

# Results-based Finance for Supply Chain Resilience



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## Cost of action vs. cost of inaction

Traditionally, global corporates have focused environmental programmes on their direct operations; identifying efficiency improvements and implementing activities to reduce emissions. Yet, as climate risks have become reality, most notably within less economically developed countries (LEDCs) on which many are dependent for supply, the business community has come to realise that material threats, impacts, and opportunities are in fact greater in the supply chain. The Global Resilience Partnership outlines some significant statistics<sup>1</sup>:

- In 2011 and 2012, 23 million people in the Sahel and Horn of Africa were affected by food insecurity due to drought
- Globally, 2.5 billion people are dependent on small farms. In Africa, agriculture contributes one third of GDP, and more than 65% of the workforce are employed in the sector
- Growing populations will drive demand for food, which is predicted to increase by 50% by 2030
- Over 400 million people in Asia are expected to be vulnerable to flooding by 2025

Increasingly corporates are looking beyond their own boundaries to enhance supply chain efficiency and resilience, and to reduce exposure to risks caused by climate change and resource availability. Yet, while the cost of action versus the cost of inaction has been accepted, developing a robust and effective supply chain programme which delivers quantifiable results can be challenging.

## Three do's for a successful supply chain strategy

Having worked on this challenge for over a decade, supporting numerous corporates who aim to drive sustainable growth and innovation, Simon Brown, European Managing Director of Natural Capital Partners, identifies three key factors necessary for a successful supply chain programme – materiality, integration, and measurability.

### 1) Ensure it is material –

To obtain greatest value, supply chain programmes should be relevant to the business – whether this be location led, product/activity led or impact led. Alignment with business strategy will facilitate stakeholder engagement and drive a sense of purpose. For instance, IT companies looking at opportunities to use technology to increase efficiency; a clothing retailer financing programmes to improve well-being for factory workers; or a beverage business working to improve sustainable farming for smallhold tea and coffee farmers.

### 2) Integrate it –

To make any programme truly effective, corporates should connect the dots across multiple strategic agendas including climate leadership, resilience in supply base, sustainable development, and responsible sourcing. Taking a more integrated, holistic approach serves to embed sustainability at the heart of the business model as an integral part of how you do business. Marks & Spencer's (M&S) Plan A strategy is one such example of a multifaceted responsible business approach. It outlines commitments and action from reducing GHG emissions in its retail operations; to retrofitting and building new green stores; to engaging consumers on climate action and supporting community development; to sourcing sustainable cotton for its clothing range; to working with food suppliers to build sustainable futures.

1. UNFCCC Newsroom. 2015. Global Resilience Partnership. [ONLINE] Available at: <http://newsroom.unfccc.int/lpaa/resilience/global-resilience-partnership-strengthening-the-poorest-against-climate-impacts/>. Accessed [24 November 15].



Tea will be one of the sectors most significantly impacted by climate change. In the foothills of Mount Kenya, carbon finance is being used to help build resilience for the industry by supporting tea farming communities develop sustainable livelihoods, while positively contributing to natural capital.



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**3) Be able to measure** -

As with any business activity, metrics are required to quantify and evaluate the success of any supply chain programme. This is particularly important to demonstrate the value of programme investment to stakeholders, and effectively communicate progress and achievements. Using a carbon-finance approach for projects ensures that independently verified results are available to measure the impact of the project. In addition to the quantified emission reductions, projects deliver a range of other co-benefits, such as the number of hectares of rainforest protected; the number of households benefitting from provision of improved household devices; or the number of trees planted.

Traditionally approached as a mechanism to reduce direct operational emissions, results-based carbon finance projects can be based within supply chains and deliver an array of additional benefits to communities and biodiversity. In addition to standards to quantify emission reductions, organisations like the Climate, Community and Biodiversity Alliance work to validate the additional positive impacts of carbon-finance projects. These additional metrics provide a crucial data point to attain corporate buy-in for supply chain activity. As a result, companies are able to overcome quantification difficulties by providing precise and appropriate measurement of activity while also enabling them to demonstrate tangible emission reductions against the footprint of their products.

**Results-based finance for sustainable impact**

By enabling technologies and services to reach communities at the bottom of the pyramid in developing countries, results-based carbon finance stimulates economic and social development; previously underserved communities can build sustainable livelihoods, enhancing their capacity to cope with the effects of climate change. According to [research](#) by Imperial College London, results-based carbon finance delivers \$664 worth of additional positive impacts per tonne of CO<sub>2</sub> offset, to households, communities and ecosystems<sup>2</sup>.

As a precisely measured metric, independently verified carbon emission reductions can be used as a proxy to quantify the wider positive benefits a business is delivering – whether that be within direct supply chain communities, or indirectly across strategic regions. Already businesses in the beverage and clothing sectors are using these approaches to improve supply chain resilience and improve the livelihoods of people working in the countries most vulnerable to climate change.

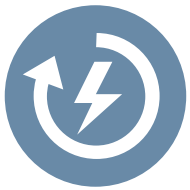
**Building a resilient tea industry**

Tea will be one of the most significantly impacted sectors by climate change due to its dependence on stable temperatures and consistent rainfall patterns, and the limited capacity of farmers in growing regions to cope with the changes. As crops degrade, reduced income and food insecurity will further increase the vulnerability of small-scale farmers and their families. In its Future of Tea Report<sup>3</sup>, Forum for the Future outlines some fundamental challenges for the industry:

2. ICROA. 2014. Unlocking the hidden value of carbon offsetting [ONLINE] Available at: [http://www.carbonneutral.com/images/uploads/news/ICRO2895\\_ICROA\\_online\\_pdf\\_F.pdf](http://www.carbonneutral.com/images/uploads/news/ICRO2895_ICROA_online_pdf_F.pdf) Accessed [23 February 16].  
 3. Forum for the Future. 2013. The Future of Tee [ONLINE] Available at: <https://www.forumforthefuture.org/sites/default/files/project/downloads/future-tea-report.pdf> Accessed [23 February 16].



With the support of carbon finance, this community reforestation project encourages farmers to form small groups and collectively plant trees on their land to improve local biodiversity. Farmers meet regularly to share best practice and receive training on conservation agriculture and agroforestry techniques.



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• **Resource constraints:**

By 2030, total world energy demand is predicted to increase by 50%, and the demand for water could be as much as 40% higher than supply. The tea sector is both energy intensive - consuming between 4 and 18 kWh per kilogram produced - and dependent on irrigation to compensate for irregular weather patterns.

• **Growing consumption:**

Growing populations will drive demand for food and built infrastructure, which will mean tea will have to compete with other crops to access land for production. At the same time, the global demand for tea consumption continues to increase - between 1993 and 2010 alone, consumption jumped by 60%, and further growth is forecast as producer countries become consumers.

• **Availability of labour:**

Growing and harvesting tea is labour intensive, and young people are choosing to leave the tea plantations and move to city-based jobs in the service sector. This raises questions about the ability of the sector to source the labour it needs for tea production in the future. This may lead to greater mechanisation, which further raises concerns over the conditions for those communities left behind during the transition.

The Ethical Tea Partnership (ETP) - a not-for-profit membership organisation - has established the Malawi 2020 Tea Revitalisation Programme to develop solutions in a particularly hard-hit region. This integrated programme aims to restore the natural capital upon which

the tea industry depends, improve farming practices to increase yields and quality, while promoting a living wage and income diversification so that smallholder farmers may thrive. To promote scale and impact, it is working in partnership with 19 organisations, including the Tea Association of Malawi, Rainforest Alliance, M&S, and tea producers to create a thriving tea industry that is socially just and environmentally sustainable.

Natural Capital Partners is working with ETP to identify ways in which project based carbon finance programmes can further build resilience for the industry. For instance, working with one ETP member, a community reforestation project in the foothills of Mount Kenya is being extended to tea farming communities to support the development of sustainable livelihoods and build resilience in this important tea sourcing region, while positively contributing to natural capital. The project encourages



The project provides training on a number of income-generating activities such as bee keeping. By diversifying income beyond small-scale farming, communities can improve financial security and the capacity to cope with adverse impacts of climate change on crop yields.



In Bangladesh, more than 32,000 children and 14,000 adults die each year as a direct result of indoor air pollution from traditional cooking methods. Carbon finance supports the distribution of improved cookstoves which, with simple design enhancements, deliver an 80% smoke reduction, significantly reducing incidence of respiratory disease from the inhalation of toxic fumes.



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tea farmers to plant trees on their land, receiving annual payment for each planted tree, and further revenue as the trees grow and sequester carbon (delivering emission reductions). Once established, the trees provide shade which protects tea bushes from scorching, and act as a barrier to minimise surface water runoff and reduce wind damage. Working in small groups, farmers share best practices and meet regularly for training sessions. Training includes conservation farming to improve access to food by reducing soil erosion and increasing yields, and agroforestry techniques such as beekeeping to create additional sources of income beyond subsistence farming. A rotational leadership structure encourages farmers to develop management skills, and promotes female empowerment.

The programme uses results-based carbon finance to deliver quantifiable environmental results in the form of number of trees planted and carbon savings from sequestration, in conjunction with sustainable impacts for supply chain communities, enabling them to build capacity and resilience to climate change.

**“A highlight of carbon offsetting is that it allows us to get a bigger bang for our buck, delivering multiple environmental and social benefits in addition to reducing carbon while supporting our supply chains overseas.”**

Carmel Mcquaid, Head of Sustainable Business, M&S

**Improving livelihoods in Bangladesh**

Bangladesh has a population of over 160 million people, with more than 48 million living below the poverty line on less than \$1 a day. In addition to being considered a Least Developed Country (LDC), it is also one of the most climate vulnerable countries in the world according to the Global Climate Change Alliance<sup>4</sup>, projected to experience considerable climate induced poverty as a result of sea level rise, heat stress, and continued population pressures.<sup>5</sup> Bangladesh is also experiencing severe deforestation - having lost 50% of forest cover since 1970 - partly as a result of unsustainable firewood use. This can further exacerbate climate change vulnerability, as trees play a key role in managing runoff from storm water.

Established in 2007, the M&S Plan A strategy includes a number of commitments to become the world’s most sustainable retailer, including a goal of carbon neutrality. To achieve carbon neutral status, M&S works with Natural Capital Partners to offset unavoidable emissions through results-based carbon finance projects. Through its ongoing partnership with UNICEF, M&S identified an opportunity to align its carbon neutral programme with UNICEF’s work in Bangladesh – a strategic sourcing region for the business. As a result, Natural Capital Partners and UNICEF worked together to structure an efficient cookstove programme across 2,000 villages in four, predominantly rural upazilas (districts).

4. Global Climate Change Alliance (GCCA) (2012) The Bangladesh Climate Change Resilience Fund <http://www.gcca.eu/national-programmes/asia/gcca-bangladesh-climate-change-resilience-fund-bccrf>, Accessed 20/02/2014

5. Potsdam Institute for Climate Impact Research and Climate Analytics (2012) Turn Down the Heat [http://climatechange.worldbank.org/sites/default/files/Turn\\_Down\\_the\\_heat\\_Why\\_a\\_4\\_degree\\_centrigrade\\_warmer\\_world\\_must\\_be\\_avoided.pdf](http://climatechange.worldbank.org/sites/default/files/Turn_Down_the_heat_Why_a_4_degree_centrigrade_warmer_world_must_be_avoided.pdf), Accessed 20/02/2014



Improved stoves are 60% more fuel efficient, allowing households to make a significant saving on fuel costs. In addition to the financial saving, reduced frequency with which fuel must be collected affords households, particularly women, more time to spend with family or on income-generating tasks.

In Bangladesh, more than 90% of the population rely on burning biomass (such as wood fuels, charcoal and dung) in traditional stoves for their daily cooking needs<sup>6</sup>. These traditional cooking methods are inefficient and polluting, contributing not only to climate change, but to poor health and poverty, particularly amongst women and children. Improved cookstoves use simple design enhancements to burn biomass fuel more efficiently, delivering up to 60% increase in fuel efficiency and 80% smoke reduction. With the support of carbon finance, improved cookstoves are displacing traditional cooking methods, tackling health issues through reduced indoor air pollution, reducing dependence on non-renewable biomass sources, while promoting financial security and female empowerment.

Through its carbon neutral programme, M&S was able to provide up-front funding for UNICEF's cookstove project and, by April 2015, approximately 46,000 cookstoves had been manufactured and distributed to households in the country. Results-based finance is being used to deliver quantifiable environmental results through the number of improved cookstoves distributed, and the resulting emission reductions. But beyond the achievement of carbon neutrality, by enabling access to efficient, cleaner products, M&S is strengthening the capacity and resilience of its supply regions. With less demand for fuelwood, money is saved and women have more time to spend on income-generating activities; households report fewer health concerns from indoor air pollution; and with less pressure on forest resources, ecosystems are conserved.

### Summary

Supply chain resilience has become a fundamental consideration for business as the threats and impact of climate change on resource availability have become increasingly apparent. While many within the business community have recognised the need, and shown the will, to take action in addressing these issues within key sourcing regions, quantifying improvement programmes remains a challenge. However, as illustrated through the examples above, businesses are now realising that the mechanisms they've previously used to fund direct operational emission reductions can in fact achieve much more; offering a credible way to deliver positive impact on some of the most material risks to their business and supply chains, and sustainable development to at-risk communities and ecosystems.

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