Discussion Paper

Voluntary Carbon Offsets

December 2014

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Published: 2 December 2014

Introduction

On May 9, 2013, the concentration of carbon dioxide (CO2) in the atmosphere surpassed 400 parts per million for the first time in recorded history (Forest Trends, 2014). Current climate science suggests that atmospheric greenhouse gas (GHG) concentrations need to peak below 450 parts per million (Harris & Roach, 2009).

Awareness of the risks posed by climate change has risen significantly in recent years and as a result an increasing number of businesses, organizations and individuals are looking to minimize their impact on the climate. Individuals and organizations can most effectively lower their own carbon footprints by improving energy efficiency, relying on lower-emission products, and changing consumption patterns.

Carbon offsets are an important tool which can be used to compensate for emissions. A carbon offset is a financial instrument representing a reduction in greenhouse gas emissions, measured in metric tons of carbon dioxide equivalent (CO2e). Those who reduce or sequester carbon can sell the associated carbon benefits, as offsets to those who wish to offset their emissions. Carbon offsetting is predominately used to compensate emissions which cannot be avoided (FAO, 2010). It is often used by companies and individuals as an additional step in becoming carbon neutral following steps taken to reduced their carbon emissions, by as much as possible.

This paper will examine some of the benefits of carbon offsetting, both in terms of emissions reductions and the associated benefits. It will also examine the voluntary carbon market and lastly the role of REDD+ offsetting projects and their benefits.

The Global Benefits of Carbon Offsetting

Reducing emissions is a huge global challenge that is proving difficult to achieve. Developed countries rely heavily on fossil fuels which cause significant GHG emissions. Deforestation and forest degradation also accounts for nearly 20 per cent of global greenhouse gas emissions (United Nation Environment Program).

There are many reasons why individuals and corporations take part in the voluntary carbon market. Often, in order to meet internal emissions reduction targets, corporations will offset their carbon where it is not possible to reduce their emissions to their targets. GHG emission reductions and offsetting offers companies an opportunity to enhance their image, both from a customer and investor point of view, as awareness increases of the risks associated with GHG emissions. Awareness also offers opportunities to reduce costs. Quantifying a company's carbon footprint can provide awareness of where energy costs and associated emissions can be reduced (Business for Social Responsibility, 2008).

Offsets can be a very effective tool in lowering carbon emissions while at the same time alleviating poverty by encouraging development in poor countries. This is possible because climate change is a non-localized problem; greenhouse gases spread evenly throughout the atmosphere, so reducing them anywhere contributes to overall climate protection. Offset projects can have multiple additional benefits: environmental restoration, infrastructure development, education and training, and provision of energy services to the poor (Kollmuss, 2007).

Many offset programs combine the goals of poverty alleviation with emissions reductions. For example, a biomass power project in Malavalli, India, produces electricity using agricultural waste that would otherwise be burned off or just left on the fields to decay. The project created five-hundred new fulltime jobs. Local farmers and stakeholders were involved in the decision-making process and an non-governmental organisation was formed to manage power distribution, billing, and revenue collection. The ash from the power plant is now used by the farmers as an organic fertilizer (Kollmuss, 2007).

Carbon finance projects are often intended to be both a payment for an environmental service and an instrument to facilitate sustainable development in developing countries. Offset projects can enhance livelihoods and benefit rural land users, provided they are willing and able to participate (FAO, 2010).

The Voluntary Carbon Market

The voluntary carbon market is the collective term for all payments for offsets which occur outside government regulation. As GHG emissions are a global problem, offsets sold in the voluntary carbon market come from a diverse range of countries and activities.

According to the executive summary of Forest Trends' latest report titled 'State of the voluntary Carbon Markets 2014', buyers of offsets in the voluntary carbon market have funded 844 MtCO2e in emissions reductions worth $4 billion (2014).

In 2006, a survey of ninety-two companies found that about seventy-five percent of respondents were actively measuring their carbon footprint, which includes GHG emissions from both their direct and indirect operations (Business for Social Responsibility, 2008). A recent survey of offset buyers notes that combating climate change has been the top motivation for offsetting. Corporate responsibility and leadership are also common motives (Forest Trends, 2014).

Carbon markets have developed from the principle that GHGs can be traded like a currency. They are measurable in units equivalent to one tonne of carbon dioxide equivalent. GHGs are global pollutants, so the emissions that happen in one part of the world, have a direct impact on the global atmosphere.

There are a number of offset providers operating in the voluntary carbon market. Providers invest in a range of projects, such as renewable energy sources and methane capture to offset their corporate buyers' emissions. The range of offset projects is constantly growing, from reforestation to carbon capture.

In order to contribute to climate protection through real and additional, permanent, and verifiable greenhouse gas (GHG) reductions, while limiting unintended negative consequences there several standards are used by the offset providers. These standards aim to ensure the integrity of offsets, with projects also being independently validated and verified by a third party.

REDD Carbon Offsets

Plants and trees absorb and store CO_2, however land use, land-use change and forestry activities, have a detrimental effect on these natural sinks. The world's forests present a significant global carbon sink. The Global Forest Resources Assessment 2010 revealed that the world's forests store more than 650 gigatonnes (1 Gt=1 billion tonnes) (FAO, 2010).

Deforestation occurs on a vast scale, with 13 million hectares of forest destroyed annually (United Nation Environment Program). When forests are destroyed or degraded they release large quantities of CO_2 into the atmosphere, and become a significant contributor to Climate Change. Reducing Emissions from Deforestation and Forest Degradation (REDD) is an effort to create a financial value for the carbon stored in forests, offering incentives for developing countries to reduce deforestation and degradation thereby lowering their associated carbon emissions. REDD+ has evolved from REDD and focuses on deforestation and degradation but also includes conservation, sustainable management of forests and improvement of forest carbon stocks.

In 2013, projects that reduce emissions from deforestation and forest degradation more than doubled their transaction volumes to 22.6 MtCO2e, and their market value also increased by 35% to $94 million (Forest Trends, 2014). The voluntary market has become very important for agriculture and forestry projects. Voluntary carbon credits are mainly purchased by the private sector. As noted above, Corporate social responsibility and public relations are the most common motivations for buying carbon credits, because of this, the origin of carbon credits is extremely important.

REDD+ offers many co-benefits alongside lowering carbon emissions and improved forest management. Biodiversity protection is a major benefit associated with REDD. REDD project areas likely to have high ecological significance. By protecting forests, whole ecosystems are also preserved and biodiversity protected. The Economics of Ecosystems and Biodiversity (TEEB) Initiative was established with the intention of generating awareness of the value of biodiversity and Ecosystem Services and facilitate the development of effective policy. TEEB acknowledges the role that and REDD+ projects can have in maintaining Ecosystem Services because of positive impacts on biodiversity achieved through the conservation and restoration of forests (TEEB, 2008).

REDD+ projects can potentially offer unique insights into complex ecosystems and their various dependencies and interactions through an increased in knowledge of these areas. REDD+ projects can also provide biodiversity conservation as an additional benefit for mitigation and development. Because of the integration of multiple benefits, REDD+ delivers a unique opportunity for the protection and enhancement of Natural Capital (Sukhdev et al. 2012). Credits from REDD and REDD+ projects have associated social and environmental benefits, as they deal with people's livelihoods and the protection of important ecosystems, and so offer an attractive option to buyers of credits.

"REDD and REDD+ have significant potential to also benefit biodiversity, since a decline in deforestation and degradation implies a decline in habitat destruction, landscape fragmentation and biodiversity loss" (TEEB, 2010)

The United Nations Environment Program (2012) notes that restoring the control and management of ecosystem resources to local communities may have benefits in terms of preserving ecosystems and providing higher quality goods and services. As local people often possess detailed knowledge of the local ecosystems they are often the best equipped for effective management, including monitoring human impacts on ecosystems. Supplying local people with resources and control over their own environments, and compensating them for maintaining and restoring biodiversity can be an effective way of taking care of these valuable ecosystems. Communities that are in full control of their own resource base tend to promote the sustainable use of resources and the conservation of biodiversity (UNEP, 2012). This creates an opportunity for poverty alleviation though employment, education and improved infrastructure.

Conclusion

The concentration of GHGs in the atmosphere is still increasing. There is, however, increased awareness of the risks associated with this. Individuals, organizations and companies are increasingly aware of the benefits of reducing their carbon emissions and the benefits of offsetting. Offset projects provide a unique opportunity for multiple benefits. Offset project which are taking place in developing countries contribute positively to the goal of reducing global carbon emissions while also alleviating poverty and offering additional biodiversity benefits, such as biodiversity protection.

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