

Policy Background: Sources of International Climate Finance

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Glossary of Acronyms

AAU: Assigned Amount Unit; a tradable unit of allowed emission of greenhouse gas equaling one metric ton of CO₂.

CDM: Clean Development Mechanism; created in the Kyoto Protocol to help developed countries reach their emissions reduction goals efficiently and flexibly.

CER: Certified Emission Reductions; a type of emissions unit associated with the CDM.

CSO: Civil Society Organization.

ETS: Emissions Trading System; provides economic incentives for reducing emissions through the trade of emission allowance units.

EUA: EU Emission Allowance; equivalent to AAU, EUA is the allowed emission of one ton of CO₂ or the equivalent.

FSF: Fast-Start Finance; supports immediate action on climate change in developing countries with the goal of developed countries committing \$30 billion for the 2010-2012 period.

FTT: Financial Transaction Tax; a very small tax on each trade of financial instruments such as stocks.

GCF: Green Climate Fund; a new fund that is being developed under the UNFCCC.

GHG: Greenhouse Gas.

IBRD: International Bank for Reconstruction and Development.

ICAO: International Civil Aviation Organization.

IDA: International Development Association.

IFA: International Finance Corporation.

LDC: Least Developed Country.

MBM: Market-based Mechanism.

MDB: Multilateral Development Bank.

NNI: No Net Incidence. The idea that, even if a finance mechanism includes contributions from a developing country, each developing country should receive more funding from a financial mechanism than they contribute to it.

SDR: Special Drawing Rights; a foreign exchange reserve that is not a currency, but can be exchanged for various countries' currencies. A potential source of climate finance.

UNAGF: United Nations Advisory Group on Climate Change Financing

VCS: Voluntary Carbon Standard

Introduction

The Cancun Agreements made progress on climate finance by establishing the Green Climate Fund (GCF)¹. However, without new funding sources in place or the identification of additional sources, the GCF risks becoming an ‘empty fund’ without the necessary leverage to advance climate finance. Alternatively, the GCF might divert existing and already-insufficient climate financial flows into this new structure in an attempt to maintain the framework. In Cancun (2010), the UNFCCC also confirmed the goal set in Copenhagen for developed countries to jointly mobilize US\$ 100 billion/year by 2020. Countries, international organizations and civil society organizations have proposed and discussed a variety of finance sources that might be used to meet that goal. In this background paper, the most prevalent of these source proposals are briefly discussed and their feasibility assessed. The progress towards full operationalization of new sources will also be presented.

Criteria Used to Assess Sources of International Climate Finance

Political Acceptability: refers to whether certain sources are acceptable to developed countries and developing countries, especially advanced developing countries. Mainly, developed countries may worry about economic distortion, negative impact on GDP growth and accountability to tax-payers and thus object to certain sources. Advanced developing countries reject the idea of contributing to climate change finance in other developing countries. Developing countries may reject a category of sources they deem unpredictable, typically private finance.

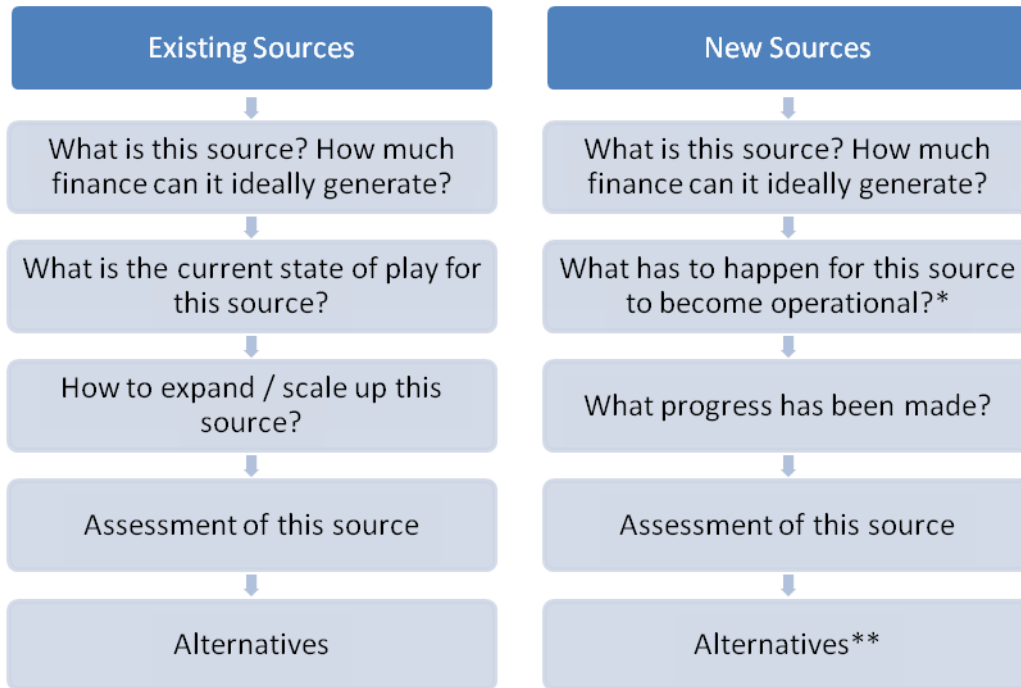
Revenue: the amount of money that a source can generate is a prime indicator of its success and importance.

Practicality: climate change is a very timely issue. While certain revenue streams can generate huge flows in the very long term, revenues that are likely to be available in the short term (i.e. ‘fast-start’ finance) must be prioritized.

Other criteria will be mentioned when relevant, including **Developing Country Incidence, Efficiency, Equity, Predictability, and Additionality.**

¹ See CI’s policy background and policy recommendations on the Green Climate Fund at <http://www.conservation.org/learn/climate/pages/publications.aspx>.

For each source, the following questions will be addressed:



* It is important to consider both generation of finance and allocation of revenues, since most sources will be collected by national governments and international organizations other than the UNFCCC. Just because revenue is generated does not mean it will be allocated to climate finance, nor should it necessarily be allocated solely to climate finance. For example, revenue from the transportation sector will also be used for industrial R&D and infrastructure; auctioning of emission allowances will be used for domestic climate change projects as well. Innovative sources that also support international development and global health may have broader support, but given the importance and urgency of the climate challenge, a certain portion should be invested in fighting climate change.

** A global mechanism is always preferred for every source to reach maximum efficiency and equity, but global mechanisms are extremely difficult to reach. Based on our short timeline before 2020, certain regional or national based alternatives should also be considered.

Potential Sources

1. Carbon Market Related Revenues

Carbon Markets are the economic frameworks for the trading of emission allowances. These allowances are often granted by government agencies, as in the case of the EU ETS, but could be granted by private institutions if the demand were to exist. According to the World Bank, US\$ 144 billion was transacted in the global market in 2009. While there is huge financial flow in the carbon market, not all of it contributes to international climate finance. Only the portion of the flow created by **carbon offsets** through Certified Emission Reductions (CERs) and **voluntary carbon markets** is automatically channeled into funding outlets for developing countries. **Auctioning** of EU Emission Allowances (EUAs) and Assigned Amount Units (AAUs), instead of giving them away for free, generates revenue that can also be used for international climate finance. A **levy** placed on the transaction and acquisition of CERs could provide yet another public funding source. These four sources will be discussed in this section.

Besides volume of transactions, carbon price is essential in calculating the potential climate finance revenue. In the World Bank's "*Report of the Secretary-General's High-level Advisory Group on Climate Change Financing*" (AGF), carbon market-related revenues are estimated based on three different scenarios for carbon credit pricing (carbon credit is equivalent to emissions of 1 ton of CO₂):

- US\$ 15: result from lower bound of developed countries' emission reduction goals, no AAU market, only some developed countries commit to caps and develop domestic markets. ETS and Offset in place.
- US\$ 25: result from upper bound of pledges (EU: 30% below 1990; US: 17% below 2005). In 2020, 9.2 Gt carbon emissions are abated. Trading of 15.2 Gt for AAU, 5.4 Gt for ETS and 0.5-0.8 Gt for Offset market.
- US\$ 50: result from a uniform reduction of 25% below 1990 level. AAU, ETS and Offset in place.

Both demand/volume of the market and price are driven by emission reduction goals set by developed countries. The medium price of US\$25 serves as the carbon price for all estimations in this analysis.

State of Play: Global Cap-and-Trade Carbon Market

- EU ETS is currently the only functional and robust carbon market in the world, which covers 40% of EU's greenhouse gas (GHG) emissions and is regulated based on emissions from individual installations.

Carbon Finance Instruments	Description	Market Value in 2010	Trends
EUAs	European Union Emission Allowances (EUAs) traded in the EU ETS during implementation phases I, II, & III	119.8 billion	Market will be guaranteed to exist beyond 2012; Half of EUAs will be auctioned instead of given for free beginning in 2013; Allocation will be decided at EU level. Banking of EUAs from EU ETS I & II will lead to low demand in the beginning of EU ETS III starting in 2013.

CERs (primary market)	Sale from CER project developers.	1.5 billion	Current demand mostly comes from the EU ETS. Diminishing demand and transaction due to long project development period and more stringent rules in the EU ETS (no forest credits; no Industrial Gas projects starting in 2013; Projects must be based in Least Developed Countries (LDCs) beginning in 2013).
CERs (secondary market)	Sale to a secondary buyer (indirect acquisition from CER project developers)	18.3 billion	Increasing compared to the primary market.
AAUs	AAUs are assigned by the Kyoto Protocol to countries with a quantitative commitment on emission reductions.	1.1 billion	Japan is the biggest buyer; Russia and Ukraine are main suppliers. Problem beyond 2012: huge overhaul from Kyoto I.
Joint Implementation	Emission reduction projects in economies-in-transition countries, mostly in Eastern Europe.	1.2 billion	Mostly in Eastern European countries; Credits issued by national government. Does not count as climate finance.
Voluntary Markets	Voluntary offsetting projects, mostly related to corporate social responsibility.		Only accounts for a small percentage but is increasing rapidly; Includes REDD+ credits.

Carbon Tax: An addition to Cap-and-Trade

Even the most robust of cap and trade systems, the EU ETS, does not cover all industries. Some countries choose to implement a carbon tax on select industries that not legally bound to comply with cap and trade restrictions. The EU is also coordinating its two existing instruments (EU ETS and Energy Taxation Directive²) to avoid overlap and to create a robust carbon price signal.

1.1 Auctioning Emission Allowances

What is this source? How much finance can it ideally generate?

In the AGF report, there are two scenarios for auctioning emissions allowances based on cap-and-trade systems: global auction or domestic auction.

² Restructuring of the Community framework for the taxation of energy products and electricity to reduce distortions of competitions between Member States as a result of divergent tax rates, increase incentives for energy efficiency, and allow companies incentives for reducing emissions

- In a **global auction**, the UNFCCC would retain a portion of the AAUs (Assigned Amount Units) and auction them under a second period of the Kyoto Protocol or a similar agreement. These revenues could then be used for climate finance.
- In a domestic auction, countries would sell emissions allowances in their own **emission trading systems**. A portion of the revenue could be set aside to finance climate actions in developing countries.

Generation Source	Potential Revenue			Justification/ Methodology
	<i>Annual, Billions</i>			
Auctions (AAU; ETS)	2-8	8-38	14-70	15 Gt by 2020 X Carbon Price X 2-10% auctioned for climate finance.
	\$15/ton	\$25/ton	\$50/ton	

What has to happen for this source to become operational?

In order to auction AAUs, there needs to be a market and demand for AAUs. This requires a continuation of the Kyoto Protocol commitment or another similar agreement placing a quantitative cap on countries' carbon emissions. AAUs could then be traded freely as CERs or other emissions permits.

Auctioning emissions allowances in a regional or domestic emissions trading system requires a cap-and-trade system such as the EU ETS or national programs. Revenue from auctioning does not automatically go to climate finance; national governments have to be willing to earmark revenues for climate finance.

What progress has been made?

Auctioning of AAUs, particularly under the first commitment period of Kyoto, has received heavy criticism and little support. Some of the controversy has arisen over disagreements on the pricing of carbon credits, given that different methods of acquiring CERs can result in widely different pricing requirements to make the efforts sustainable.

EU ETS is moving toward auctioning of half of its emissions allowances starting in 2013 and earmarking half of the revenue for financing climate change-related activities, a portion of which will be used in developing countries.

Assessment

This is a new and additional source as called for in the Cancun Agreements and one that does not create incidence on developing countries. The revenue depends solely on the carbon price and the demand within the market for emissions allowances. There needs to be a stronger impetus to ensure revenue is allocated to climate-related activities.

A significant short-coming of auctioning AAUs after 2013 will be the huge overhaul of AAUs following the first commitment period, especially in Russia, Ukraine, and Central and Eastern European countries. Mixing trading of AAUs and CERs could significantly divert financial flows from developing countries to countries with surplus AAUs. Those countries are less likely to contribute AAU auction revenue to climate finance than the EU ETS is.

The auctioning of emissions allowances has also been mentioned in the Maritime Transportation cap-and-trade proposals.

1.2 Carbon Offsets based on compliance carbon market

What is this source? How much finance can it ideally generate?

Compliance Carbon Markets currently exist in the form of three Market Based Mechanisms (MBMs) established by the Kyoto Protocol: Emission Trading³, Joint Implementation⁴ and Clean Development Mechanism (CDM)⁵. They are meant to help developed countries reach their emissions reduction goals efficiently and with flexibility. **The CDM generates climate finance for developing countries**, relying on a carbon market with caps on emissions to create demand for carbon offsets.

Generation Source	Potential Revenue (Gross) <i>Annual, Billions</i>			Justification/ Methodology
Carbon Market Offsets	8-12	38-50 (8-14 net)	150	Gross: Offset price X 1.5-2Gt of offset flows.
	\$15/ton	\$25/ton	\$50/ton	Net: Gross Flow minus Transaction costs

What is the current state of play for this source?

- CDM already accounts for 60% (USD 7 billion per year) of mitigation financing in developing countries, which also draws on private investment to develop CDM projects.
- Most of the finance flows to advanced developing countries where stringent CDM projects can easily be implemented. In order to balance this trend, the EU will only accept CDM projects from LDCs (Least Developed Countries) (which currently accounts for 0.003% of CDM projects) starting in 2013.
- Industrial projects account for the majority of CDM projects, including industrial gases (67%), which will no longer be accepted by the EU starting in 2013.
- REDD+ credits are not included in the CDM; forestry and other land-based credits only account for a very small percentage.
- California is developing a cap and trade program with REDD+ credits being the most favored international offsetting credits.

³ Emission Trading is trading of assigned emission allowance, which is a trading between Annex B countries. In the Kyoto Market, it is trading of AAUs; in the EU ETS, it is trading of EUAs.

⁴ Joint Implementation refers to emission reduction projects in economies-in-transition, which mostly affects Eastern European countries, which are not developing countries.

⁵ CDM projects takes advantage of low emission reduction costs in developing countries, thus both help developed countries to meet their emission reduction goals and developing countries to implement their NAMAs and transform to a low-carbon development pathways.

How to expand/scale up this source?

- Ensure increased carbon offset demand (through developed countries' emissions reductions goals, international carbon trading mechanisms, addressing the issue of AAUs carryover from Kyoto I) and supply (mitigation action in developing countries).
- Additional developed countries external to the EU should commit to quantitative emissions reduction goals and develop national carbon markets; currently about 97% of carbon trading happens in EU ETS.
- Reform carbon offset mechanisms; current CDM is project-based, which cannot achieve sectoral or economy-wide carbon emissions reductions. REDD+ credits are not included.

Assessment

- Establishing markets beyond the EU is important; however, building new markets and linkages is very challenging.
- The carbon offset market has been shrinking since 2008, mostly due to the unclear state of international policy and negotiations on a second commitment period under Kyoto (the first commitment period ends in 2012).
- According to the EU analysis, allowing full banking of AAUs from Kyoto I and adopting the same emissions reductions from Kyoto I beyond 2013 will result in low demand and oversupply of emissions allowances, resulting in insufficient demand for carbon offsetting credits.
- CDM cannot meet the demands of carbon offsetting, in terms of quantity and nature of CERs. CERs from industrial gases, which account for nearly half of the 100-150 million CERs approved each year, will no longer be accepted by the EU ETS. Also, EU ETS will prefer CDM projects in LDCs, whereas approximately 90% of current CDM projects are in BASIC countries (Brazil, South Africa, India and China).
- The preference for CDM credits from LDCs poses a new challenge since it is more difficult for LDCs to leverage private finance.

1.3 Offset Levies

What is this source? How much finance can it ideally generate?

Offset levies constitute an additional charge on CER transactions. Currently, the World Bank collects a levy on behalf of the Adaptation Fund. This cost is paid by CER buyers but does affect demand for CERs.

Generation Source	Potential Revenue (billion/year)			Justification/Methodology
	Variable: Carbon Price (dollar/ton)			
Offset Levies	0-1	1-5	3-15	1.5-2 Gt of Offset X Carbon Price X 2-10% levy
	15	25	50	

What is the current state of play for this source?

A 2% percent levy has been put on the CDM projects to provide funding to Kyoto Protocol's Adaptation Fund⁶. As of January 2011, \$138.16 million has been generated for the Adaptation Fund from the sale of CERs alone.

⁶ Adaptation Fund also receives Direct Budget Contributions in addition to the levy.

How to expand / scale up this source?

Increase demand for CERs by putting a more stringent cap on emissions allowances in developed countries that will result in higher domestic abatement costs, or simply increase the rate for the levy.

Evaluation

This is a tax on emissions reductions instead of emissions, which puts a small but negative incentive on CDM projects.

1.4 Carbon Offset based on the voluntary carbon market, with a focus on REDD+

What is this source? How much finance can it ideally generate?

The voluntary market also generates demand for carbon offsets. The voluntary market only accounts for 0.3% or less of the global carbon market, but it is growing, increasing in size 28% between 2009 and 2010. A distinctive feature of the voluntary market is that REDD+ and other land-based credits are included. The market share of REDD+ credits increased dramatically after the approval of REDD methodology under the voluntary carbon system (VCS).

What is the current state of play for this source?

In the voluntary offsetting sector, a huge portfolio of REDD+ projects is in preparation. The first REDD+ project registered under the VCS is the Kasigau Corridor REDD project, which issued \$1.16 million for six years.

Key Figures in 2010: forestry dominates the expansion of supply in developing countries

- Market Volumes - 131 Megatons (Mt), of which 128 Mt were over-the-counter; 4 Mt in exchanges.
 - Market Value - US\$ 414 million, of which 414 million were OTC; 10.2 in exchanges.
 - Average Price – US\$ 6 /ton, except in the collapsed Chicago Climate Exchange (\$0.10/ton).
 - Project Type - REDD+ Credits occupy 29% of Voluntary Market Transaction Volume (followed by Landfill methane 16%; wind 11%; aforestation/reforestation: 6%; Improved Forest Management: 6%; Agricultural soil: 5%; Biomass: 3%).
 - Project Location - North America: 35%; Latin American: 28%; Asia: 17%; Europe (non-EU): 8%; Africa: 4%; Canada: 2%; Oceania: 1%; EU: 0.3%.
 - Flow to Developing Countries: 58% of OTC transactions, with 5% from least developed countries.
-

How to expand/scale up this source?

Demand in the voluntary market comes from pure, voluntary interests and pre-compliance speculation. For voluntary interests, companies need to be challenged by consumers and shareholders and simultaneously supported by local governments and infrastructure to draw more attention to their internal carbon footprint and the supplemental role of high-quality offsets. In order to transition to compliance mechanisms, more progress in the policy arena is needed. A system is needed to merge project-based voluntary offsetting into integrated national schemes. The Carbon Fund under the Forest Carbon Partnership Facility is likely to pilot this process, with the VCS Jurisdictional & Nested REDD

framework likely to play an important role in certain jurisdictions. Social and environmental safeguards are also critical, and the CCBA (Community, Climate and Biodiversity Alliance) is playing a leadership role at project, state and national scales.

Assessment

Voluntary carbon offsets are not necessarily counted as climate finance. Carbon offset projects contribute to international climate finance only if the projects are located in developing countries; currently, the number one location for carbon offset projects is the United States.

2. New Innovative Climate Finance Sources

Innovative finance sources have been discussed in many contexts, from climate finance, to global health finance, to general development finance. Sources that are most relevant are offset levies on CDM projects, finance generated from MBMs (Market Based Mechanism) in regulating emissions from the maritime and aviation shipping sectors, financial transaction taxes and capitalizing on the Special Drawing Rights (SDRs)⁷.

2.1 International Maritime Transportation Bunker Fuels

What is this source? How much finance can it ideally generate?

A mechanism to address GHG emissions in the maritime transportation sector, which contribute to 2% of global GHG emissions, can also be used to generate climate finance. This sector is not covered by any emissions reduction mechanisms currently. By establishing a market-based mechanism, climate finance can be generated while mitigating emissions from this sector. Energy efficiency measures that do not generate climate finance have also been discussed at the International Maritime Organization (IMO).

Proposals delivered to the IMO include an International Fund for GHG emissions from ships (GHG Fund); Leveraged Incentive Scheme (LIS); Port State Levy (PSL); Ship Efficiency Credit Trading (SECT); Vessel Efficiency System (VES); Emission Trading System (ETS); and Rebate Mechanism (RM). The following four proposals have attracted the most attention:

- Denmark's GHG Fund proposal puts a levy on bunker fuels, but the charge is not expected to be sufficient to reduce emissions to the desired level. Levies would be put in a GHG fund to purchase carbon offset credits and invest in adaptation projects.
- Norway, UK and France's Sectoral Cap-and-Trade, which allows out-of-sector carbon offsetting and plans to auction a portion of emissions allowances to generate revenue for adaptation finance.
- USA's Ship Efficiency Credit Trading, which does not generate any climate finance.
- In addition, a Rebate Mechanism to prevent developing country incidence has been proposed (see below).

⁷ The SDR is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves. Its value is based on a basket of four key international currencies, and SDRs can be exchanged for freely usable currencies. With a general SDR allocation that took effect on August 28 and a special allocation on September 9, 2009, the amount of SDRs increased from SDR 21.4 billion to SDR 204 billion (equivalent to about \$324.1 billion, converted using the rate of March 31, 2011).

Source	Potential Revenue			Justification/Methodology
	US\$ billion per year / carbon price			
International Maritime Transport	2-6	4-9	8-19	0.9-1 Gt carbon offsetting X Carbon Price X (1-30% developing country incidence) X 25-30% Estimates
	(\$15/ton)	(\$25/ton)	(\$50/ton)	

What has to happen for this source to become available for climate finance?

In November 2011, the IMO Assembly is expected to make a decision regarding a MBM (Market-based Mechanism) and operationalize the mechanism by January 2013. They are also expected to decide where to invest the revenue.

For most mechanisms to be effective as a source for climate finance, revenue generation and allocation are both important. Because the IMO and shipping industry would prefer for revenue generated to be invested back into the sector, it may be challenging to direct revenues to climate finance. In addition to financing improved energy efficiency, port infrastructure and other industrial R&D, a portion of the revenue should be channeled to finance climate change adaptation and to rebate developing countries for contribution from industrial sectors within their borders. Allowing out-of-sector carbon offsetting, such as for REDD+, would also contribute to mitigation and provide a source of finance.

What progress has been made?

Although developing countries do not support the sectoral mechanism yet, they do emphasize that any proposal should guarantee No Net Incidence (NNI) on developing countries. Developed countries are not satisfied with this proposal since they worry most of the rebate will flow into advanced developing countries such as China. A revision has been added to the proposal to encourage developing countries to voluntarily give up their rebate money and recognize it as a financial contribution to climate finance.

Assessment

This is a justifiable innovative source of climate finance and progress is well-advanced.

What is a Rebate Mechanism?

The concept of a Rebate Mechanism emerged from the conflict of principles at IMO and UNFCCC, i.e. no differential treatment based on flags vs. common but differentiated responsibilities. Since a global sectoral mechanism that does not discriminate between developed and developing countries will incur a financial contribution from developing countries, a Rebate Mechanism was proposed by the IUCN, official NGO observer to the IMO, written by Dr. Andre Stochniol from the International Maritime Emission Reduction Scheme (IMERS). This proposal has now been taken over by the WWF, also an official observer at the IMO.

The logic behind this proposal is to calculate incidence based on developing countries' imports, since additional charges on exports will generally be passed on to consumers in destination countries⁸. The

⁸ For detailed calculation methodology, see *REVIEW OF PROPOSED MBMs - Towards an optimal rebate key for a global maritime MBM*, Submitted by the World Wide Fund for Nature (WWF).

distance of shipping is irrelevant. This rebate mechanism also excludes imports from neighboring countries and is adjusted for trade patterns in Latin America and Europe. A country's share of imports in global trading is considered as the optimal "rebate key", which can be used to calculate a countries' financial contribution to the international maritime shipping sector scheme. Developing countries should get a rebate equivalent to their contributions. Developed countries' contributions to climate finance can be calculated using the "rebate key" as well.

2.2 International Aviation Transportation

Airlines contribute to 2% of global GHG emissions, a number that is quickly rising. The industry is not covered under the Kyoto Protocol, as most of its activities are conducted internationally. The UNFCCC addresses this issue under a negotiation stream on "sectoral approaches" and also designated the ICAO to design a market-based mechanism to reduce emissions and generate finances. In addition to global regulations, regional, national and voluntary approaches have been proposed and even implemented.

What is this source? How much finance can it ideally generate?

A sectoral cap-and-trade mechanism is the most ideal mechanism to encourage reduced emissions and generate climate finance because it covers the whole sector, is compatible with the Kyoto Protocol, generates the most revenue, and provides incentives to reduce emissions while creating flexibility through offset options.

Source	Potential Revenue billions per year			Justification/Methodology
	1-2	2-3	3-6	
Aviation Bunker Fuels	\$15/ton	\$25/ton	\$50/ton	250 Mt X Carbon Price X 25-50% used for climate change.

What has to happen for this source to become available for climate finance?

An international mechanism with universal compliance is most likely to be developed under the ICAO.

What progress has been made? Is it possible to build the necessary mechanisms?

Not much progress has been made under the ICAO. There is also a concern about developing country incidence, especially for small island countries far away from trade centers.

Assessment

A global mechanism triggers the problem of developing country incidence, similar to that of the maritime bunker fuels. Other options include levies, trading schemes or ticket taxes. The ICAO (International Civil Aviation Organization), rather than the UNFCCC, has the main responsibility for international aviation transportation and therefore may operate outside the context of international climate negotiations regarding taxation of flight transportation.

Alternative 1. Tax on Airline Tickets⁹

What is this source? How much finance can it ideally generate?

Implementing an extra tax on airline passenger tickets could generate around \$10 billion from major developed countries if they imposed a tax at the same rate currently implemented in France¹⁰.

Currently, France assesses a tax based on the number of passengers boarded and the tons of freight and mail loaded from Metropolitan France and from most French overseas departments.

What has to happen for this source to become available for climate finance?

First, the tax must be applied at a national level to cover domestic flights, or an international or regional level to cover international flights.

Then, the tax revenues must be earmarked for climate change financing, especially for a national-level mechanism. Since countries can use tax revenue as they see fit, countries will most likely spend a portion of the revenue for domestic activities, such as health care. Tax revenue may also be channeled back to the aviation sector for improving energy efficiency in order to contribute to mitigation. Efforts should be made to make some of the revenue available for climate finance, for example for adaptation activities in developing countries.

What progress has been made? Is it possible to build the necessary mechanisms?

This source has already been implemented in several countries, such as France and LDCs, either for health purposes or general revenue. Since the source can be implemented at either an international or national level, administrative and political feasibility is high. The World Bank plans to suggest a global fuel levy in a finance sources report being commissioned by the G20.

Assessment

The frequency, price, and reliability of short-haul and leisure trips which display a higher price elasticity are the mostly likely to be affected, in addition to transportation methods serving as an alternative to these flight options.

Alternative 2. EU ETS

What is this source? How much finance can it ideally generate?

All international flights to, from, and within EU member countries are included under the EU ETS system, which means airlines have a cap on emissions and have to purchase credits for emissions beyond the cap as well as the final 15% of permits designated under the cap (to be auctioned) that is not directly allocated to airlines. The EU set a goal of 212.9 million permits in 2012 as an upper bound on the total airline emissions for all EU flights, which will be reduced to 208.5 million per year from 2013-2020. Estimated revenue could amount to US\$ 1-3 billion per year, most of which is earmarked for climate finance.

⁹ Peter Lockley and Muyeye Chambwera, *Solidarity Levies on Air Travel, the Case for a ready-made innovative stream of finance in support of the current international climate negotiations*, April 2011.

¹⁰ Individual passenger taxes range from €4.2-7.5 and cargo tax is set at €1.25 per ton for 2011.

What has to happen for this source to become available for climate finance?

Airlines from all countries must comply with the EU rule, which automatically generates mitigation finance through offset programs. As the EU plans to auction the final 15% of emissions permits, this additional revenue can be earmarked for climate finance, though there is still debate on the fate of this generated income. Countries can also adopt equivalent mechanisms, or measures to offset emissions rather than fall under the direct jurisdiction of the EU aviation scheme, in which case flights to EU countries from outside locations would not have to comply with the EU rule.

2.3 Financial Transaction Tax and Currency Transaction Tax¹¹

What is this source? How much finance can it ideally generate?

Financial Transaction Tax (FTT) is a very small tax (0.005% is most-often quoted) on each trade of stocks, derivatives, currency, and other financial instruments. It has many variations, such as currency transaction tax, global solidarity levy, financial activities tax, Value Added Tax, etc. The calculation below is an estimate for the Currency Transaction Tax. The revenue calculation does not account for the impact on the financial market, but in general, a higher tax rate and broader coverage of financial products will yield higher revenue from FTTs.

Generation Source	Potential Revenue US\$ Billion/year	Justification/Methodology
Financial Transaction Taxes (Tobin Tax)	2-27	US\$ 3000 billion foreign exchange per day ~ (tax rate 0.001% to 0.01%) ~ (tax elasticity of 3-6% to 21-37%) X (1-8.5% compensating developing country incidence) X 25-40% of total revenue for climate financing use.

What has to happen for this source to become available for climate finance?

A global uniform tax is preferred to reduce inefficiency and promote behavior change. Experts proposed collecting the tax at financial transaction centers, yielding lower revenues for the banks and potentially the customers. Alternatively, interested nations and regions can volunteer to implement this mechanism.

What progress has been made?

- Many countries have already implemented FTTs or a variation at the national level, including developed countries, Brazil, India, and South Africa.
- France, as President of the G20 this year, is advocating for FTT in both the G20 and the European Union. Germany is supporting this effort.
- The financial industry and the United States firmly object to this tax.
- In the absence of a global system, the EU is assessing the possibilities of bank levies, and taxes on financial transactions, bonuses or profits for general budget use.

¹¹ For further technical information, see UNAGF Paper, IMF Paper and European Parliament Report.

- NGOs organized a Global Day of Action in Support of Financial Transactions Taxes during the G20 summit in February 2011; however, this source has not won much attention in the global South.

Assessment

FTTs are a new and additional climate finance source, but are not related to carbon emissions. A global mechanism needs strong international coordination to avoid non-taxation or double taxation, while regional mechanisms may create behavior changes aimed at avoiding the tax. Under a uniform global tax, developing countries also contribute to this source; a spin-off proposal is to implement the tax only in developed countries, which further lowers the political acceptability and feasibility. The possibility of implementing FTTs for climate finance is strongest in the European Union. Discussion and advocacy for FTTs has focused more generally on development finance (not just climate finance), generating a broader base of support for this source. More economic studies are needed to assess its impact on the economy, coordination to avoid tax evasion, or whether FTTs reduce speculation and enhance the stability of the financial sector.

2.4 Special Drawing Rights

What is this source? How much finance can it ideally generate?

IMF's Special Drawing Rights can be used directly (monetizing) or indirectly (capitalizing) for climate finance:

- Monetizing SDRs: countries lend or give their SDRs to developing countries as concessional loans or grants.
- Capitalizing SDRs: countries collectively use a portion of their SDRs to issue Green bonds in the international capital market. In a IMF staff paper, for every one 1 dollar equivalent SDR, 10 dollar can be raised in the capital market, which means 10 dollars worth of lending to developing countries.

What are Special Drawing Rights?

The mechanism of special drawing rights (SDRs) was created in 1968 to supplement other reserve assets in IMF member countries. It is a form of currency that can only be traded within the IMF system, but can be converted to other major currencies* to be used anywhere in the world. IMF has allocated SDRs four times, with the most recent allocation of US\$ 240 billion approved in August, 2009. The amount of SDRs received by each country is in proportion to its IMF holdings, which means large economies receive more SDR allocations. For example, the US received a ~US\$ 35 billion SDR allocation, China received ~US\$ 7 billion, and Costa Rica received ~US\$ 156 million.

Countries pay interest on their SDR allocations and receive interest on their actual holdings, which means that no costs are incurred if countries do not make changes to their assigned SDRs. If countries convert SDRs to other currencies by selling or lending them to other countries, they will have fewer SDR holdings than allocated and will have to pay interest to the IMF**.

For example, if Costa Rica wants more US dollars to purchase its government bonds in order to fund infrastructure projects, it can sell a portion of SDRs to China in exchange for US dollars. This will result in

excessive holdings for China and deficient holdings for Costa Rica, which means China is receiving interest and Costa Rica is paying interest. If this amounts to Costa Rica's total deficient SDR holdings of 23 million, it has to pay $23,000,000 \text{ (SDR deficit)} \times 0.3\% \text{ (interests rate)} \times 10/6.6 \text{ (currency exchange with USD)} = \sim 104,545 \text{ USD}$ annually to the IMF. Similarly, if developed countries lend or give their SDRs to developing countries, they will have to pay interest in addition to their SDRs contribution.

* Exchange rate of SDRs links to a basket of currencies including USD, Yen, Euro and Pound Sterling. In August 2010, 10 USD = ~6.6 SDR.

** The calculation of interest rates is very complex, but the rate is around 0.3 percent. The IMF also charges a levy of 0.01% on country allocations to cover their operational costs.

What has to happen for this source to become available for climate finance?

Countries have to commit a portion of their SDRs to climate finance in one way or another. In some countries, this requires changes to budgetary systems or national law.

A group of countries can give or lend their SDRs to developing countries. Since SDRs are not usable outside the IMF, developed countries have to sell their SDRs in exchange for freely usable currencies such as US dollars. These contributions can be managed by donor countries individually, via a donor country consortium, or existing or new multilateral mechanisms. Ideally, developed countries can convert all of their SDRs to freely usable currencies, but in reality, there is not strong enough demand for SDRs among IMF member countries. Only a small portion of SDRs can be converted and be potentially used for climate change-related projects. Developing countries with huge foreign currency reserves and a low percentage of SDR reserves can be persuaded to purchase developed countries' SDRs in order to make such money available for climate and development finance.

Capitalizing SDRs: A Green Fund can be set up to issue bonds backed by developed countries' SDRs as a revenue mobilization mechanism. The funds raised in the market can be channeled to an existing climate fund or the Green Climate Fund to provide concessional lending, guarantees or other financial instruments to mitigation projects. Investors in these bonds have to expect generally lower returns since the funds are invested in mitigation projects compared to other conventional projects. As long as the mitigation projects do not incur huge losses, the finance can always be raised from the market and never really affect developed countries' SDRs. Developed countries do bear the risks of having to pay back investors if the funded projects fail to generate returns. In addition, countries can make a subsidy contribution to the Green Fund so that it can make concessional loans, or even grants, to developing countries. Providing grants would make this a feasible source of financing for adaptation projects as well. To neutralize any monetary contribution by developed countries, the Center for Global Development proposed an **IMF gold sale** as a way to provide supplemental funding.

What progress has been made?

Recently, a group of African NGOs came together to call for SDR financing of US\$ 150 billion, as a bridge between fast-start financing (FSF) and long-term financing involving more innovative finance sources. That said, not much progress has been achieved in official discussions regarding usage of the SDRs. Even the United Nations Advisory Group on Climate Change Financing (UNAGF) report deemed this source as

having low political acceptability, mainly due to the nature of SDRs as an international reserve tool without any direct linkage to climate change.

Assessment

- **Monetizing:** Developed countries have to pay/receive less interest for the portion of SDRs lent/given to developing countries. Although SDRs do not have significant impact on most developed countries, this would involve reduction of their asset reserves and poses the problem of identifying who will be willing to purchase huge amounts of SDRs. This source can provide grants for adaptation projects if developed countries are willing to give SDRs away.
- **Capitalizing:** This is a smarter source that only incurs lost interest and the risk of having to pay back the investor with monetized SDRs rather than requiring the conversion of a huge portion of committed SDRs into other currencies. Whether the committed SDRs can still perform as a foreign asset reserve is a lingering question. Since it is financed by bonds, only mitigation projects with steady returns can be funded under this approach. Concessional lending or grants for adaptation projects require an additional contribution from developed countries.

Capitalizing SDRs is a smarter source than monetizing, but monetizing SDRs requires very simple procedures similar to Direct Budget Contribution. The UNAGF report indicated that this source has very low political acceptability to IMF countries, especially the U.S. This source does not require universal agreement and countries can voluntarily participate, meaning that objections from a few countries would not prevent mobilization of this source of finance.

3. Direct Budget Contribution (Fast-Start Finance and Beyond)

What is this source? How much finance can it ideally generate?

Direct Budget Contribution refers to developed countries' contributions to international climate finance. They can be channeled through bilateral agencies or multilateral funds, such as the World Bank's Climate Investment Funds, Forest Carbon Partnership Facility and potentially the Green Climate Fund. The scale of finance depends on developed countries' capabilities and willingness to provide funding.

What is the current state of play for this source?

Currently, countries are still trying to meet the goal of US\$ 30 billion Fast-Start Finance (FSF) from 2010-2012.

How to expand/scale up this source?

Besides numerical figures, it is important to examine financial modalities (loans, grants, guarantees) provided, as well as the percentage of mitigation, adaptation and REDD+ finance. Developed countries should try to provide more grants and adaptation finance. They should also be providing *additional* finance in two respects—climate finance should be additional to current levels of climate finance and to current commitments to provide official development assistance. At the UNFCCC, a robust registry system can better monitor developed countries' contributions.

Assessment

Developing countries prefer Direct Budget Contributions as a source of climate finance for two reasons: it is public money and is perceived as a predictable source of finance. Many are increasingly looking to Direct Budget Contributions for the immediate term as innovative sources encounter numerous road blocks.

4. Multilateral Development Bank Leveraging

What is this source? How much finance can it ideally generate?

Multilateral Development Banks can leverage additional finance beyond the direct budget contributions they can draw on. MDBs are best at leveraging concessional and non-concessional loans (at a ratio of 1:3.5), but the grant element of additional finance (1:1.1) provided is actually very low.

What is the current state of play for this source?

Development banks already support climate-related activities, such as the World Bank's Climate Investment Funds, but most of the funding comes from developed countries' contributions, which also count as Direct Budget Contribution.

How to expand / scale up this source?

Contributions by developed countries to MDBs need to be scaled up. Also, MDBs can increase their own share of investment in climate related activities. In addition to leveraging loans inside the bank, MDBs have the strong ability to leverage public and private finance.

Assessment

MDBs are best at generating a large amount of gross flows into a developing country, which also brings in co-investment from the private sector. The additional grant elements generated by MDBs are limited, but the gross flow is huge. For countries with limited access to international finance, this gross flow leveraged by MDBs is particularly important. Developed countries favor this option for climate finance since MDBs are traditionally dominated by developed countries. Many developing countries are strongly against MDBs' role in climate action because they have invested in many projects that significantly contribute to climate change. The AGF report argues in favor of MDBs' leveraging capability and encourages channeling part of the revenue generated in public finance into MDBs. The middle ground would be for MDBs to reform in terms of ensuring environmental and social safeguards in project financing, equity in board representation and decision making process, and then assume the role of financing climate change actions. Otherwise, national development banks in developing countries can and should perform similar leveraging duties.

Calculation of Multilateral Development Banks' Contribution – the Leveraging Effect

Leveraging Gross Flows: How much money can MDBs provide to developing countries?

MDBs and World Bank: MDBs and bilateral institutions can issue bonds to raise additional funding (secondary funding) on the back of paid-in capital (primary funding: portion of public funds and Direct

Budget Contribution) and existing headroom.¹² Additional funding is distributed in the form of concessional loans and non-concessional loans. For concessional loans, MDBs can issue 1.2 dollars for every 1 dollar to be repaid, with additional money coming not from bonds, but from direct donor contribution and borrowers' repayment. For non-concessional loans, MDBs can issue 5 dollar bonds on the back of every 1 dollar of paid-in capital. Based on a mid-market carbon price, for every 1 dollar of paid-in capital received for the sale of carbon credits, 60 cents are used to generate non-concessional loans and 40 cents for concessional loans. After considering the above-mentioned multiplier effects, the total loans distributed amount to 3.50 dollars (please see below for calculations). Loans issued in this fashion are the gross flow of MDBs.

Assuming 1 dollar paid-in capital

1. 0.6 for non-concessional lending X multiplier 5 = 3 dollar in loans
2. 0.4 for concessional lending/grants X multiplier 1.2 = 0.5 dollar loans/grants
3. Total loans distributed to developing countries: 3+0.5=3.5 dollars

Gross multiplier: 1:3.5

Leveraging Net Flows: How much of the money is grant-equivalent?

In calculating net flow, only grant elements of loans are counted. MDB loans consist of IDA (International Development Association), International Bank for Reconstruction and Development (IBRD) and International Finance Corporation (IFC) type of loans. Only IDA-type concessional loans and IBRD-type non-concessional loans (limited-concessional) were calculated for grant elements, contributing to 80% and 20% of the total, respectively. IFC-type loans are considered commercial loans and have no grant element, thus they are not included in our calculations here. For the 3.50 dollars in loan gross flow, 1.1 dollars are grant equivalent, with 10 cents added value for every 1 dollar of paid-in capital. The 10 cents comes from the difference of interest rates in borrowing and lending, with additional risks taken by shareholders of MDBs. **Grant elements**

Calculating for grant equivalence of loans:

1. Grant equivalence of 3 dollar non-concessional loans is \$0.7.
2. Grant equivalence of 0.5 dollar concessional loans is \$0.4.
3. Net Flows = 0.7+0.4=1.1 dollars.

Net multiplier: 1:1.1

Additional Amount: 0.1 dollars

5. Private Investment

What is this source? How much finance can it ideally generate?

Under the assumption of the UNAGF report, international private investment, including “negative cost” mitigation measures and leverage from the carbon market, MDBs and other public flows, can contribute US\$ 100 -200 billion per year towards mitigation finance in developing countries, assuming half of the finance comes from developing countries' domestic flows. Numbers can vary significantly depending on what kind of flow into which areas is counted towards climate finance.

Private investment can also contribute to adaptation finance in the form of insurance mechanisms.

¹² The amount of further lending or borrowing capacity available to an MDB given the limitations of its existing capital base before a new infusion of capital has to be negotiated.

What is the current state of play for this source?

A portion of private investment was leveraged by CDM projects and the Multilateral Development Banks' investment. The voluntary market is expected to guide private investment into the forest sector. In 2010, low-carbon investment grew by 30% to reach US\$ 243 billion, with significant growth in the Asia region. Argentina (US\$ 743 million) and Mexico (US\$ 2.3 billion) had the highest growth rate; China (US\$ 54.4 billion) had a growth of 39% while Brazil (US\$ 7.6 billion) and India (US\$ 4 billion) had less satisfactory results.

How to expand / scale up this source?

Create a friendlier investment environment in developing countries through advancement of international and domestic policy, risk-mitigation strategies, and promotion of up-front investment. Public finance is extremely important in leveraging private finance but bears the risk of over-intervention as well.

Assessment

- Eventually the transitional change into a low-carbon economy relies on private investment, but in the short term, private finance is not a desired source by developing countries since it provides little predictability and lowers the public finance responsibilities of the developed countries.
- Private finance cannot function well alone. Most low-carbon projects require high up-front investment, bear high risks and offer low returns, which does not attract private finance. The unclear future of the carbon-offset market further complicates the situation.
- It is extremely difficult to define which private investment contributes to climate finance or to calculate the grant elements of private finance. Even more challenging is monitoring, reporting and verification of financial flows as expected from public finance.

What is gross vs. net flow of climate finance?

A total of US\$ 65-110 billion (funding from public, market offset, MDBs) can leverage private funding of US\$ 195-330 billion in addition to capacity-building finance of US\$ 70 billion. Subtracting 50% of this total, the contribution coming from developing countries, the gross flow is US\$ 100-200 billion. Since risk in investment is mitigated by MDBs and bilateral instruments, private investors tend to lower their expectation by 2% (US\$ 4 billion). Over a 10 year project and 10-15% cost of capital, the net present value of the US\$ 4 billion becomes US\$ 20-24 billion, which is defined as the net flow of private investment.

Private finance is very controversial in terms of contributing to the US\$ 100 billion/year goal. Most developing countries believe only public finance should count towards this goal. However, private finance plays a key role in the transformation of an economy into a low-carbon economy in the long run. In spite of the considerable emphasis placed on public finance, private finance has already begun contributing to climate change mitigation and adaptation activities. A good proposition so far has been to value private finance in future climate finance, but not to include it in reaching the US\$ 100 billion/year.

The distinction between gross vs. net flow is relevant to all climate finance sources. It is meant to differentiate between the total finance generated and the portion of this finance that is contributed to by grants and related elements. With private finance, it is particularly difficult to calculate these grant

elements and differentiate them from private elements. Also, developed countries claim that private finance will consist of a huge portion of the US\$ 100 billion goal while developing countries are strongly rejecting this idea by asking for the money to come from solely public sources. Calculating the grant elements of private finance may help developed and developing nations think about how to analyze the role private finance can play.

6. Other Carbon-Related Finance Sources

A few other carbon-related climate finance sources were also discussed in the UNAGF report, but didn't receive much international attention. Below is a brief explanation of these sources.

Carbon Tax or Wires Charges

If a tax equivalent to US\$ 2 per ton of emission were to be levied on all energy-related emissions in OECD and non-OECD European countries, it could generate revenue in the sum of US\$ 10 billion per year. An additional variation is "Wires Charges," which means tax is only collected on the electricity generation sector in OECD+ countries; this revenue is estimated to be US\$ 5 billion in 2020.

Also, this source overlaps with EU ETS in EU countries since EU ETS already covers emissions from energy-related sectors, creating the issue of double taxation. Several European countries have implemented carbon taxes in sectors outside the EU ETS, but the revenue goes to the national budget and can only contribute to international climate finance via Direct Budget Contribution.

Redirection of Fossil Fuel Royalties

Royalty revenues are already a portion of developed countries' national budget, which are incorporated into international climate finance through Direct Budget Contributions. Replacement of these revenues is needed in the national budget. In addition, this source is only relevant to a few developed countries that have huge fossil fuel productions.

Removal of Fossil Fuel Subsidies

The G20 has an initiative to phase out developed countries' fossil fuel subsidies of US\$ 8 billion per year. This source is budget neutral as the government is simply moving spending on fossil fuel subsidies to climate finance. This initiative has not gained much traction and the scale is limited to the scale of the subsidies. Also, Fossil Fuel Subsidies contribute to the energy security of a nation. Developed countries have also raised the importance of removing fossil fuel subsidies in developing countries to reduce emissions.

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