance). Climate finance needs and development needs differ by sector and geographical area. If climate finance follows the priorities, and compared to traditional aid allocation finance to address climate change is more likely to lead to relatively more finance for water in Middle East, Asia and Latin America, rather than support for education, health or aid for trade in Africa. Hence a diversion of aid to climate finance (e.g. if traditional aid was used to address climate change needs) involves reallocations across priority sectors and areas and this would hit education and Africa hardest). Whilst it is more risky to rely on private sector sources of climate finance, there could be larger developmental effects (e.g. impact of foreign direct investment (FDI) vs ODA, depending on local institutions and policies), although there will also be distributional consequences.

Especially in those regions where the private finance sector is weak, or where private sector financial flows are low or not effective, ODA should be able to satisfy traditional development needs and adaptation targets. Innovative financing tools such as carbon markets that involve the private sector could complement the positive effects of traditional and new public finance tools for development and global warming, and create the conditions for a sustainable growth in developing countries over time.

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Appendix I: summary of party proposals

Country	Summary of Proposal	Does it propose a specific amount or percentage ?	Is this amount or percentage explicitly additional to ODA?	Could part of this in principle be met out of ODA?	Are there explicit calls for additional sourcing mechanism ?	Are there explicit calls for additional spending mechanisms?
The Africa Group	In agreement with G77 and China proposal - 0.5% GDP from developed countries for 'climate action' in developing countries. Financial flows to support adaptation in developing countries must be $67 billion/year by2020.	✓	✓ in addition to existing ODA	✓	✓	Adaptation action should be country-driven, address the concerns of especially vulnerable groups such as women and children, and reflect indigenous knowledge
AOSIS (Alliance of Small Island States)	Funding must be grant-based and generated from assessed contributions from developed country Parties, as well as market-based mechanisms and private sector sources. • Funding from auctioning of AAUs under the Convention. • Countries beyond Annex II countries should provide support. • Financial commitments by developed countries must by fully MRVed.	×	N/A	✓	✓	Creation of a "Multi-window Mechanism to Address Loss and Damage," including: • Insurance Component • Rehabilitation/Compensatory Component • Risk Management Component
Argentina	Supports extending the share of proceeds to the JI and ETS mechanisms, recognizing that "this will result in a rapid and effective way to increase the funds that are urgently needed. These funds will be additional to the funds currently available as share of proceeds of the CDM."	×	N/A	✓	✓	Supports creation of MCTF and advocates that the MCTF should include supervision of financing mechanisms. A new body on technology transfer and finance should be convened under the UNFCCC-this body should fund NAPAs and NAMAs, among other things.

Bangladesh	Funding from Annex I countries on the basis of polluter-pays principle, possibly by implementing an International Air Passenger Adaptation Levy or Green Levy on airfare and carbon taxes.	×	N/A	✓	✓	Supports creation of MCTF. Financial mechanism should be fully under the COP.
Bolivia	At least 1% of GDP in developed countries and other contributions from taxes on oil and gas, financial transactions, sea and air transport, and profits of transnational companies. Additional to ODA.	✓	✓	✓	✓	Proposes the creation of an "Integral Financial Mechanism for Living Well," which "must be under the coverage of the UN, and in no case under the GEF and other intermediaries such at the world Bank and regional development banks." Decisions must be made by all Parties.
Brazil	In agreement with G77 and China proposal - 0.5% - 1% of GDP from developed countries for 'climate action' in developing countries.	✓	✓	✓	✓	Supports idea of registry as a framework for NAMAs and for the support they receive (to link actions with support). Non-Annex I countries would voluntarily propose actions for the registry, along with an estimate of the international support needed for such actions and their expected mitigation result.
Canada	Leverage private sector funding using global carbon markets.	×	N/A	✓	✓	
Colombia	Finance for adaptation should be provided by developed countries at the rate of initially 0.7% and later (2nd commitment period) 2% of the countries GDP. Further resources should be provided by 2% of CDM project activities and 4-8% (both numbers used) of JI project activities and emissions trading. MCTF funds should be acquired by 5% levy to carbon-intensive products and services in Annex I Parties, 5% profits participation of carbon-intensive patented processes, 2% overprice on fossil fuels to be contributed by Annex I Parties.	✓	✓		✓	Supports establishment of Multilateral Climate Technology Fund (MCTF).
Costa Rica	Sources include finance of the Adaptation Fund extended to Joint Implementation and Emissions Trading Schemes.	×	N/A		✓	Financial mechanism fully under and accountable to the COP

	The share of proceeds shall represent at least 2% of the ERUs and AAUs issued. This extension applies in addition to a predictable, sufficient and long-term financial mechanism for adaptation.					
EU	Finance requirements for adaptation and mitigation actions in developing countries could be €100 billion per year by 2020. Domestic private and public finance could deliver between 20-40%, the carbon market up to around 40%, and international public finance could contribute to cover the remainder. International public funding in the range of €22 to 50 billion per year should be made available in 2020. From 2013 public funding contributions should be shared out on the basis of ability to pay, responsibility for emissions, and emissions reduction commitments of contributing countries. Economically more advanced developing countries should also be contributors. On the basis of these assumptions, the EU share would be from around 10% to around 30% depending on the weight given to these two criteria. In case of an ambitious outcome in Copenhagen, the EU's fair contribution could therefore be between € 2 to 15 billion per year in 2020 depending on the overall size of the global financing agreed and the weight given to each distribution criterion. Explore innovative financing through levies on international aviation and maritime transport. Climate finance could be a blend of ODA and other sources in the medium/long term.	✓	×	×	✓	The EU proposes that a new High-level Forum on International Climate Finance should monitor and regularly review gaps and imbalances in financing mitigation and adaptation actions. It also proposed a framework for adaptation action (FAA) as a partnership between developed and developing countries.
G77 and China	Developed country contributions by percentage of annual GDP, e.g. 0.5-1%, in addition to existing ODA. Private sector finance will be complementary, but primary finance	✓	✓	✓	✓	New Finance Mechanism under the COP with a Board representing a balanced geographical distribution of Parties. Several funds will exist under

	will be public from developed countries. Specific proposal for a 'Multilateral Climate Technology Fund' to be financed by assessed contributions from developed country Parties, shall be new and additional to ODA, and "must be raised according to respective responsibilities for cumulative and historical GHG". Sources include: i. 5% levy to a carbon-intensive products and services in Annex I Parties. ii. 5% profits participation of carbon-intensive patented processes. iii. 2% overprice on fossil fuels to be contributed by Annex I Parties. Finance and technology support are the responsibility of developed country Parties.					the Board: Adaptation, Mitigation, and Technology. The COP will (i) decide on the priorities of the mechanism and eligibility for funding, and (ii) appoint a Board. A Multilateral Climate Technology Fund (MCTF) will provide technology-related financing, and will operate under the COP. These funding windows will also be supported by corresponding technical panels.
India	"MCTF financed by Annex II (covering full costs and incremental costs). No non UNFCCC funds." "Funding will be new and additional, over and above all existing and likely flows from domestic and foreign official and private sources currently financing development" contributions from developed countries amounting to 0.5% of GDP of the developed world (on top of existing and likely ODA) Finance should be in the form of grants – not loans. International levies, private grants, and bilateral funding could also be considered as sources for funding, but any funding outside of the authority of the COP would not be considered as fulfillment of Party obligations under the Convention. Carbon markets could be a source of finance PROVIDED THAT developed countries take on even deeper targets, "potentially negative emission obligations for some developed country parties"	✓	✓	✓	✓	Establish a Finance Mechanism with an Executive Board under the COP, organized into functional windows such as a Technology Acquisition and Technology Transfer Fund, a Venture Capital Fund, Collaborative Climate Research Fund, Adaptation Fund etc. It could integrate other funds operating under the Kyoto Protocol to avoid duplication. Each window would operate independently. Governance structure must include developing country perspectives. Funding cannot be voluntary - it must be a legally binding obligation. Finance must be considered a 'legal obligation' and not be structured as 'repayable loans'. Funds pledged outside the UNFCCC will not be considered as acceptable

						support.
Indonesia	Primarily public funding, with complementary private sector resources: “New and additional source could be generated from: (a) Auctioning of assigned amounts or emission allowances from Developed Countries at the international and/or domestic level (b) A share of proceeds from market-based mechanisms under the Kyoto Protocol”				✓	
Least Developed Countries Group	Developed country Parties are responsible for providing financing for developing countries. “Sources of money: • New, additional, reliable and predictable financial resources through weighted assessed contribution of developed country Parties; • Assessed contribution of developed country Parties, taking into account GDP, historical cumulative contribution to GHG concentrations in the atmosphere. • Governments are the best mobilizers of funds as evidenced by their actions to solve the current economic crisis; • Levies from market mechanism, included an expanded 2% on Kyoto Mechanisms; • A levy on civil aviation and maritime transport except journeys originating and destiny to LDCs; and • Contributions from private sector and foundations Should distinguish between the needs for finance for adaptation that is integrated with development planning and stand-alone programs which are additional to national development planning	×	N/A	✓	✓	Support the creation of a Convention Adaptation Fund, which supports capacity building, technology transfer, implementation of adaptation programs, and solidarity funds to address catastrophic risk and collective loss-sharing mechanisms
Madagascar	Developed countries should dedicate 0.5% of their GDP to climate change in the developing countries; international tax on global monetary transactions or on	✓	×	✓	✓	

	fossil fuels or by the use of change reserves.					
Mexico	World Climate Change Fund (Green Fund): Assessed contributions based on emissions, GDP and population. All contributions received by the Fund should be subject to a double levy, one for the Adaptation Fund and a second levy for the Clean Technology Fund. Under this plan, countries beyond Annex II would be required to provide support.	×	×	✓	✓	
Nicaragua on Behalf of Guatemala, Dominican Republic, Honduras, Panama and Nicaragua	Sources of funding: 1) The Adaptation Fund under the Kyoto Protocol, for which up to 2% of current clean development mechanism (CDM) needs to be guaranteed, as well as a share of proceeds from the sale of emission reduction units from joint implementation projects and from the auctioning of assigned amount units from the emissions trading. 2) A new burden sharing mechanism or solidarity fund based on a levy on international airfares and maritime transport freight. 3) A global carbon tax based on a levy on fossil fuel consumption. 4) Innovative financial instruments such as capital risk or climate safety funds. 5) Mitigation Fund and the MCTF 6) Contributions up to 0.5-1% of annual GDP of developed countries through public grants. 7)Financial resources from the LDCF and the SCCF. 8) Contributions from corporate donors, NGOs and international financial institutions in contact with regional institutions.	✓	✓	✓	✓	New Funding and funding sources are needed to complement the current existing funding mechanisms. “The Convention’s financial mechanism should include different funds to be established under the new post-2012 global regime, namely: the Multilateral Climate Technology Fund (MCTF), the Convention’s Adaptation Fund, the Mitigation Fund, including a forest re-serve fund; as well as the relevant existing funds, such as the Least Developing Country Fund (LDCF) and the Special Climate Change Fund (SCCF).”
Norway	Auction a share of allowances related to international carbon emissions trading (about 2%). Provision of new and additional financial resources should be generated independent of national budgetary processes. Countries beyond Annex II will be required to provide support. Technology investment from the private sector will also be an important source of finance.	×	×	✓	✓	
Panama	At least 2% of ERUs and AAUs issued should finance the	×	×	✓	✓	

	Adaptation Fund.					
Philippines	Supports the G77 and China proposal Favors Norwegian proposal for auctioning allowances and calls for an immediate ban on issuing free allowances. Additionally supports Assessed Contributions of Annex I Parties (Mexico Plan) and the Swiss plan for a global CO2 levy. Proposes that 10% of JI and ET funds go to Adaptation Fund.	×	×	✓	✓	
South Africa	All sources of finance should be mobilised by the UNFCCC through at least 4 types of funds: (1) public funding (e.g. grant finance, subsidies); (2) market-linked sources of funding (e.g. revenues from auctioning of allowances); (3) carbon market (e.g. CDM, ETS, no-lose sectoral crediting baselines); (4) market finance (e.g. loans on preferential terms, revolving credit, venture capital); and others. "Each developed country Party shall report the direct financial transfers and indirect contributions through quantifiable technology and capacity-building support made in its national communication every x year(s)." "Options to consider might include 0.5% GDP of Annex II Parties as a group or $200 billion annually, to be reached by 2020 or 2030"	✓	✓	✓	✓	Establishment of a register of nationally-appropriate mitigation actions (NAMAs) by developing countries. The UNFCCC Secretariat shall open and maintain the register of NAMAs. Developing countries establish a "National Coordination Body" to be the "focal point to support the implementation of climate change projects and programmes that have received TFCB support.
Switzerland	The funding scheme proposes a basic tax exemption of 1.5tCO2-eq per inhabitant, to take into account the principle of CBDR. This free emission allowance relieves the low-emission countries, while countries with higher-emission levels make a higher contribution to the fund. A share of revenues differentiated according to groups of countries formed on the basis of the per capita GDP shall	×	×	✓	✓	Funding would go into two windows: National Climate Change Funds (managed at national level): for national priorities and Multilateral Adaptation Fund ($18 billion/yr): for prevention and insurance.

	flow into a global Multilateral Adaptation Fund (MAF) and the NCCF. Based on per capita GDP. Industrialized countries would make 76% of the contribution to the fund.					
Tuvalu	Multilateral Fund for Climate Change (MFCC) will derive funding from: (a) "Contributions from all Parties based on a contribution formula developed by the Conference of Parties serving as the assembly of Parties. Criteria for such contributions shall be based on ability to pay and historical responsibility for emissions; (b) International levies on international aviation and maritime transport. (c) A share of proceeds from the trading of units established under Article 3 of this Protocol. (d) Contributions from the Kyoto Protocol Adaptation Fund. Such contributions shall be directed towards specific adaptation activities jointly agreed upon by the Conference of Parties serving as the meeting of Parties of the Kyoto Protocol and the Conference of Parties serving as the assembly of Parties to this Protocol (e) Additional contributions by Parties over and above assessed contributions identified in (a) above; (f) Contributions by philanthropic organizations and other donor sources."	×	×	✓	✓	Establish a Multilateral Fund for Climate Change (MFCC) with five funding windows: Mitigation, REDD, Adaptation, Insurance, and Technology. MFCC Board will have equal geographic representation and "shall establish technical advisory panels for each of the funding windows to support the Board in identifying sources of funding and spending priorities and to support recipient countries in developing project proposals"
United Kingdom	The British government recognises that "finance to tackle climate change cannot simply be part of official development assistance. Assistance for climate change	×	✓			

	should not be allowed to divert money from the pledges we have already made to the poorest". The Prime Minister Gordon Brown announced "that as part of a comprehensive international agreement in which all countries play their part, the UK will contribute our fair share to climate financing separately from and in addition to our promises on aid and the Millennium Development Goals. That means that even when we have achieved our 0.7% target of national income we will also be contributing additional finance on top. I believe that additionality to aid in this way is an important principle to which all developed countries should commit."					
United States	All countries, except LDCs, should contribute, but contributions should not be mandatory. Contributions from Parties to come from multi year replenishments and pledges and should be allowed to be designated for thematic areas. Voluntary contributions would be additional. In terms of predictability, each Party will formally indicate its level and source of its expected contribution. Private sector expected to be a larger source of funding than the public sector.	×	×	✓	×	Establishment of the Global Fund for Climate. Transparent, effective, and efficient governance with balanced representation between net contributors and net recipients. Fund to be administered by multilateral development banks, domestic institutions in host countries, or by other actors including the private sector and civil society; An existing multilateral financial institution should operate as trustee. The Global Fund shall be an operating entity of the financial mechanism. The GEF will continue to act as an operating entity with primary focus on capacity building and readiness, technology programmes and measuring and reporting activities. UNFCCC governed funds and other funds (including domestic, bilateral,

						regional, and multilateral) will be considered as acceptable support.)
Zambia	Financial resources must be over and above 0.7% of GNP of developed countries' ODA. Developed countries need to commit a target for financial assistance as well as technology transfer in the range of 1% of their GNP. It is important that the main source of this financing is through the public sector. UNFCCC governed funds and other funds will be considered as acceptable support.	✓	✓	✓	×	