



ADAPTATION Working Group

Submission to GLOBE Tokyo Legislators Forum

Working Group Chairs



**Mr. Anders Wijkman MEP
European Parliament
Swedish Prime Minister's
Commission on Adaptation**



**Hon Suresh Prabhu MP
Parliament of India
Former Cabinet Minister
for Power, Industry & Environment**



**Lord Julian Hunt
UK House of Lords
Former Head of UK
Met Office**

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Adaptation Working Group Chair's Introduction

The international effort on climate change has, up to now, focused predominantly on mitigation – reducing greenhouse gases to prevent dangerous climate change. However, it is clear that, despite the efforts so far to tackle rising greenhouse gas emissions under the Kyoto Protocol and the ambition of the post-2012 negotiations, we will only be lessening, not preventing, climate change. Addressing adaptation is not only a moral imperative but also a strategic necessity: a strategic necessity in the sense that ambitious and equitable adaptation plans are absolutely necessary to be able to reach agreement on a post-2012 climate regime; and a strategic necessity for the global economy. Climate change impacts in developing economies that are particularly climate-sensitive will exacerbate political instability by damaging social systems, leading to increased migration to cities and, potentially, across borders. To combat climate change, governments and international bodies should explore the many opportunities for cost-effective policies that combine mitigation of global emissions, adaptation to climate change and sustainable development.

The impacts of man-made climate change are already being felt worldwide, in both developing and developed countries. They are very real challenges for all of us. But it is the world's poorest countries that are more vulnerable to climate change and have least capacity to adapt. Many are situated at lower latitudes, where impacts such as increased disease and extreme heat and drought will be more pronounced. Many also derive a large proportion of their income from climate-sensitive sectors such as agriculture, fishing and tourism. Insurance cover against weather-related losses in poor countries is generally low with only around 4 per cent of losses covered in the world's poorest countries. Future climate impacts will affect a broad cross-section of human and natural systems with consequences for human health, agriculture, water supplies and other critical infrastructure as well as natural ecosystems and biodiversity. These impacts could increase the risk of mass migration, causing social and economic tensions, and provoke conflict over scarce resources. Predicting and adapting to these changes in order to minimize the human and environmental cost is a major challenge for all nations. Meeting this challenge will require action at several levels: international; regional; national; and local. Unlike mitigation, which is very much a global issue (it does not matter to the atmosphere where emissions are reduced, just that they are reduced) adaptation is very much a local issue and adaptation needs will be very different in different parts of the world and, in most cases, in different parts of an individual country. At the same time, the technologies, skills and changes to community living required for adaptation will have many features in common around the world, especially in how best to respond to the increasing frequency of extreme natural hazards associated with climate change.

Equity is at the heart of the adaptation debate. It is industrialized countries that are the main contributors to man-made climate change and yet it is the poorest countries

that are most vulnerable to the impacts. This leads to an uncomfortable reality for politicians in industrialized countries – adequate action to address adaptation in developing countries will only be possible if industrialized countries are prepared to commit substantial additional resources. Although very difficult to quantify and indicative only, estimates suggest that the costs of adapting to climate change in the developing world are in the order of tens of billions (between USD 28 and 67 billion per year by 2030 according to the UNFCCC or USD 86 billion per year by 2015 according to the UNDP Human Development Report 2007/2008). At the moment the international community's response, under the Kyoto Protocol, is the Adaptation Fund, raised via a levy on the Clean Development Mechanism (CDM). The UN estimates that the Adaptation Fund is worth around USD 36 million per year at 2007 levels of CDM activity. This is expected to grow to between USD 80 and 300 million between 2008-2012. If we take the most optimistic assessment of the value of the Adaptation Fund and the most conservative end of the UNFCCC estimate for the costs of adaptation, the Adaptation Fund would only contribute around 1 per cent of the funds needed. The funding gap is central to the issue and is the main focus of the GLOBE Adaptation Working Group. Recognising that climate change poses a direct threat to development and poverty reduction, it is clear that adaptation will not be successful if it is treated as a standalone issue. Another of the central priorities of GLOBE's Adaptation Working Group is, therefore, the integration of adaptation into all development planning, including Overseas Development Aid.

The recommendations of the group focus on five main areas: general principles; funding; climate insurance; integrating adaptation into development aid; and capacity building. The recommendations have been developed in consultation with legislators from the G8 and +5, with advice from experts in the field. On that basis, we offer these recommendations to G8 leaders at the Hokkaido Summit.

HON SURESH PRABHU MP (India)

MR ANDERS WIJKMAN MEP (Sweden & European Parliament)

LORD JULIAN HUNT (UK)

Recommendations of the GLOBE Adaptation Working Group

The following recommendations from GLOBE's Adaptation Working Group are split into 5 areas: general principles; funding; climate insurance; development; and capacity building.

Key message

Given the high estimated costs of adaptation in the developing world, **substantial new and additional resources should be committed by all industrialized countries** to assist adaptation in the developing world.

1. General Principles

- Adaptation should be given equal prominence to mitigation in the post-2012 negotiations;
- There should be stronger coordination between existing international and regional bodies to advise the post-2012 discussions, assist with the development of international and national adaptation plans, allocate any implementation assistance made available under the Adaptation Fund, and maintain political pressure for action on adaptation (the issue of adaptation is, par excellence, a test of the multi-agency UN system and its coordination with regional and national bodies);
- Given the appropriate ownership by developing countries, any additional innovative funding sources for adaptation in developing countries should, as far as possible, be managed by the UN's Adaptation Fund
- Climate change adaptation strategies should build resilience of communities and be focused on reducing and managing risk for all sectors including natural hazards, coastal risk management and land use, resource management, public health, public displacement, agriculture and biodiversity;
- Adaptation strategies should build on the established international disaster risk reduction framework - the Hyogo Framework for Action - and take into account the Miami Declaration agreed by G8 Environment Ministers, whilst contributing to fairer terms of trade and helping to achieve the UN's Millennium Development Goals.

2. Funding

The primary adaptation issue is how to generate the necessary funding to assist developing countries to adapt to climate change. The status of funding is currently woefully inadequate with, at best, 1 per cent of required funds likely to be available over the next few years via the UN's Adaptation Fund. There are additional sources of funding such as the Special Climate Change Fund and the Least Developed Country Fund, amounting to a combine total of USD 120 million, but still, major sources of additional funding must be generated. These additional sources must not come at the expense of current overseas development aid or other existing assistance.

- Estimated costs of adaptation for developing countries are in the tens of billions per annum – **USD28-67 billion per year**¹ in 2030 (UNFCCC) and **USD 86 billion per year**² by 2015 (UNDP Human Development Report 2008)
- The Adaptation Fund, under the Kyoto Protocol, is generated using a levy on the Clean Development Mechanism (CDM)
- The Adaptation Fund is projected to contribute **USD 36 million** per annum, based on today's CDM project revenue
- The revenue from the CDM levy in the period 2008-2012 is expected to grow to **USD 80-300 million** per year
- How do we bridge the gap? Additional funds via a wider carbon trading levy, auctioning emissions allowances, a potential levy on aviation and/or shipping and financial contributions from Annex I countries as part of post-2012 framework.

We believe the following options have the potential to help bridge the funding gap:

2.1 Levy on aviation and/or maritime activity

Currently the UNFCCC's Adaptation Fund is financed via a 2 per cent levy on the Kyoto Protocol's Clean Development Mechanism (CDM). Although politically attractive due to the "self-financing" aspect, this tax is inefficient as it taxes activity that we want to encourage. It is anomalous that a mechanism that benefits developing countries and that already has high transaction costs should be given the additional competitive disadvantage of a levy on proceeds. Efficient taxes should target activities that we want to discourage (eg activity leading to increases in greenhouse gas emissions). At present, aviation and shipping, whose emissions are growing, are not included in the measures to reduce greenhouse gas emissions under the Kyoto Protocol. A paper by the Oxford Institute for Energy Studies proposes a levy on aviation – the International Air Travel Adaptation Levy (IATAL)³. The paper argues that a levy on aviation will have a double positive effect. Firstly, for demand-elastic short-haul flights, demand for aviation will be reduced, resulting in fewer flights and fewer greenhouse gas emissions. Secondly, for demand-inelastic air travel (long-haul business flights), significant funds will be raised. The proposal estimates that a EUR 5 levy on each air ticket could raise up to EUR 10 billion annually that could be used for adaptation (or other climate change related activity). The levy could be designed to promote efficiency by rewarding operators using more fuel-efficient aircraft and who have implemented other emissions-saving measures. When aviation enters the EU's emissions trading scheme, consideration of an exemption would be needed for flights captured by the scheme. Stochniol's International Maritime Emissions Reduction Scheme (IMERS) suggests the application of a similar levy for emissions from shipping.⁴

¹ See http://unfccc.int/files/meetings/dialogue/application/pdf/070828_smith.pdf

² See: <http://hdr.undp.org/en/reports/global/hdr2007-2008/>

³ IATAL – see <http://www.oxfordenergy.org/pdfs/EV36.pdf>

⁴ IMERS – see www.imers.org

Recommendation:

That the IATAL and IMERS proposals be given serious consideration by legislators from the G8 and +5 as a meaningful way for the aviation and maritime sectors to contribute to combating climate change.

2.2 Levy on carbon trading

The 2 per cent levy on credits sold through the CDM will generate between USD 80-300 million per year between 2008-2012 for the Adaptation Fund. Although a tax on emissions-producing activity as outlined in 2.1 is more efficient, given the urgent need to generate funds for adaptation it may be more politically acceptable, at least in the short-term, to extend the CDM levy to the wider emissions trading market (including the EU ETS and other developing markets). The EU ETS alone was worth around USD 30 billion in 2007⁵. A 2 per cent levy would have generated USD 0.6 billion in 2007 alone. Whilst still well below the estimated costs associated with adaptation in the developing world, the rapidly expanding carbon market could help to generate a significant contribution for the Adaptation Fund in the short-term.

Recommendation:

Consideration of an extension of the 2 per cent levy on CDM activity to cover the wider emissions market in the short-term with a view to eventual replacement by a (ideally global) tax on emission-intensive activity, such as aviation and shipping.

2.3 Auctioning allowances under emissions trading schemes could help to raise funds for adaptation in developing countries

The idea of using the value of allowances or revenues from an auctioning system to generate funds for climate related activity, including adaptation in developing countries, is being considered in several forums. For example, three proposals currently on the table include:

- In the US, the Lieberman-Warner Bill sets aside revenues from the auction of allowances worth around USD 2 billion in 2020 towards international adaptation and national security
- In Europe, the European Commission's ETS revision proposal suggests that at least 20% of the proceeds from the auction should be used for CCS, energy efficiency, renewable energy, avoided deforestation efforts, and adaptation in developing countries. This could amount to around Euros 10 billion annually by 2020
- The Norwegian Finance Minister has proposed that a portion of allowances from national emissions trading systems be set aside to generate revenue for adaptation and other specified purposes

Such proposals have several advantages:

- Payment for Adaptation would be more closely based upon the "polluter pays

⁵ Source: IDEACarbon

principle”

- The funding is more predictable - as long as the emissions trading system or tax operates, a funding source is potentially available
- The funding is more sustainable as long as efforts to reduce emissions continue

Recommendation:

Legislators, when designing domestic or international emissions trading systems, should consider the use of a portion of any auction revenues to help fund adaptation in developing countries.

2.4 Financial contributions from Annex I countries as part of post-2012 framework

To recognize the historic responsibility of industrialized countries, Annex I countries should be required to make a contribution towards the Adaptation Fund as part of their post-2012 commitments.

Recommendation:

As part of a post-2012 framework, the commitments for industrialized countries should include a compulsory financial payment towards the UN’s Adaptation Fund, based on historical responsibility and ability to pay (ie GDP per capita).

3. Climate Insurance

Climate ‘insurance’ is identified in the UNFCCC and the Kyoto Protocol as one means of adaptation. While intended primarily to provide relief after losses occur, insurance-type approaches could be designed to encourage proactive risk reduction efforts as well. Insurance payouts can stipulate the reconstruction of infrastructure, schools and housing in less vulnerable locations and to climate-resilient design standards; low cost adaptation techniques can be specified as a condition of insurance policies; and lower premiums can be charged for climate-resilient buildings, infrastructure and crops.

Only around 4 per cent of weather-related losses are covered in low-income countries. Barriers include cost – insurance products are only available to those who can afford them – and also the lack of appropriate insurance-related products. Insurance companies could develop new products that are better designed for the rural poor to help in the event of weather-related losses but also encourage proactive risk reduction. Such policies could include index-based insurance (see Annex A). Industrialised countries could, in partnership with the private sector, support insurance-type approaches in vulnerable countries by subsidizing premiums or by pledging reserve capital to reduce risks to private providers.

Recommendation:

To stimulate the development of insurance as a tool for climate change adaptation, governments should:

- i) **support pilot projects at local, national and regional levels that make affordable insurance available to vulnerable individuals and governments and examine the potential of index-based insurance for agriculture-dependent economies**

- in the developing world. Particular attention should be paid to ongoing pilot projects in India and the Horn of Africa.
- ii) **facilitate improved information-sharing and more relevant information collection.** Insurance schemes have heavy information and modeling needs (meteorological, geological, climate predictive capacity, economic modeling data and weather monitoring data). Governments should support active information sharing between climate scientists, private sector insurance providers and governments.
 - iii) **promote ‘pro-poor’ insurance conditions.** Insurance need not simply offset risk: insurance mechanisms can also be used to reinforce adaptation responses such as building in safer locations, construction of weather-resilient housing and crop diversification. Governments can assist by encouraging new and existing insurance and credit schemes to incorporate climate conditionality. Post-disaster reconstruction works can focus on reinforcing building codes, slum/neighbourhood improvement schemes and livelihood strategies that spread risks.

4. Development

The World Bank estimates that as much as 40 per cent of the development financed by overseas assistance and concessional loans is ‘sensitive to climate risk’. Absorbing the climate change impacts will hamper achievement of many of the United Nations Millennium Development Goals, including those on reducing poverty and child mortality and combating HIV/AIDS, malaria and other diseases.

It is imperative to stop viewing climate change adaptation and disaster risk reduction as mainly humanitarian aid-related activities, and rather integrate them into long-term development strategies. Today, aid flows are increasingly being diverted in support of disaster relief, partly as a result of the increasing number and severity of climate change-related disasters. However, prevention is better than cure. Acting early makes sense not least from an economic point of view. According to the 2007/2008 Human Development Report issues by the UNDP, every US dollar invested in pre-disaster risk management in developing countries can save USD 7.

However, the largely project-based approach of current funds dedicated to adaptation risks becoming a barrier to the further integration of climate change adaptation into development planning. More program-based assistance, including within the UNFCCC Adaptation Fund, is necessary to avoid the marginalization of adaptation as a standalone issue.

Recommendations:

- i) **climate change adaptation and disaster risk reduction should be integrated across the full range of development-related assistance. This should include mandatory climate risk assessments for projects, including those financed with bilateral or multilateral support, to ensure the ‘climate-resilience’ of development aid. Approval for projects could be conditional on meeting a set of climate vulnerability criteria.**

- ii) **The Adaptation Fund under the UNFCCC should move towards program-based rather than project-based assistance.**
- iii) **A development-based approach should complement – and not replace – the UN approach via the Adaptation Fund**

5. Capacity Building

The direct impacts of climate change are felt locally and response measures must be tailored to local circumstances. However, for these efforts to be successful, they must be guided and supported by national and international strategies and policies. Even if the funding outlined above were available, many developing countries do not have the capacity to carry out the adaptation measures required. The capacity to implement successful adaptation strategies will be dependent on:

- i) Information – effective strategies must be based on the best available technical, social and scientific data on the nature and extent of likely physical, social, economic and health impacts over short- and long-term timeframes in given locales
- ii) Technical and Planning Capacity – key priorities are to establish local, national and international networks (e.g. for flood protection), strengthen capabilities in the disciplines most relevant to understanding climate impacts and devising precautionary and response strategies, including local governance structures to deal with extreme events
- iii) International Institutions – while adaptation must become a priority and be integrated across existing institutions, focal points are needed at the national and international level to collate expertise and coordinate broad-based planning and action
- iv) Technology – adaptation success depends, at least in part, on access to technologies - such as climate monitoring equipment - and the social and economic conditions necessary to apply them.

Annex A: Index-based insurance

Index-based insurance is widely used in Europe, the US and Japan as a countermeasure for crop failure or sluggish sales of beverages and other consumer goods due to weather anomalies. This type of insurance is applicable to the risk of agricultural output fluctuation in developing economies.

For example, the cultivation of sugar cane, a material of sugar and bioethanol, largely depends on whether or not there is sufficient rainfall. It is known that, statistically, sugar cane production in north eastern Thailand decreases substantially when annual rainfall falls below 1,000mm. Farmers often take out loans to purchase farming machinery and equipment. A decreased output has an adverse impact on the living conditions of farming households, while at the same time hindering their debt servicing capabilities. If a scheme is introduced to compensate production losses for farmers in the event of rainfall of less than 1,000mm, it could support farming households by ensuring greater stability of their livelihoods and steady loan payments. This is weather index insurance.

What differentiates this type of insurance from other products is that it does not assess details of accidents; instead, payment is made when certain ‘trigger’ conditions occur.

Challenges associated with weather index insurance:

- **Data:** to create weather index insurance, it is essential to collect sufficient data over long periods of time on meteorological phenomena and crops. Developing countries are likely to have difficulty obtaining such data in quantity and quality.
- **Cost:** some farmers in developing countries do not have sufficient capacity to pay premiums

A feasibility study, based in northeastern Thailand, reported the following findings:

- In some regions, sufficient volume of meteorological data is available retrospectively. Local core cities, and some other towns and cities, have collected sufficient data.
- The agenda concerning meteorological data includes data quality and difficulty in cross-agency data collection.
- Local governmental agricultural banks provide loans to finance the purchase of farming machinery and equipment and have strong needs for weather index insurance, since reduced production caused by climate change leads to arrears in payments. They also have a keen interest in selling insurance products.
- Sufficient attention should be paid to farmers’ capacity to pay premiums.
- If the scope is limited to specific regions and crops, an actuarial model could be developed using currently available meteorological data. To create such a model for a wider region and for general crops, there is a need to provide assistance.
- Assistance is also needed to develop sales channels for insurance products.

Source: JBIC