

# A Glossary of Climate Finance Terms

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## Introduction

Do you speak ‘climate finance’?

This glossary is for anyone who wants to know their way around the complex language of finance products and institutions related to climate change.

As you’ll discover below, many of these terms are politically contested – even ‘climate finance’ itself. As participants in these debates, we’re no more neutral than anyone else, but we have tried to give readers a sense of why these disputes arise, and of the main different interpretations that are currently circulating.

You’ll also notice that we’ve placed a particular focus on terms that relate to the financial sector. That’s a deliberate choice too. With an ever greater emphasis being placed on ‘leveraging’ private finance, we wanted to make clear what was at stake in placing ever more reliance on banks, private equity funds and other financial services providers.

This remains a work in progress, and we’ll be posting updates at: [climatemarkets.org](http://climatemarkets.org). If you have any comments, queries or suggestions, we’d love to hear from you!

## Adaptation

Adaptation refers to measures that lessen the impacts of climate change on individuals, companies, institutions or society as a whole. In this broad sense, adaptation is sometimes used to describe any of the risks and opportunities that companies face in response to climate change.

In policy discussions, however, the term is used more narrowly to refer to actions that reduce the vulnerability of poor communities to the effects of climate change. Adaptation financing is necessary to address changes in the climate that are already happening or are very likely to happen over the coming decades as a result of greenhouse gases that have already been emitted. These changes were disproportionately caused by the actions of industrialized countries, which has led some commentators to refer to an ‘adaptation debt’.

Cost estimates by the *World Bank* suggest that \$70 - \$100 billion per year will be needed globally to cope with the impact of climate change by 2050, while the *UNFCCC* estimates a figure of \$28 – 67 billion per year for developing countries by 2030.

## Additionality

Additionality has various, overlapping uses. In its most general sense, it refers to *climate finance* commitments over and above those made as part of Official Development Assistance, aid flows that should amount to 0.7 per cent of the GDP of developed countries (although they almost never do).

A more specific meaning relates to lending by the *World Bank* and other *IFIs* in relation to projects that also have private sector backing. This is typically assessed as ‘financial additionality’, ‘operational and institutional additionality’, and ‘development and/or climate additionality’, and is very similar to what is now more commonly termed *leveraging*.

‘Financial additionality’ refers to whether the private investment would have happened without IFI involvement. ‘Operational and institutional additionality’ is an assessment of whether the involvement of IFIs leads to improvements in the social, environmental or corporate governance standards adopted by the project. ‘Development additionality’ relates to whether the total investment has sustainable development benefits and/or contributes to *adaptation* or *mitigation*. These measures tend to be highly subjective, and IFIs have been criticized for claiming ‘additionality’ where none exists or can be proven. Even the World Bank Group’s own assessments have often found it falling short. In the case of the *International Finance Corporation*, the Bank’s private sector arm, a 2011 in-house evaluation found that fewer than half of projects had poverty reduction or distributional benefits amongst their objectives, while only 13 per cent were explicitly focused on the needs of poor people.

Additionality has a more specific meaning in relation to *carbon finance*, where it refers to the quantity of greenhouse gas emissions reductions said to have occurred as a result of an *offset* project. A baseline assumption is made about what the future would have held without the project, the offset project is assumed to have altered that future, and credits are awarded as a result.

Additionality is meant to prove ‘real, measurable and long-term benefits’ in reducing greenhouse gas emissions. In reality, such complex processes as methane reduction, forest carbon sequestration and counter-factual shifts in grid-connected energy production cannot be compared, making it virtually impossible to truly establish the additionality or otherwise of projects.



## Additionality tool

CDM projects are assessed using an ‘*additionality tool*’, which requires them to pass either a ‘barrier analysis’ to identify factors that might otherwise prevent the project from taking place (such as a lack of in-country experience with a particular technology, or uncertainty surrounding electricity tariffs), or an ‘investment analysis’ to show that the project is not financially viable without CDM revenue. However, the results of these tests are easily circumvented, since the variability in plausible assumptions is almost always greater than the actual number of emissions claimed.

## Arbitrage

A form of trading that takes advantage of varying prices for equivalent goods, usually in different markets. For example, an arbitrage trader may simultaneously buy wheat in Chicago and sell it in New York, profiting from the price differences at that moment. In principle, this type of trading is risk-free, although in practice traders use computer-based statistical modeling to analyze ‘arbitrage opportunities.’

In mainstream economic theory, arbitrage serves the purpose of correcting price imbalances. However, it is also used to manipulate prices. For example, when traders see potential differences between current (*spot*) and *future* prices for commodities like food and oil, they have been known to buy large them in large quantities and store them until the price rises. This was a key factor in the 2008 global food crisis.

In the case of carbon trading, arbitrage opportunities exist because EU emissions permits (*EUAs*) and UN offset credits (*CERs or ERUs*) are both treated as ‘one tonne of carbon’ but trade at different prices. Traders then seek to model these differences in relation to various other risks (e.g. that offsets won’t be delivered on time, or that certain types won’t be accepted as ‘one tonne’ in future).

## Assets

An asset is anything that is owned by a company, person or institution, such as shares or property. If a company is holding onto cash, that is also an asset.

In banking and the *shadow banking* system, debts are also treated as assets because they generate *interest*. The promise of future revenue is the asset underlying *asset-backed securities*.

## Asset class

An ‘asset class’ is a grouping of assets by type. The main types are: *equities* (shares), *bonds* (fixed-income), cash (or money market equivalents), real estate and commodities.

## Asset-backed securities

Asset-backed securities (ABS) are created by the repackaging (*securitization*) of loans (or predicted future revenues) into new financial products that can be resold to investors. Income from these securities is supported by the stream of expected revenues that the assets bundled together in this way are expected to generate in future. The most typical case is the mortgage-backed securities that played a major part in the 2008 financial crisis, although anything from

credit card repayments to musicians' royalties have been sold in the same way. The main common features are the repackaging itself, and their re-sale by companies set up exclusively for this purpose (*special purpose vehicles, SPVs*).

Asset-backed securities bundle together small debts into larger products that can be re-sold to investors. Pooling debt in this way in theory makes it safer, since any one of the underlying assets can be defaulted on without risking the whole package. In practice, it makes the whole system more risky, because the complex web of repackaged debts makes it impossible to truly assess the value of the underlying assets, and creates a long and obscure paper trail even to find what they are. This did not stop financial markets from creating and selling more and more asset-backed securities, which began to resemble a giant Ponzi scheme. These products were particularly attractive to banks, who set up SPVs and created asset-backed securities to get debt off their books, as a means of circumventing the capital requirements laid down by the Basel Accords.

Asset-backed securities are often traded in the form of *Collateralized Debt Obligations (CDOs)*, which add a further layer of complication by repackaging the debt into tranches with various supposed levels of risk.

Proposals for the creation of *climate bonds* or *forest bonds* often suggest that they could take the form of asset-backed securities.

## Assigned Amount Unit (AAU)

A unit of greenhouse gas emissions as defined by the Kyoto Protocol. An AAU is equivalent to one metric ton of carbon dioxide equivalence (CO<sub>2</sub>e).

## Auditor

An auditor is an external evaluator employed to certify the claims that a company makes, typically in relation to its financial position.

With the rise of *ecosystem services* and *carbon trading*, the market in environmental auditing has also grown.

In the case of the *Clean Development Mechanism*, private auditors (referred to as *Designated Operational Entities*) are employed to assess whether projects should be registered ('validation') and whether *carbon credits* should be issued ('verification'). Critics contend that this outsourcing of regulation can generate conflicts of interest, and lead to lax standards.

## Basel Accords

The Basel Accords are international banking regulations issued by the Basel Committee on Banking Supervision. Its secretariat is based at the Bank of International Settlements in Basel, Switzerland.

Although Basel Committee recommendations have little formal authority, they have been widely adopted by national governments. Basel I established minimal standards for assessing 'credit risks' taken on by banks, setting a minimum *capital requirement* equivalent to 8 per cent of their overall lending, at least half of which needed to be 'Tier 1' capital (the safest form, including shares and retained profits). Basel II, initially published in 2004, extended the scope of the

agreement to take account of ‘market risks’ (price fluctuations) and ‘operational risk’ (potential failures in bank’s internal processes). Although the USA and other major economies signed up to Basel II, its implementation was delayed and limited. Banks, meanwhile, responded to the Basel Accords by increasing the *securitization* of their assets. This took lending off their books and loaded it into *special purpose vehicles* - newly formed companies, mostly registered in tax havens, beyond the view of regulators. They also offloaded some risk to *hedge funds*.

Basel III, agreed in light of the financial crisis, raises the bar for ‘Tier 1’ capital from 4 to 6 per cent, redefines ‘Tier 1’ to include only ‘common’ or ‘preference’ shares (those with voting rights, whose investors are among the first to be repaid from remaining *assets* in case a company goes bankrupt) and cash held over and not reinvested from the bank’s profits. Other key changes include extending the definition of risk to include certain types of *derivatives*, and introducing new *leverage* and *liquidity* ratios for banks to comply with.

As Basel III is rolled out, more lending could shift away from bank loans and on to *capital markets*. In particular, this may result in more *climate bonds* or *forest bonds*, as well as a greater use of *private equity* in *project finance*.

## Bonds

A bond is an IOU (‘I owe you’), a piece of paper or record on a computer screen that acknowledges a debt and agrees in advance how long it will take to pay back, and at what interest rate. When the allotted time (which can range from six months to over 10 years) is up, then the original sum of money is repaid in full. Interest payments (also called ‘coupon payments’) are made periodically. For example, government bonds typically pay out twice a year.

Bonds are issued by governments or corporations who want to borrow money. Bond purchasers (or ‘bondholders’) such as pension funds and banks lend the money on the grounds that they will gain interest on it as well as being returned the original sum at a later date. For example, if it is a \$1bn 10-year bond with a 5% interest rate, then the bondholder would receive \$50 billion per year, as well as seeing the initial \$1bn repaid at the end of the 10 year period.

However, the bondholders also stand to lose their money if the repayments are not made. For this reason, the rate of interest on a bond is calculated according to how risky the borrower (the government or company issuing the bond) is perceived to be. The perception of risk is generally judged by private *ratings agencies*.

As companies and governments want to borrow money cheaply, they try to reduce the perceived riskiness of their bonds in various ways. One of the most obvious is to provide guarantees (or ‘collateral’).

Bond trading on today’s capital markets is often far more complex than the above description, as a result of *securitization* (the re-sale of complex packages of debt, or *asset-backed securities*, which bundle together existing loans and then re-slice them into tranches for re-sale as *Collateralized Debt Obligations*).

Bonds already play a key role in *climate-related finance*, with government bonds or *project bonds* funding renewable energy infrastructure. They also provide the core source of income for the *World Bank (IBRD)* and *International Finance Corporation*, which have started to offer *green*

*bonds* to investors.

Various *climate bonds* and *forest bonds* also exist, with some investors and non-governmental organizations arguing that these should become a more central instrument in international climate policy.

## Cap and trade

Under cap and trade schemes, governments or intergovernmental bodies set an overall legal limit on emissions in a certain time period ('a cap') and then grant industries a certain number of licenses to pollute (*carbon permits* or 'emissions allowances'). Companies that do not meet their cap can buy permits from others that have a surplus ('a trade'). The idea is that a scarcity of permits to pollute should encourage their price to rise, and that the resulting additional cost to industry and power producers should then encourage them to pollute less.

In practice, the *European Union Emissions Trading System* (the largest cap and trade market) and similar schemes have failed to limit emissions, with an over-supply of permits collapsing the carbon price. Critics argue that these failings signal more fundamental flaws in a market where the scope and supply of permits are decided by governments in accordance with corporate interests.

## Capital

Capital has various meanings. In financial terms, a company's capital is the total of the *assets* that it owns. However, the term 'capital' might also be used to refer to the total value of these assets minus liabilities (unpaid bills, un-repaid borrowing, etc.)

In Marxist theory and some related strands of political economics, capital refers to anything that is bought in order to be sold again for financial profit.

## Capital controls

Limits placed on the movement of *capital* across borders. Capital controls take various forms, including limits on foreign ownership of certain types of *asset*, as well as taxes on foreign currency exchanges (and other *financial transaction* taxes) and capital inflows. Capital controls are intended to protect the domestic economy from financial volatility, although neo-liberal theory argues that they are inefficient and costly.

Developed countries all used various forms of capital control to grow their economies and protect fledgling industries, before turning to neo-liberalism and removing these barriers from the late 1970s onwards. At the same time, IMF and other *structural adjustment* programs set the removal of capital controls as a key goal, 'kicking away the ladder' from developing countries, according to economist Ha-Joon Chang. China and India in particular have continued to use capital controls to grow their economies, however, while various South-East Asian economies re-established such controls in the wake of the 1997 financial crisis.

## Capital market

The collective term for any source of *debt* (bonds) and *equity* (shares) *financing*. Advocates of private sector climate finance argue that the main investment in climate-related projects is likely



to come from capital markets, rather than from bank loans or public grants. This reflects a redefinition of the concept of *climate finance* away from *climate debt*, and tends to reduce the perceived role of the public sector to *leveraging* private finance through reducing the perceived risk to investors.

## Capital structure

The ‘capital structure’ of a business is a reflection of how much *debt* and *equity* appears on its balance sheet.

## Carbon credits

Carbon credits are emissions allowances produced by *offsets*, measured in metric tons of carbon dioxide equivalent. Unlike *carbon permits*, they are only issued after a *verification* process, which is meant to ensure that emissions reductions have taken place.

## Carbon permits

Permits to pollute (or ‘emissions allowances’) issued under *cap and trade* schemes. Unlike *carbon credits*, permits are issued in advance, in relation to a limit (‘cap’) that is set by government.

## Certified Emissions Reduction (CER)

Carbon offset credits issued as part of the *Clean Development Mechanism*. A CER is a unit of greenhouse gas emissions reductions measured in metric tons of carbon dioxide equivalent.

## Clean Development Mechanism (CDM)

A UN-administered scheme that allows industrialized countries and companies with greenhouse gas emissions reduction targets to invest in ‘emissions-saving projects’ that are supposed to compensate for their continued pollution. The CDM has over 4,000 projects registered to date, and is the world’s largest source of carbon *offsets*.

A September 2012 review commissioned by the *Executive Board* that administers the CDM found that it has ‘essentially collapsed’, with prices falling dramatically on the basis of a lack of ambitious climate targets.

The CDM has been criticized for the inadequacies of *additionality* testing. The use of *CERs* in *cap and trade* systems (notably, the *EU Emissions Trading System*) serves to delay and displace greenhouse gas emissions reductions at source in industrialized countries.

## Climate bonds

There are various definitions of climate bonds, ranging from those covering any ‘climate themed’ activity (e.g. funding renewable energy infrastructure or public mass transit systems) through to the creation of specific financial instruments called ‘climate bonds’.

The Climate Bond Initiative, amongst others, argues that climate-specific bonds would need to be large-scale, with deals of over \$500 million, and ‘investment grade’ (above the BBB scoring issued by *ratings agencies*) to attract investors. They suggest that this could be achieved by structuring climate bonds as *asset-backed securities*, which would package together loans for

renewable energy or energy efficiency. Proposals have also been made to structure climate bonds as *Collateralized Debt Obligations (CDOs)*, or to offer *carbon credits* as a revenue stream, in addition to interest payments on the sum borrowed.

Proponents of climate bonds have also proposed various means to guarantee investments, including governments or *international financial institutions* offering risk insurance (in effect, playing the role of *monoline insurers*).

Critics argue that climate bonds are another form of *financialization*, instrumentalizing climate change for the creation of new vehicles for financial speculation. Climate bonds could repeat many of the mistakes that led to the 2008 financial crisis, loading significant risks onto public institutions in the interest of new opportunities for private gain – thereby undermining the basis for long-term, sustainable public investment.

## Climate debt

The idea that developed countries should pay reparations to developing countries, as well as accepting non-financial obligations for their disproportionate responsibility in causing the climate crisis. Climate debt takes two main forms: ‘adaptation debt’ and ‘emissions debt’.

‘Adaptation debt’ refers to the fact that developing countries will suffer three-quarters of the damage caused by climate change.

‘Emissions debt’ refers to the fact that developed countries have produced around two thirds of the greenhouse gases causing climate change, taking up a disproportionate share of ‘atmospheric space’.

Approaching *climate finance* as reparations for climate debt distinguishes it from aid (‘development assistance’), private charity or the creation of new trade and investment opportunities for transnational companies.

Climate debt is as much a moral concept as an economic one, which is why it is central to conceptions of *climate justice*. From the moral standpoint, financial transfers should be part of a package of obligations, alongside developed countries drastically reducing their emissions and helping developing countries to adopt green technology (for example, by rolling back or pooling patents).

## Climate finance

Climate finance is a heavily contested term. From a *climate justice* perspective, it refers to the transfer of public resources from North to South to cover the costs of dealing with the long-term impacts of climate change. This money, a key component of *climate debt*, should also be provided to help Southern countries to pursue low-emissions paths without repeating the unsustainable reliance on fossil-fuels that was central to the industrialization of Northern countries.

The UN Framework Convention on Climate Change (*UNFCCC*) set out the basis for climate finance in similar, if slightly more technical terms. Article 4.3 of that agreement commits Annex II countries (a list that including all members of the European Union, the USA, Canada, Japan, Australia, Switzerland and New Zealand) to provide ‘new and additional financial resources’ for the ‘full incremental costs’ of addressing climate change.

Other definitions are more broad, and refer to all financial flows relating to climate *mitigation* and *adaptation*. Mitigation can include renewable energy, energy efficiency and fuel switching, forestry and land use, urban transport and carbon sequestration projects, as well as technical assistance and capacity building to address climate change. Adaptation includes projects that are those which are partly or wholly dedicated to addressing the impacts of climate change, such as water scarcity, agricultural resilience, infrastructure to withstand floods and other extreme weather, and capacity building.

The key difference between these broader and narrower definitions of climate finance are that the latter includes one or more of the following: sources that are not ‘additional’ (such as aid money), private finance, and ‘capital investment’ (rather than just ‘incremental costs’). Counting capital investment means including market-rate loans (which will need to be paid back) as well as *equity* investments (ownership of a stake in projects, or companies running these projects) in the figures.

Proponents of a broad climate finance definition argue that the private sector already provides three times more money than the public sector, and that an emphasis should be placed on encouraging (or *leveraging*) even more money from the private sector. Opponents argue that these figures are based on *non-additional* expenditure that distorts the overall picture, and ignore considerations of equity and responsibility that form the very basis of climate finance.

Measuring climate-related finance can be a useful diagnostic exercise, showing the limited capacity of carbon offsets, for example, or highlighting the rising share of finance that passes through bilateral institutions (such as members of the *International Development Finance Club*). Relying on too broad a definition of climate finance can distort the policy debate, however, overstating the role that *leveraging* plays in for-profit companies’ decisions and overlooking the conditions that are often attached to bilateral finance, such as requirements to import products from ‘donor’ countries. The institutional set-up that emerges from this definition risks sidelining community-led projects, *adaptation* and finance to ‘least developed countries.’

## Climate funds

Climate funds are pots of money earmarked for measures that address climate change. Beyond this general description, the scope and definition of climate funds varies considerably. They can target *mitigation*, *adaptation* or both. A variety of specialist funds, including those to address deforestation (such as *REDD funds*), are also in operation. Some explicitly aim to provide money that is *additional* to Official Development Assistance (ODA) aid programmes, but this is not universally the case. Other criteria, such as whether or not investments are made in fossil fuels, also vary.

Climate funds are organised at multilateral, bilateral and national levels. The largest multilateral funds are the Climate Investment Funds, coordinated by the World Bank and a number of other multilateral development banks. These should be surpassed by the *Green Climate Fund*, agreed under the auspices of the United Nations Framework Convention on Climate Change, which is scheduled to become fully operational from 2014.

At present, more money passes through *bilateral* rather than multilateral funds, which provide finance directly from donor countries to the developing world. Japan, UK, Norway, Germany and the USA run the largest of these funds, although most of the money is repackaged ODA

expenditure. Bilateral channels are often favoured because they give donor countries more control over the use to which funds are put. In some cases, financing is tied to purchases of technology from the donor-country – an arrangement similar to those made by *export credit agencies*.

National climate funds are established in developing countries to pool and coordinate financing from multilateral and bilateral funds, often blended with private sector sources.

## Climate justice

‘Climate justice’ perspectives address climate change through the framework of social rights, human rights and equality – rather than treating it as simply a scientific, technical or ‘environmental’ issue.

Within international climate negotiations, climate justice groups place a central emphasis on *climate debt*, pointing out that the vast majority of historical and current greenhouse gas emissions like with industrialized, ‘Northern’ countries (referred to as ‘Annex I’ countries in UN discussions).

Social movements working from a climate justice perspective argue that ‘system change’ is required to address climate change, emphasizing the unsustainability of a reliance on fossil fuels underlying capitalist consumerism.

## Collateral

Something of value that is used to provide a guarantee for repayment of a loan or other form of debt. If the borrower fails to repay, the lender can seize the items offered as collateral.

Land and real estate are often used as collateral, but other *assets* can also be used.

## Collateralized Debt Obligation (CDO)

Collateralized Debt Obligations (CDOs) have been described as *asset-backed securities* on steroids, since they take the concept of bundling together loans into larger packages and add a further layer of complexity by re-selling the debt in separate chunks, which have different levels of perceived riskiness.

Typically, a bank or other financial institution bundles together higher and lower risk loans and sell this package to a *Special Purpose Vehicle (SPV)*, a company that it created specifically for this purpose. In the case of banks, this allows them to shift debt from their balance sheets, enabling them to lend more, take greater risks (and circumvent the *Basel II* regulations).

The SPV buys the debt by issuing bonds, which entitle investors to interest payments. If this debt were re-sold as a single package, it would be rated high risk and have a low *credit rating*, limiting the range of potential buyers (since many *institutional investors* have rules stating that they cannot invest in such products). This problem is overcome by *structuring* the loans into ‘tranches’: ‘junior’ (the highest risk), mezzanine and the supposedly lower risk ‘senior’ tranche. This financial magic trick allowed packages containing high risk loans (such as ‘sub prime’ lending) to be re-branded as ‘safe’. But it is not immediately obvious to the *rating agencies* responsible for assessing the risk of the different packages what is contained within them.

CDOs were at the heart of the 2008 financial crisis. By magically transforming risky *assets* into supposedly safe ones, they fueled a bubble that saw the CDO market grow to a value of \$2 trillion in 2007 before collapsing.

A number of proposals for *climate bonds* and *forest bonds* suggest that they could be structured as CDOs.

## Commercial bank

A lender of money whose traditional role was to take savings deposits, on the basis of which it is able to make loans to individuals and companies. These lenders have increasingly taken on many *investment banking* functions and become more active players on *capital markets*.

## Commodity

A useful item that is traded or sold for profit. Usefulness (or ‘use value’) alone does not make something a commodity. For example, an apple picked from a tree is not a commodity, whereas an apple grown for sale is. The process of transforming a useful thing into something that is traded for profit is called ‘commodification’.

*Carbon trading* and *ecosystem services* are instances of commodification. The former quantifies pollution into tradeable units (*carbon credits* and *carbon permits*), while the latter generates a whole range of new tradeable products (from water cycling to habitat provision), privatizing what were until now common goods. These can be interpreted as part of a broader trend towards *commodification* (and *financialization*), which is driven by capitalism’s need to find new *assets* to trade profitably.

## Concessional Loan

A loan offered at favorable terms to the poorest countries. Concessional loans have lower interest rates and longer repayment periods than standard market or multilateral loans.

## Conditionality

Conditions attached to loans made by multilateral (or bilateral) finance institutions, such as the *World Bank* or International Monetary Fund. The linking of loans to market liberalization and *privatization* has proven to be particularly controversial.

## Contract

A legal agreement between two parties.

## Credit Default Swap (CDS)

An insurance policy or bet on whether a company or country will default on a loan or *bond*, which pays out in the event that the company against which it is secured goes bust. The purchaser of a CDS pays a regular fee to the seller at regular intervals. If the borrower or bond issuer defaults, then the company holding the CDS receives a pay out. In theory, this reduces the risk of making loans, since the lender’s losses are partly insured as a result. However, it also encourages greater recklessness in lending money in the first place.



Crucially, the investor does not need to be the holder of the debt in order to enter into a CDS. For example, if Paul thinks John's company is about to go bust, he can buy a CDS from Ringo. If that comes to pass, Ringo must pay a large sum of money to Paul. CDSs are frequently used in this way, not as insurance but as a form of *speculation* on the credit worthiness of other companies.

The CDS market grew from less than \$2 billion in 1998 to a *notional value* of \$58 trillion by 2008, when they were central to the financial crisis. CDSs were issued by banks and mortgage holders, as well as insurance companies, interlinking risks across the whole financial system.

## Credit rating agency

A private company that assesses the financial health of companies and countries in relation to how indebted they are, as well as providing ratings for different types of bonds.

They grade according to categories ranging from AAA (the safest) to CCC (very risky). A 'D' rating is given if the borrower defaults on payments on their debt. In the case of bonds, less risky products (typically, above BBB) are called 'investment grade', while the riskier products are called 'junk bonds.'

The market is dominated by just three large firms: Moody's (40 per cent market share), Standard & Poor's (40 per cent) and Fitch (15 per cent).

The ratings agencies were heavily criticized for understating the risk of *securitized assets* (including *mortgage-backed securities* and *collateralized debt obligations*), which played a major role in sparking off the 2008 financial crisis. Critics contend that the agencies profited by offered simple ratings for complex products without fully grasping the risks. This was compounded by conflicts of interest – the ratings agencies were also selling consultancy services, so had a financial interest in lenient ratings.

The collapse of Enron also showed up the limits of the ratings assigned by these agencies: just four days prior to the company's filing for bankruptcy, all three major agencies had rated the company as 'investment grade'.

## Currency risk

Currency risk (also called 'exchange rate risk') arises when investments are made in one currency but the earnings from which they should be repaid are in another. For example, a wind farm may generate revenue in Mexican pesos but have debts for purchasing turbines denominated in US dollars. The World Bank (and other *International Finance Institutions*) suggest that 'innovative' climate finance could include tools for *hedging* this risk, such as through *currency swaps* or *interest rate swaps*. However, these *derivatives* may also undermine *currency controls* and other forms of regulation.

## Currency swap

Currency *swaps* are a mechanism to exchange debt denominated in different currencies. They were developed to circumvent cross-border *capital controls*, which set limits on the trade in foreign currency (as well as underpinning certain designs for *financial transaction taxes*).

The first currency swap took place in 1981 between the *World Bank* and IBM. The Bank found that it could raise its *capital* by denominating more of its lending in Swiss francs, which had a low interest rate. IBM, for its part, wanted to convert some of its bonds into US dollars, fearing that the Swiss franc would lose value. New layers of complexity have since been added to this basic structure, with currency swaps traded as *derivatives* worth trillions of dollars.

## Debt finance

Lending money to a company, government or a project in the form of a loan or *bond*. The repayment is in the form of interest, as distinct from *equity finance*.

## Derivatives

Financial instruments whose value depends on something else – a foreign currency, an interest rate, or the anticipated price of an *asset* at a future date.

For example, a company developing a *CDM* project may agree to sell 10,000 *carbon credits* at a price of US\$100,000 in five years time. Under such an arrangement, it is able to secure an income in advance of credits being issued, and often before the project has even been approved or implemented. The seller bets that they will be able to deliver the credits (sometimes taking out insurance in case this does not happen) and gains some security against a collapse in prices. By securing future revenues, the seller may also be in a better position to borrow some of the money needed to finance the project in the first place.

The buyer, on the other hand, is betting that the price of credits will rise higher than the figure they initially paid, making this *forward* trade a good value option. But they are also taking on a financial risk that they may be locked into paying over the odds if prices fall. In practice, that is exactly what has happened with CDM credits, as a result of which such deals have become unpopular. Buyers are instead seeking out *options*, which (as the name implies) give buyers the right to first refusal on a future purchase, while allowing them to walk away without penalties if the price isn't right.

Derivatives are either traded on *exchanges* or *over-the-counter*. Whereas an exchange is a regulated and organized trading venue, over-the-counter trading takes place away from the gaze of regulators. Such deals are conducted directly between two parties. The majority of derivatives are traded this way.

Derivatives are often described as *risk management* tools. In the simplest type of forward trade, a producer secures a future price that reduces the risk that they are taking in bringing a product to market – e.g. a farmer is able to set the price they will get for their wheat when planting it. This is a form of *hedging*.

In reality, most derivatives do not take such a simple form, and the majority of those trading in them are seeking returns from *speculation* rather than price stability. Derivatives traders make money from *arbitrage*, which means they are perpetually searching for unstable prices (without which, they would not make any profit). This constantly moving speculation over-rides and undermines the 'price stabilization' effect of derivatives, increasing rather than reducing risk. The essence of derivatives trading today is that bets are placed on the value of assets that the parties to the trade do not own and that do not yet even exist. In describing the threat that this poses to the whole financial system, billionaire investor Warren Buffett famously described derivatives as

‘financial weapons of mass destruction.’

The key shift occurred in the late 1970s. Until that time, derivatives trading was considered a form of gambling in the USA unless (as in the case of *futures* and *forwards*) the contract could be settled by physical delivery of the underlying commodity – in the above example, a truck of wheat. Alongside the loosening of these restrictions, a market in *swaps* started to be traded over-the-counter. Since that time, the *notional value* of the derivatives market grew from nearly nothing to US \$ 647 trillion in 2011. Four US banks dominate the market - JP Morgan, Citibank, Bank of America and Goldman Sachs.

## Designated National Authority

A Designated National Authority (DNA) is a government office or ministry sub-section that provides approval at national level for *CDM* projects. In host countries, DNAs must assess projects according to legal requirements and ‘sustainable development’ criteria before issuing a Letter of Approval. There is no common definition of sustainable development, however, and these checks are generally easy to pass – not least because many DNAs also perceive their role as one of encouraging further project investment.

## Designated Operational Entity (DOE)

An auditor appointed to assess whether a *Clean Development Mechanism* project should be registered (‘validation’) and whether *carbon credits* should be issued (‘verification’). Critics contend that outsourcing such vital regulatory functions can generate conflicts of interest and lead to lax standards.

## Emission Reduction Purchase Agreement (ERPA)

A legally binding agreement between buyers and sellers of *carbon credits*, generally signed before the project is registered (in the case of *CDM* or *Joint Implementation*) or credits are issued.

## EU Emissions Trading System (EU ETS)

The EU ETS is the world’s largest cap and trade scheme, accounting for over 80 per cent of the global carbon market, and covering almost half of the EU’s CO<sub>2</sub> emissions. It sets an overall legal limit on the CO<sub>2</sub> emissions of around 11,000 power stations, factories and refineries, and since January 2012 has also included CO<sub>2</sub> emissions from flights between and into European countries. Each ‘installation’ covered by the scheme receives for free, or buys, permits to pollute called *European Union Allowances (EUAs)*. Carbon credits from the *CDM* or *JI* can also be used.

For six of the seven years in which the EU ETS has been in operation, the number of allowances circulating has exceeded the ‘cap’. The scheme has been criticized for rewarded major polluters with windfall profits, gained from ‘passing through’ the cost of permits received for free, or selling surplus permits, as well as for delaying efforts to reduce greenhouse gas emissions.

## Equator Principles

The Equator Principles are a voluntary framework for determining environmental and social risks associated with *project finance*. They are based on the ‘Performance Standards’ of the *International Finance Corporation (IFC)*, the private sector arm of the *World Bank*. The Equator Principles have been adopted by over 70 banks for transactions over \$10 million, although several

loopholes exist and there is a lack of transparency in how they are applied. Criticisms have also been leveled at the fact that some of the signatories to the Principles are amongst the largest investors in fossil fuel extraction and coal-fired power plants, reflecting the limits of applying principles only to project finance in a context where bank and financial sector investment is increasingly moving directly onto *capital markets*.

## Equity finance

In financial markets, equity means ownership. An ‘equity’ investor takes partial ownership of a company, for which *shares* are issued. The value of the investment is related to the success or otherwise of the company, rather than the interest payments accrued by *debt finance*.

## Exchange

A regulated market whose members can buy and sell shares, bonds, commodities and derivatives. An exchange was traditionally a physical location, although the majority of trading today happens electronically. Like any type of club, exchanges have membership rules. These vary, but most request regular audited financial reports.

The largest *carbon trading* exchange is the European Climate Exchange in London, which accounts for around 80 to 90 per cent of all trading on exchanges. The other major carbon exchanges are Nord Pool (Oslo), BlueNext (Paris) and the European Energy Exchange (Dresden).

## Export Credit Agency

A government body that uses public money to insure private companies against the commercial and political risks of operating abroad.

## Financial intermediaries

A financial intermediary is any institution that connects lenders with borrowers - such as banks, private equity, venture capital funds, leasing companies, insurance and pension funds, and micro-credit providers.

In debates on *climate finance*, the term is generally only used to refer to private sector intermediaries. It typically refers to a funding structure where money is provided by *international financial institutions* to companies in the financial sector, rather than being directly used to fund projects. The idea is that this money, in the form of loans or *risk guarantees*, will encourage private financiers to invest in climate-friendly projects by reducing the perceived risks. To date, there is little evidence to support this claim.

Critics of too great a reliance on financial intermediaries point to the example of the *International Finance Corporation*, whose lending has had few environmental benefits and done little to benefit the poor when it has a poor record when it passes through intermediaries.

## Financialization

Financialization refers to the ever greater role that *capital markets* play in our lives. At an individual level, this has been accompanied (or driven) by the concentration of wealth in the hands of a small financial elite, the social effects of which were partially managed by debt-fueled consumption (and more widespread share ownership) in industrialized countries. At a collective

level, it has made trading in money and *derivatives* far more profitable than goods and services, and resulted in an ever wider range of complex financial instruments. This shift has increased the power of financial corporations, such as banks, insurance companies and *hedge funds*. It has also changed how non-financial companies are run, so that generating short-term ‘shareholder value’ is favored over making long-term investments.

The combined effect of these trends is too much *capital* chasing too few profitable opportunities, resulting in a relentless search for new assets. This has seen a boom in speculation on *commodities* (like corn and oil), spurred on by financial deregulation. It has also seen the creation of new commodities, such as *carbon* and *ecosystem services*, in a process that has been described as the ‘financialization of nature’.

The causal relationship between different aspects of *financialization* is subject to heated debates, while the generalized nature of the descriptions it provides have led some critics to question its usefulness as a framework for addressing changes in *climate finance*.

## Financial Transactions Tax

A Financial Transactions Tax (FTT) is geared at *speculative* traders. According to a 2011 European Parliament report, it could raise up to \$650 billion per year globally by putting a small tax on trades in *stocks*, *bonds*, *derivatives*, currency and other financial instruments. A share of this revenue could be allocated to *climate finance*.

Proponents of an FTT point out that it does not redirect other climate finance, that it offers a fairly stable revenue stream (despite the volatility of the transactions being taxed), and it could play a modest role in limiting financial speculation.

## Foreign Direct Investment

Foreign direct investment (FDI) is expenditure by a corporation in a foreign country to build new facilities, purchase equipment or real estate. The money is either channelled to existing subsidiaries of that company, or used to buy an existing business. In this sense, it is different from “portfolio investment,” where the foreign corporation buys shares or bonds but is a “passive” investor without a directly trying to control the company bought or lent money.

FDI is usually encouraged, and treated as a positive sign that foreign capital is flowing into a country. This is not always the case, however. Capital outflows through the call back of inter-company loans, repatriation of earnings, or outright diversment sometimes exceed inward FDI flows, in particular once tax avoidance via the use of offshore secrecy jurisdictions is taken into account.

## Forest Bonds

A forest *bond* is a way of borrowing money from private *capital markets* at a fixed rate of interest over an agreed time period. It is promoted as a means of achieving predictability and front-loading financing.

Forest bonds may be issued by Multilateral Development Banks (MDBs), *financial intermediaries* (including commercial banks) or host-country governments, with the issuer liable



for repaying the sum of the money borrowed plus the interest payments. In order to attract investors, the bond issuer must therefore generate revenues. These may be related to the bond itself - for example, if the bond issuer is allowed to use the promise of yet to be issued carbon or ecosystem service credits as *collateral*, or if the bonds are sold in relation to the certification of 'forest-related products' such as timber or eco-tourism. Another option is for revenues to come from public financial sources, such as taxes on aviation, shipping or financial transactions.

Although forest bonds are conceived of as potentially more attractive to private sector investors than carbon offset credits, capital market perceptions of political risk (or the costs of political risk insurance) may make them an expensive means of financing as compared to public grant payments.

## Forwards

A forward is a contract to buy or sell a specified amount of a certain item at an agreed price and date in the future. For example, a farmer may make an agreement in March to sell a ton of apples for \$400 the following October. Payment is settled at an agreed date in the future, or on delivery of the asset.

Forward contracts are *derivatives* that are typically arranged directly between two parties (called *over-the-counter*) according to specifically written contracts. In this respect, they differ from *futures*, which serve a similar purpose but are traded on *exchanges*.

A significant proportion of *carbon credits* from the *CDM* are first traded as forwards. As such, the project developer takes responsibility for the issuance and delivery of credits, for which the buyer must then pay. A collapse in carbon prices has led to many sellers defaulting on these agreements, or taking advantage of *UNFCCC* delays in issuing credits to renegotiate them.

## Fungibility

Fungibility means the ability to exchange one thing for another. In the context of *carbon trading*, it is the ability to exchange *carbon permits* and *carbon credits* from different schemes. Proponents of linking carbon markets suggest that greater fungibility would mean greater *liquidity*, making the scheme more efficient. Critics suggest that linking different schemes would undermine regulations (such as EU limits on credits from agriculture or forestry) adopted to enhance environmental integrity, leading to a race to the bottom on standards.

## Futures

A future is a contract to buy or sell a specified *asset* at an agreed price and date in the future. In this respect, it is similar to a forward trade. However, these two types of *derivative* are traded in very different ways. Whereas forward contracts are negotiated *over-the-counter* between two parties according to specifically agreed terms, futures are traded on *exchanges* subject to standardized contracts.

The key difference is that buyers of *forwards* generally expect that they will be delivered, whereas *futures* trades are more typically *speculative* bets on the direction in which *asset* prices will move. The vast majority of *futures* contracts are closed out before delivery of the underlying *asset* (many companies trading in wheat derivatives do not own grain silos).

The flow of money is also very different in the case of *forwards* and *futures*. *Futures* trading results in daily interim payments as the market value of the derivative changes. These marginal differences are the basis for *speculation*. By contrast, the only payments in the case of forwards come once the trade is settled, at a contractually agreed date that may coincide with delivery of the product.

## Green Climate Fund

The Green Climate Fund (GCF) aims ‘to make a significant and ambitious contribution to the global efforts towards attaining the goals set by the international community to combat climate change.’ It was formally established by a *UNFCCC* decision in Durban, South Africa in December 2011, although the groundwork was laid in the earlier, non-binding ‘Copenhagen Accord’ of 2009.

It is widely claimed that the objective of the GCF is to raise \$100 billion per year in climate financing by 2020. This is not an official figure, however, and disputes remain as to whether the funding target will be based on public sources, or whether *leveraged* private finance will be counted towards the total. Only a fraction of this sum has been pledged so far, mostly to cover start-up costs.

The GCF is overseen by a 24-strong Board, composed of equal number of members from developing and developed countries, and will be headquartered in Songdo (Incheon), South Korea. The *World Bank* serves as the interim trustee, meaning that it is tasked with administering any money currently raised.

Many of the rules according to which the GCF will operate remain to be discussed. To start with, however, it will have ‘thematic funding windows’ for *adaptation* and *mitigation*, as well as a separate ‘private sector facility’.

## International Bank for Reconstruction and Development (IBRD)

More commonly known as the ‘World Bank’, the International Bank for Reconstruction and Development is one of five institutions that make up the *World Bank Group*. The World Bank provides loans, loan guarantees, *risk management* products and advice services. Most of its funds are obtained through the sale of *bonds* on international *capital markets*, including \$3.3 billion in *green bonds* (as of October 2012). It also has considerable *derivatives* investments, most notably in *interest rate swaps* (a financial technique pioneered by the bank in the early 1980s).

The World Bank’s climate finance portfolio includes the Climate Investment Funds (CIFs), with \$6.5 billion pledged towards ‘clean’ technology, renewable energy and forestry. These are jointly implemented with other *international financial institutions*, and were established on the understanding that they would be phased out once a new multilateral financing mechanism was in place. That has since emerged in the form of the *Green Climate Fund*, although there are no signs yet that the CIFs are winding down.

In addition to the CIFs, the Bank is responsible for 13 carbon funds and facilities, with involvement in 160 *CDM* and *JI* projects, from which it has contracts to purchase credits worth

\$1.86 billion (as of December 2011).

At the same time, the World Bank continues to have a large portfolio of fossil-fuel investments, with 2010 estimates valuing these at around \$6.6 billion.

## Hedging

An investment strategy to limit risk. For example, a farmer might sign a derivative contract to sell wheat harvested later in the year at an agreed price, in order to limit the risk taken as a result of price changes between the time of planting and harvesting. Hedging in this sense is a form of insurance, as in the phrase ‘hedging your bets’. In practice, most of the activities of *hedge funds*, and other *capital market* hedging strategies, are forms of *speculation* (in the hope of making financial gains through *arbitrage*) rather than insurance. Their goal is to make money, even at the cost of increasing rather than reducing risk.

## High net worth individuals

Private investors with more than US\$1 million in ‘liquid *assets*’, meaning either cash or items that can be quickly converted to cash (such as shares and bonds), but excluding property. Dubbed ‘the 1 per cent’ by the global Occupy movements, there are an estimated 11 million high net worth individuals worldwide, according to the consultancy Cap Gemini. Their combined *assets* are estimated to total over US\$42 trillion.

There are an estimated 100,000 ‘ultra-high net worth individuals’ worldwide, each holding over \$30 million in liquid assets.

## International Development Finance Club (IDFC)

A group of nineteen national and regional development banks and agencies. Its members include the national development banks (or national development agencies) of Brazil, China, France, Germany and Japan.

## International Finance Corporation (IFC)

The private sector arm of the World Bank Group. It provides loans, *equity*, and *risk guarantees* for private sector projects. Around 40 per cent of IFC investments are channeled through *financial intermediaries*. The vast majority of IFC funding is raised through issuing *bonds* on international *capital markets*. As of 2012, this includes a *green bonds* scheme worth around \$1 billion.

The IFC has a growing *climate finance* portfolio. It has offered *loans* and *risk guarantees* to over 340 renewable energy and energy efficiency projects since 2005, worth an estimated \$11.6 billion.

The largest of the IFC’s carbon funds, the post-2012 Carbon Facility, attracted \$195 million in private investment (on top of \$22 million of IFC funds), but has since lost 75 per cent of its value due to a collapse in carbon credit prices. The IFC also manages a handful of other *carbon funds*. Climate change-related investments are also at the forefront of the IFC’s *private equity* portfolio, with 12 climate-focused funds estimated to be worth \$225 million as of mid-2012.

## International Finance Institutions (IFIs)

A generic term to describe all multilateral financial institutions. These include the *World Bank* and *International Finance Corporation*, as well as regional development banks such as the Asian Development Bank.

The definition is also often extended to include bilateral financial institutions, such as the members of the *International Development Finance Club*.

## Institutional investors

Investors with large amounts of funds under their management, such as *pension funds*, insurance companies and *mutual funds*.

## Interest

A regular payment made by a borrower for the use of money – in essence, a form of ‘rent’. An ‘interest rate’ is a standardized measure, usually calculated as a percentage of the total borrowed amount that is paid in interest each year.

## International Financial Institutions (IFIs)

The general name for all public financial institutions operating on an international level, including the World Bank and regional development banks.

## Joint Implementation

A carbon *offset* mechanism established under the Kyoto Protocol.

## Leverage

‘Leveraging’ is used loosely in the context of climate finance, where it refers to public finance (e.g. from *international finance institutions*) that is used to encourage private investors to back the same project. This can take the form of loans, *risk guarantees* and insurance, or *private equity*. The aim in each case is to reduce the perceived level of risk taken by the private sector, in order to make the project a more attractive investment.

Leverage is usually expressed in terms of ratios. For example, if the *International Finance Corporation* were to claim that for every \$1 dollar it puts towards a particular investment, private companies have put \$5, this would be a 1:5 leverage ratio. In practice, leverage ratios are difficult to calculate and there is no agreed methodology for doing so. Ratios are often inflated descriptions of subsidies for private activities that would have happened anyway without public involvement.

Many of the debates here are similar to those around *additionality*. Since leveraging is most attractive for investments that are already profitable (or nearly so) without *IFI* assistance, it tends to direct money towards large-scale projects in middle-income countries. It has been pointed out that too great a focus on *leveraging* private finance can result in too little attention being placed on the social, environmental and human rights impacts of projects.

Critics have also suggested that leveraging reduces transparency and accountability. Pooling public funds with private money can see it drawn behind a veil of ‘commercial confidentiality’, or

directed via obscure companies set up as *Special Purpose Vehicles* in offshore *tax havens*.

## Long

A trader is 'long' if they own more shares, bonds or foreign currency than they have sold. Traders deliberately go long if they expect the price of an asset to go up in future.

## Maturity

The expiry point of a bond, at which time the original amount (*principal*) needs to be repaid.

## Mitigation

Actions taken to reduce greenhouse gas emissions. Mitigation tends to cover 'clean' energy (including, but not restricted to renewables), energy efficiency and fuel switching, forestry and land use, urban transport and carbon sequestration projects, as well as technical assistance and capacity building to address climate change.

Most *climate finance* goes towards mitigation, with clean energy taking the largest slice of this money. Critics claim that an overly broad definition of 'clean' energy is often used, however, with the term extended to include gas or even coal-fired power plants (on the grounds that they are a little less dirty than existing plants), locking-in unsustainable levels of future greenhouse gas emissions.

According to Climate Funds Update (CFU), \$2.97 billion was been approved for mitigation projects through dedicated *climate funds* between 2004 and 2011, although only \$1.17 billion of this money had been disbursed by the end of 2011.

## Monoline insurer

A firm specializing in insuring bonds, including 'structured' finance such as *Collateralized Debt Obligations* and other forms of *asset-backed securities*.

The *Credit Default Swaps* offered by monoline insurers were at the center of the 2008 financial crisis.

## Offsets

Carbon offsets are *tradeable credits* created by 'emissions-saving projects', which are intended to compensate for continued greenhouse gas emissions elsewhere. Most offsetting is on a North-South basis, with the *Clean Development Mechanism* being the largest such scheme.

Offsets are not reductions, but simply move the responsibility for reducing emissions from one location to another. Credits are generated on the basis of an *additionality* claim. A baseline assumption is made about what the future would have held without the project, and if the projects proponents succeed in claiming that they have altered that future, credits are awarded as a result.

In practice, it is impossible to prove this type of counter-factual claim. Studies of the *CDM* have repeatedly shown that most projects are non-additional, and subsidize activity that would have happened anyway. If a project were not financially viable without offset revenue, it would generally be too risky a prospect to interest investors.



## Options

Options are *derivatives* contracts between two parties that gives the buyer the option (but not the obligation) to buy ('call') or sell ('put') an asset at an agreed price at a later date. They are traded both on *exchanges* and *over-the-counter*.

The majority of *Certified Emissions Reductions* are first sold as options which, on current projections, makes it likely that the overall value of the *carbon offset* market is likely to be considerably exaggerated.

## Partial credit guarantee

A “partial credit guarantee” (or “first loss” guarantee) is a pledge made by a public finance institution to take financial responsibility for the first losses should a company fail to repay its debt or go bankrupt. They are a popular *leveraging* tool since they allow public institutions to claim that relatively cash outlays have “mobilized” large financial flows. Such claims are criticized, however, on the grounds that these investments are highly likely to have taken place regardless of the guarantee provided.

## Ponzi scheme

A form of fraud where investors are conned into putting money into an organization that has nothing underlying it. The fraud is maintained for as long as a steady flow of new investors is maintained, because the money these new investors pay in is used to pay off existing. However, when this momentum stops, the scheme collapses.

The economist Herman Minsky theorized that financial markets move in cycles of increasing speculation followed by crisis and collapse – the latter being triggered when they have come to resemble Ponzi schemes. This theory, as applied to *securitization* and *shadow banking*, has become increasingly famous for offering a more plausible explanation than most mainstream economics as to why the 2008 financial crisis happened.

## Principal

The amount of a loan, separate from the interest to be paid on it.

Public-private partnerships

*Public Private Partnership (PPP)* is a general term for a contractual relationship between the public sector and private companies to finance, design, build and operate facilities, such as roads, hospitals and schools. This form of financing is increasingly being explored as a means to fund climate-related energy infrastructure.

There is no common definition of PPPs, but the projects labelled this way share many characteristics. Often, a new company (or *Special Purpose Vehicle*) is established for each project, usually involving a bank or major investor, the construction company, and the services company that will manage the facilities. The initial financing comes from the private sector, which typically provides 10 to 20 per cent of the total project cost upfront in the form of *equity*

(ownership of the shares in the company). The remaining finance is in the form of debt (*loans* or *bonds*), which is taken on by the company running the project. The main advantage of this arrangement for governments and other public bodies, and one of the main reasons they are attracted to PPPs, is that the debt does not appear on their balance sheet, as would be the case for other forms of infrastructure spending.

PPPs are a ‘build now, pay later’ scheme. They do not provide ‘additional investment’, but offer a means for public authorities to spread out how they account for the costs of infrastructure spending over a longer period, with contracts often lasting 25 to 40 years. Instead of owning the new or renovated infrastructure, the public sector agrees a long-term rental contract for use of the facility and/or allows the SPV to make direct charges for its use (e.g. toll highways). The drawback is that leasing costs can be considerably higher than the equivalent cost of public sector borrowing to directly fund and manage the project in the first place. It can also result in higher costs for users, including charges being levied for public services that were previously free.

After a project is financed, construction companies often sell their stake to financial sector companies once the building phase of projects is complete, creating a *secondary market*. In such cases, the investment is *securitised* (parcelled into smaller chunks) and re-sold or spread across different funds.

## REDD+

REDD+ is a scheme that puts a cash value on forests on the assumption that this will result in their preservation and, in turn, a carbon saving. The acronym stands for Reducing Emissions from Deforestation and forest Degradation. The ‘plus’ symbol refers to the inclusion of additional activities, such as the sustainable management of forests and the enhancement of forest carbon stocks.

REDD+ schemes are proposed under the auspices of the *United Nations Framework Convention on Climate Change (UNFCCC)*, as well as being piloted by national authorities and bilaterally. They are controversial, however, with critics claiming that they would mainly benefit corporate investors, not least because the definition of forests being used includes industrial-scale monoculture tree plantations. In the context of contested land rights between states, corporations and local authorities, some REDD+ pilots have already been shown to dispossess Indigenous Peoples and other forest-dependent communities.

One of the most contentious debates on REDD+ relates to how it will be funded. The debate centers on whether public or private sources will be prevalent, and the extent to which it will generate *carbon credits*. Although the majority of REDD+ funding to date has been provided by the Norwegian *sovereign wealth fund*, the jump-starting of a forest carbon market remains an important element in REDD+ ‘readiness’ activities.

The *transaction costs* associated with generating *carbon credits* are significant. Initial estimates and comparisons with the *Clean Development Mechanism* would suggest that 30 per cent or less of the cost of a REDD+ credit would find its way to the project itself, while as little as 3 per cent may find its way to the producer. The Munden Project, which offers a market-based critique of REDD+ proposals, has also suggested that REDD+ trading would likely see the emergence of ‘monopsony power’ - an imbalanced market with many sellers but few buyers – strengthening the

hand of *financial intermediaries*, while ensuring that few benefits flow to the producers of ‘REDD projects, the communities that live within them or the countries where they are located.’ Munden also suggests that forest carbon commodities are so poorly and variably defined as to be ‘unacceptably risky’ as a basis for trading.

With carbon markets beset by a massive over-supply, REDD+ is not currently an attractive proposition for the majority of investors, so bilateral and multilateral public funding accounts for most REDD+ finance to date. Aside from the Norwegian contribution, which accounts for two-thirds of all money pledged to REDD-dedicated climate funds, the major donor countries are Australia, the United States and Germany. Most major donors have created bilateral funds, while the World Bank’s ‘Forest Investment Program’ is the largest multilateral fund. A role for the *Green Climate Fund* is also under discussion. As the market develops, it is likely that public investments in this sphere will follow the broader trends in *climate finance* towards pooled *public-private* funds, shielding them from public scrutiny.

The role of *capital markets* in REDD+ is far from restricted to carbon trading, however. Some investors and conservation NGOs are proposing new financial instruments, notably *forest bonds*, to diversify the source of revenue beyond carbon or ecosystem services credits.

## Risk Management

A collective description for a variety of credit or *risk guarantees* and *risk insurance* products that are proposed as a means to make climate change investments more attractive to *capital markets*.

## Securities

A collective term for *bonds*, *shares* or *stock*, and *derivatives*.

## Shadow banking

*Shadow banking* is a system of lending money through *capital markets* without adequately recording this in a company’s financial reports, in contrast to ‘traditional’ bank lending, which is based on money deposited in a bank. It grew up largely as a means for banks to get around capital requirements – the minimal levels of readily accessible capital (such as cash and shares) that they are legally required to hold on to by national regulators, in accordance with the *Basel Accords*. As such, shadow banking is not an alternative to regular banking but part of a broader transformation in how banks operate. *Commercial* and *investment banks* are major players in this new system, alongside other institutional investors (e.g. *pension funds*, *sovereign wealth funds* and *banks*) and traders operating on behalf of *hedge funds*, *mutual funds* or *private equity* firms.

Shadow banking operates through the creation of new companies, known as *special purpose vehicles*, ‘conduits’ or ‘structured investment vehicles’, which are designed to take lending off the balance sheets of banks or other financial institutions. These off-balance sheet companies are generally set up in offshore tax havens (also called ‘secrecy jurisdictions’), both to avoid taxes and as a means to circumvent regulation (a process sometimes referred to as ‘regulatory arbitrage’). The off-balance sheet companies then take up various forms of *securitized* debt (such as *asset-backed securities*, *collateralized debt obligations* and *credit default swaps*). Around \$20 trillion was taken off bank balance sheets in this way in 2007, shortly before the financial crisis hit.

The overall effect is to spread significant risks throughout the whole financial system. Shadow

banking is similar to a *Ponzi scheme*, with a constant flow of new short-term borrowing required in order to keep up with longer-term loans. When the momentum stops, the scheme collapses, as happened in 2008.

The new *Basel III* banking regulations address some of these failings, but it is likely that ‘regulatory arbitrage’ will also increase as banks and other financial institutions look for new off-balance sheet possibilities. This has a potential impact on climate finance, with banks liable to shift project *finance* onto *capital markets* in order to ‘free up’ space on their balance sheets for lending that cannot so easily be hidden away. Many forms of climate-related lending already used the off-balance sheet companies and structures that characterize the *shadow banking system*.

## Share

In common usage, ‘shares’ are the same as ‘stocks’, and refer to share certificates that denote partial ownership of a company. Investors in shares (or *equity*) hope to gain from rises in the overall value of a company, thereby increasing the re-sale value of each share. They are also entitled to a claim on part of the company’s profit, which is paid out as a ‘dividend’ at regular intervals. Many (though not all) shares also carry voting rights at the company’s annual general meeting.

## Short selling

When traders engage in short selling (or ‘shorting’), they are selling stock that they do not actually own. Traders go ‘short’ if they expect the price of an *asset* to go down in future.

## Sovereign Wealth Funds

A Sovereign Wealth Fund (SWF) is an investment fund owned and managed by a national government. SWFs were originally created in the 1950s by countries with economies dependent on oil and mineral extraction. Many of the largest SWFs are still financed by oil money, although others are funded by consistent budget surpluses, foreign exchange reserves, or the proceeds of privatization. Massive global imbalances in global trade have played an important role in generating these surpluses.

The aim of SWFs is to protect the domestic economy against volatile international *commodity* prices, to build up savings for future generations, and to manage excess *liquidity*.

Unlike private equity and hedge funds, which have shrunk since the 2008 financial crisis, SWFs have continued to grow. They had \$4.8 trillion in *assets* under management in 2011, while another \$7.2 trillion is held by other sovereign investment vehicles, such as pension reserve funds and development funds, according to figures compiled by TheCityUK, a financial services lobby group. The largest SWFs are managed by China, United Arab Emirates and Norway.

The continued, post-crisis growth of SWFs is, to some extent, a product of their investment strategies. Most SWFs are ‘patient’ investors with a long-term outlook – as holders of state capital surpluses with no liabilities, they can remain committed to under-performing investments in the short term in the hope of future reward, and can also act against market trends. In the financial crisis, they took significant stakes in several of the investment banks perceived to be most at risk.

The same, long-term horizons could make SWFs significant investors in climate-related and low-

carbon infrastructure. Norway's \$650 billion Government Pension Fund Global, which invests the country's oil wealth, is one of the world's largest SWFs and is currently the most active in relation to climate change. It has committed over \$500 million per year to rainforest conservation, with a significant proportion of this figure channeled into *REDD*, especially in Brazil and Indonesia. At the same time, however, it has almost US\$13.7 billion invested in industry sectors that threaten forests, including oil palm, oil and gas, mining, cattle ranching, logging, pulp and paper, soy and hydroelectric dams, according to a March 2012 study by the Rainforest Foundation.

The investment strategies of several SWFs are also evolving to engage in more partnerships with private institutional investors, a significant factor in relation to land grabs in Africa and other parts of the global South. SWFs are also placing money with private international money managers, which is increasingly financing agricultural commodities. Infrastructure is another *asset class* that is increasingly appealing to SWFs. It remains difficult to fully assess the investments held by SWFs, however, with many lacking basic standards of public accountability and transparency. In this regard, they have adopted levels of 'confidentiality' that are akin to those of private sector investors.

## Special Drawing Rights (SDRs)

SDRs are international reserve *assets* created by the *IMF* and allocated to its member countries according to their relative weight in the global economy. Although SDRs are not themselves a form of currency, they can be converted into money that could be used for *climate finance*.

An allocation of \$176 billion (worth over \$230 billion today) in SDRs was agreed in 2009 in response to the financial crisis. Proponents of using SDRs for climate finance suggest that a proportion of this total, or of a subsequent allocation, could be issued in the form of grants or as a means to underwrite climate-related *bonds*. Although the *IMF* is responsible for issuance, other bodies (such as the *Green Climate Fund*) might serve a similar function.

## Special Purpose Vehicle

A *Special purpose vehicle* (also known as a 'conduit' or 'structured investment vehicle') is a shell company established to take lending off the balance sheets of banks or other financial institutions. These off-balance sheet companies are generally set up in offshore tax havens (also called 'secrecy jurisdictions'), both to avoid taxes and as a means to circumvent regulation (a process sometimes referred to as 'regulatory arbitrage').

## Speculation

Buying or selling *shares*, *bonds*, *commodities*, *derivatives* or other financial instruments in order to profit from price fluctuations (*arbitrage*). Although the language of financial markets emphasizes their role in reducing risk, the majority of trading is based on speculation. Volatility is encouraged, since fluctuations in asset prices are the basis for profits made on financial markets. The overall effect is to create a risk-laden financial system.

## Spot Market

An immediate (or 'on the spot') exchange of financial instruments or commodities in return for cash payments, as opposed to *derivatives* markets. In reality, it takes up to three days for carbon



permits or credits to be transferred. This segment of the market is unregulated at present, and is where most carbon fraud cases have occurred.

## Stocks

In common usage, ‘stocks’ are the same as ‘shares’, and refer to stock certificates that denote partial ownership of a company. Investors in stock (or *equity*) hope to gain from rises in the overall value of a company, thereby increasing the re-sale value of each share. They are also entitled to a claim on part of the company’s profit, which is paid out as a ‘dividend’ at regular intervals. Many (though not all) stocks also carry voting rights at the company’s annual general meeting.

## Swap

A swap is an agreement to exchange *assets* at agreed prices at a specified future date. Currency swaps and interest rate swaps are amongst the most common forms.

*Currency swaps* are a mechanism to exchange debt denominated in different currencies. Interest rate swaps, meanwhile, allow for the exchange of different types of debt. Most simply, they are contracts to exchange debt with a fixed *interest rate* for debt with a floating (variable) rate. There are also several more complex forms of swap, most notably *credit default swaps*.

## Transaction Costs

Transaction costs are a generic label for the cost associated with making an economic exchange, although the exact definition varies. They are sometimes sub-divided into search, negotiation and enforcement costs. Search costs relate to finding parties to an exchange – for example, brokers’ fees for exchanging stocks, and may also refer to the costs of finding an appropriate project to undertake in the first place. Negotiation costs determine mutually acceptable terms of trade, such as lawyers’ and consultants’ fees in relation to contracts (such as *Emissions Reduction Purchase Agreements*). Enforcement costs refer to legal fees and taxes levied by the institutions that regulate the exchange. In the case of *carbon credits*, these can include paying for *validation* and *verification* reports, as well as UNFCCC project registration fees and an *adaptation levy* (of 2 per cent) on the credits that are issued, as well as national taxes (such as Value Added Tax).

*Transaction costs* in relation to *carbon offsets* include any fees, taxes and charges that do not directly relate to activities that reduce emissions.

## United Nations Framework Convention on Climate Change (UNFCCC)

The UNFCCC is an international environmental treaty that was agreed at the Rio Earth Summit in 1992. It aims to stabilize the concentration of greenhouse gases in the atmosphere at a level that would prevent dangerous climate change.

The UNFCCC sets out the principles of international climate action, as well as forming the basis for subsequent multilateral climate negotiations. These include the principle of ‘common but differentiated responsibilities’, a recognition that industrialized Northern countries have had a disproportionate role in causing climate change and are best placed to take a lead in addressing it. Annex I of the UNFCCC defines a list of these industrialized countries, which include all

members of the European Union, the United States, Australia, Japan, Switzerland and New Zealand, Turkey, Russia and some other former-Soviet states.

The UNFCCC does not set out binding international emissions targets, but these were subsequently established by the 1997 *Kyoto Protocol*, which was negotiated under the Convention. Most Annex I countries (except in the former Soviet Union, Eastern Europe and Turkey) took on reduction targets. The Kyoto Protocol also set out the basis for establishing the *CDM* and *Joint Implementation offset* schemes.

## Validation

In carbon market terminology, *validation* is the process by which a private *auditor* (called a *Designated Operational Entity*, or *DOE*) checks the claims made by the developer of a *CDM* project. Validation consists of three steps: the preparation of a 'Project Design Document' by the project developer, host-country approval of the proposed project, and a 30 day public comment period. A DOE must certify that each of these has been conducted adequately before recommending it for registration by the *CDM Executive Board*. However, much of what is being tested (notably, the *additionality* of the proposed project) is either unprovable or highly subjective. The structure of this system has also been criticized for outsourcing regulation to private companies that must compete for the business of validation. Just like the *ratings agencies* that also acted as consultants to financial companies, this leads to a significant conflict of interest.

## Verification

A check on the monitoring and reporting of 'emissions reductions' claimed in association with a *carbon offset* project, prior to *carbon credits* being issued. *CDM* project developers are required to have monitoring reports checked by external auditors (*Designated Operational Entities*) as part of this process. The fact that these companies are paid by the developers themselves leads to a conflict of interest akin to the role of the *ratings agencies* who also acted as consultants to the financial sector in advance of the 2008 crisis.

## Voluntary Emissions Reduction (VER)

A form of *carbon credit* produced primarily for sale in 'voluntary offset markets', i.e. those created by private entities, producing credits that can not be used for compliance with commitments under the Kyoto Protocol.

## World Bank

A term that usually refers to the *International Bank for Reconstruction and Development (IBRD)*, one of five institutions that make up the World Bank Group. *See IBRD.*

Do you speak 'climate finance'?

This glossary is for anyone who wants to know their way around the complex language of finance products and institutions related to climate change.

From 'additionality' to the World Bank, it defines the key terms you'll need to engage to engage in this debate, and explains why some of this vocabulary is so hotly contested.