

Fighting Carbon with Fire: Global Investment Opportunities in Carbon

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Carbon Trading Schemes

Carbon reduction creates investment returns by generating carbon credits and selling them in the carbon markets. Carbon trading, sometimes called emissions trading, is a market-based tool to limit greenhouse gas emissions (GHGs). The carbon market trades emissions under **cap-and-trade schemes** or with **credits** that pay for or offset GHG reductions.

The main schemes that generate Carbon Credits are:

- The European Union Emissions Trading Scheme (EU ETS) is a European Union wide cap and trade emissions trading system, which trades in “EU Allowances”, called **Emission Reduction Units (EUAs)**.
- The **Clean Development Mechanism (CDM)** is one of the mechanisms defined in the Kyoto Protocol (IPCC, 2007) that provides for emissions reduction projects in developing countries to generate **Certified Emission Reduction (CER)** units which may be traded in emissions trading schemes.
- **Voluntary Carbon Standard (VCS) and Voluntary Carbon Units (VCU)**. The VCS Programme provides a robust, global standard for approval of credible voluntary carbon credits. VCS credits or Voluntary Carbon Units (VCU) must be independently verified. The VCS is the most widely known and chosen standards in the voluntary market due to its Kyoto compatibility.
- **Verified Emissions Reduction (VER) and Gold Standard VER**. Projects that could be used to deliver compliance credits such as CERs and ERUs can sometimes be used to deliver the lesser standard of VERs. The cost of compliance with this scheme is significantly less than others although the price of the credits is usually also less.
- **Reduced Emissions from Deforestation and Forest Degradation (REDD+)** is detailed below.

In addition to the EU ETS, there are many countries that are in the process of implementing carbon trading schemes. These include Australia, Switzerland, New Zealand, the Republic of Korea, Japan, California, the Regional Greenhouse Gas Initiative (RGGI) of US States and the Western Climate Initiative (WCI) of US States and Canadian Provinces.

The Chinese government has also announced its plan to establish a carbon emissions trading system by 2015 — if pilot programs in seven major cities prove successful. Pilot emissions trading schemes are being developed in the cities of Beijing, Chongqing, Shanghai and Tianjin, the provinces of Guangdong and Hubei, and the Shenzhen Special Administrative Region. These seven regions collectively cover 200 million people.

Under United Nations negotiations, China has committed to lowering its carbon emissions per unit of gross domestic product by 40 per cent below 2005 levels by the year 2020.

At 6.8 tonnes per capita, China’s emissions are five times less than that of an average Australian, however China’s population of 1.3 billion makes the Asian country the largest emitter of carbon pollution.

From 2013, there will be more than 50 national or sub-national emissions trading schemes around the world, covering more than 850 million people.

REDD+ Projects

In 2007, it was agreed by the UNFCCC to explore opportunities for providing finance to developing countries for protection and effective management of their forests, through a scheme that has become known as REDD+. The plus sign (+) captures an aspiration for REDD to be used to maximize the value of biodiversity and social benefit as well as to include sustainable forest management as part of an effective emissions reductions strategy for forests.

A number of civil society & commercial groups, as well as bilateral and multilateral funding agencies (including the Australian Government), have been developing this concept in earnest since 2009, including establishing commercial and public funding streams for developing national 'readiness' programmes and pilot projects, primarily designed to learn lessons for full implementation of REDD+.

According to the Food and Agriculture organisation of the United Nations, there are 340 REDD+ projects in 52 countries. The first REDD+ project in Africa to be verified and achieve crediting was the Kenyan Kasigau Corridor in Kenya in 2010, protecting 200,000 hectares of important corridor land between the Tsavo National Parks.

REDD+ Case Study

A new, innovative Carbon financing project is being launched by Fauna & Flora International and Carbon-Plus Capital in Mozambique in conjunction with the Ministry of Tourism (MITUR), and the Ministry of the Coordination of Environmental Affairs (MICOA).

The project is a REDD+ project, based in the Niassa Reserve, famed as a last stronghold of elephants with Africa's largest tusks. The project aims to generate Carbon Credits via the Verified Carbon Standard (VCS) system through the effective long-term management and ecological integrity of the reserve through:

1. Development of a sustainable financing mechanism based on the demonstrable sequestration of atmospheric carbon through enhancing the carbon carrying capacity and reducing ecological degradation from 2013-2054.
2. Facilitating the strategic management, ecological enhancement and community development of the Reserve to ensure sustainable REDD+ revenues over 40 years.

Improved fire management within the Reserve will be fundamental in realizing these objectives at a cost of a mere \$18 million. Revenues are expected to be \$76million via the sequestration of 11.4million tonnes of carbon. Total Profits at \$12 million over the 8 year life of the project ensure attractive investment returns.

However this project goes well beyond just Carbon sequestration. The Niassa Reserve area suffers from many other constraints such as resource scarcity created by environmental damage including food scarcity, unprecedented population growth, severe poverty, and then there is fire.

Current Use of Fire

Traditional burning, the use of fire as a land management tool, is prevalent in and around the Reserve and includes slash-and-burn agriculture, natural product harvesting, livestock grazing, clearing of travel routes, protection from wildlife, hunting and honey gathering. Over

past decades the influence of traditional burning on the Miombo woodland ecosystem has increased alongside rapid population growth.

Management or coordination of the use of fire, for all intents and purposes, is non-existent throughout the Reserve and adjacent areas. Insufficient and inconsistent land and fire management legislation, policies and strategies inadequately address the appropriate use of fire in Mozambique. Limited government capacity combined with weakening traditional institutions has created a lack of understanding of fire management amongst stakeholders (including communities) that results in the uncoordinated use of fire throughout the region.

In short, communities burn in the dry season when the fires are characterised by high intensity and a tendency to spread due to the hot, dry and windy conditions and fully cured fuel. Fires at this time can burn for weeks and spreads far beyond the intended purpose. Unmanaged crop fires account for 80% of the total burnt area in Mozambique annually.

By changing this behaviour and moving burning to the wet season, Reserve Management aims to secure the long-term conservation of the rich and unique biodiversity and pristine wilderness of the Reserve through:

- i. Generating direct revenue from the Elimination 11.4 million tonnes of carbon and earning revenue from the REDD+ voluntary carbon market;
- ii. Securing, managing and developing biodiversity;
- iii. Reducing pressure on natural resources and promoting alternate community livelihoods;
- iv. Developing eco-tourism and professional hunting through engagement of private concessionaires; and
- v. Decentralizing management through innovative public / private partnerships.

Community Participation in REDD+

Effective local participation in project design and implementation is vital to ensure multiple benefits from the project and ensure equitability and sustainability. Projects that operate in a transparent manner build confidence with stakeholders and enable them to contribute more effectively to the project objectives. Community engagement is a priority throughout the project lifetime.

During the project, communities will be engaged in three main ways:

- 1) Development of a socio-cultural baseline, through a participatory process;
- 2) Community consultation and 'Free, Prior and Informed Consent' (FPIC) sought where community rights are affected; and
- 3) Active involvement in project activities, with adequate incentives provided to ensure communities benefit from project success.

REDD+ design needs to ensure that a strong focus is placed on developing sustainable sources of income and employment to maximise benefits to communities (e.g. local community employment as forest rangers). Also, it is particularly important to support sustainable agricultural development to reduce pressure on forest, and assist in poverty reduction.

Working with communities on REDD+ projects requires a great deal of education and dialogue, and forms a major component of developing effective REDD+ planning. The role of people living in and depending on forest resources is central to success in reduction of carbon emissions and securing ongoing revenues from carbon credit sales to buyers.

Delivering the Niassa Project

The Niassa REDD+ Conservation Initiative (NRCI) will follow a globally recognised REDD+ project development approach, using a phased process for developing and implementing the 40-year project. At all stages, technical teams will ensure that suitable training and capacity building is given to Governmental and non-governmental partners through joint management and planning of all activities

Carbon sequestration Activities

- 1) Fire Management- Reduction of the intensity and frequency of fires in the reserve is a key mechanism to increase carbon sequestration. Much further research is required but it is expected that the project implementing a fire reduction package including a focus on ignition sources, as well as community travel and lifestyle behaviours.
- 2) Improving the productivity of land presently under agriculture will focus farming activities in a smaller area, and reduce the expansion of farming land into intact forest areas. With a combination of effective zonation and agricultural assistance, it is hoped to limit further agricultural expansion whilst improving livelihood conditions for local farmers. It will also be necessary to ensure that only people with existing and appropriate land rights are supported in developing agriculture, to avoid generating a 'magnet' effect.
- 3) There is a significant proportion of valuable timber species in the reserve and efforts will be taken to ensure that exploitation of these resources will only be undertaken in a legal and sustainable manner. This may require licensing and regulation of existing activities and cessation of unsuitable and/ or illegal operations.

In order to support the national policies of Mozambique and the REDD development strategies, much of the revenues for carbon will be applied to reduce poverty in the communities of Niassa and Cabo Delgado Provinces, particularly those within the reserve. This may include development of vocational skills training, including microenterprise and practical trades, e.g. mechanics, construction, agriculture, tourism.

Revenue sharing will be structured to ensure alignment with the National Development Strategy of Mozambique and performance-based schemes will be established to ensure accountability.

To maintain carbon revenues over the project period, it will be important to empower the reserve management to effectively manage the development path of the reserve. This will require a range of interventions, e.g. prevention of illegal resource extraction including poaching as well as support for community agriculture and livelihoods programmes, including mitigation of human-elephant conflict.

Investment Pipeline

In addition to the Niassa Project, there are many other projects being developed throughout Africa including in Liberia, Tanzania, and Cameroon. However, projects have been generally slow to come to fruition with many countries uncertain about the impact of REDD on their own development, and the compromises on land use required to access the scheme. The Niassa Project is the most advanced REDD project in Southern Africa, and through engagement of South African, Namibian and Australian specialists, is a test bed for REDD concepts in the vast Southern African miombo forests, covering a staggering 24 million hectares from Angola to Mozambique.

Carbon offsets are also in demand in Mozambique as the country experiences a massive jump in investment, following confirmation of massive coal and gas deposits in the northern

regions of the country, attracting the likes of Rio Tinto, Vale, Eni, Ana Darko, and other major players to this remote corner of Africa.

The Mozambique project aims to monetise the Carbon, via the Verified Carbon Standard. VCS offsets must be real (have happened), additional (beyond business-as-usual activities), measurable, permanent (not temporarily displace emissions), independently verified and unique (not used more than once to offset emissions).

The Program Objectives of VCS projects are to:

- 1) Standardize and provide transparency and credibility to the voluntary offset market.
- 2) Enhance business, consumer and government confidence in voluntary offsets.
- 3) Create a trusted and tradable voluntary offset credit; the Verified Carbon Unit. (VCU)
- 4) Stimulate additional investments in emissions reductions and low carbon solutions
- 5) Experiment and stimulate innovation in emission reduction technologies and offer lessons that can be built into future regulation.
- 6) Provide a clear chain of ownership over voluntary offsets that prevent them being used twice. This is achieved through multiple VCS registries and a central project database that is open to the public.

Opportunities for Chinese Investors

There are already many CDM and voluntary projects in China and there are further opportunities to develop socially focussed projects that develop substantial financial returns.

A report released in October 2012 by the Climate Institute titled *Carbon Markets and Climate Policy in China: China's pursuit of a clean energy future* outlines China's recent ambitious climate and clean energy policies. The report states that China's main exposure to the carbon market has been through the Clean Development Mechanism (CDM). The CDM has driven renewable energy development and built capabilities in carbon measurement and auditing. This positive experience with carbon markets has contributed to China choosing to establish its own domestic carbon trading scheme.

Chinese investors and developers can get involved in projects at home. Through China's widespread investments in Africa, there may also be significant opportunities for highly profitable investments in to REDD+ projects in Africa.

Emissions trading schemes are set to play an important part in the next phase of China's climate change policy. China's ambitious pilot schemes will already represent the world's second largest emission trading schemes and are expected to lead to a nationwide system in 2015-2016.

The Niassa Project as detailed here demonstrates impressive financial returns and may pave the way for many future similar projects in Africa and beyond. What is most exciting about these projects is that as well as generating strong financial returns they will also deliver numerous social benefits through food security, population management, reduction in poverty, recovery of the natural fauna, preserving biodiversity.

At Ecofin Australia we believe that projects that combine social and financial returns have an exciting future particularly in countries with developing carbon pricing and structure like China and Australia. The essential ingredients are simply reducing human impact on the environment and a mechanism to price it. The potential for this is global and we believe that there will be many projects like this that will continue to drive investment into carbon projects worldwide.

Ecofin is an independent investment management firm which specialises in the global utility, infrastructure, alternative energy and environmental sectors. The firm, which was founded in 1992, is based in London and has offices in New York, Hong Kong, Sydney and Geneva.

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