

## **Basic Explanation of Carbon Offsetting**

Over the past 200 years (since the industrial revolution) manmade emissions of carbon have been entering the atmosphere as carbon dioxide CO<sub>2</sub> and Methane CH<sub>4</sub>. This has increased the concentration of atmospheric carbon from 280 to 340 ppm (parts per million). Increased levels of carbon in the atmosphere have complex impacts on the climate. CO<sub>2</sub> and CH<sub>4</sub> cause warming through the ‘green house effect’, which is when the suns energy is trapped by the earth’s atmosphere and rises the overall temperature of the planet. The impact varies in the different regions (of the world) from: changes in temperature, onset of seasons, increased frequency and severity of storms and droughts. The impacts appear to becoming more severe, therefore countries and regions are trying to predict what the impacts will mean specifically to them i.e. agriculture diversity, biological conservation, sea level rise, emergency (flood, draught, hurricane) response etc. and plan accordingly. One way of slowing the rate of environmental change, is through carbon offsetting, which targets the cause of climate change - too much carbon in atmosphere and not just the symptoms.

### **How does this impact on the environment?**

1. CO<sub>2</sub> emissions go into the environment, which increases the concentration of CO<sub>2</sub> in the atmosphere, resulting in the “green house effect”; hence why it is “man-made climatic change”.

### **Where does carbon come from?**

2. Business and individuals produce carbon dioxide. Under legislation, certain industries are forced to produce a “carbon footprint” for their emissions, i.e. how much carbon they produce. Companies or industrial sectors are allocated emissions targets, based on internationally agreed targets. These are termed the involuntary carbon market, as they are legally binding and companies and industries have no option but to adhere to them
3. There is also a voluntary market, where people and companies produce a carbon footprint and decide to offset carbon emissions related to their life style or business activities. These are not compulsory or legally binding, thus termed voluntary.

### **What can be done?**

4. Individuals can actively use cleaner energy, plus “3Rs” Recycle, Reuse, Reduce to lower their personal carbon emissions / carbon footprint.
5. Business has 2 options:
  - A. **Reduce Emissions** – through improved technology and resulting efficiency of operations.
  - B. **Carbon offset** - pay for projects which will absorb their excess (above set limits) carbon. These can taken many forms: investing in sustainable energy projects, sequestering carbon or investing in improved technologies in developing countries where large efficiency gains can be achieved easily, with existing technologies.

### **Why carbon offset?**

There are three core benefits for a business to carbon offset:

- A. Allows the business to still grow.
- B. Short term least expensive option - though not long term (better to invest in clean technology).
- C. Good for CSR – Corporate Social Responsibility.

### **How does planting trees assist the situation?**

6. Trees absorb CO<sub>2</sub> into: wood, fruit (sugars and oils), foliage and protein (enzymes such as RUBUSCO for photo synthesis) thus trapping atmospheric carbon in vegetation.
7. This takes carbon out of the atmospheric system, thus reducing the concentration of carbon dioxide in the atmosphere.

### **How does carbon offsetting work on a practical level?**

8. If a business decides to Carbon offset, they have to contact a broker to buy carbon credits.
9. The broker liaises with an implementing NGO/ farmer organisation/ forestry company/ forestry ministry to assess how much carbon can be sequestered i.e. number of carbon metric tons.
10. The NGO “sells” the project concept to the broker, who then takes the proposal to the “buying” business.
11. The business buys concept / carbon, in return for long term funding (for implementing NGO).
12. The broker certifies the project.
13. The NGO has independent Monitoring and Evaluation to check all conditions are being met.
14. The NGO passes a % (usually 40% - 60%) of the carbon payment to the farmer.

### **How can carbon offsetting help implementing NGOs?**

- Often the problem for NGOs is start up capital. Currently, funding generally comes from donors i.e. EU, DFID, USAID, philanthropists, foundations etc. or social entrepreneurs.
- Donors normally expect short term impact, entrepreneurs want return on investment, either way it is hard for long term sustainability.
- By financially modelling lifetime of project i.e. profit and loss, cash flow and balance sheet, it is possible to decide what money is needed when, what is total cost of project in terms of NGO management, training, M&E etc and what % can be given to the implementers i.e. farmers planting trees.
- When the reduction of carbon metric tons is forecasted (from planting trees) and a carbon metric ton value is known, the NGO can write a business plan detailing how much carbon can be sold and what the start up costs are. The carbon broker will generally give 20% (for start up costs) and the remaining 80% on forecast targets being met and the carbon value (at the time).
- Some NGOs will specifically set up projects i.e. reforestation, which will target growing forest for ecological / environmental reasons.
- Other NGOs, i.e. those involved in Fair Trade, already have specific reasons for starting their projects i.e. income for farmers e.g. nut farming. For these organisations, carbon offsetting gives them three additional benefits:
  - A. Start up capital
  - B. Operating costs
  - C. Additional income for implementers i.e. carbon payments on top of nut income to farmers.
- NGOs can also implement carbon reduction projects i.e. reduce the amount of carbon being produced by using cleaner energy i.e. solar lights and cooking stoves as opposed to paraffin and charcoal respectively.

### **Summary**

Carbon offsetting helps business to keep inside their legal limits, without adversely affecting their core business. Though profitability will be affected, many companies now actively have CSR programs, which can absorb this additional cost. Public and employee relations will improve, whilst at the same time leading to potential new market opportunities, i.e. mobile phones in Africa. Implementing NGOs can now design a long term business plan, which is not solely dependant on donor funding. This will lead to greater sustainability, as it is possible to make longer term plans, knowing that there are already funds. This will also encourage synergies with other NGOs i.e. environmental, renewable energy, micro finance. At the grass roots level, the farmer will be receiving an additional income for a job they are already doing, and depending on the project, have cleaner renewable energy; a **win win situation!**

**January 2009**

**Chris Statham** – Business consultant – [cstatham77@gmail.com](mailto:cstatham77@gmail.com) - [www.businessforall.org](http://www.businessforall.org)

**Nick Evans**- Macadamia project manager Malawi – [nick@equalexchange.co.uk](mailto:nick@equalexchange.co.uk)