

Climate finance

– How much is needed?

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Curbing climate change and coping with its adverse effects will require a major scaling-up of climate finance. UNFCCC Parties have recognised this need agreeing to ‘urgently enhance implementation of the Convention in order to achieve its ultimate objective in full accordance with its principles and commitments’ (UNFCCC, 2007a). To address this challenge in practice Parties must address the scale and sources of financing and find better ways to disburse and account for it.

The Convention requires the Conference of Parties and the ‘entity or entities entrusted with the operation of the financial mechanism’ (for example, the new Green Climate Fund) to identify the scale of financing that is ‘necessary...for the implementation of this Convention’ (UNFCCC, 1992). Yet, very few of the estimates offered so far provide comprehensive estimates of the funding needed to implement the Convention.

The UNFCCC Secretariat analysis, for example, suggests that adaptation costs in 2030 could be US\$49–71 billion per year globally, of which US\$27–66 billion would be required in developing countries (UNFCCC, 2007b). A recent review of the UNFCCC study suggests actual costs could be up to three times higher for the sectors covered in the study and ‘much more if other sectors are included’ (Parry et al, 2009).

The costs of adverse effects from climate change are real, they are explicitly referred to in the Convention and they can and should be added to estimates relating to ‘adaptation’. The World Bank’s own studies, for example, indicate that two degrees of warming could result in permanent losses of GDP in South Asia of 5 per cent (World Bank, 2009); sea level rise could cause losses of 38.4 per cent of GDP in some coastal areas (Dasgupta et al, 2009:25); and some countries will be so heavily impacted by sea level rise ‘that their national integrity will be affected’ (Dasgupta et al, 2009:44).

Other studies confirm levels of costs and damage that exceed current estimates by the World Bank, UNFCCC and other studies – in some cases by one order of magnitude or more. In terms of adaptation costs:



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Costs in terms of future loss potential 'of a strong hurricane in New York would escalate ... to US\$ 5.43 trillion'

- » The Global Humanitarian Forum, headed by Kofi Annan, 'estimates future economic losses could amount to more than US\$340 billion by 2030 (only 30 countries in the world currently have a GDP higher than this number)' (GHE, 2009: 20). The same study states: 'The carbon dioxide emitted globally in 2004, for example, carries a social cost [i.e. net present value of future impacts] of over US\$1300 billion, a figure greater than 2 per cent of global GDP in 2008 (GHE, 2009: 44).
- » The Imperial College London and International Institute for Environment and Development study reviewing the UNFCCC Secretariat analysis (noted above) points to costs of adaptation exceeding US\$500 billion a year if UNFCCC Secretariat analysis is updated to include a fuller evaluation for covered sectors, additional cost for sectors not covered by the analysis, as well as costs for damage to ecosystem services and residual damage relating to extreme weather events (Parry et al, 2009; Kanter, 2009).
- » Allianz insurance company and WWF, in their study entitled 'Major Tipping Points in the Earth's Climate System and Consequences for the Insurance Sector', estimate that:
 - Costs in terms of future loss potential 'of a strong hurricane in New York would escalate...to US\$5.43 trillion' (WWF and Allianz SE, 2009:37) and, as a result, 'economic development in such a hazardous zone has to be questioned' (WWF and Allianz SE, 2009: 38).
 - Die-back of the Amazon forest which releases carbon dioxide and 'occurs between 1 and 2°C results in incremental NPV [net present value] costs of carbon approaching US\$3,000 billion and ... policies aimed at stabilization at 2°C result in NPV costs of the order of US\$3,000 billion from carbon lost through die-back of the Amazon alone' (WWF and Allianz SE, 2009:56)
 - Global sea level rise 'of 0.5 m by 2050 is estimated to increase the value of assets exposed in all 136 port megacities worldwide by a total of US\$25,158 billion to US\$28,213 billion in 2050' (WWF and Allianz SE, 2009:30).

The potential for non-linear and spiralling climate impacts and costs is not well addressed either in current climate models (which regularly underestimate climate feedbacks) or in estimates of adaptation costs (which, excepting a few studies, have underestimated or excluded the costs of adverse impacts and have not addressed tipping points and other non-linear changes), meaning expected loss and damage, and associated costs, are underestimated.



World military spending exceeds US\$1.5 trillion annually,

Similarly, studies of mitigation costs often fail to take into account the latest scientific information about the scale of committed warming, or fail to adopt equitable assumptions about how the costs will be distributed between developed and developing countries, or assume an inadequate scale of global emissions reductions and therefore understate the costs of limiting warming (for example, they assume a 450 ppm pathway, which is now understood to risk catastrophic impacts).¹

The existing models for calculating finance need to be recalibrated and the scale and sequencing of financing for mitigation and adaptation needs to be rethought, with much larger investments made earlier. Growing impacts worldwide provide a warning beacon signalling the need for more ambitious and early action on both mitigation and adaptation.

If UNFCCC Parties are serious about curbing climate change, and achieving the objectives of the Convention, then much larger levels of financing than currently under consideration (that is, in the trillions) must be taken seriously. This is particularly true in light of emerging science regarding levels of committed warming and the potential for non-linear effects and tipping points.

Financing in this order seems high when evaluated against ODA and other traditional development-related expenditures. Finance demands for climate change, however, are modest when viewed as an investment in maintaining the stability of the Earth's life support system, or when compared against the likely costs of inaction, or the sums spent on other issues such as the global financial crisis or military conflicts. For example:

- » In response to the global financial crisis, central banks in the European Union and the United States purchased US\$2.5 trillion in debt; they raised capital of national banking systems by US\$1.5 trillion (Altman, 2008); and the United States executed two stimulus packages totalling almost US\$1 trillion (BBC, 2010).
- » In prosecuting wars in Iraq and Afghanistan, the United States has allocated around US\$1.09 trillion (Dagget, 2010). The wider costs of the Iraq war to the United States (not to Iraq and the rest of the world) is estimated to be in the order of US\$3 trillion (Edemariam, 2008).
- » World military spending exceeds US\$1.5 trillion annually, with the United States spending around US\$660 billion (4.3 per cent GDP),

¹ For example, the International Energy Agency confirms that by 2017 the building of infrastructure will 'lock in' the whole remaining carbon budget for 2°C 'leaving no room for additional power plants, factories and other infrastructure unless they are zero-carbon, which would be extremely costly'. Accordingly 'delaying action is a false economy: for every US\$1 of investment avoided in the power sector before 2020 an additional US\$4.3 would need to be spent after 2020 to compensate for the increased emissions.' See, *World Energy Outlook 2011* (IEA, 2011).

China US\$98 billion (2 per cent GDP), United Kingdom US\$69 billion (2.5 per cent GDP), France US\$67 billion (2.3 per cent GDP), Russian Federation US\$61 billion (3.5 per cent GDP), Germany US\$48 billion (1.3 per cent GDP), and Japan US\$47 billion (0.9 per cent GDP) (SIPRI, 2011; Wikipedia, 2011).

The demand by the G77 and China for annual financing equivalent to at least 1.5 per cent of Annex I GDP (roughly US\$600 billion) is approaching the order of financing required. The African Group's demand in Copenhagen for financing equivalent to at least 5 per cent of Annex I GDP (roughly US\$2 trillion), and Bolivia's demand for at least 6 per cent (roughly US\$2.4 trillion), may ultimately prove more realistic estimates of costs when both mitigation and adaptation are considered in light of the latest scientific evidence on climate change, and the need for an ambitious global effort to avert non-linear changes and hold warming to levels that are safe for developing countries. Given the uncertainty surrounding climate change, developing countries should avoid locking in a sum for long-term financing (for example, by 2020) that provides a 'ceiling' rather than a 'floor' for future levels of financial resources.

The challenge for Parties going forward is how to progressively raise the level of ambition on financing and to close the financing gap, to ensure that the aggregate level of new and additional resources measures up to the yardstick of funding that is needed to implement the Convention and address climate change.

The responsibility for meeting financial commitments under the Convention lies squarely with the developed countries listed in its Annex II. Yet, the pledge by developed countries is to 'mobilise' US\$100 billion offers a start, but it guarantees neither the provision of any specific level of public funding (it refers to a 'wide variety of sources') nor that the funding will be provided by the developed countries (they have merely committed to 'mobilise' it). Additionally, US\$100 billion falls well short of any reasonable science- and economic-based estimates of the level of financing required to implement the Convention.

A first step in scaling up finance is ensuring that financial contributions by developed countries occur in practice and not merely on paper. Consequently, the Convention requires financial contributions to be new and additional. Developing modalities for evaluating whether financing is new and additional is a priority, particularly in light of the fact that emerging information suggests that a substantial proportion of 'pledged' finance was

pledged previously (and so is not ‘new’) or will be counted towards ODA commitments (and so is not ‘additional’).²

Ultimately, the provision of assessed contributions drawing on both traditional public sources and ‘innovative sources’ (for example ‘special drawing rights’, such as those created by the IMF to provide international reserve assets to address the global financial crisis) will be required as part of the major effort to scale up financial resources in order to cope with the adverse effects of committed climate change, and to curb emissions by 2015 or 2020 and avoid further dangerous interference with the climate system.

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² See, e.g., African Climate Policy Center (2011), *Fast-Start Finance: Lessons for Long-term Climate Finance under the UNFCCC*, indicating that between US\$2.8bn and US\$7.0bn (out of the US\$29.2bn pledged) of the fast-start finance is ‘new’, and figures up to early September 2011 indicate that less than US\$3bn are ‘additional’ to ODA commitments. By this standard, less than one-tenth of the US\$30 billion pledged is ‘new and additional’.