



ACHIEVING COST-EFFECTIVE MITIGATION AND ADAPTATION

A Submission to the Secretariat of the UNFCCC
in response to its invitation to accredited observer organizations to submit views on
various approaches, including opportunities for using markets,
to enhance the cost-effectiveness of, and to promote, mitigation actions,
bearing in mind different circumstances of developed and developing countries.

from

Civic Exchange
an accredited observer organization

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Civic Exchange is a Hong Kong-based independent public policy think tank addressing issues in climate change, energy, environment, urban planning and governance. Civic Exchange is accredited by the UNFCCC as an observer organization and comments on this submission can be directed through its Designated Contact Point, Andrew Lawson alawson@civic-exchange.org +852 2893 0213.

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To download a copy of this submission, please go to:

<http://www.civic-exchange.org/wp/120301UNFCCC.pdf>

1. EXECUTIVE SUMMARY

This paper responds to COP17's request ([appendix 2](#)) for observer's views on a framework of approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions bearing in mind different circumstances of developed and developing countries.

The paper recommends the Green Climate Fund (GCF) use a range of tendering and Reverse Auction Mechanisms (RAM – [see appendix 1](#)) to allocate funding to mitigation projects. RAM is a business process that currently transfers hundreds of billions of dollars from the developed to the developing world each year – for example for textile procurement. The paper explains in detail how RAM would be applied to mitigation and its potential drawbacks. Key benefits of RAM include (i) providing accountability for funds spent without infringing on the sovereignty of countries; and, (ii) enabling cost-effective, concurrent action on projects with different costs per tonne of carbon mitigated. RAM can also be used for adaptation projects.

While explaining how RAM fits into the framework developed by the decisions of the COP, the paper notes the following points which require clarification (or agreement) for effective action:

1. The Common but Differentiated Responsibility (CBDR) principle should be seen as not only relevant to countries but also to [individuals](#). The barrier it forms to agreement on mitigation action can then be overcome by applying it fairly to individuals and letting a country's obligation be the aggregate of the obligations of its residents ([Section 2 and Appendix 4](#)).
2. Improvements are required to pricing carbon emissions including introducing floor and ceiling prices and making Central Bankers responsible for managing the markets in the same manner as they manage money supply and interest rates ([Section 5A](#)).
3. Regulation should be used to reduce the opportunity costs which mitigation projects must cover. For example implementing rules to curtail trade in unsustainably extracted forest products ([Section 5B](#)).
4. The GCF should be used to decouple the funding projects in different segments of the global economy so each segment's carbon price and/or funding mechanism can be tailored to its needs ([Section 5C](#)).

2. PAYING FOR CARBON EMISSIONS AND THE MITIGATION FRAMEWORK

We consider anthropogenic climate destabilization to be the paramount threat to human civilization and that it is therefore in the interest of those who use carbon intense activities to contribute to funding mitigation and adaptation.

We strongly support raising substantial funds from carbon intense activities, which are part of ‘rich world lifestyles’, and using this money to help developing countries achieve low carbon prosperity. We see CBDR as not only relevant to countries but also to individuals:¹

1. Any individual, regardless of nationality or country of residence should pay for the carbon emissions of their activities which are part of a high standard of living. These activities include fossil-fueled transport, eating meat frequently and heating/cooling more than a modest living area per person.
2. The responsibility of a country should be the aggregate of the responsibility of its residents.
3. As there are more individuals with ‘rich world lifestyles’ in developed countries and more action required to achieve low carbon prosperity in developing countries, there should be a flow of funds from developed to developing countries. This result will benefit individuals with poor living standards living in developing countries.

We believe the key elements for achieving this result are:

1. Putting a price on greenhouse gas emissions from carbon intensive ‘rich world lifestyles’ in all countries to internalise the cost of these emissions. This should cause purchasers of goods and services to switch to less carbon intense sources. The way in which the price on greenhouse gas emissions is introduced must not distort competition in other ways.
2. Developed Countries funding the GCF with some of the money raised by putting a price on greenhouse gas emissions.
3. Developing countries creating ‘Nationally Appropriate Mitigation Action’ plans (NAMA), ‘National Adaptation Plans of Action’ (NAPA) and establishing a ‘National Designated Authority’² (NDA) to work with the GCF to manage climate funding.
4. The GCF channelling funds to projects which support effective NAMAs and NAPAs. This paper proposes the GCF uses a ‘reverse auction mechanism’³ (RAM) to determine how much to pay for each of these projects. In doing so it decouples the process for funding action in developing countries from the pricing of arrangements for raising money from ‘rich world lifestyles’ and thus allows efficient funding of actions which have different costs per tonne.

¹ See [appendix 4](#) for a discussion of how ‘common but differentiated responsibilities’ applies to individuals.

² Per paragraph 46 of the GCF Governance Instrument countries receiving money from the GCF may set up a ‘National Designated Authority’ to work with the GCF on the funding arrangements.

³ The RAM is explained in Section 5D and its application set out in [appendix 1](#).

3. KEY ISSUES WHICH THE PROPOSAL IN THIS PAPER ADDRESSES:

1. **Enabling concurrent action:** The urgency to avoid further destabilising the climate requires concurrent work on different types of mitigation actions which take many years to implement. If a single carbon market price is used to determine payment for these actions, then setting the price high enough to cause the high-cost/tonne projects to happen will lead to paying substantially more than necessary for low-cost/tonne projects. This 'excess' payment for low cost projects would be inefficient use of scarce resources. The proposed RAM solves this problem by facilitating paying for mitigation projects at prices which vary by segment of the economy, depending on the cost of taking the action.
2. **Accountability and Sovereignty:** Currently, the flow of funds for mitigation and adaptation action in developing countries is sometimes impeded by donors wanting accountability while recipients want their national sovereignty respected. The RAM aims to alleviate donors' concerns about accountability, while avoiding infringements of sovereignty. As explained below, it does this by facilitating private enterprises competing on price to undertake projects while operating in accordance with the laws of the country in which they do business.

4. PROBLEMS WITH CURRENT CDM AND CARBON MARKETS ARRANGEMENTS

We consider three types of problems occur due to letting markets determine the price of carbon credits for the Clean Development Mechanism (CDM).

1. **Cost inefficiency due to paying a uniform price for projects which have different cost rates:**⁴ The multi-year timescale for mitigation projects and the need for large scale action mean high cost/tonne and low cost/tonne projects should be undertaken at the same time. If the same 'market price' is paid for all projects then more than necessary will be paid for low cost projects in order to raise the price enough to make high cost projects viable. This is inefficient use of scarce money for mitigation action. The move to include REDD+ (which, excluding opportunity costs, is likely to have low cost per tonne) and CCS (which is likely to be high cost per tonne) in CDM exacerbates this problem.
2. **Mismatches between the price required to curb emissions in developed countries and the price required to motivate mitigation projects in developing ones:** The multi-year timescale of the action required makes it inefficient to use the same price to curb emissions in developed countries as is used for mitigation projects in developing countries. For example, decarbonising electricity supply in the EU requires the application over many years of a carbon price which makes it viable to switch from coal fired electricity generation to renewable energy. It is unlikely that this carbon price will match the cost of REDD action or rural electrification in developing countries.
3. **Price uncertainty increasing risk and hence the prices at which CDM project developers are prepared to commit:** CDM projects often take years to generate carbon credits. Fluctuating

⁴ Price uniformity for CDM projects: It is noted that there is already some variation in the pricing of credits with, for example, EU rules leading to lower prices for CERs delivered after April 2013 from large-scale projects to destroy the greenhouse gases HFC-23 and N₂O.

carbon prices make CDM project developers unsure of the value of credits their projects will generate. While project developers can reduce this risk by selling the credits they expect to generate on forward markets, they cannot get complete cover given uncertainty on the timing and quantity of credits they will generate. Further margins for the market makers, which are likely to increase with volatility, will lead to some reduction in future market price and hence the viability of carbon reduction projects.

In addition to the above issues, CDM has the following problems:

1. CDM has excessive administrative costs and slow transaction processing due to (a) its centralized and politically vulnerable processing (b) the complexity of its additionality rules; and (c) the effort to establish a baseline and precisely measure the number of tonnes of GHG emissions mitigated so as to calculate the payment due.
2. The need for predictable rules to encourage project development and a lack of restriction on the number of projects which can be approved restricts the ability of the CDM Executive Board to restrict cost-ineffective projects.

In summary, CDM financed by carbon markets is vulnerable to cost-inefficiencies and is slow and inflexible. Action is being taken to improve it but there is a significant gap between its performance and the rapid, large scale action required to avoid destabilizing the climate.

5. PROPOSED STRUCTURE FOR FUNDING MITIGATION AND ADAPTATION ACTION

5A. Improvements to pricing carbon emissions

As the decision that created the Durban Platform for Enhanced Action noted, there is a significant gap between the aggregate effect of countries' commitments to action, and what is needed for a likely chance of holding the increase in global average temperature below 2°C above pre-industrial levels. Part of the additional reduction required should come from tighter emissions caps. This will lead to higher carbon prices which will motivate low carbon technology deployment on a wide scale.

The process for putting a price on carbon emissions should provide adequate certainty of future carbon prices and thus have a greater impact on investment decisions:

1. Where carbon markets are used this might be done by introducing 'floors' and 'ceilings' for a carbon market at which the agency managing it buys or sells credits. NB:

The objective is to control the total emissions over a number of years so there is flexibility to go above planned emissions for one year, provided there is a mechanism to force greater reductions in later years.

The scheme must be designed, and sufficiently tight caps set, for the agency to have sufficient resources to fund purchases and generate a surplus over the life of the programme. This surplus can fund additional mitigation and adaptation action.

The current low price of credits in the EU ETS has led to this topic being raised in the European Parliament.⁵

Put options mechanisms have been proposed⁶ to provide a floor price in a low risk, cost effective manner.

2. An alternative to carbon markets is to have an emissions levy. This will require an institution to set and, when necessary, adjust the levy to achieve the cumulative long-term emissions abatement target. This process is similar to Central Banks setting interest rates to control the level of activity and inflation in economies.

It is helpful to have the flexibility to use different mechanisms in different sections of the global economy. For example international shipping might, as proposed by the International Chamber of Shipping, adopt a levy while the EU ETS continues to cover EU electricity generation.

3. Whether a levy or a carbon market with ceilings and floors is chosen, the job of managing the process is best given to Central Bankers as an addition to their current role of managing the inflation and the level of economic activity. Reasons:
 - a. This facilitates coordination between using interest rates and money supply to influence the level of economic activity and setting carbon prices to influence carbon emissions;
 - b. Central Bankers are less likely than Governments to depart from the long term mitigation objectives due to such political pressure; and
 - c. While Central Bankers have been criticized for the economic problems in recent years, they have the best available information networks, established staff and market credibility for the task.

If it is felt to be too radical a step to give the task to Central Bankers immediately then consideration might be given to setting up the 'carbon authority' for each jurisdiction in a manner which ensures it works closely with its Central Bank.

5B. Use regulation

Where appropriate, we propose using regulation to restrict certain activities and support industry change through direct funding. The Montreal Protocol has shown this to be a cost effective approach for tackling a similar global gas emissions problem.

⁵ European Parliament discussion of a floor EU ETS price
www.reuters.com/article/2011/12/18/us-eu-carbon-idUSTRE7BH0DZ20111218

⁶ William A. Pizer, Sanford School of Public Policy and Nicholas Institute for Environmental Policy Solutions, Duke University NI PB 11-06 August 2011 paper proposes governments auction contracts (put options) which commit them to buy carbon credits at a fixed price (the strike price) on or before a fixed date (the maturity). Each such contract would give a project developer who purchases it a price guarantee for the volume of credits it covers thus reducing risk and making it more likely it will go ahead with the project. Note that:

1. Governments only pay for CERs which are generated thus they only pay for performance.
2. The government's commitment is limited to buying the number of CER specified in the contracts it has auctioned. The alternative of it committing to buy any CERs at a given floor price would be give it potentially unlimited exposure.
3. The mechanism puts the limited amount that the government can commit to price support to the best use as firms with the greatest need for the price support are likely to bid the highest price for the contracts.

Regulation can be used to restrict alternatives to carbon mitigation action, thus reducing its opportunity cost. The price which makes a mitigation project viable can then be close to its cost of implementation, rather than having to cover opportunity costs. This regulation should include:

1. Establishing international rules which curtail trade in unsustainably extracted/produced forest, agricultural and other products; and
2. A country's NAMA and NAPA including laws which restrict activities which disturb carbon stores.

Examples of where regulations are appropriate:

1. National legislation restricting the right of owners of mangrove swamps to convert them to hotels or shrimp farms. Note that such legislation is less vulnerable to 'leakage' as it applies to the whole of a country whereas a CDM project only applies to its project area and has no influence on the conversion of other areas to hotels or shrimp farms.
2. International rules against trading in products from Palm Oil plantations which have been set up on forests cleared after a specified date eliminates the opportunity value of such conversion and hence the 'opportunity cost' which must be paid to avoid it.

5C. Use the GCF to decouple the funding projects in different segments

The GCF should be used to decouple the pricing in carbon markets which fund it from the mechanism for allocating funds to adaptation and mitigation projects. This provides the flexibility to:

1. Tailor the pricing and other parameters of each fund raising market to meet its economic activity, political acceptability, GHG mitigation and fund raising objectives. An example:
 - a. Electricity generation requires considerable time to introduce low carbon technology and has politically sensitive output prices. It may therefore be appropriate to raise carbon prices in predictable steps over a number of years. This would provide more politically acceptable electricity price increases while providing predictably higher long term prices to incentivizing investments in decarbonising electricity generation.
 - b. For Marine Bunkers the carbon price is a small percentage of the cost consumers see and there may therefore be scope to increase prices more rapidly in order to provide money for the GCF.
2. Use the RAM (see [Section 5D](#)) applying competitive pressures to drive down the amount paid for each type of mitigation action in each geographic area to close to the cost of the most efficient provider.

5D. The GCF uses the 'Reverse Auction Mechanism' to allocate funds to mitigation and adaptation projects

RAM is explained in [appendix 1](#). It will take different forms depending on the sophistication of the governance of each country and potential bidders available. For countries with weak governance the GCF will probably be restricted to directly funding projects on their own merits and this may limit the volume of funding that it is practical to provide.

The objective is to work towards each country having a NAMA, a NAPA and a NDA which meet internationally agreed standards.⁷ The allocation of funds to mitigation and adaptation activity should be a three step process:

1. The process of developing a Country's NAMA and NAPA will include its NDA estimating funding required for each type of action and negotiating with the GCF for the money. This requires prioritising actions and allocating budgets accordingly. Least Developed Country programmes are likely to be entirely funded by GCF while more advanced economies may contribute a percentage of the funding with the GCF providing balance.
2. Once the NAMA and NAPA are agreed, the GCF, with the NDA's assistance, should publish a schedule for the funding rounds it plans indicating the money allocated to each type of project. The NDA should then act as the agent of the GCF to use the 'reverse auction mechanism' outlined in [Appendix 1](#) to allocate the funding. In this process it puts a contract out for bidding and multiple potential project managers submit bids competing to offer the lowest price that meets all of the specifications of the bid.

The specifications in the contract will vary according to the funding area but will always include:

- a. Bids having to meet biodiversity and indigenous people standards before their carbon benefit is considered.
 - b. The bid being submitted together with a 'Review Report' from an Auditor accredited by the GCF.
 - c. Payment being made against reports of progress / completion of the project. These reports must be accompanied by a 'Review Report' from an Auditor accredited by the GCF.
3. On receiving the bids the NDA should first eliminate any bids which do not meet fundamental requirements such as adequate protection of biodiversity and treatment of indigenous people. It should then rank the remaining projects in order of 'carbon benefit' per dollar cost and, as agent for the GCF, commit to fund the highest ranked projects. – see [Appendix 1](#) for further detail.

Potential project managers whose projects are approved can use the GCF's commitment to pay to support their creditworthiness and thus ability to raise the funds for implementation.

It would be appropriate for the GCF to instigate some pilot projects for the process and gather information on their performance.

⁷ Internationally agreed standards for NAMAs and Country GCFs:

- Procedures for International Verification and Review of NAMAs are set out in annex II to the COP17 'Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention'.
- The GCF should publish Governance Guidelines for Country NDAs and establish a process for determining whether a Country's NDA meets these guidelines.

6. BENEFITS OF THE REVERSE AUCTION MECHANISM

The benefits of the RAM outlined in Section 5D will vary depending on what process is practical and the level of competition. They will include:

1. **Cost effectiveness:**

- a. **Prices linked to cost of mitigation action:** Rather than paying a uniform 'market' price per tonne the different prices can be paid for each project based on competitive bidding⁸. This enables simultaneous, cost-effective funding of different actions with different costs per tonne of carbon.

To elaborate, the segmentation of the funding rounds will allow different prices per tonne to be paid for different types of project. The competition between potential project managers for each type of project should drive prices down. i.e. it will 'discover' the lowest price for doing the work while meeting biodiversity, indigenous people and other requirements.

- b. **Reduced administration costs:** Work will be saved as it will not be necessary to (i) prove additionality, (ii) precisely establish baselines and (iii) precisely measure the change in carbon from the baseline.

2. **Adaptation projects:** The RAM mechanism can be used to get competitive prices for adaptation projects where there is no carbon quantity.
3. **A learning, adaptive system:** The GCF, advised by NDAs, can vary the terms of the contracts each time there is a new bid to (a) close gaps between a country's NAMA/NAPA plan and action; and (b) eliminate 'loop holes' which bidders on previous contracts have found.
4. **Full allocation of funds available:** When the system is running well more bids will be received than there are funds available thus making it possible to fully allocate the funds for each funding round. This compares favourably with the CDM process which has been slow to approve projects.

Once the mechanism is understood, we believe many organizations will support it and will have an incentive to actively ensure its success. In particular:

- Governments of countries which receive funding will see it providing a revenue stream for their country's mitigation and adaptation in a manner which does not infringe their sovereignty or require a lot of work by their staff. The sovereignty concern is met by making it the responsibility of private enterprise Project Managers to meet the GCF's requirements while complying with the laws of the countries in which they are doing business;
- Companies acting as Project Managers and their banks will have a strong incentive for their Project Plans to succeed. They will therefore become protectors of the projects in which they have invested;
- In countries or regions where the governance is better, competitive pressures should lead to companies offering better terms for project management contracts. Thus governments have a financial incentive to enforce good governance, including anti-corruption measures in both public and private bodies; and

⁸ Regarding 5b: One concern with bidding driving costs down is to avoid pressure for low costs leading to damage biodiversity and other 'non cost' issues. As noted Section 5 D3 RAM covers this by qualifying bids as meeting biodiversity and other requirements before considering which bid delivers mitigation or adaptation at the lowest cost.

- Auditors will be incentivized to provide sound assessments to protect their reputation and certification which are key to winning future audit tasks.

The mechanism can provide valuable business opportunities in the green economy, and organizations that can take advantage of these opportunities can be expected to campaign for its implementation and success, including:

- Organizations capable of project management;
- Consultants who can prepare Project Plans;
- Entities who can independently audit both the Project Plans and the Reports of performance against these plans;
- Banks who can lend money to Project Managers;
- Insurance companies who can provide fire and storm damage insurance to Project Managers; and
- Rating agencies who rate the credit worthiness and performance of project management companies.

In summary, while the extent of the benefits will vary depending on the sophistication in governance of each country and the level of competition among potential bidders, the arrangements proposed create a business dynamic that:

- Incentivizes many players, working in their own self-interest under the laws of the country in which they are operating to strive for good management of mitigation and adaptation projects.
- Provides a basis for funding mitigation projects on different prices/tonne so that cost effective action can simultaneously be taken in areas with different costs/tonne mitigated. This simultaneous action is necessary as many projects take years to complete and must be started soon given the urgency of avoiding dangerous climate change.

Provides a system which will be self-correcting and self-improving for the following reasons:

1. The GCF and NDA running it can set the requirements for each funding round based on the experience of previous funding rounds.
2. Project Managers and Independent Auditors will be able to improve their performance based on experience.
3. The quality of the work Project Managers and Auditors do will influence who wins further work.
4. Merger & Acquisition activity will allow better Project Managers to buy out less effective Project Managers.

The arrangements are modelled on the supply chain services mechanism by which billions of dollars from consumers with 'rich world lifestyles' are transferred to countries such as Bangladesh and China in return for specific performance such as the production of shoes, clothes and textiles. In the commercial context, this arrangement facilitates the flow of funds directly to factories in developing countries without their national governments feeling their sovereignty is threatened. The model proposed can do the same for mitigation and adaptation projects.

APPENDIX 1: USING THE REVERSE AUCTION MECHANISM FOR FUNDING MITIGATION AND ADAPTATION PROJECTS

Summary

A reverse auction can be defined as follows:

A type of auction in which Sellers bid the prices at which they are willing to sell their goods and services. In a regular auction, a Seller puts up an item and buyers place bids until the close of the auction, at which time the item goes to the highest bidder. In a reverse auction, the Buyer puts up a request for a required good or service. Sellers then place bids for the amount they are willing to be paid for the good or service, and at the end of the auction the Seller with the lowest amount wins⁹.

In some circumstances the Buyer may decide to purchase from several Sellers paying each the price they have bid.

An example of the Green Climate Fund (GCF) using the Reverse Auction Mechanism (RAM) for allocating funding for mitigation projects would be for it to announce a 'funding round' at which it will allocate money for projects which meet rural electrification objectives. Project Developers will put in their bids and the GCF will award contracts to the lowest priced bid which meets its requirements.

There is a range of options for the bidding process. These include:

1. A simple request for bids where bidders only get one chance to offer their best price for each funding round. Having repeated funding rounds will allow progressive price discovery and should drive down costs.
2. A single request for bids followed by a negotiation process where the GCF pushes the bidders to improve their offers and then accepts the best offer.
3. A computerised 'reverse auction' system similar to E-Bay where bidders can make repeated offers up to the closing date. Where this system is used there may be a two stage process. Stage 1 is to qualify bidders by confirming they satisfy non price requirements. Stage 2 is to have the auction where price and carbon quantity are the only variables.

Which option is chosen will depend on the nature of the projects and the sophistication of the governance structure of the country where the project takes place and of the potential bidders.

⁹ Reverse auction definition: www.investopedia.com/terms/r/reverse-auction.asp#ixzz1jn4pdNCI

Examples of RAM being used for commercial transactions

The RAM is a business process that currently transfers hundreds of billions of dollars from the developed to the developing world each year.

For example, consumers in the USA buy shirts from a retailer and the retailer, through a supply-chain agent, asks factories in developing countries to bid to produce more shirts. The request for bids will specify the quality of shirts and arrangements the factories must follow to protect the environment and the quality of life of their workers. Factories submit bids and the ones which offer the lowest price while meeting the product quality, environmental and labour requirements will be awarded the contract. Often large contracts will be divided between several factories each of which will be paid the price they bid – and these prices are likely to be different. Payment is made after the goods have been checked for quality and shipped. The arrangements are such that the consumer and retailer are confident that the products they buy offer value for money and are made with due care on environmental and labour issues (i.e. accountability). The activity is carried out by private enterprise operating in accordance with the laws of the country where the factory is. Thus the sovereignty of the government of the producing country is respected.

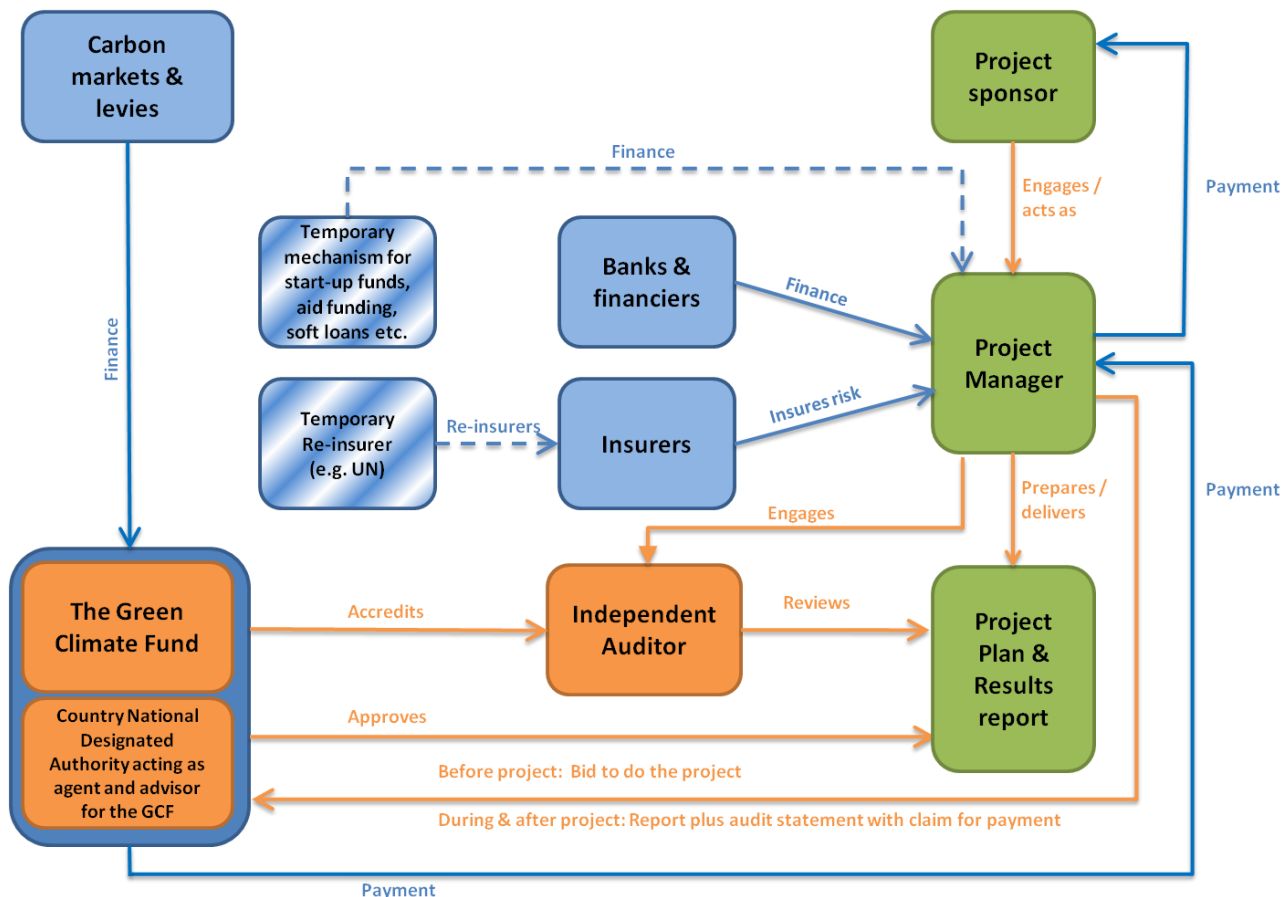
In the commercial context this process, through repeated reverse auctions for each new batch of goods, drives down the cost of providing goods. It also gives the various players a strong interest in making its process work well.

- Retailers, as noted above, profit from procuring products which offer value for money and are made with due care on environmental and labour issues.
- Supply-chain agents have an incentive to find factories which provide competitive prices and meet minimum specifications. Also to monitor the factories to ensure they perform.
- The national governments of the countries where the factories are see benefits in attracting expertise and job creating income within their jurisdictions. They are therefore willing to implement the necessary policy measures to create an environment for the business to succeed.
- Factory owners have a bountiful source of business. Further, once they have won a contract, they can use it as security to finance the production.
- Organisations such as banks and venture capitalists which finance a factory have an interest in it completing the contract and receiving payment.

Another example where the RAM is used is letting areas for oil or mineral exploration and production. Countries issue tenders for the minerals rights for a plot of land (or sea). The tender document specifies the conditions for the development. Companies tender the upfront amount and percentage of production income they will pay for exploration rights. The company which makes the highest price offer which meets the conditions is awarded the right to exploit the plot. If that company doesn't meet the tender conditions it must surrender the exploration rights without compensation and the country can then retender it.

Details of how the GCF might use RAM

The key components of the mechanism are:



The Green Climate Fund ('GCF') and National Designated Authorities ('NDA') – administer the programme. They establish the protocol for payment of the funds for project management. They may also make satellite and other remote sensing information freely available as a 'common good' to reduce cost and duplication in preparing this part of a project plan or progress report.

The GCF is the ultimate authority of dispersing funds while each country NDA may act as its agent for disbursement in the country it covers. NDAs with a good systems and track record should be given substantial delegated authority.

Projects in each country must both comply with the laws of that country and with the rules set by the GCF.

The Project Sponsor – owns the land or other asset which is the subject of the Project Plan for which funding is sought. In some cases, the Project Sponsor will be a national or provincial government. In others, it may be an indigenous people, a company or a private individual.

The Project Manager – may be the Project Sponsor or someone the Project Sponsor appoints. NB:

- Where a Project Sponsor has responsibility for a large area it is recommended it divides this into management units and appoints a manager for each unit. For example forest might be divided based on ecotype, biome, watershed, or socio-political characteristics.

- Where the Project Sponsor is a government, it is recommended that it selects the Project Manager through a tender process. Advantages of this include:
 - Transparency with a greater chance that the organisation most suited to the project will win the role of managing it.
 - A contracted Project Manager could ordinarily be dismissed without compensation if it does not meet its contractual obligations. Further, the incentive of being able to secure new work elsewhere will motivate a contractor to perform. If a government agency is the Project Manager and fails to perform, bureaucratic entrenchment makes it more difficult to change.
 - The Project Sponsor doesn't need to fund the project. It will be the responsibility of the Project Manager to raise funding required to implement the project through bank loans and other means.
- One option is for a Project Sponsor to require a Project Manager to pay an upfront fee for the right to manage a Project. This firstly reduces the risk that a Project Manager will walk away from a project. Secondly it provides the Project Sponsor with early funding and hence incentive to commit to the project.

A Project Plan – which is submitted as a bid in response to a GCF request for bids. Its contents will be specified by the request of bids and will depend on the type of project. For example:

- Projects on forest management will include:
 - Conservation of biodiversity, protecting the rights and wellbeing of indigenous people.
 - Estimates initial carbon stocks and forest inventories and targets for carbon stocks at future assessment dates.
 - Arrangements for sustainable forestry (if relevant).
- The amount the Project Manager asks to be paid if the plan is implemented. Payment might be made every five years, for a 30 year period.
- Projects for rural electrification will include:
 - Impact of the project on biodiversity, protecting the rights and wellbeing of indigenous people.
 - Estimates of the reduction in GHG and black-carbon emissions which will result from the population using electricity instead of biomass burning.
 - The amount the Project Manager asks to be paid if the plan is implemented. This will depend on the capital cost less the present value of the expected cash flow from future sales of electricity. Payment might be made according to milestones for completing the project.

Note:

- For projects where the funding is over a long period the payment amount may be based on a formula which allows for inflation and changes in interest rates.

- Price is determined by competition between bids from potential project managers. The GCF funding rules will need to include provision to ensure adequate competition.

Bidding and project award – As noted at the start of this appendix there are a range of options for the bidding process. These include:

1. A simple request for bids where bidders only get one chance to offer their best price for each funding round. Having repeated funding rounds will allow progressive price discovery and should drive down costs.
2. A single request for bids followed by a negotiation process where the GCF pushes the bidders to improve their offers and then accepts the best offer.
3. A computerised ‘reverse auction’ system similar to E-Bay where bidders can make repeated offers up to the closing date. Where this system is used there may be a two stage process. Stage 1 is to qualify bidders by confirming they satisfy non price requirements. Stage 2 is to have the auction where price and carbon quantity are the only variables.

Which option is chosen will depend on the nature of the projects and the sophistication of the potential bidders.

Whichever option is chosen there will be a two stage process for evaluating bids. First eliminate any bids which do not meet fundamental requirements such as adequate protection of biodiversity and treatment of indigenous people. Then rank the remaining projects in order of ‘carbon benefit’ per dollar cost and commit to fund the highest ranked projects. Note:

1. Depending on the circumstances the ‘carbon benefit’ may be maintaining an existing carbon store, increasing the amount of carbon stored in a system or reducing the carbon emissions from activity such as electricity generation:
2. Allocation rules may be varied to meet particular objectives. For example, projects which develop new methodologies may be trialed even if initially their carbon benefit per dollar cost is lower. NER300 is an existing development along these lines with The European Investment Bank, as the agent of the European Commission, using the proceeds from selling 300 million European Union Allowance Unit to fund carbon capture and storage demonstration projects.¹⁰

Performance and payment: The GCF contracts with the Project Manager for the implementation of the plan.

The Project Manager manages the project and, at the end of each contract period in the plan, prepares a report on the project and arranges for these reports to be independently audited.

The Project Manger is paid once the GCF receives confirmation from an Independent Auditor that it has achieved the deliverables agreed to in the Project Plan.

¹⁰ For details of NER 300 see <http://www.eib.org/about/news/ner-300.htm>

The Independent Auditor: must be accredited with the GCF and must be sufficiently independent of any of the major players (including the government of the country or region where the project is implemented). The costs of the independent audit must be paid by the Project Manager.¹¹

The review function of the Independent Auditor should be a profitable business that will attract expert organizations who value their reputations. These reputations will influence the quantity of business they secure in future.

The GCF would review accreditation every couple of years based on performance. There should be a grading scale for auditors. For example from a '1 star' auditor who can review small projects to a '5 star' auditor who can review the largest projects. Depending on a performance and auditor may gain or lose 'stars' on review.

Finance: It would be the responsibility of the Project Manager to source funding. Some initial assistance to kick-start the provision of finance may be necessary in the form of soft-loans. Once the mechanism is mature, financiers should be willing to lend on the strength of the contract with the GCF.

Risk management: Risks such as fire or storm that may inadvertently prevent the Project Manager from fulfilling its obligations under the Project Plan (and hence becoming ineligible to receive the UN payment). These should be insured against.

It would be the responsibility of the Project Manager to source insurance. Some initial assistance to kick-start the availability of insurance may be necessary in the form of GCF supported reinsurance. Once the mechanism is mature insurers should be willing to provide risk cover with minimal GCF supported reinsurance.

Pilot projects: The GCF, or countries providing fast-start funding, should instigate some pilot projects to kick-start the process outlined in this proposal and trial the process and gathering information on the feasibility and efficacy of the mechanism. This would entail:

- The GCF (or country providing fast-start funding) rapidly approves a number of pilot projects, using a more relaxed set of criteria than would be applied once the mechanism is more mature. This would expedite the experimental phase and avoid delay.
- Similarly, for accrediting the Independent Auditors of pilot projects, the GCF (or country providing fast-start funding) would specify a modest level of diligence, but would make the requirements more stringent as experience is gained.

¹¹ Who should pay the auditors?: This paper proposes that Auditors are accredited by the GCF but paid by Project Managers. This has the following advantages:

- The task of choosing an auditor for each project and negotiating the audit fee is left with the Project Manager thus avoiding additional work and corruption opportunities in the GCF bureaucracy. Further central appointments by the GCF would be likely to cause delay and higher audit fees.
- Should the project fail the Project Manager bears the cost of the audit.

The requirement for periodic re-accreditation of Auditors by the GCF provides an incentive for them to perform well. The GCF may also include in the accreditation contract the right to charge penalties should an auditor be proven to be grossly negligent. Any auditor which does not pay a penalty would lose its accreditation.

- As the pilot projects carry more risk for the Project Sponsor and Project Manager because of their experimental nature, they will require more generous funding than later projects. However, the principle that the GCF pays only on performance should remain. If soft loans or aid funding are required to kick-start the pilot project, then these should be administered by a different organization (i.e. not the GCF) to emphasize that the start-up support is temporary.
- Monitoring of these pilot projects would then provide data to assist drafting future requests for project bids and assessing proposals submitted in response to these requests.

APPENDIX 2: SUMMARY OF THE REQUEST FROM THE UNFCCC TO WHICH THIS PAPER RESPONDS

This paper responds to the invitation in paragraphs 81 and 85 of COP17 Decision on the Outcome of the work of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention.

To paraphrase, the invitation asks for the views of accredited observers on:

Para 79 to 81: The development of a recommended decision for COP18 on a framework of approaches, including opportunities for using markets, to enhance the cost-effectiveness of, and to promote, mitigation actions bearing in mind:

- The different circumstances of developed and developing countries;
- meeting standards that deliver real, permanent, additional and verified mitigation outcomes, avoid double counting of effort, and achieve a net decrease and/or avoidance of greenhouse gas emissions;

Para 83 to 85: The development of a recommended decision for COP18 on elaborate modalities and procedures for a new market-based mechanism, operating under the guidance and authority of the Conference of the Parties, to enhance the cost-effectiveness of, and to promote, mitigation actions which may assist developed countries to meet part of their mitigation targets or commitments under the Convention, bearing in mind:

- The different circumstances of developed and developing countries.
- Decision 1/CP.16, paragraph 80 to take into account:
 - (a) Ensuring voluntary participation of Parties, supported by the promotion of fair and equitable access for all Parties;
 - (b) Complementing other means of support for nationally appropriate mitigation actions by developing country Parties;
 - (c) Stimulating mitigation across broad segments of the economy;
 - (d) Safeguarding environmental integrity;
 - (e) Ensuring a net decrease and/or avoidance of global greenhouse gas emissions;
 - (f) Assisting developed country Parties to meet part of their mitigation targets, while ensuring that the use of such mechanism or mechanisms is supplemental to domestic mitigation efforts;
 - (g) Ensuring good governance and robust market functioning and regulation;

Observer organizations are invited to include their experiences, positive and negative, with existing approaches and mechanisms as well as lessons learned.

APPENDIX 3: COMPARING THE REVERSE AUCTION MECHANISM AND THE CLEAN DEVELOPMENT MECHANISM

	Clean Development Mechanism	Reverse Auction Mechanism
1	The CDM Executive Board issues rules which projects in a developing countries must meet to be accredited for generating and selling 'Certified Emission Reduction' certificates.	The GCF Board, working with NDA for each country, develops a funding plan for that country. It then, with the NDA's help, runs a number of 'funding rounds'. For each funding round bids are invited for completing a specified task with the bidder naming the price at which they are prepared to do the work. The GCF selects the lowest cost projects which meet its requirements and makes commitments to pay the price the bidders name.
2	Developing Countries set rules on which entities in their country can submit projects for CDM accreditation.	Projects must be done in accordance with the laws of a developing country. The GCF rules on funding will include measures to ensure there is adequate competition in the auctions.
3	<u>Baseline:</u> Project plans must provide a 'Baseline Scenario' of the emissions which would happen in the future without the CDM project. Determining this baseline is difficult and it is suggested that in many cases they end up being politically fixed. IF the baseline is over estimate then the CDM project will pay for the amount of the overestimate.	Project plans will follow a similar process of establishing a baseline and projecting the saving from that baseline. Less accuracy is, however, required than for CDM as the payment made is based on the amount bid for the project rather than the number of tones calculated to have been saved.
4	<u>The additionality test:</u> Project plans must prove CDM funding is necessary to make the project viable. Projects which are viable without CDM funding will not be accredited.	In place of the CDM additionality test the system will avoid paying for projects which are viable without funding by (a) the terms of the requests for bids; (b) competitive pressure driving down the price for viable work; and, (c) scrutiny of bids received.
5	Once a project has been approved the entity owning it will do the implementation, calculate the number of tonnes of carbon saved and then be audited to obtain CERs for this saving. The entity can then sell these CERs.	Once a project has been approved the Project Manager will do the implementation and prepare a report on how this implementation matches up to the project plan and get it audited by a GCF accredited auditor. The GCF will pay the amount bid if the audited report satisfies the conditions set when it committed to fund the project.

The main differences between CDM and RAM:

1. The amount paid for each project:
 - a. For CDM the amount paid is the number of CERs produced times the carbon price at the time these CERs are sold.
 - b. For RAM the amount is bid price submitted with the project won in the auction.
2. RAM reduces complexity by replacing CDM's additionality test by (a) the terms of the requests for bids; (b) competitive pressure driving down the price for viable work; and, (c) scrutiny of bids received.
3. RAM requires less accuracy on establishing baseline future emissions as it pays for achieving general targets rather than a paying price per tonne of carbon abated.

4. RAM permits the GCF to change rules to eliminate inefficiencies more rapidly than is possible for the CDM Executive Board. To explain:
 - a. Project Developers will be discouraged if they are not certain of the rules that will apply when they submit their projects for approval. Both CDM and RAM must therefore give adequate notice of rule changes. The current CDM procedure faces the following difficulties:
 - i. The 'baseline' and 'additionality' requirements lead to project development taking a long time and thus require long notice periods.
 - ii. A long notice period, and the lack of restriction of the number of projects which may be approved in a given time, increases the chance that project developers rush cost-inefficient projects through before rule changes take place.
 - b. For RAM the GCF can set new rules for each funding round. Further:
 - i. The simpler 'baseline' and 'additionality' requirements should reduce the time required to prepare plans and hence the notice that needs to be given.
 - ii. The GCF determines the funding commitment for each area by the funding rounds which it sets. Thus it can limit the number of cost-ineffective projects which must be accepted ahead of rule changes.

See Section 6 of the report for elaboration on why these differences make RAM preferable to CDM.

APPENDIX 4: DEFINING “COMMON BUT DIFFERENTIATED RESPONSIBILITIES”

Action on climate change has been weakened by disagreements on sharing responsibility between countries. Rio+20 should provide an equitable basis for future agreements by defining how ‘common but differentiated responsibility’ (CBDR) applies to individuals and agreeing that the responsibility of each country should be the aggregate of the responsibilities of its residents.

Introduction

The concept of CBDR was enshrined as Principle 7 of the Rio Declaration by the 1992 Rio Earth Summit. This reads:

... In view of the different contributions to global environmental degradation, States [countries] have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit to sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.

The Rio Earth Summit also approved the United Nations Framework Convention on Climate Change creating a list (Annex 1) of ‘developed’ countries incorporating CBDR in its principles as follows:

The Parties [i.e. Countries] should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities. Accordingly, the developed country Parties should take the lead in combating climate change and the adverse effects thereof.

In 1997 the Kyoto Protocol required ‘developed’ (Annex 1) countries to reduce their emissions while ‘developing’ countries only needed to report their emissions. The USA refused to ratify this agreement partly because it considered the ‘lack of symmetry’ cause serious harm to its economy.

Since the Kyoto Protocol, arguments over CBDR have been one of the biggest barriers to taking action on climate change. Most developing countries have refused to agree to anything which they consider to break the ‘CBDR’ principle. Some developed countries have refused to take additional commitments to reduce emission as they consider these will make them uncompetitive with rapidly growing developing countries.

International shipping as an example of CBDR preventing action on climate change

International shipping is an example of arguments about CBDR preventing action to mitigate climate change. The International Chamber of Shipping (ICS) has proposed putting a carbon price on the emissions of all international shipping with most of the money raised being used to fund mitigation and adaptation in developing countries. It has pointed out that:

1. Its proposal meets the CBDR principle by the way money is spent rather than how it raised.
2. If the carbon price only applied to shipping flagged in developed countries then ship owners will reflag their vessels in developing countries to avoid it. This would make the scheme ineffective.

The ICS proposal would have raised the cost of emissions from shipping incentivising reduction in these emissions. More significantly it could have raised substantial funds to help developing countries invest in low carbon technology and adapt to climate change. Developing countries, however, considered that having a carbon price apply to ships flagged in their countries would break the CBDR principle. They therefore blocked this proposal in meetings of the International Maritime Organisation and the Convention of the Parties of the UN Framework Convention on Climate Change.

How CBDR applies to individual citizens

To see the way forward on this issue, it is helpful to consider how the arguments which justify CBDR at country level apply to the position of individuals.

1. Firstly, carbon emissions, unchecked for long enough, will destabilise the climate adversely impacting the standard of living and life expectancy of everyone. It is therefore in the interest of all individuals to fund action to achieve low carbon prosperity and thus reduce the risk of destabilizing the climate.
2. The following arguments for developed countries having greater responsibility apply equally to individuals:
 - a. Developed countries currently have greater per capita emissions and place more pressure per capita on the environment and so should pay more. Similarly individuals with higher consumption place more pressure on the environment and so should pay more.
 - b. Developed countries are richer and so can afford to help developing countries mitigation and adaption work. Similarly individuals who are wealthier can afford to spend more on preventing the climate from being destabilized.
3. The argument that developed countries have 'historical responsibility' due to their higher historic carbon emissions appears reasonable for countries which have a continuous existence but is not tenable when applied to individuals – see box.

Why it is not tenable to apply 'historic responsibility' to individuals

Consider two individuals with similar assets and consumption:

- If one of them lives in Bangkok and the other in Paris should they pay different amounts on their carbon emissions?
- Does the answer change if they have different nationalities or have moved to their current country of residence during their lifetime?
- Does the answer change if they have lived all their lives in one country but their parents, or grandparents moved there from another country?
- What should be the position for people who are half French and half Thai, some of whom live in Paris and some in Bangkok?

The conclusion from asking these questions is that, with one minor exception, there is no reasonable or practical way of distinguishing the responsibility of individuals. The minor exception is that people in a developed country may have more responsibility due to benefiting from infrastructure whose construction caused past carbon emissions. This, however, is part of the argument that those with a higher standard of living should pay more for action to reduce the risk of destabilising the climate and is not, therefore, an additional reason for differentiating the responsibility of individuals.

Given the above points we conclude:

1. Any individual, regardless of nationality or country of residence, should pay for the carbon emissions of their activities which are part of 'rich world lifestyles' with the money being used to create low carbon prosperity. These activities include using fossil-fueled transport, eating meat frequently and heating/cooling living spaces of more than modest area per person¹².
2. The responsibility of a country should be the aggregate of the responsibility of its residents.
3. As there is more enjoyment of 'rich world lifestyles' in developed countries and more action required to achieve low carbon prosperity in developing countries there should be a flow of funds from developed to developing countries. As a result individuals with poor living standards and residing in developing countries should benefit from funds flowing into those countries to help them achieve low carbon prosperity.

Strengthening the CBDR principle

Rio + 20 should act on these conclusions by updating Principle 7 in the Rio Declaration as follows:

States shall cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem. In view of the different contributions to global environmental degradation **caused by the current differing levels of resource consumption of their citizens**, States have common but differentiated responsibilities. **All States ~~developed countries~~** acknowledge the responsibility that they bear in the international pursuit to sustainable development is determined by the pressures **the living standard of their citizens societies** place on the global environment and by the technologies and financial resources they command. **Developed countries acknowledge the higher average living standard of their citizens and their greater access to technologies and financial resources increases their responsibility.**

This revised CBDR principle can then become the basis for negotiation within the Durban Platform for Enhanced Action under the UNFCCC of rules which increase the contribution of emerging economies to climate change mitigation in line with the increase of wealth and consumption of their citizens.

¹² The concept of 'common but differentiated responsibilities' referring to the emissions of individuals was proposed by Chakravarty, Shoibal, Ananth Chikkatur, Heleen de Coninck, Stephen Pacala, Robert Socolow, and Massimo Tavoni in "Sharing Global CO2 Emission Reductions Among One Billion High Emitters." *Proceedings of the National Academy of Sciences of the United States of America* (July 6, 2009)



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