CLIMATE CHANGE RISKS AND SUPPLY CHAIN RESPONSIBILITY

How should companies respond when extreme weather affects small-scale producers in their supply chain?

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What role can companies play in strengthening the capacity of small-scale producers in developing countries to adapt to climate change, and in doing so, make their global value chains more resilient? While some leading companies have made progress in taking greater responsibility for what happens throughout their supply chains, there has been little discussion about the threat that climate change poses to the livelihoods of small-scale producers. Through interviews with three companies: Starbucks, Marks & Spencer, and The Body Shop, the paper examines how smallholders involved in coffee production in Colombia, sesame in Nicaragua, and cotton in Pakistan have been affected by climate change and what it means for the companies' businesses. From this research, Oxfam identifies key actions for companies to begin to address the challenges to small-scale producers, and raises questions for further discussion.

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1 INTRODUCTION

What happens when floods, droughts or disease wipe out the crops of small-scale farmers? What does it mean for their livelihoods and food security, and for the wider community? And, where small-scale farmers are selling into global value chains, how do companies respond when adverse weather events affect production? With climate change driving such events to become more frequent and more intense, this discussion paper explores these pressing questions.

While focusing on adaptation, the case studies presented in the paper are also a reminder that strong international action over the next few years is essential to reduce global greenhouse gas emissions and prevent catastrophic climate outcomes. The International Energy Agency warned in May 2012 that the door is already closing on the possibility of keeping global warming within two degrees Celsius, a limit beyond which scientists warn the climate could become unstable.[1] Unless we change course, experts predict a 15–30 per cent decline in agricultural productivity in the period up to 2080 in developing country regions that are most exposed to climate change. But the decline could be as much as 50 per cent for some countries.[2]

Although much of the discussion around climate change focuses on future risk, Oxfam is aware that in developing countries, hundreds of millions of farmers – many of whom are women[3] – and their communities are *already* suffering from the effects of changing weather patterns on their livelihoods. Many areas are witnessing increasing frequency of natural disasters, food shortages and drought, with adverse impacts in areas such as health, water and food security. Almost without exception, the countries that already struggle to feed their people are the most affected by climate change.[4] Poor rural women, who often have fewer livelihood alternatives and fewer rights over productive resources such as land and water, are the most vulnerable to crises and are likely to be hardest hit when a climate-related disaster occurs.

Small-scale producers are a key link in companies' supply chains, often producing labour-intensive commodities. In some cases, companies are also investing to increase the range of small-scale producers they source goods from. This is driven in part by a need to diversify their portfolio of suppliers in the face of diminishing resources and the impacts of climate change, and in part by the desire to protect or enhance their brand and reputation.

Sourcing from small-scale producers – when it adheres to ethical standards – can generate goodwill and help companies to reach and retain customers.[5] As recent campaigns targeted at major clothing, food and retail companies whose suppliers use harsh working conditions have shown, there is a public expectation that companies accept greater responsibility for what happens throughout the supply chain. Despite progress made by leading companies in this respect, there has been relatively little discussion about the threat that climate change poses to the livelihoods of small-scale producers in developing countries and the role companies can play in helping them to adapt. This discussion paper is about understanding that future and responding in a way that meets the needs of producers in developing countries as well as global value chains.

It should be noted that the efforts described in this paper are but a tiny part of the solution. Most small-scale farmers are not involved in global value chains; they provide produce and grains for local markets or to meet their own consumption needs. Here, the role of governments and public policy in supporting adaptation is vital: to help small-scale farmers increase and secure their access to productive resources through policies such as land reform; and by enhancing access for all small-scale farmers, including women,[6] to the finance, inputs, and extension services that can support adaptation.

WHAT WE DID

We worked with three companies that rely on agricultural commodities from developing regions and are interested in climate change and what it means for their business:

- Starbucks, a coffee company;
- Marks & Spencer, a food and clothing retailer;
- The Body Shop, which sells cosmetics and beauty products.

Based primarily on interviews with company executives from buying departments, as well as those whose remit covers climate change and related issues, we posed some key questions: Are companies aware of climate events affecting their agricultural supply chains? Are they taking actions to help producers build their capacity to respond in the face of such events? What more could companies be doing?

To ground the discussions in reality, we focused on examples of crops which these companies source from small-scale producers and which have, in some way, been disrupted by extreme weather with significant impacts on producer livelihoods. Our three case studies examine coffee production in Colombia, sesame in Nicaragua, and cotton in Pakistan. Our understanding of these examples was built on additional interviews with producer organizations and NGOs. A full list of interviewees can be found in Appendix 1.

Throughout the paper, we refer to the effects of extreme weather events on communities, and make the link to climate change. Our intention is not to claim that each of these events was caused specifically by climate change. However, empirical data suggest that extreme weather events have become more common in recent years,[7] and the majority of scientists relate the increased frequency and intensity of such events to climate change (see Box 1).[8]

Box 1: Climate change and extreme weather

Our case studies are centred on extreme weather events, including excessive rainfall and flooding. While we cannot conclusively attribute any specific event to climate change, the science linking extreme events to human-caused climate change has advanced rapidly in recent years.

Until fairly recently, the natural variability in climate systems generally limited scientists to saying that any individual extreme weather event was 'consistent' with climate predictions. Increasingly, more definitive statements about attribution are becoming possible. According to Kevin Trenberth, Head of Climate Analysis at the US-based National Center for Atmospheric Research (NCAR), scientists can now say that particular events would not have occurred in the same way in the absence of climate change.[9]

One of the first published studies linking a single extreme weather event to climate change related to the 2003 heat wave in Europe, which killed 40,000 people. Led by Peter Stott, the study concluded that human influence more than doubled the likelihood of the heat wave occurring.[10] More recently, the Intergovernmental Panel on Climate Change (IPCC) report on extreme weather events judged it '*very likely* that the length, frequency, and/or intensity of warm spells or heat waves will increase over most land areas' and '*likely* that the frequency of heavy precipitation or the proportion of total rainfall from heavy falls will increase in the 21st century over many areas of the globe'.[11]

WHAT WE FOUND

The three case studies clearly show how weather events are affecting producers: increasing their costs; threatening the quantity and quality of production; and making decisions about planting and harvesting increasingly difficult. In Colombia, one of the world's biggest coffee-growing countries, one-third of the coffee-producing area is temporarily out of action because trees that are vulnerable to diseases brought on by increased rainfall are being replaced with more resistant varieties. In flood-ravaged Pakistan, deteriorating quality is threatening the viability of cotton production, and many farmers are taking on unsustainable levels of debt to survive. And in Nicaragua, increasingly unpredictable weather has seen excessively dry years followed by very wet winters, affecting the viability of crops in different ways, and leaving farmers uncertain about when or what to plant.

Companies and consumers at the other end of global supply chains have so far been largely unaffected by these changes, though in some cases costs have risen or companies have had to diversify their sources of materials or to substitute inputs, for example. In general, however, co-ordinated business action on climate adaptation remains limited. A recent study from the Organisation for Economic Co-operation and Development (OECD) found that while companies are generally aware of the physical impacts of climate change, few undertake formal assessments of the specific risks they face and follow up with action on adaptation to reduce those risks.[12]

Adaptation is a core business issue, but also has important ethical dimensions when it comes to supporting small-scale producers, rather than simply leaving those in the supply chain who have the fewest resources to shoulder the risks and costs of climate change. Arising from this research were five basic actions for companies to begin to address the challenges to small-scale producers and to the business:

- **Raise awareness and understanding of adaptation within the business;**
- **Ask producers about current climate trends and impacts;**
- **Build longer-term and more stable relationships with suppliers;**
- **Support community development and environmental sustainability;**
- **Work through existing institutions, including governments.**

And through the research, five questions arose that need further consideration:

- **How can finance be mobilized to support adaptation?**
- **How can the flow of information be improved?**
- **Can producers diversify their supply base too?**
- **How will business models need to change?**
- **What is a responsible exit strategy?**

For companies, the impacts of climate change are manageable – for now. However, as resource constraints intensify in the years ahead and climate shocks become more frequent and severe, their ability to source high-quality raw materials is likely to face significant constraints. Strengthening small-scale producers' capacity to adapt to climate change and involving them in discussions about what adaptation measures are needed not only makes good business sense by reducing disruption in supply chains. It also improves small-scale producers' chances of securing their livelihoods in the face of a changing climate.

2 OUR THREE CASE STUDIES

Case study 1: Starbucks and arabica coffee

Coffee is an obvious place to start, as it is a crop that is frequently grown by small-scale producers, and often cited as being at risk of serious climate-related disruptions.[13] Without significant changes to varieties or plant husbandry over the next few decades, the sector may see declines in yields, higher production costs (mainly due to greater need to combat pests and disease), and lower-quality berries. There is also likely to be a shift of coffee production to higher altitudes. While this may be offset by growing regions stretching further north and south of the tropics, it may also lead to greater concentration of production and market vulnerability.

Rising temperatures have not yet had a major impact. However, in parts of Central and South America, too much or too little rainfall is proving to be a significant challenge (see Box 2). According to Carlos Rodriguez, Director of Agronomy at Starbucks' Farmer Support Centre in Latin America, 'In the last three years, the changes have been very significant. Landslides are probably the most critical, with deaths and a high level of damage to roads and bridges. In Colombia, there has also been a significant loss of production due to rust.'[14]

As well as landslides, extreme rainfall has tended to come at exactly the wrong moment in the coffee-growing cycle. Heavy rain in the first three months can significantly alter the growth pattern of coffee trees, with decreased fruit growth and smaller beans. It also increases vulnerability to pests and disease. When coffee tree leaves stay wet, they become more vulnerable to fungus. This reduces short-term production and harms the longer-term health of the tree, as well as increasing the need for expensive fungicide to combat disease. Poorly tended farms and unhealthy trees exacerbate weather-related production issues.

Box 2: How excessive rainfall has affected coffee producers in Colombia

Across Colombia, the past three years have seen dramatic weather events. According to the Colombian Coffee Growers Federation (FNC, the *Federación Nacional de Cafeteros de Colombia*), rainfall has been 40 per cent greater than average and exceptional in terms of frequency and intensity. The increased rainfall has decreased the number of hours of sunshine by between 15 and 30 per cent in many regions, leading to lower productivity and plant growth, and, in 2011, cooling average temperatures by 0.8 degrees. This is in contrast to some other parts of South America, which have experienced drought and higher temperatures. In the wake of the excessive rainfall since 2009, which came just as the coffee cherries were starting to set, overall coffee production in Colombia fell from 11.5 million bags in 2008 to just 7.8 million in 2009, recovering a little to 8.9 million in 2010.[15]

In Colombia, 95 per cent of the 500,000 coffee growers are small-scale farmers, with less than 5 hectares. These families are extremely vulnerable in the face of extreme weather events. Their livelihoods have been affected as 'rust' (a coffee leaf fungus) has reduced productivity and incomes, and landslides from excessive rainfall have destroyed homes and roads. In one extreme case, an entire coffee-growing community had to be evacuated as a result of severe landslides.[16]

To deal with the threat posed by climate change over the longer term, Colombian farmers have had to begin diversifying their income so they are less vulnerable to these threats,[17] as well as increasing their use of rust-resistant plant varieties. Some new varieties have been developed by FNC's National Coffee Research Center (Cenicafé). These have been available for some time but farmers can be reluctant to uproot existing trees and plant the

new variety. By the end of 2010, more than one-third of the area under coffee cultivation was planted with rust-resistant varieties; only around 2 per cent more than in 2006.[18]

Why are coffee growers reluctant to change to rust-resistant varieties? For one thing, it is often hard to convince farmers to change their longstanding agricultural practices. However, the reality is also that many cannot afford to forego three years of income (while the new trees mature), without external assistance.

The FNC has been working with the local government and finance providers to improve credit programmes and increase the pace at which new coffee plantations use rust-resistant varieties. According to the FNC, 300,000 hectares are currently out of production due to replanting – one-third of the total coffee-growing area. The FNC stresses that this is a necessary investment in the future, but acknowledges some tough years ahead in terms of crop size and reduced incomes.

Starbucks, coffee, and climate change

Starbucks sources nearly two-thirds of its coffee from small-scale producers in Latin America, Africa and Indonesia. Although most of its purchasing is done through intermediaries such as exporters and importers, the company is able to track which farmers or cooperatives produce their coffee, as well as key factors such as the prices farmers are paid. Starbucks' Coffee and Farmer Equity (C.A.F.E.) standards[19] – which cover product quality, economic accountability, social responsibility, and environmental leadership – are a key tool in this respect. The company has also set up farmer support centres in Costa Rica and Rwanda to provide local farmers with resources and expertise.

Colombia is not currently a major sourcing region for Starbucks, though the company sees it as an important source for the future, and is investing in a new farmer support centre there. In Nariño, in the far west of Colombia, where Starbucks does currently source some of its coffee beans, production has been affected by the spread of rust and early-onset climate change, which has altered traditional weather patterns.[20]

A geographically diverse supply chain and ongoing production and processing improvements in coffee mean that Starbucks sees itself as able to withstand the negative impact of weather events that have affected producers such as those in Colombia. Perhaps the most tangible impact on the company so far has been the increased difficulty of getting coffee from mills to ports due to road damage from extreme rain and landslides. This has been a particular problem in Papua New Guinea, Colombia, and Honduras; in some cases, the company has had to expand the number of ports it uses to compensate for road closures affecting access to its regular ports.

Starbucks' response to climate change

About 10 years ago, concern started to build at Starbucks about the possible impact of climate change on coffee-growing communities, and the company responded by assessing and addressing its own contribution to the problem, especially by reducing energy use in stores.[21] It is also a founder member of Business for Innovative Climate & Energy Policy (BICEP), a coalition of US-based corporations calling for stronger national and international action.[22] Starbucks has also sought to use its leverage with employees and customers to raise awareness of the issues.

In terms of coffee production, while Starbucks' C.A.F.E. guidelines were not initially developed to tackle climate change, the company recognizes that they play an important role in supporting climate mitigation by rewarding good environmental practices, such as the use of shade trees, cover crops and good soil management, as well as discouraging the removal of trees or conversion of natural forest to agriculture. [23] In a 2008 review, Starbucks found that around 45 per cent of C.A.F.E. indicators within the coffee growing (or, environmental leadership) section were relevant for climate mitigation.

With regard to adaptation, Starbucks has recently joined the Partnership for Resilience and Environmental Preparedness (PREP), co-ordinated by Oxfam America. PREP helps vulnerable communities and businesses to adapt to the impacts of climate change by promoting US government policies and funding for critical programmes that build resilience to extreme weather events and climate shocks both at home and internationally.

Starbucks is also funding work by Conservation International to understand the impacts of climate change on coffee production, as well as how to support farmers to adapt. One goal of this work is to supplement household incomes to reduce the reliance of whole communities on coffee. While the Starbucks project's focus so far has been on increasing farmers' access to forest carbon markets, Conservation International is also exploring other models, such as sustainable production of alternative crops. While supporting farmers to diversify into producing different crops may not seem a natural role for a coffee company, according to Ben Packard, Starbucks' Vice President for Global Responsibility, 'Starbucks recognises its inherent responsibility to the people and places it sources from.'

Discussion

Given the urgency with which climate change needs to be tackled, it is imperative that companies reduce their operational carbon emissions, so Starbucks' commitment is welcomed. With regard to adaptation, it may be possible to further develop C.A.F.E. indicators so that they more explicitly focus on adaptation. However, as climate events can vary significantly in different areas, it will be particularly important to focus on developing the overall adaptive capacity of small-scale producers, rather than disseminating a particular set of practices or technologies. Working together with farmers, communities and local institutions to understand their priorities and to incorporate valuable farmer knowledge (e.g. on historic climate patterns or local plant varieties) will be critical.

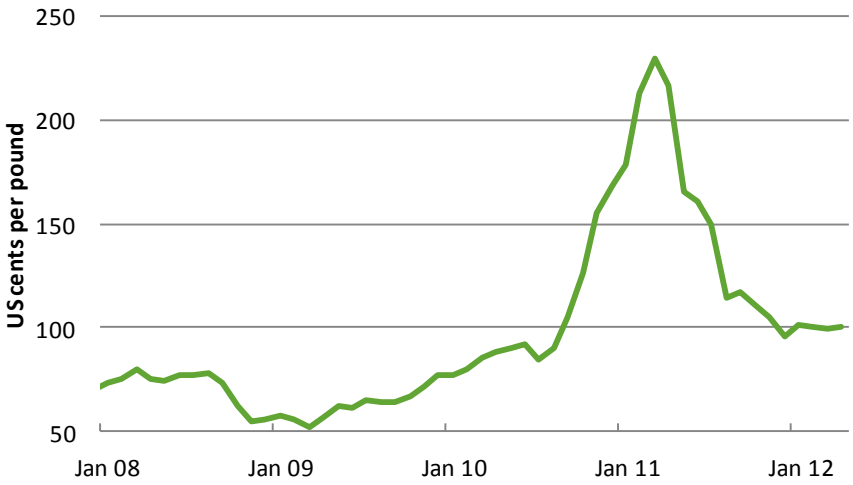
The example from Colombia also shows that for farmers, responding to a changing climate can mean significant short-term costs (including loss of income) in order to achieve longer-term benefits. For the poorest and most vulnerable, these losses are likely to be more than they can bear without financial support. The FNC, for example, is providing some funding to farmers for up to two years while new varieties grow. Starbucks has recognized that farmers often need improved access to credit on reasonable terms to invest in improvements, and helping farmers to access finance to build their adaptive capacity could be a logical next step.

Case study 2: Marks & Spencer (M&S) and cotton

In recent years, the global cotton market has been turbulent, with price instability affecting textile and garment manufacturers and producers worldwide. For retailers, this has made sourcing more difficult and costly. Weather-related chaos in Pakistan – the world's fourth largest cotton producer – has been a contributing factor, after floods in 2010 devastated large swathes of productive land (see Box 3).

The resulting shock to world markets that were already facing low supplies and rising prices was exacerbated by panic buying by textile mills. This drove cotton prices from a stable 10-year price range of US $0.65–0.70 per pound of cotton in 2009 to spike as high as US $2.48 on some shipments in September 2010, following the floods. Average prices also rose sharply, and only eased off several months later (see Figure 1). Pakistani government officials and the UN both pointed to climate change as a major contributing factor to the floods.[24]

Figure 1: Cotton prices January 2008 – April 2012



Source: data from Index Mundi website[25]

While flooding has made year-to-year production increasingly uncertain in Pakistan, a longer-term threat around water scarcity and water management is also gathering pace. Cotton is a thirsty crop, requiring 550–950 litres per square metre.[26] In Punjab and Sindh provinces, cotton cultivation depends on irrigation from the Indus River system, with agriculture using 90 per cent of the available fresh water, leaving rural communities with much-reduced water access. This is being exacerbated by climate change, which is causing the Himalayan glaciers to melt, reducing the long-term availability of water for Pakistan's rivers – particularly the Indus. Major improvements in water management will be needed in light of the growing imbalance between supply and demand.

Box 3: The impact of floods on cotton producers in Pakistan

Cotton is Pakistan's most important crop in terms of area under cultivation. Much of it is produced by small-scale farmers, with cotton providing a livelihood for 1.5 million people and their communities. Most of these farmers work plots of land of less than 5 hectares – often precarious land in flood-prone areas. Struggling with low margins, limited access to credit, inputs, and water, and exploitation by powerful traders, these cotton farmers are extremely vulnerable to weather-related impacts.

In 2010 and again in 2011, Pakistani cotton farmers were hit by major floods, which washed away much of their production (cotton grows close to the ground and is relatively fragile, so floods are particularly damaging for the crop). In 2010, the flood caused a total of €35bn worth of damage, putting approximately 160,000 km^2 under water – one-fifth of Pakistan's land mass. The UN declared the situation one of the worst humanitarian disasters in UN history; 20 million people were affected, and 2,000 lost their lives. Losses from the destroyed cotton crops accounted for 74 per cent of all financial losses, with nearly 20 per cent of the crop wiped out – severely affecting the livelihoods of small-scale farmers, as well as many workers in Pakistan's textile manufacturing plants.[27]

As a result, many small-scale farmers were unable to repay loans taken out for seeds, fertilizer, and other inputs, while those who still had access to credit went further into debt. Some stopped growing cotton altogether, switching to less lucrative but more resistant crops like sugar cane, which can better withstand floods and rising temperatures.

Matters were made worse for many small-scale farmers because they tend to be tenants on the lands they cultivate, and they were required to pay rent to feudal lords despite the floods. They were also the ones left to clear the land of the water; yet without legal tenure,

these farmers missed out on government assistance packages which targeted the owners of the damaged land. In essence, the producers have borne all of the risks and costs associated with the floods, despite having the least capacity and resources to do so.

M&S, cotton, and climate change

Marks & Spencer (M&S) is a major food and clothing retailer, based in the UK but expanding globally. It sources commodities such as tea, coffee, cocoa, cotton, soy, palm oil, and wood from around the world. According to Mark Sumner, M&S's Sustainable Raw Materials Specialist, cotton is the most important fibre for the company's clothing business, accounting for more than 50 per cent of material used. Pakistan is one of a number of important sources for M&S.

While M&S does not directly source cotton from producers (it buys garments from clothing manufacturers), cost and quality of cotton are major factors in the company's business. Along with other textile and garment manufacturers and retailers, M&S has been affected by recent instability in the price of cotton as well as quality issues. Much of the cotton that survived the 2010 floods and made it to markets was damaged.

Given cotton's importance to M&S's business, the company says it is working to develop a more sustainable sourcing strategy though its support for the Better Cotton Initiative (BCI). It is part of the 'Better Cotton Fast Track Programme' a consortium of retailers, brands and others working in Brazil, India, Mali and Pakistan to increase demand for more sustainable cotton and to create supply by supporting good farming practice. Although the BCI does not include climate change as a specific principle, the organization says that practices such as improving water and soil management provide practical ways for cotton farmers to better manage those impacts of climate change that are not too extreme.[28]

M&S's response to climate change

At a corporate level, M&S has prioritized climate change as part of Plan A – its commitment towards being the 'world's most sustainable major retailer' by 2015. But when Plan A was launched in 2007, the focus was on mitigation rather than adaptation. As Carmel McQuaid, M&S's Climate Change Manager, explains: 'At the time, no one wanted to talk about adaptation because that was seen to imply that we were giving up.'

Things have moved on since then, and in 2011, the company carried out a major climate change risk assessment, analysing six major food commodities. This is one step further than many companies have gone, although M&S notes that the process does not yield instant solutions. Unlike mitigation, 'it is not obvious what changes are needed', says McQuaid. 'Instead, you need to build the capacity to change, both within the company and its suppliers.'

However, previous work on mitigation can offer lessons for adaptation, including the need to avoid creating the confusion that leads to inertia. For example, when M&S first requested that its UK beef producers conduct a climate change audit and reduce greenhouse gas emissions, the company discovered that other buyers were making similar demands but using different methods to calculate the producers' carbon footprint. Not only did these burden producers with considerable additional costs, but the inconsistent methods being used threatened to undermine the credibility of the whole approach. In response, an industry-wide collaboration was set up to standardize carbon footprint measurements.

Overall, M&S says it recognizes that its business models may need to change, becoming more diversified in order to manage risk, while at the same time building stronger relationships with suppliers. As Paul Willgoss, the company's Head of Food Technology, says: 'Some companies prefer to spot buy, but as a 128-year-old business, we take the longer-term perspective.' He accepts that this could include helping producers to reduce their dependence on one crop and therefore increase their overall resilience, even though this may result in them supplying less to

M&S. ‘You need strong relations with resilient suppliers, even if sourcing must become more diversified’, he concludes.

Discussion

The sort of weather-related devastation that Pakistan has suffered is likely to become increasingly common as climate change continues, with projections of erratic monsoon rains causing frequent floods and droughts, and increased temperatures enhancing heat and water stress conditions.[29] At the moment, many of Pakistan’s small-scale farmers have decided to stick with cotton, taking huge risks to have another go at growing the crop. To survive, however, they are likely to need significant support.

What role and responsibility does a major retailer like M&S have, given that it is purchasing garments rather than cotton as a raw material? How can major retailers help producers build their adaptive capacity and integrate this support into the relationship the retailer has with its first-tier suppliers, the garment manufacturers?

In addition to responding to the floods, one thing is certain: supporting small-scale cotton farmers in the adoption of water efficient technologies and practices will be critical. In addition, in cotton as well as in other crops, retailers will increasingly need to support small-scale farmers to diversify their livelihoods, so that they are less vulnerable when water becomes scarce, or flooding wipes out their crops.

Case study 3: The Body Shop and sesame oil

Coffee and cotton are well known as globally traded commodities. Sesame is less so, yet it is perhaps the world’s oldest oilseed crop, first domesticated thousands of years ago. Although some large-scale production exists, sesame is a labour-intensive crop grown primarily by small-scale producers in tropical regions. In African and Asian countries, sesame is mostly a staple crop, while in countries such as Nicaragua it is a cash crop (see Box 4).

In 2008, there were about 5,000 sesame producers in Nicaragua, mostly working small plots.[30] Among these are the 275 members of the Juan Francisco Paz Silva (JFPS) Cooperative set up 20 years ago by an enterprising group of farmers in the remote Achuapa region – an area affected by climate change as well as by environmental degradation resulting from intensive cotton production in the past. Members of the cooperative have been producing maize, beans, and sorghum as local food crops, and selling sesame as a cash crop, which provides a regular income. In addition, the cooperative receives a fair trade premium, which is invested in the community.

According to Brigido Soza, President of the JFPS Cooperative, they started with almost nothing, but have already built eight schools, brought clean drinking water to the community, and helped to fund an alternative therapy clinic which treats more than 100 people each month at affordable rates.[31] The cooperative is also working in partnership with The Body Shop to pioneer how the fair trade premium could be used to offer loans to women and to provide payment for (typically unpaid) household labour.

JFPS has also helped producers to move up the value chain by developing processing facilities for extracting sesame oil, which it exports through Del Campo (an umbrella cooperative to which JFPS belongs). They have also started to import into Europe through a company they have formed in the UK called The Ethical Trading and Investment Company (ETICO).

Box 4: How climate change has affected sesame producers in Nicaragua

Nicaragua's geographical position leaves it prone to extreme weather events such as storms, hurricanes, floods, and droughts.[32] Despite the success experienced by the JFPS Cooperative, this unpredictable weather has led to production challenges. 'There is now no equilibrium and we can no longer expect certain seasons or climates. Suddenly it rains and then suddenly there is sun', says Brigido Soza, President of JFPS. Juan Ramon Bravo Reyes, President of the umbrella cooperative, Del Campo, adds that these changes have been developing over the past few decades. He describes how the winter, which used to start predictably in May and end in October, has become erratic, and how the rains now change suddenly, and have become much heavier.

A few years ago, Achuapa suffered a period of very dry weather – good for sesame production but not for the cooperative's other crops like maize. However, in 2010 and 2011, the region experienced extremely wet winters. Excess precipitation has weakened sesame plants, leaving them vulnerable to disease, while excess moisture at harvest has caused seeds to go rancid, interrupting the drying process, which depends on the sun.

Cooperative members Beinarola Martinez, Isabel Sevilla, and Teodoro Rocha Calderon described the impact this extreme weather has had. Crops have been weakened and left vulnerable to disease and pests, and roads have been washed away. In 2011, 12 days of heavy rain left the road to Achuapa impassable, cutting the community off for some time. Crop losses, coupled with higher prices for inputs, meant that some families had less food to eat and less income with which to buy food. 'Some people have had to emigrate to sustain their families', says Isabel.

The cooperative is fighting back, however. Members have been responding by diversifying their production, planting some crops that are tolerant of wet weather and others that are tolerant of drought, and making better use of their available land. They are being supported by JFPS and affiliated cooperatives, which are investing in developing new technologies and agronomic practices to combat pests and illnesses; providing technical support; and organizing workshops, training, and forums to raise environmental awareness.

JFPS has a comprehensive diversification strategy. This includes supporting its members to reintroduce coffee as a cash crop, to sell fruit from trees planted to protect the environment, to produce honey (which also brings bees for pollination), and to grow vegetables and fruit, among other crops. They are also planting *moringa*,[33] a wild plant that can be used for food and oil, which the cooperative aims to export. All members who benefit from these initiatives are required to keep a proportion of their land covered with trees to help protect the environment.

The Body Shop, sesame, and climate change

The Body Shop's sourcing strategy is designed to ensure that a significant proportion of the ingredients it purchases – around 15 per cent of the total – comes from community-based producers who are committed to fair trade principles. The company's Community Fair Trade (CFT) programme covers 25 producer groups in 21 countries, who provide more than 50 types of accessories and 18 key ingredients. In Nicaragua, The Body Shop has been sourcing sesame oil from the JFPS Cooperative since 1993.

As The Body Shop sources sesame oil (which is processed) rather than the raw ingredient, this creates some flexibility in the supply chain. Where the community faces crop losses, they have also been able to source seeds for the oil from other cooperatives under the Del Campo umbrella. The fact that all the cooperatives which belong to Del Campo are fair trade-certified makes this process easier.

The Body Shop's response to climate change

Historically, The Body Shop's supply chain commitments have focused on ethical labour standards and on the CFT programme. Although the company does not purchase ingredients directly from CFT producers, it requires the manufacturers who make their products to use only the CFT ingredient required in formulations, at the agreed price. A team of specialist buyers seeks out groups that could supply ingredients but which may not possess the contacts, capacity or scale to compete in international markets.

Over the 25 years that the CFT programme has been running, the company has focused on long-term relationships that ensure a reliable supply for the company and a predictable level of demand for producers. Thus, the CFT programme is limited to key ingredients and goods that are integral to The Body Shop's regular supply chain. In addition, the company says it strives to ensure that purchases are kept at a 'sustainable business level' – enough to provide a tangible benefit for the supplier, but not such that these purchases excessively expose the supplier's livelihood to market risk. This is particularly important given that The Body Shop is a consumer- and trend-led company.

The Body Shop has recognized that it needs to strengthen coherence between its supply chain management and over-arching commitments to the planet, which include a commitment to reduce CO_2 emissions from stores, offices and distribution centres by 50 per cent by 2020 (2015 for offices), compared to a 2010 baseline. They have developed new environmental criteria for CFT suppliers. These currently focus on direct impacts, but the company plans to expand them to look at the broader impact of the environment on people and livelihoods. Climate change is part of this.

The Body Shop is also asking intermediaries that supply the company with the CFT ingredients to hold greater amounts of stock in reserve in future, to cover supply fluctuations driven by climate change. This may be particularly important for ingredients sourced from tropical and semi-arid zones, which are likely to experience the strongest impacts of rising temperatures and fluctuating rainfall.

The Body Shop believes that its regular communications with CFT suppliers may also provide a solution. For example, the company says it provides suppliers with detailed forecasts for upcoming demand, which exceed industry norms. For each ingredient, the company provides a minimum of 12-month estimates of the quantities needed and carries out a mid-year review to ensure that production is on track to meet those targets. If production problems are anticipated, The Body Shop can help its suppliers to manage them before they become a problem. As Mark Davis, The Body Shop's Community Fair Trade Director explains: 'If a product is out of stock for too long, it could call the line's viability into question – harming both the producers and The Body Shop in the process.'

Micro-insurance is another tool that could help protect producers against weather-induced crop failure. The Body Shop sources CFT soya oil from farmers in Brazil who are piloting a crop insurance scheme. Under the pilot project led by the Fairtrade Insurance Initiative, in the case of massive crop losses, those farmers will receive vouchers for farm inputs, providing resources for production to recover in the next season. The Body Shop is discussing a similar approach with the JFPS Cooperative in Nicaragua, in which an additional fair trade premium would fund a crop insurance scheme. As the cooperative already runs a life insurance scheme, it has some experience on which it can build.

Discussion

This case study shows some of the innovative solutions that may be possible where companies have closer working relationships with producers. Because The Body Shop has invested considerable time and resources in a supply chain that may take years to reach full production,

it has an interest in ensuring that producers are robust and able to meet demand in the longer term.

There may also be learning from other parts of the business that could be applied to climate change and adaptation. For example, through its years of experience on labour rights issues, The Body Shop has found that working with producers on prevention is more effective than a tick-box audit approach. According to Mary Teakle, the company's Ethical Trade Compliance Manager, The Body Shop strives to frame issues as joint problems – recognizing that the company and the supplier both need to change their practices in order to tackle problems effectively. Will an inclusive approach that treats the supply chain (including small-scale producers) as one competitive unit also prove critical to success in the face of climate change?

The Body Shop, as mentioned earlier, is focusing on the role of women in agriculture, which is often overlooked despite women accounting for a large part of the agricultural workforce in many developing countries. Together with the JFPS Cooperative, The Body Shop has recognized that much of the valuable work that women do is unpaid, and together they are at an early stage of exploring how part of the fair trade premium could be used to support women. As the initiative develops, there is an opportunity to assess and factor in the additional burden that climate change places on women.

3 CONCLUSION: FIVE ACTIONS COMPANIES CAN TAKE AND FIVE QUESTIONS TO THINK ABOUT

These three case studies show how the changing climate is already affecting agriculture and the livelihoods of vulnerable, small-scale producers, and they provide an indication of the challenges that lie ahead. They are yet another reminder of the urgency with which world leaders must tackle climate change and stop it from frustrating the attempts of millions of people to escape poverty.

These case studies also indicate why the disruption – and, at times, devastation – felt by small-scale producers are not yet generally felt by consumers in developed countries. While poor producers are particularly vulnerable to weather changes, and have few resources to help them respond when a disaster strikes, large companies have so far been able to manage these risks by switching sources of supply. In this way, they have protected their consumers from disruptions in price, quality and availability of goods.

However, in the face of multiple shocks such as the Pakistan floods, which occurred when commodity prices were already rising, even large companies may soon find that the impact of climate change threatens 'business as usual'. As Carmel McQuaid, Climate Change Manager at M&S, explains: 'Climate change is not yet a major problem for M&S and its sourcing. However, the feeling is building that all is not well.'

Investing in adaptation

Robust and effective supply chains are key to company success, especially in the consumer goods sector. In order to protect and build on this success, companies have a role to play in helping to manage climate risks faced by the vulnerable small-scale producers they work with. This is first and foremost a moral responsibility. However, in an increasingly resource-constrained world, relationships with producers are also becoming a critical business issue.

Concrete actions by companies have so far been limited.[34] Short-term pressures to deliver quarterly results are one challenge, as is the view that investing in adaptation is tantamount to failure in the battle to halt climate change. However, scientific uncertainties about the precise location, magnitude, timing, and consequences of climate impacts may be the biggest factor limiting the ability of companies to predict and respond to physical climate risks.

Developing a better understanding of likely climate impacts is important, but doing nothing is not an option. In the absence of a proactive and strategic approach, companies and their suppliers may use short-term coping strategies that undermine longer-term resilience (often referred to as 'maladaptation').

There is enough information available on climate impacts and trends to enable companies to at least begin to monitor and assess risks, so that they can plan for reasonable contingencies and start to adopt policies and practices to manage those risks. There may also be 'no regret' or 'low regret' actions they can take, such as addressing water scarcity – actions that will benefit the company and its suppliers under any plausible climate change scenario. Ultimately, a strategic response will consider how to address the increased risk of disruptions due to extreme weather events, and how to plan for more incremental shifts such as gradually rising temperatures.

FIVE ACTIONS COMPANIES CAN TAKE

To help small-scale producers build their adaptive capacity, and deliver more resilient supply chains, companies should take five actions:

1. Raise awareness and understanding of adaptation within the business

Companies need to make more effort to understand and evaluate the potential physical impacts of climate change on their value chain, in both the short and long term. They should raise awareness internally and train employees across key business functions. They should also ensure that board members are informed, and tasked with integrating adaptation strategies into core business processes. And they should develop 'champions' who are able to secure and sustain executive-level commitment. Engaging external experts and business partners is a key part of this process.

Two core messages should underpin these efforts:

- adaptation is a core business issue for supply chain security;
- it is better to manage the issue proactively rather than reactively.

2. Ask producers about current climate trends and impacts

When the company has developed a better understanding of the threat to its supply chain posed by climate change, the specific risks must be assessed. There is no substitute for talking to producers directly. Many companies might be surprised by the extent to which changing weather patterns have already affected their suppliers. Questions they should be asking include:

- Are producers seeing changes to traditional weather patterns?
- What effects are these changes having on production, productivity, costs and quality?
- How have the changes affected women as well as men?
- Have producers made changes in response, and what would they need in order to adapt (more) effectively?

In some cases, companies have already started a dialogue with their suppliers on mitigation, but adaptation may be a better entry point, given the direct link to producers' interests. As Carmel McQuaid of M&S notes: 'Human nature means we are often better at addressing problems that directly affect us rather than responding to abstract challenges.'

3. Build longer-term and more stable relationships with suppliers

One of the most crippling issues for small-scale producers is the inconsistency of demand and the ease with which their customers can seemingly switch to new suppliers. As with coffee farmers in Colombia, producers may be unwilling or unable to accept the short-term loss required to invest in improvements to make their crops more resilient to climate change, especially if markets are uncertain. Conversely, where markets are more stable, farmers are empowered to invest for the future. Notes Body Shop's Mark Davis, 'We strongly believe that long term relationships are a good idea – and we have a proven model doing this for over 25 years.'

For companies, this is also about protecting security of supply – building relationships with producers based on trust, and enabling those producers to continue as suppliers in the long run. This means producers that are economically viable and food secure. As Paul Willgoss, Head of Food Technology at M&S, explains: 'We work on the basis that climate change means supply chains will become more diversified, and suppliers themselves will also need to diversify. However, strong relationships remain imperative. We may be sourcing less produce from each

individual but we also know that producers have many options, and if we don't support them, we can't count on them being there when we need them.'

Box 5: Making adaptation work for women

Poor rural women are often the most vulnerable to weather-related crises and suffer disproportionately from the impacts of climate-related risk. Consequently, women's chances of success are increased if they have the capacity to adapt to climate change and work collectively to influence the rules that govern them.

A recent Oxfam study of climate change adaptation in Tajikistan[35] highlighted that women were overlooked in the design of adaptation strategies. As a result, adaptation measures often increased the workload of women farmers – for example, requiring additional weeding and manual pest control, tasks which were done by women – and reduced the time they had available for other household tasks.

Although the study was not specifically linked to company supply chains, the learning is relevant, given that women provide much of the agricultural labour in developing countries, including on small-scale farms. The study highlights the need for vulnerable women producers to take a lead role in formulating adaptation policies and practices. Some areas, for example, where women could have a stronger role or access include in managing water sources; information technologies for information on market prices, weather forecasts and farming practices; and rural finance infrastructure.

4. Support community development and environmental sustainability

Poverty and environmental degradation determine the extent to which communities are vulnerable to climate change. Supporting overall community development and environmental sustainability are critical components of resilience. This can include:

- supporting climate-resilient agricultural practices (taking into account any potential negative impacts on women producers);
- supporting producer organizations like cooperatives;
- promoting schemes for income diversification and household food security – for example, by supporting small-scale farmers to grow staple crops as well as cash crops;
- developing an understanding of the often unseen and unpaid roles that women play and their particular vulnerability to climate change;
- providing new markets for new crops.

A dialogue with producers and their communities is vital, as simply introducing solutions that have worked elsewhere may not be appropriate. Communities also need to be supported to develop the skills to lead their own adaptation strategies, for example knowledge around plant breeding, or new techniques to preserve water or reduce soil erosion.

Better access to key resources like land and finance is also fundamental. Cotton producers in Pakistan, for example, who lacked secure land tenure, were unable to access finance and also missed out on government assistance in the wake of the 2010 floods that wiped out their crops. While there may be short-term costs, investing in farmers' adaptive capacity is critical to ensuring their long-term viability as suppliers.

5. Work through existing institutions, including governments

The case studies have highlighted various ways that companies can incorporate adaptation into existing initiatives: The Body Shop exploring micro-insurance; M&S coordinating climate actions with others in the sector; and Starbucks' assessing C.A.F.E indicators and climate change.

However, Oxfam's experience also shows that supporting communities to build their adaptive capacity is best done in collaboration with existing local institutions – producer cooperatives, local research institutes, and local governments. This helps ensure that efforts respond to local needs and bring scale and sustainability, while avoiding uncoordinated parallel efforts that could create confusion and paralysis. It will also be important that women have strong representation in these institutions, or that greater representation is encouraged, so that women are not overlooked in adaptation measures.

AND FIVE QUESTIONS TO THINK ABOUT

The interviews for these case studies raised some important questions and presented some interesting new ideas about possible solutions to the challenges faced by small-scale producers. The first two revolve around how best to remove barriers to producers' capacity to adapt, while the others relate to increasing producers' options, in the short term and the long term.

How can finance be mobilized to support adaptation?

Small-scale producers around the world are already hampered by a lack of access to finance on reasonable terms, which hinders their ability to invest and raises the risk of unsustainable levels of debt. Climate change adds further urgency to the need for better finance options for producers.

Micro-insurance is one approach, which The Body Shop is considering in its work with community fair trade suppliers. Oxfam America is also piloting risk approaches, working with Swiss Re and the World Food Programme (WFP)[36] in Africa to explore how insurance can help poor rural communities protect their crops and livelihoods from climate change. According to Oliver Zenklusen, co-founder of the Fair Trade Insurance Initiative, focusing on fair trade means an existing institution which covers hundreds or thousands of farmers – the producers' organization – is the insured entity, and there is better production data generated by certification for calculating the premium. However, he cautions that there are limits to micro-insurance as an adaptation strategy. When climate impacts really start to multiply, the insurance will either become unaffordable or the insurers will go out of business. This adaptation measure can only buy time to allow producers and their community to find other, more sustainable solutions.

Carbon finance is another area that companies are increasingly interested in. Starbucks and M&S are among those exploring how to help small-scale farmers improve and diversify their incomes by accessing carbon finance. Where small-scale farmers are engaged in activities that are beneficial for climate mitigation – for example through low-input agriculture or sequestering carbon by planting trees – the aim is to enable them to benefit from these activities by selling credits on voluntary carbon markets.

Oxfam acknowledges the potential of carbon finance to improve small-scale farmers' livelihoods. However, carbon markets can also pose substantial risks for poor communities where projects are designed primarily to meet global climate mitigation goals rather than to support local needs, including the need for access to resources, or for adaptation. These projects could only be considered beneficial for development if they meet the expressed priorities of poor communities, including guaranteeing their rights, while meeting objectives of environmental integrity.

How can the flow of information be improved?

Uncertainty and lack of communication around climate change can lead to inertia or maladaptation on the part of companies and producers, while better communication can contribute to greater resilience throughout the value chain. In some cases, this may be a straightforward technical matter. The Colombian Coffee Growers Federation (FNC), for

example, cites improved communication technologies for coffee towns as one area where companies can play a constructive role, helping small-scale producers to access regular public information on weather forecasts.

However, expanding and strengthening relationships within the supply chain is likely to be a key factor in improving the flow of information. The fact that The Body Shop regularly shares demand forecasts with its suppliers enables all parties to plan their operations more effectively. What is the potential for The Body Shop to build information exchange on climate and adaptation more explicitly into this system, and could other companies consider using or developing similar systems?

Can producers diversify their supply base too?

One of the key messages from the research is that while producer groups are vulnerable to climate change, companies' broad supply chains have meant that they can switch to other sources when weather disruptions occur. Producers generally lack such alternatives, but does this always have to be the case?

For instance, the JFPS Cooperative in Nicaragua is, in effect, in a good position to seek alternative sources of sesame since it is involved not only in production of sesame seeds but also primary processing into sesame oil. Through membership of the umbrella cooperative, Del Campo, JFPS has widened its supply of seeds for oil processing beyond the quantities it directly produces.

Producer organizations and umbrella groups, which can bring together producers in different regions that may not be equally affected by particular weather events, are likely to be key to the success of this strategy. Companies also have a role to play by building greater flexibility into their relationships with suppliers.

How will business models need to change?

There is no simple answer to this question. However, the case studies shed some light on the key elements that need to change, and are changing. One is the nature of supply chain relationships, where growing resource constraints are increasing the relative power of producers. These constraints, driven in part by climate change, mean that companies may need to increase their range of suppliers, but also increase their investment, building stronger relationships based on trust and genuine partnership – and sharing the costs and risks more fairly across the value chain. Providing a dependable and fair source of income is one of the most significant ways in which companies can help vulnerable people to adapt to climate change.

Other steps may include greater flexibility in sourcing – buying new products from existing suppliers, for example. This might also mean moving away from 'just-in-time' supply systems and potentially holding greater levels of stock, as well as better sharing of information with producers (as already discussed).

What is a 'responsible exit strategy'?

The case studies in this paper describe the impact of weather events on vulnerable small-scale producers. However, what they do not explore is the long-term viability of crops in particular regions. With rising temperatures predicted to have a negative impact on the production of coffee, and water shortages becoming a growing threat to cotton production, there are significant questions about the future livelihoods of small-scale producers in these regions, and what role companies should play in supporting those producers' efforts to diversify their livelihoods.

In the case of annual crops, the risks may be more manageable. Provided that the land remains fertile, farmers can shift production – though this may require seeking new markets, accessing

new inputs, and developing new knowledge and skills. However, in the case of perennial crops like coffee, which require significant upfront investment and several years before the crop reaches maximum productivity, the challenge is much greater. It is harder for producers and companies to make any changes quickly.

While longer-term changes in climate are often considered too uncertain to be accounted for in management decisions,[37] the planning stages of new investments is an one opportune moment to tackle these longer-term issues. Scenario planning, for example, is one tool to deal with uncertainty. The selection of crops that are more resistant to climate variation and therefore provide greater stability for producers is another approach, especially for companies that have flexibility in the ingredients they source.

A final word

This discussion paper has attempted to provide insights into how climate change is affecting small-scale producers in developing countries today, and the role that companies can play in strengthening the adaptive capacity of these producers and in doing so make their global value chains more resilient. But much more work needs to be done on how companies can best invest in building small-scale producers' adaptive capacity – especially for retailers, who are often one step removed from primary production.

As we noted earlier, most small-scale producers do not supply global companies; many are subsistence farmers, and those who do have a small surplus usually sell it on local markets. It is thus primarily governments that must be at the core of addressing adaptation, while the international community must ensure that they have the appropriate resources, including financing, to perform this role. Nevertheless, companies, working with governments, must also take key steps to support small-scale producers in their value chain rather than leaving them to bear disproportionately the risks and costs of climate change.

APPENDIX 1: INTERVIEWEES

- Juan Ramón Bravo Reyes, President of Del Campo Cooperative
- Nick Hoskyns, co-founder of Juan Francisco Paz Silva Cooperative
- Beinarola Martínez, member of Juan Francisco Paz Silva Cooperative
- Hammad Naqi Khan, Global Cotton Leader, Market Transformation Initiative, WWF International
- Teodoro Rocha Calderón, member of Juan Francisco Paz Silva Cooperative
- Luis Fernando Samper, Chief Communications and Marketing Officer, Federación Nacional de Cafeteros de Colombia (FNC)
- Bambi Semroc, Senior Director, Food, Agriculture & Freshwater, Conservation International
- Isabel Sevilla, member of Juan Francisco Paz Silva Cooperative
- Brigido Soza, President of Juan Francisco Paz Silva Cooperative
- Oliver Zenklusen, co-founder, Fair Trade Insurance Initiative
- Juan Ramón Bravo Reyes, President of Del Campo Cooperative

Marks & Spencer

- Carmel McQuaid, Climate Change Manager
- Mark Sumner, Sustainable Raw Materials Specialist
- Paul Willgoss, Head of Food Technology

Starbucks

- Colman Cuff, Managing Director, Starbucks Coffee Trading Company
- Ben Packard, Vice President, Global Responsibility
- Carlos Rodríguez, Director of Agronomy, Starbucks Farmer Support Centre in Latin America
- Chris von Zastrow, Director, Coffee Sustainability

The Body Shop

- Christina Archer, Senior Buyer, Latin America
- Mark Davis, Community Fair Trade Director
- Simon Henzell-Thomas, International Head of Sustainability
- Lee Mann, Senior Buyer, Community Trade
- Mary Teakle, Ethical Compliance Officer

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