

6. Describe the current and planned reactive technology strategies used in the Maldives to counter the impact of climate change.

## Civil society and corporate strategies

Society is sometimes categorized into **three sectors**, the first sector being **government**, the second sector being **business** (the corporate sector), with the third sector being **civil society**. Civil society therefore consists of non-government organisations (NGOs) and institutions that express the will of the people. **Civil society organisations** include academic societies, activist groups, charities, clubs, community organisations, consumer advocacy groups, co-operatives, foundations, political parties, professional associations, religious organisations, social enterprises, support groups, trade unions and voluntary organisations.

Combatting the impacts of climate change can be expensive and difficult, especially when it is done at a national or large regional scale. This explains why much of the initiative comes from the first tier of society, the government sector. However, the second (corporate) sector and the third (civil society) sector also have significant roles to play.

### Corporate strategies

Although climate change is having a growing impact on the corporate sector, a 2015 survey of the largest 100 corporations in the world by McKinsey & Company, an international management consulting firm, found that only 28% had done **assessments of climate change** on their operations, and an even smaller proportion (18%) were using climate-specific tools or models to **assess risks**.

McKinsey identified **six areas of risk** for the corporations that are posed by climate change:

- **Physical risks** result from damage to company infrastructure caused by climate change-related hazards such as hurricanes, storm surges, floods, wildfires. Examples of physical risks affecting corporations occurred in 2012 when Cargill (a multinational food and agricultural company) posted low earnings as a result of a prolonged drought in the US, and Western Digital (a major supplier of hard disk drives), whose revenues

declined after major flooding in Thailand in 2011 affected its production.

- **Price risks** arise from large changes to the cost of raw materials, which can result from fluctuations in the supply of energy, water and input commodities. The prices of many resources are becoming more volatile as climate change affects production, transport and insurance. Examples of corporations taking action to protect themselves from price uncertainty include IKEA (a Swedish international furniture and home accessories retailer), which is using renewable energy where possible to become self-sufficient in power, and Volkswagen (a German multinational car manufacturer), which aims to produce all the energy needed for their factories on-site, taking their factories off the wider electricity grid.
- **Product risks** occur when a company's core products become unpopular, and perhaps impossible to sell. Examples of this happening include air conditioning factories that lose market share to alternative cooling technologies, and ski resorts that lose business because they can no longer rely of sufficient snow cover. These risks can provide new opportunities for agile companies that can adapt, such as when hydrocarbon-based energy companies diversify into solar and wind energy, or when traditional supermarkets promote new products that are rising in popularity, such as organically grown macrobiotic foods.



**6.63** Shrinking glaciers and declining snow cover pose product risks for corporations that rely on winter tourism. This view shows the July 1st Glacier in the Qilian Shan Range near Jingtleshan in Gansu Prince, China, which has retreated 50 metres since the mid-1950s.

- **Rating risks** refer to the higher cost of capital (borrowing money) because of additional costs arising due to climate change, such as carbon pricing, technologies becoming obsolete or unacceptable, or disruptions to supply chains.
- **Regulation risks** arise when governments impose new requirements on companies because of climate change. New regulations may require companies to pay more money to comply with tighter pollution controls. Alternatively, new regulations may limit certain activities or production processes, they may provide subsidies for competitors or withdraw subsidies that had previously been received. This risk is amplified for companies when there is a change of government in a country, and policies become more volatile (for better or for worse) when new administrations gain power.
- **Reputation risk** occurs when the public perceives a corporation's activities as harmful for the environment, as this can result in a loss of sales or business, and in extreme cases, in consumer boycotts or community protests.

The first three of these risks are known as **value-chain risks**, meaning they relate to the corporation itself, and its own operations. The other three risks are known as **external stakeholder risks**, meaning they relate to the corporations relationship with the wider community. The risks faced by corporations in different sectors of industry due to climate change vary widely, as shown in figure 6.64. Within the framework of figure 6.64, the risks for individual companies will differ according to the company's location, management and markets.

Corporations **respond** to these risks and threats in different ways:

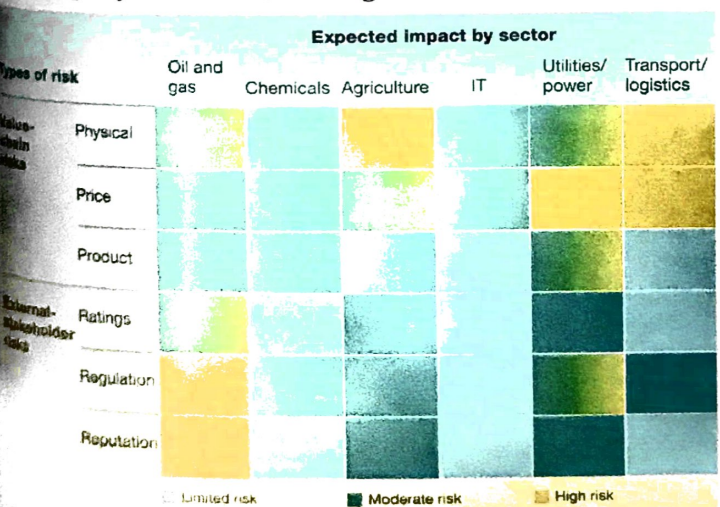
- Some companies continue to operate in **denial** of climate change, or function in the hope or belief that climate change will not affect them. These companies have either not conducted climate change risk assessments, or they have made a conscious decision to ignore them. Alternatively, they accept and pay for the consequences of climate change when affected, as we saw with Cargill and Western Digital.
- Some companies **adapt their production processes** to make them more energy efficient, updating technology to make them less reliant on hydrocarbon fuels, as we saw with IKEA and Volkswagen.
- Some companies **diversify or shift their core product range** in anticipation of the impact of climate change. Examples of corporations that have followed this strategy include General Motors and Toyota (both multinational automotive companies), which pioneered the retail sale of hybrid cars, and BP (a British multinational oil and gas company), which diversified into solar energy and biofuels in the period 2002 to 2005 (but later withdrew from these industries in 2011 and 2012).
- Some companies **adopt marketing strategies** to portray themselves as concerned about climate change and socially responsible in order to boost their reputation and increase sales to customers who care about such issues. Examples of companies that do this include supermarkets that

Sustaining growth in an environmentally-conscious manner. It's a question of responsibility.

We do a lot – to emit as little CO<sub>2</sub> as possible.

The advertisement includes a large image of a Lufthansa Airbus A380 in flight. Below it, there is a portrait of a pilot and several data visualization elements: a pie chart, a line graph, and text blocks. One text block is titled 'Reducing Emissions' and another is 'A 10-billion-euro investment in efficiency'. A bottom section is titled 'Maintaining a balance'.

6.65 An advertisement from Lufthansa, a large German Airline, promoting its commitment to tackling climate change.



6.64 The impact of climate change risks on different industries. Source: McKinsey & Company.

promote sustainably grown, organic produce, and Lufthansa (Germany's largest airline) that has undertaken advertising campaigns that emphasise its commitment to reducing carbon dioxide emissions and its sponsorship of climate research.

- Some companies **modify their infrastructure** to combat the threats imposed by climate change. Examples of companies that have built physical infrastructure to address the risks of climate change include the resorts and hotels in the Maldives that have built their own seawalls and coastal reinforcements.



66 This seawall was built by the company operating the resort that covers this small atoll in the Maldives. It is an example of a corporate response to climate change by building defensive infrastructure to protect their investment.

## Civil society strategies

The roles played by **civil societies** in addressing the risks of climate change are quite different from corporations. Unlike governments and corporations, which often function in a 'top-down' manner that impose decisions on the general population, civil society organisations usually try to reflect the **desires and aspirations** of their supporters in a 'bottom-up' manner. The main strategies followed by civil society organisations

Civil society groups such as academic societies and professional organisations undertake **research** into climate change that can investigate new frontiers and check the accuracy of other research. Research by civil society groups is most effective when the **organisation is supported by unconditional funding and its research is conducted independently of any political or corporate agenda**. Research undertaken

by civil society organisations, and individuals working with them, that is published in **peer-reviewed academic journals** such as *Nature Climate Change*, *Science*, the *American Journal of Climate Change* and the *International Journal of Climatology* is highly regarded in the academic community, and is usually regarded as authoritative information. Research is also communicated through **conferences** that have the potential to gather experts and interested individuals from many parts of the world to share, discuss and debate ideas and viewpoints. The **networking** that occurs at such conferences can build professional relationships that make future research better informed and more widely available.

Organisations such as 350.org and Avaaz play an important role in **awareness raising** — simplifying climate change research, and then communicating it to the general public to inform them about the issues and risks. Awareness raising is often linked to **advocacy** through **petitions** (online and paper) and **lobbying**. Lobbying is an explicit attempt to influence or persuade politicians, journalists, development organisations such as the World Bank, and other people of influence towards a particular viewpoint. If awareness raising and advocacy continues for an extended period of time, it can be regarded as a **campaign**. Civil society groups that engage in campaigns relating to climate change include Greenpeace, WWF, Get Up!, 350.org, Connect4Climate and the Union of Concerned



6.67 A climate change protest in downtown San Francisco, USA, where activists are advocating the cancellation of the Keystone XL oil pipeline from Alberta in western Canada to refineries in Illinois (USA) and the Gulf of Mexico coastline in Texas (USA).

Scientists. Awareness, advocacy and campaigning are increasingly conducted online through websites, Twitter and Facebook postings. Civil society bodies that organise online petitions or engage in lobbying include change.org and Avaaz.

**Protests and demonstrations** are a more traditional way to raise awareness and campaign for action against climate change. Protests may be related to a single climate change-related issue, such as the controversial proposed Keystone XL oil pipeline, or they may be more general in nature, such as street protests organised by groups such as the Campaign Against Climate Change.

**Corporate boycotts** are a strategy that civil society groups use to place pressure on companies that are acting unethically, or in ways that are fuelling climate change, or companies that support politicians or political parties that are failing to take effective action to counter climate change.

Some commentators regard the actions of organisations such as Greenpeace hanging protest banners on the chimneys of coal-fired power stations as direct action. The term '**direct action**' is more accurately used to describe the work done by NGOs and other civil society organisations to mitigate the threats of climate change for people who do not have the financial, educational or organisational means to do so themselves. Examples of direct action are the water wells provided by Islamic aid organisations to residents in rural villages in the Sahel region of Africa to counter the effects of prolonged droughts, and solar power panels donated by Christian missionaries to residents in the Highlands of West Papua to reduce their use of greenhouse-gas producing fuelwood.



6.68 This water well was donated to residents of a small village north of Bamako in central Mali by a Saudi aid organisation.