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Trócaire

Broadening the Voluntary Carbon Market: Ad-Mit Strategies for Climate Change Justice

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There is now insurmountable scientific evidence that human activities are changing the climate, that the world is warming (4) and that the people who are least responsible for climate change are likely to suffer the earliest and the greatest impacts. These people, mostly located in low-income developing countries, are especially vulnerable because of their existing exposure to multiple stresses (5) and their economic and social sensitivity to climate change.(6) Climate change not only has a strong justice dimension but also threatens progress towards sustainable development and meeting the Millennium Development Goals (MDG).

Reducing the build-up of greenhouse gases in the atmosphere, which is a function of past and current emissions, by cutting emissions below natural "depreciation" and/or by measures to accelerate removal of atmospheric carbon (e.g. planting of "carbonsink" forests) is known as climate change mitigation. Preparing for and learning to cope with the impacts of climate change that reduce damages (and allow beneficial opportunities to be taken) is known as adaptation to climate change.

Adaptation can reduce the social costs of climate change and mitigation can prevent them. For a long time it was politically incorrect to speak about adaptation to climate change, because it presumably implied accepting defeat in the battle against emissions.(7) However, it is now recognised that combining adaptation and mitigation is both inevitable and essential. Even if we reduce our emissions to zero we will have to live with a changing climate but if we do not reduce our emissions at all, in the long term, it is likely that we will exceed our natural, managed and human capacity to adapt.(8) The more we mitigate the less will be the impacts to which we will have to adjust and similarly the more we invest in preparatory adaptation the less may be the impacts associated with any given degree of climate change.(9) Neither mitigation nor adaptation alone can avoid all climate change impacts (10) and we need not think of them as alternatives.

Implications for development agencies

With greater understanding of the science and experience of these impacts, agencies working in development are increasingly conscious of the justice dimension of climate change and the threat posed by the impact for organisational objectives. This acts as a driver for change as does the availability of financial resources specifically directed at climate change.(11) Understanding and

awareness are improving and political, media and supporter interests are now major push factors for agencies to demonstrate responsiveness, innovation and leadership on climate change.(12) Climate change has become a mainstream development issue and NGOs (non-governmental organisations) have a crucial role to play in facilitating adaptation as the type of development pursued determines the degree of vulnerability to climate change.(13)

Society's willingness to pay compensation voluntarily to offset the impact of greenhouse gas emissions is reflected in the emergence of a voluntary market for carbon offsets. This paper proposes the development of a new approach to compete with carbon offsetting in a broader voluntary market of climate change responses that can merge complementary strategies of mitigation and adaptation. Development agencies could use a high-end,ethical product, it is argued, to target adaptation investment in communities most vulnerable to the impacts of climate change. Hence, this approach, unlike carbon offsetting, can focus on who rather than what as it will earmark or ring-fence generated revenues for communities most vulnerable to climate change, with the goal of partially undoing climate change injustice.

The paper briefly presents the voluntary carbon market in its current form and an opportunity to design and develop a niche adaptation-mitigation product. Subsequently the development of this new hybrid product for the voluntary market will be explored with examples of potential investment projects. The paper also presents the challenges for product development including a critique of carbon offsetting and conclusions follow.

Introduction to the voluntary carbonmarket

The source of the climate change problem, from an economic perspective, is untaxed or unpriced emissions of greenhouse gases.(14) An effective carbon-price signal could realise significant mitigation potential.(15) The international carbon market is creating price signals for emission reductions through either meeting emission quotas under legally binding agreements, or for voluntary purchase of verified emissions reductions. The market is stimulating cleaner development policies and measures around the world, but is not without its critics, discussed later in the article.

The compliance market facilitates trading of certified emissions reductions which

meet legally binding quotas or caps on emissions.Through the Kyoto Protocol the United Nations Framework Convention for Climate Change (UNFCCC) has set emission caps where parties over-complying can sell offsets (i.e. human induced emissions reductions or carbon sink enhancements) to those that fail to meet their targets. As part of the Kyoto framework, the Clean Development Mechanism (CDM) allows industrialised countries which fail to meet their targets to buy certified emissions reductions from developing country projects. Such projects must demonstrate they are additional to what would happen under a business-as-usual scenario and that they contribute to sustainable development priorities as defined by the host country. The CDM is mobilising low-cost greenhouse gas emissions reductions, but is criticised for not yet achieving substantial poverty alleviation andfor its limited support of sustainable social and economicdevelopment in the host countries.(16) Constraints for small project swith strong potential sustainable development benefits include high verification and validation costs and the difficulty ofe stablishing appropriate methodologies to prove the emissions reductions are real and measurable. Traders of this new market commodity (emission reductions or carbon credits) tend to prefer low risk, high volume projects with short payback periods.

In tandem with the compliance market is the voluntary carbon market driven by entities that decide to buy verified emission reductions to offset their own emissions, without mandatory obligations to do so. The voluntary market to date concerns a much smaller volume of emissions reductions (i.e. carbon credits) than the compliance market but it is becoming more widespread, with many initiatives that reflect our societies' awareness of the dangers of climate change.(17) Unlike the CDM, the voluntary market is largely unregulated and offsets generated do not have to follow rigid methodologies and modalities. On the one hand this is problematic as the "rules of the game" are vague, there is a lack of traceability and no guarantee of sufficient information for buyers.(18) But on the other hand this weakness may present an opportunity as greater flexibility can facilitate the development of new, innovative approaches and methodologies that extend beyond the reach of the compliance market with potential to generate real, measurable and long-term climatic and sustainable development benefits.

Players

The voluntary market is growing fast with over 53 specialised service providers or retail offsetters worldwide. The volume

estimates of a voluntary carbon market from 2006 to 2009 are approximately 500 million tonnes.(19) Offset retailers include businesses, not-for-profits and conservation organisations. Buyers in this market have other motivations besides regulatory compliance, such as a desire to take responsibility for their impacts on the global environment or to enhance reputation or corporate image.

Prices

In this market the lowest price may not be the prime concern and offsets with ancillary benefits, such as poverty reduction or biodiversity conservation, as well as the delivery of climate benefits may drive demand. According to one study conducted this year, nearly half of European consumers of carbon compensation declare that they would be ready to pay more for indirect (or ancillary) benefits.(20) Out of a summary of 30 offset providers with headquarters in seven countries the price of offsetting a tonne of carbon dioxide equivalent ranged from $4 to $40. (21)

Payment method

In general offset providers encourage potential buyers to reduce their carbon footprint and to offset what remains. Simple online calculators that estimate the potential buyer's carbon emissions from activities such as flying, driving a car, heating buildings or electricity use, facilitate this process. The providers sometimes claim to offset an equal amount of carbon dioxide equivalents as were emitted (carbon neutrality) while one offset company claims to deliver positive action to compensate for emissions.(22)

Standards

There are a variety of standards and procedures to provide credibility. Some retailers provide offsets that go beyond the stringent CDM methodologies, such as the gold standard. Others use the voluntary carbon standards which the International Emissions Trading Association, the Climate Group and the World Economic Forum promote.(23) Some providers have developed their own independent standards, such as Climate Care's project principles and the Carbon Neutral Company's carbon neutral protocol, which are usually supervised and advised by an external Steering Committee.

Projects

Offset retailers usually provide monetary incentives for renewable energy, energy efficiency and/or forestation projects and sell specific amounts of offsets from the projects to customers with a mark-up. Offsetting projects, identified for funding

by agents,sometimes target small scale community development projects that finance sustainable technologies. Often, providers who focus on low cost, low risk, high volume offsets are less likely to generate offsets that originate from small scale community projects, hence market preferences can result in a trade-off between delivering measurable climate benefits and sustainable development benefits.The second part of this article contains a comprehensive critique ofcarbon offsetting.

The Ad-Mit concept

The voluntary carbon market has a mitigation focus and is often centred on technologies that generate climate benefits. The new hybrid product being considered in this paper (adaptation mitigation, let's call it Ad-Mit (24), with some similarities to existing products on the voluntary carbon market, can charge for greenhouse gas emissions that can be voluntarily bought. A fundamental difference lies in the rationale for a distinct price and for earmarking the generated revenues differently.

The emphasis for Ad-Mit is on who more than what. Ad-Mitcan target generated revenues specifically towards those people andcommunities most vulnerable to climate change. They will thenhave a say in deciding the most appropriate way to adapt to andmitigate current and future adverse climate change impacts, given local realities. The approach can be consistent with the principle of common but differentiated responsibilities, enshrined in the Kyoto Protocol, as mitigation need not be the overriding priority for developing countries but can be promoted where appropriate and prudent. This approach can provide a unique way to unite global emissions reductions and alleviate local problems caused by passed emissions, hence current impact (not emissions) can be offset. Ad-Mit can demonstrate a more equitable way to address the burdens of climate change whereby the polluter assumes responsibility and invests in the welfare of the victim for past and current damages.

The price of Ad-Mit may not be linked to the market price to mitigate a tonne of carbon dioxide but estimates by the Stern Review of the dynamic social cost of carbon in year 2000 prices were $85 / tCO2e.(25) This is likely to be closer to the social and environmental damage cost of a tonne of CO2, hence Ad-Mit aims to internalise, partially, the social and environmental costs of emissions (some of which are not internalised in the market priceof carbon) and earmark the revenue for investment in the most vulnerable communities. But not all the costs are internalised as we know that even if it was possible to estimate

precisely the social cost of a tonne of carbon dioxide that value would only incorporated is counted future damages less any potential benefits, but would not account for past emissions. We also know that the most climate-vulnerable populations contributed least to past emissions.So Ad-Mit will target current revenues (generated from current polluters) in the short term in areas most likely to suffer, to offset partially damage caused by past, current and future emissions. As the accumulated effect of emissions intensifies, the social costs will rise correspondingly. But the price of Ad-Mit is likely to be also constrained by willingness to pay, estimated through studies, that is likely to be lower than the social cost of carbon (for past and present emissions) but higher than the current market price.

A buyer of the adaptation-mitigation niche product, Ad-Mit, is likely to be aware of and understand the dangers of climate change and to be particularly interested in climate change justice and ethics.

Buyers are likely to have many different motivations for doing so. Some may be motivated by communication reasons to draw more attention to the problem or to manage their reputation and enhance their image. Developers of Ad-Mit can pitch the approach to entities (individuals and organisations) interested in being coherent with their mission and organisational values "to bring one's conduct in line with one's principles" (26) in a way that avoids green-wash and that encourages willingness to take responsibility for our ecological impact.

Other reasons for buying into the Ad-Mit concept may be a desire to demonstrate solidarity with victims of climate change or may even include a type of protest vote against the principle of carbon offsetting. The Ad-Mit approach can challenge the offset market as to whether emissions can be neutralised.

As greater awareness develops on the need for adaptation to complement mitigation, being two sides of the climate change coin, there is likely to be demand to buy into an approach that attempts to merge both. Buyers of Ad-Mit may be a small subset of the current voluntary carbon market and may include entities waiting to find a product from a broader voluntary climate response market that so far does not exist.

Testing out the new approach

So far the rationale of the Ad-Mit concept has been discussed with few details of where an Ad-Mit can invest. Climate hotspots, (i.e.areas that are highly vulnerable socio-economically and climatically, which can be identified using indicators of poverty and climate change impact), are likely to be the most appropriate locations for Ad-Mit investments.

Identifying potential projects

This section briefly discusses two initiatives at planning and policy level in Malawi and Honduras that clearly identify priority synergistic adaptation-mitigation projects and a project in Brazil that is likely to have characteristics of an Ad-Mit project.

Malawi

Malawi is one of the countries most vulnerable to climate change where entrenched poverty, a degraded environment and other problematic stresses such as a high incidence of HIV-AIDS have eroded resilience. Harsher more frequent extreme weather events could be tipping points pushing Malawians into famine and forced migration.(27)

Malawi's National Adaptation Programmes of Action (NAPA) identify priority adaptation to climate change activities. The process gives prominence to community-level input as an important source of information, recognising that grassroots communities are the main stakeholders.(28)

Many of the NAPA's adaptation priorities present scope for synergistic adaptation-mitigation initiatives. For example, forestation in Malawi is adaptation-driven to reverse vulnerability caused by environmental degradation. For instance, low forest cover threatens to deepen the water table, land degradation causes soil erosion and increased deforestation deprives communities of fuel wood, fruits, fodder and improved soils etc. Through community managed reforestation or natural regeneration,however, natural carbon absorption or carbon sinks (i.e. stocks of carbon in vegetation, decomposing organic material, soil and forest products in vegetation, decomposing organic material, soil and forest products) are increased in a more sustainable way than through large scale commercial carbon sequestration forestry projects that can result in the displacement of people and put pressure on local hydrological resources.

Another likely ancillary mitigation benefit of forestry adaptation strategies can come in the arrest of siltation of Malawi's principal river, the Shire. Through riverbank rehabilitation, soil and water conservation and agro-forestry, water-flow disruptions will be reduced, indirectly contributing to the sustainability of hydroelectricity generation. The River Shire provides over 285 megawatts of the 304 total installed capacity of hydro-electric power in Malawi. Some of Malawi's other adaptation strategies identified in the NAPA provide opportunities for cleaner development paths that can be promoted by development agencies. At a household level the NAPA identifies the promotion of improved fuel-efficient kitchen stoves. This technology can relieve pressure on woody biomass,(29) reduce exposure to indoor air pollution and reduce timespent on gathering fuelwood (mostly by women). Another technology identified for promotion in Malawi's NAPA is windpowered water pumps for drinking water and irrigation for communities that are increasingly vulnerable to dry spells and drought.

Malawi's NAPA clearly identifies potential synergistic adaptation-mitigation interventions at a community level, which must be used as the basis for aspirant Ad-Mit project developers.

Honduras

Honduras has assessed climate change vulnerability and prepared an adaptation plan of action for the Aguan Valley in the north, which is naturally prone to landslides given its topography, soil type(lateritic) and geology.More intense and frequent extreme weatherevents including erratic downpours and tropical rainstorms,induced by climate change, combined with deforestation greatly increase the risk of landslides and flooding.

The Secretary of Natural Resources and the Environment (SERNA) developed a Vulnerability Assessment, Strategy and Plan of Action for Climate Change Adaptation for the valley, using participative methodologies that incorporate the preferences and demands of local communities.

The vulnerability assessment process also identified related potential opportunities to mitigate climate change. One such opportunity considered a high priority is the establishment of micro-hydro plants for generating electricity, which are very suitable for the Aguan's natural terrain and have been standardised and popularised by the Honduran Foundation for Agriculture Research (FHIA). Certification of this

technology can be facilitated by SERNA under existing legislation.

Climate change mitigation benefits come from the generation of electricity through ambient energy that avoids the use of fossil fuels.(30) Ancillary benefits include the promotion of decentralised energy with potential efficiency savings, which is a form of consumer empowerment.(31)

Micro-hydro plants can promote and sustain growth and poverty reduction, and enhance resilience. They:

(i)provide an incentive for upstream riverbank regeneration ormaintenance to avoid provoking landslides and river siltationwhich could jeopardise the hydro power system and alsoescalate downstream flooding; and

(ii) provide a small reservoir, required for the system, that can also be used to store water for drinking and irrigation.

This also prompts debate on how the use of renewable energy to deliver power locally can be scaled up to the national and continental level, even potentially to create net exports of clean energy.(32) This is an example of how the goal of achieving prompt emission reductions can lead to investments that facilitate less emission intensive infrastructure and development pathways for a carbon restricted future. Similar to Malawi's NAPA, this Plan is a product of consultations between national authorities and local communities and clearly spells out opportunities for potential Ad-Mit project developers.

Brazil

The semi-arid region in north-eastern Brazil is another climate hotspot that is highly vulnerable to drought and desertification. Coping with increasing aridity is an everyday reality for people living in the interior. Strategies that are transforming society include the promotion of rainwater harvesting cisterns, community seed banks and local micro-finance institutions called revolving solidarity funds.

In Pintadas municipality, a rural community located in theinterior of the state of Bahia, a southern network called SouthSouthNorth (33) is collaborating with local organisations as part of a project called Pintadas Solar. It started off as a mitigation project but has evolved into an adaptation project that applies a sustainable technology. The project consists of the installation of an electric water pump powered by solar photovoltaic (PV) energy,connected to a drip-irrigation system on a family farm in

Pintadas.This technology is used as a tool to improve the family's agricultural productivity, generating an income, work and food security. The system also enables them to grow crops in areas thatare not optimal for agriculture and reduces water-use.

This potential Ad-Mit project is an example of the promotion of cleaner and more resilient development pathways involving the introduction and diffusion of new technologies. Potential Ad-Mit project developers are likely to be challenged on how best to develop approaches that facilitate such diffusion among vulnerable citizens with limited access to formal education while avoiding topdown direction. Improving the facilitation of peer-to-peer, farmer to-farmer or villager-to-villager communication and interaction is likely to be a key area of learning for aspiring Ad-Mit project developers.

Project standards

This article has briefly touched on candidate Ad-Mit projects that development agencies can facilitate. Endorsement by credible member organisations of an Ad-Mit consortium that design and develop the approach will ensure their quality, maintain standards and guarantee the environmental and developmental integrity of the Ad-Mit offsets.

To measure and prove the delivery of Ad-Mit benefits, it is possible to develop reasonably objective standards for adaptation and for mitigation. Baselines are needed to demonstrate the difference between what can happen with financial incentives from Ad-Mit finance and what would have happened otherwise. The types of baselines to be developed are likely to differentiate Ad-Mitfrom other development projects or programmes. Ad-Mit design can draw on Kyoto's Clean Development Mechanism and quality offsetting standards to measure mitigation for these standards (e.g. how emissions are reduced or how forestry carbon sinks are enhanced). The measurement of mitigation for Ad-Mit may not be to offset emissions but rather to generate evidence of the cleanliness of a project's development path.

The adaptation element of Ad-Mit standards must demonstrate that specific benefits are additional to ordinary development. This can be demonstrated through the difference between the outcomes of the baseline (which could be no project or it could be an existing project that does not take climate change into account) and the outcomes of the project with Ad-Mit financial input. Quality assessment is likely to depend on sustainable development criteria such as how the intervention impacts

onlocal/regional/global environment, social sustainability and economic and technological development.

A pilot phase can gauge whether pilots are working or not, i.e.verifiable demonstration that projects are leading to:

(i) more adaptation benefits (people or communities can cope better with adverse effects of climate change); and

(ii) more mitigation benefits (such as cleaner development paths).

Ad-Mit methodology can facilitate a bottom-up participatory approach which empowers local actors who prioritise for themselves investment and implementation strategies. Pilot projects can facilitate development of standards by vulnerable communities using their own ingenuity, rather than by external technical professionals with less knowledge of the day-to-day realities of those communities.

It is crucial to achieve a happy medium between delivering high quality project standards without overly complicated andbureaucratic procedures that may exclude the most vulnerable communities the approach is attempting to engage and benefit.

Marketing the approach

The Ad-Mit initiative can initially target individuals and organisations who want to invest in highest-end ethical approach in the voluntary offset market, which may serve to empower investors to be part of a solution. Buying into the Ad-Mit concept will be conditional on three pledges to be made by the investor:

1.Reduce your own carbon footprint as much as possible (literature and information will be provided on how to do this);

2.Long term commitment to offsetting (this may permit a relationship between the polluter and the victim);

3.Encourage friends, family and local politicians to do the samething.

Challenges for Ad-Mit development

The Ad-Mit is a unique approach, without a predecessor, that can redress climate injustice. It can steer the resources and

energy of the voluntary carbon market towards adaptation in the most vulnerable communities to climate change and can challenge the carbon market to what extent emissions can be offset. Two of the principal challenges for this new approach will be product identity and product delivery.

Offsetting

As the Ad-Mit hybrid product can be a part of the voluntary market of climate change responses it may be in danger, by association, of being confused with classic carbon offsets and their various shortcomings highlighted in the media (e.g. "Beware the carbon offsetting cowboys"(34). It is of paramount importance for Ad-Mit to distinguish clearly its uniqueness, what it does and does not claim to do.

What is a carbon offset?

There is no contention that the most appropriate action to combat climate change is to reduce emissions.(35) For emissions that can not or will not be reduced there are claims, sometimes contentiously, that the remainder can be counteracted, cancelled out or neutralised through carbon offsets generated from specific projects that reduce, avoid, or sequester an equivalent amount of greenhouse gas elsewhere. The claimed compensating equivalent or carbon saving is usually through the promotion of energy efficiency, renewable energy and / or reforestation and afforestation.

The principle of offsetting

While recognising that voluntary offsetting is not a cure for climate change, advocates maintain that it is a way to take responsibility, to demonstrate leadership that can empower people to act in the face of impotence given the problem's significance and dimension. Avoiding or reducing emissions at another source by the same amount brings about the same climate benefit.(36) However, there is concern that the purchase of offsets is a way of buying our wayout of the problem whereby such peace of mind offsets replace the need to take tough decisions to lessen our ecological footprint. The Ad-Mit concept does not claim to offset emissions.

Offsetting is criticised for placing disproportionate emphasis on individual lifestyles and carbon footprints, distracting attention from the need for wider, systematic changes and collective political action.(37) For example, instead of focusing on how individuals can offset their road transport emissions there should be more emphasis of providing a more effective and equitable public transport system. It is also argued,

however, that where altruism and voluntary markets can be harnessed, they should be guided towards complementing regulatory interventions, rather than acting as a substitute for them.(38)

Technical / measurement issues of offsetting

Some carbon offsets claim that offsetting is the only practical way to reduce your carbon footprint to zero. This is criticism of the argument as being scientifically flawed. There is often a time lag as current carbon offsets depend on future renewable energy generation or CO2 removal and storage through forestry. Emissions un-avoided today build up in the atmosphere and can contribute to positive feedback or runaway effects intensifying impacts.(39) To argue that impact can be reduced to zero now is simplistic and flawed and akin to claiming that pollution can be made victimless. Ad-Mit, on the other hand, can encourage constructive engagement between the polluters and the victims.

The calculation of voluntary offsets usually involves estimating the amount of future emissions avoided. This is done with the help of a baseline scenario, which is by definition counterfactual as it describes what would have happened in the absence of the project activity.(40) Making assumptions about what might have happened can hinder the environmental integrity of the offset. A keychallenge for Ad-Mit may be in the development of grass-roots methodologies to establish baselines to generate evidence on the effectiveness of the intervention.

Offsetting through reforestation and afforestation is complex and controversial. While there is widespread agreement that curbing deforestation is a highly effective way of reducing greenhouse gas emissions, forestry offsetting is contested. Measurement of emissions avoided from energy projects, for example, is far easier than the precise measurement of carbondioxide absorption through photosynthesis in vegetation and soils. Measurement is complicated as absorption may not be permanent (e.g. loss of carbon through a forest fire) and there may be leakages whereby reforestation in one place will lead to deforestation in another. It is also argued that offsetting tree growth for fossil fuel depletion is akin to comparing apples and oranges. Some argue that claims about swapping carbon stored in oil or coal for carbon absorbed by trees are unreasonable. Mineral carbon, while it remains in the ground, is stable and quantifiable. Biological carbonis labile and uncertain.(41) The socio-ecological impacts of fastgrowing monocultures and diversified agro-forestry are distinct and it is important to account for the negative

externalities of the former and the positive externalities of the latter; offset providers do not always do this. For the Ad-Mit concept, the driver for forestry is adaptation and the carbon storage benefits are supplementary or additional and are not claimed to be equivalent carbon savings.

As the voluntary market is largely unregulated there is now a wide array of standards and procedures. While most offset providers follow some sort of standard, a widespread lack of transparency means it is possible to follow significantly less rigorous procedures, creating doubt about credibility of the voluntary offset market.(42) The credibility of the Ad-Mit may be established by those organisations that endorse it and by the standards and approach that guide it.

Awareness

By calculating emissions generated from our daily activities it ispossible to raise awareness of our impact on climate change. Also purchase of emission credits is an acknowledgement mainly by entities in industrialised countries (corporate, individuals) of the impact of their activities on climate. (43) However offsetting, like any form of trade, is comprised of various retailers and some of the sales pitches employ marketing gimmicks to provide simple and seductive messages (44) that hardly suggest greater awareness of the significance of the problem being addressed.

Effectiveness

When done in a robust and responsible way, offsetting leads to a reduction in carbon dioxide emissions in the area local to the offsetting project, often in developing countries.(45) There are reports, however, of some offsetting projects that have not delivered and thus the offsets have not materialised, even though they may be charged for and accounted. This problem is exacerbated by the possibility of double counting in the absence of widely used registry of projects and emissions.(46)

The voluntary market has come under much scrutiny and media attention with many conscious investors looking for an approach that may not yet exist - Ad-Mit may bridge this gap. To do so it must be clearly identified for what it is: a tool to redress climate injustice not to offset carbon. It will also have to guarantee the quality of project delivery.

Risks in delivering synergistic projects

The development of standards to assess and guide the quality ofAd-Mit has already been discussed but there may also be a need to manage potential risks in the delivery of synergistic projects within a community development context. Bringing together mitigation and adaptation can present potential synergies and trade-offs. Mitigation driven activities may result in positive or negative outcomes for adaptation and vice versa, while various developments may bring about unplanned consequences for both adaptation and mitigation. For example,hydropower dams in Nepal may render the country more vulnerable to glacial lake outburst floods that were precipitated initially by retreating glaciers.(47) Also, from a policy perspective there may not be sufficient opportunities to identify synergies to achieve the required global levels of mitigation and adaptation. Climate response options, however, can be implemented to realise synergies and avoid conflicts with other dimensions of sustainable development,(48) particularly at a local or project level. Opportunities are especially evident in the land-use sector where enhancing land-use with forest cover can be both beneficial for mitigation as well as adaptation.(49)

At a project development level there may be a risk that the promotion of the Ad-Mit concept provides incentives for project managers to portray their projects (which may well have very laudable goals) as combined mitigation and adaptation projects.Even though they were not intended as such they may simply labelmitigation activities as adaptation activities and vice versa for funding attractiveness.(50)

Initially there may be learning costs in promoting previously unused technologies or strategies. Acknowledging such learning costs and separating them from other costs during a pilot phase can help feasibility analysis and avoid the risk of discarding an otherwise worth while initiative. It is prudent to evaluate if the net effect of investing in synergetic measures, in terms of reducing damages, will be greater than investing the same amount of resources in two separate options, one of a purely mitigation character and the other adaptation. The calculation of avoided damages due to anintervention is typically quite difficult, however.

There may also be risks that Ad-Mit projects pose greater institutional complexity. Ad-Mit is likely to be similar in some ways to normal development projects but with a distinct project

approach which project designers, implementers and participating communities may find confusing, initially. The development of a concerted, simple, common approach to Ad-Mit during a pilot phase by members of a consortium with grass-roots organisation scan lead to a methodology on how to generate evidence of the effectiveness of community based adaptation. Adopting a good methodology can have implications not only for assessing and guiding the quality of Ad-Mit projects but as a proposal for an integral part of a mechanism to decentralise adaptation finance ingeneral.

Conclusions

Climate change as a global challenge has evolved. Initially, it was perceived as a global environmental problem centred on prevention of future impacts but it is now recognised that some impacts are unavoidable and must be coped with, to prevent much more severe and possibly catastrophic longer term impacts. In recognition of developing countries' modest per capita emissions and their hefty proportion of the climate change burden, demands for greater emphasis on the principle of the polluter pays and on adaptation are mounting. Hence the challenge is not only environmental but also developmental, with strong human rights implications.

This paper proposes the development of a new approach for a voluntary market of climate change responses that can merge complementary strategies of mitigation and adaptation to redress climate injustice. This approach, unlike carbon offsettings, can focus on who rather than what as it will earmark generated revenues for those communities most vulnerable to climate change rather than for a particular technology per se. Development agencies are well positioned to attract climate change funding via the market to be invested (not donated) in the most vulnerable communities through synergistic adaptation-mitigation projects. But the return on investment must be additional to ordinary development projects in terms of increased resilience and adaptive capacity, and this must be verifiably demonstrated. It is not enough to focus on input as emphasis on worth is essential.

Ad-Mit can capture the attention of buyers in the voluntary market of climate change responses. In establishing its identity, Ad-Mit can challenge our understanding of climate justice and the extent carbon offsets actually do what they say they do.The proposed adaptation-mitigation approach challenges current international climate change responses to promote effective bottom-up engagement, allowing

vulnerable citizens to put forward appropriate methodologies, given their realities, that generate evidence on the value of community based adaptation. Such an approach is likely to be crucial for community based adaptation agenda to be taken on board in future multilateral climate change agreements at Poznan in 2008 and Copenhagen in 2009.

Footnotes

1. This article builds on work carried out during a consultancy for Trócaire informing the agency's involvement in the International Institute for Environment and Development-New Economics Foundation AdMit initiative.

2. Intergovernmental Panel on Climate Change (IPCC) is a scientific intergovernmental body established to provide decision-makers and others interested in climate change with an objective source of information. The IPCC and Albert Arnold (Al) Gore Jr. were awarded the Nobel Peace Prize"for their efforts to build up and disseminate greater knowledge about man made climate change, and to lay the foundations for the measures that are needed to counteract such change".

3. International Institute for Environment and Development-New Economics Foundation have developed the Ad-Mit concept presented in this paper.

4. IPCC (2007)

5. Stresses include: current climate hazards, poverty and unequal access to resources, food insecurity, trends in economic globalisation, conflict and incidence of diseases such as HIV/AIDS; IPCC (2007), p.14.

6. Adapted from Stern (2007), p.487

7. Adapted from Burton (1994)

8. Adapted from IPCC (2007), p.209 Adapted from Huq and Grubb (2003), p.3

9. IPCC (2007), p.20

10. Adapted from Tanner and Mitchell (2007b)

11. Ibid.

12. Adapted from Huq et al. (2006a)

13. Stern (2007), p.40

14. IPCC (2007), p.18

15. Michaelowa and Michaelowa (2007)

16. Mission Climat (2007)

17. Bellassen and and Leguet (2007)

18. Ayres et al. (2006). Note that estimation of the volume and worth of the voluntary market, which is largely unregulated, is not straight forward.

19. Bellassen and Leguet (2007), p.10

20. Clean Air-Cool Planet (2006)

21. Presentation by BioClimate Research and Development on Plan Vivo methodology, Edinburgh, April 2007

22. The voluntary carbon standard is a new standard intended to cover greenhouse gas emissions reduction projects developed for voluntary markets.It is being promoted in response to the absence of a universally recognised voluntary standard for carbon offsets.

23. The term "Ad-Mit" first appeared in an IIED Discussion Paper, "Can voluntary carbon offsets assist development" by Jessica Ayres and Saleemul Huq on the possibilities for combining mitigation and adaptation invulnerable communities in the developing world.

24. tCO2e is short for tonnes of carbon dioxide equivalent. Since there are various greenhouse gases (e.g. methane, nitrous oxides etc.) greenhouse gases can be expressed in carbon dioxide equivalents as determined by their global warming potential. For example, if a tonne of methane is estimated to contribute 21 times more to global warming that one tonne of CO2, a tonne of methane is measured as 21 tCO2e.

25. Bellassen and Leguet (2007)

26. Adapted from Huq and Ayres (2007)

27. Adapted from www.unfccc.int/national_reports/napa

28. 93% of Malawi's population depend on fuel wood, firewood and charcoal for their energy needs.

29. Ambient energy is energy that is present but unnoticed, usually unmeasured and free of charge, for instance the energy of sunlight, wind, warm bodies and other systems warmer than their surroundings. The costs arise in controlling its conversion for use, for example by wind generators and solar cells. Some commentators prefer this term to renewable energy as it refers to natural energy flows, not including bio-mass which is a fuel. The expression ambient energy is not

in common use, but perhaps it should be: Patterson (2007),p.171.

30. Mitchell and Tanner (2006), p.10

31. Ibid.

32. SouthSouthNorth (SSN) is a network of organisations, research institutions and consultants grouped into one developmental organisation with considerable expertise to help public and private stakeholders build capacity to reduce poverty in the context of global climate change. SSN operates in Brazil, South Africa, Tanzania, Mozambique, Bangladesh and Indonesia.

33. The Financial Times, 26 April 2007

34. Adapted from UK Department for the Environment, Food and Rural Affairs(DEFRA), accessed May 2006: http://www.defra.gov.uk/environment/climatechange/uk/carbonoffset/index.htm

35. Mission Climat (2007)

36. Transnational Institute: www.tni.org/detail_pub.phtml?&know_id=56&menu=11c

37. Hepburn (2007)

38. Avoidable or "luxury emissions" that we chose not to avoid today may not necessarily be reduced to zero. This is because offsets are not always immediate and emissions reductions may occur in the future. But the marginal damage of some emissions today may be greater than the marginal benefit of the same level of reductions tomorrow. This is the case with the impact of the runaway effect or the tipping point in global warming. This is the point at which change due to human activity brings about sufficient new processes in nature to make any human reversal of that change impossible.

39. Sutter and ParreÃ±o (2007) p.76

40. Monbiot, G. cited in The Guardian, 22 January 2006

41. Ayres et al. (2006)

42. Mission Climat (2007)

43. Some of the marketing techniques used for the sale of offsets hardly convey a message that enhances awareness on the seriousness of the problem being addressed. For example: "Zeroing out your carbon emissions" (Conservation Fund); "Erase your carbon footprint now" (Carbon Plant); "Fly Carbon Free"TM (Carbon Fund); "Zero impact" (Carbon Clear); "You've reducedyour global warming

pollution to zero" (Native Energy); "I emit no gas"(Drivegreen); etc.

44. DEFRA, accessed May 2007: http://www.defra.gov.uk/environment/climatechange/uk/carbonoffset/index.htm

45. Ayres et al. (2006)

46. OECD (2003)

47. IPCC (2007), p.19

48. Ravindranath (2003) and Pan (2003)

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