

# Action to combat climate change

Climate change is disruptive and accelerating. It is a risk we can, if we act swiftly and collectively, try to mitigate. There are also opportunities for companies that recognise the challenge and develop credible plans to adapt to changing circumstances.

## Climate risk is disruptive and accelerating

The past year has seen climate change move dramatically up the global agenda. In August 2021, the Intergovernmental Panel on Climate Change (IPCC) published its Sixth Assessment Report, which paints a stark picture of the impact of climate change on our environment, and makes it clear that all parties need to act immediately if we are to avoid catastrophic implications for the planet. November 2021 saw most of the world's leadership gathering for COP26, the UN's climate change conference, which confirmed the Paris Agreement, a treaty made at COP21 in 2015, that governments must make every reasonable effort to ensure that the global temperature rises by no more than 1.5°C above pre-industrial levels. In January 2022, the World Economic Forum's Global Risks Report stated: 'Climate change continues to be perceived as the gravest threat to humanity. Global Risks Perception Survey respondents rate "climate action failure" as the risk with the potential to inflict the most damage at a global scale over the next decade'<sup>1</sup>.

## Developments in corporate regulation

It is no surprise that climate change is of increasing concern to legislators, investors and analysts – as well as to employees and other corporate stakeholders. Global companies, with considerable economic and wider influence, are important actors in the world's efforts to combat climate change. This concern is making itself felt through developments in regulation, for example, with the requirement in the United Kingdom this year for premium listed companies to report against the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). In the United States, the Securities and Exchange Commission (SEC) proposed rule changes that would require companies to include climate-related disclosures in their periodic reports. 2021 also saw the establishment by the IFRS Foundation of the International Sustainability Standards Board (ISSB), whose aim is to 'deliver a comprehensive global baseline of sustainability-related disclosure standards that provide investors and other capital market participants with information about companies' sustainability-related risks and opportunities to help them make informed decisions'.

## Committed to action

We welcome many of these developments, and particularly certain recommendations of the TCFD and the SEC, as important steps in increasing stakeholders' and companies' focus on climate change, and we are committed to playing our part and championing policies that support the Paris Agreement. We believe harmonisation of reporting frameworks will bring benefits to investors, as well as simplifying reporting requirements for companies. We support the establishment of a coordinated approach by regulators across jurisdictions, which reflects the reality that climate change is a cross-border issue, and we have actively engaged in consultations by organisations like the SEC to advocate such harmonisation.

## 'Society 2030: Spirit of Progress'

Since 2020, we have worked to incorporate the TCFD framework into our reporting, and have found it helpful in accelerating our efforts to decarbonise our value chain, mitigate and adapt to climate change risks and identify opportunities for transitioning quickly to a low-carbon future. We began our carbon reduction efforts in 2008, while also acting as a champion for water stewardship around the world to combat the related issue of water stress.

Today, our focus on climate change is encapsulated in one of our six strategic priorities, which help us pursue our ambition to be one of the best performing, most trusted and respected consumer products companies in the world. The priority, 'pioneer grain-to-glass sustainability', also encompasses other important topical issues relating to sustainability, such as water stress, biodiversity loss, poverty and inequality. Many of these issues are being exacerbated by climate change, and are threatening both the environment and the prosperity of communities everywhere, particularly those in low-income countries. In response to these challenges, in 2020 we launched a bold, 10-year action plan, 'Society 2030: Spirit of Progress', which sets stretching targets, including our commitment to achieving net zero carbon emissions from our direct operations (Scopes 1 and 2) by 2030, and across our full value chain (Scope 3) by 2050 or earlier. And we are proud to be a signatory to the Business Ambition for 1.5°C, which calls on companies to set ambitious science-based emissions reduction targets.

## Understanding the impact of climate change on our business

Climate change is an important disruptive force, with potential to drive substantive changes in our operations and supply chain in the short term (one to five years), medium term (five to 10 years) and long term (10 to 30 years). Many of the potential effects of climate change can be characterised as risks, either physical risks to our environment, or risks associated with the transition to a low-carbon economy in pursuit of the Paris Agreement targets. Climate risk is therefore cross-cutting, with the potential to affect companies, financial institutions, households, countries and the financial system at large. There may, however, be opportunities as well as risks for those companies that enable the transition to a low-carbon economy.

Because there are so many different factors affecting how climate change will play out in the world, it is difficult to quantify the precise timing and impact of climate risks on our business, or indeed the opportunities that may present themselves. Nonetheless, some modelling is possible, and so, with the support of expert partners, we are building our capability to assess both, and model their impact under various scenarios, as discussed in this report. From this modelling work, we estimate that, from what we know now, climate change is not expected to have a material impact on the results of our operations, or on our financial condition by 2030 (see page 151).

1. Global Risks Report, World Economic Forum, January 2022

# Governance

*We have adopted the TCFD's recommendations for reporting on governance, summarised on page 56.*

Given its importance, and the potential severity of the risk it poses, we oversee climate change at the highest level of the company, and have governance processes in place intended to ensure that we consider and factor climate risk into our business operations. We include climate risk as a principal risk in our risk register (page 43), now as well as in the short, medium and long term, and we assess and consider its impact carefully, including a formal review by the Executive Committee and the Board at least twice a year, and discussion at our Annual Strategy Conference.

## Board and management oversight of climate change

We believe governance of climate change risks and opportunities needs to be embedded at all levels of our organisation. This year, while our governance structure, described below, has not changed, we increased our investment in climate risk management and scenario analysis.



We believe that climate change is of such importance to us and our stakeholders that the Diageo Board and Executive Committee should be responsible for managing climate-related risks and opportunities, and do not delegate responsibility to a sub-committee. Executive sponsorship and responsibility is shared jointly between the President of Global Supply Chain and Procurement (Ewan Andrew) and the Corporate Relations Director (Dan Mobley). At an operational level, they are supported by our cross-functional Climate Risk Steering Group, with sub-groups dedicated to different areas such as supply, strategy, risk and so on.

The Steering Group meets up to twice a month to oversee how we are managing climate risks and identifying opportunities. Within this, a sub-group from Supply and Procurement oversees physical risks, with other working groups responsible for addressing transition risks and opportunities, for example market and reputation, policy and legal, and technology.

Our Executive Committee reviews updates on climate risks and opportunities from the Steering Group twice a year, and considers their implications for strategy and decision-making. The Executive Sponsors formally update the Board quarterly, including, where relevant, reviewing the outputs of our climate change risk assessments and scenario analyses, and overseeing any related decision-making. Any potential financial implications of climate risk and potential impacts on Diageo's consolidated financial statements, including performance and progress against non-financial metrics, are also shared with the Audit Committee.

Because of the critical importance of climate change, we have developed a range of communications and training materials on sustainability issues for our employees on our digital learning platform. These include specialist training for leaders, and climate-risk education programmes open to all.

We continue to engage externally, to monitor and promote good practice and keep pace with stakeholders' expectations of companies with regard to climate change. This includes being an active member of the TCFD working group through the UN Global Compact.

## Climate change as part of remuneration

Given the importance of managing climate change, the performance element of the long-term incentive plan (LTIP) for our senior leaders encourages and rewards performance against an ESG measure (introduced in 2020, for fiscal 21 to 23). It constitutes 20% of the performance share award, which is granted to the Executive Committee as well as other senior leaders across the business. Of this 20%, 10% (i.e. half of the share award) relates to targets for carbon emissions and water efficiency, which directly support mitigation of and adaptation to climate change risk (see Directors' remuneration report pages 106-131).

# Risk management

*We have adopted the TCFD's recommendations for reporting on risk management, and include identification of risks in this section as they are easier to understand in this context.*

Climate risk may be divided into two broad categories: physical risk and transition risk. Physical risks to our environment manifest themselves in two ways: chronic changes (sea level rise, temperature increases, changes in precipitation patterns), and acute events (such as floods, storms, heatwaves or other extreme weather events). While acute events can cause short-term damage, chronic changes are slower to materialise but can cause long-term, irreversible changes. Transition risks are those associated with the economic transformation needed to transition to a low-carbon economy: for example, policy and legal changes, such as introducing carbon taxes; technology changes such as developments to switch to renewable energy; or market changes such as consumer pressure for more sustainable solutions. As we have already seen in the last few years, the time lag between emissions increasing and the resulting change in the climate means that some physical risks are already becoming a reality, and will continue to increase even while efforts to reduce emissions intensify.

Although they are interconnected, physical and transition risks are normally assessed separately, since they are amplified by different scenarios. In a world where carbon emissions continue to rise, physical risks become more likely, whereas in a world where we meet the goals of the Paris Agreement, transition risks – and opportunities – increase.

## How we manage climate risk

As a global business with a broad portfolio of brands based on agricultural ingredients, and production facilities in multiple geographies and locations, we are exposed to a wide range of climate risks. However, we believe we have a considerable measure of resilience, built up through decades of experience managing the effects on our raw material supply of normal variations in climatic conditions and agricultural yields. We do this through careful planning in our supply and procurement function, and through supporting research and development of high-yield, drought-resistant crops. Many of the regions in which we operate are water stressed, and we have a strong track record of adaptation measures to support the sustainability of our operations in these areas. Climate risk has been integrated into our enterprise risk management processes for some time, particularly in our market, supply chain, procurement, and site and strategic risk management processes; and has been built into our strategic and business continuity plans.

Nevertheless, climate risk is accelerating fast, so we must not be complacent – which is why it is included as a principal risk on our risk register. We take very seriously the risks climate change could pose – to the health and safety of our people, to our reputation, and to our ability to meet our ‘Society 2030: Spirit of Progress’ goals. We are therefore prepared to take some risk ourselves in innovating to meet consumer needs for more sustainable products and combat climate change that way. And so, with the help of external partners, we have developed a much broader and deeper analysis of climate-related risks, which will continue to evolve as scientific understanding develops, and as we build our internal knowledge and expertise.

## Identifying our physical risks

Physical risks manifest themselves differently in different parts of the world, and so, for a global business like ours, with operations in many parts of the world, assessing them is a considerable task, requiring assessment not only of our own sites, but those of our many suppliers as well. Trying to do it all at once is challenging, and there is an advantage in doing the analysis over a couple of years because it means we can incorporate what we learn from earlier assessments into later ones. Nonetheless, we appreciate the urgency of understanding this risk, and are pleased with the coverage we’ve achieved since we began the process last year. We plan to complete the work with our remaining markets over the next two years.

We began our physical risk assessment in 2021 by focussing on those markets with the highest sales value – North America and Scotland – and followed that up this year with those geographies where physical climate risk is likely to be highest – Africa, India, Mexico and Turkey. Also in 2021 we carried out a global assessment of water stress, an activity we conduct routinely every two to three years.

## Scope of assessment

We conducted assessments for our own sites and those of key suppliers and logistics, over two timeframes (present to 2030 and to 2050), and for two warming scenarios: medium warming, 2-3°C (IPCC scenario RCP 4.5) and severe warming, 4-5°C (IPCC scenario RCP 8.5). The analysis we have done so far (see table on page 50) represents approximately three quarters of our volume produced globally.

- **Diageo sites:** for our own and key third-party operator (TPO) sites, we analysed at a high level the risks to which they are likely to be exposed; and for those that are either of greatest strategic importance or at greatest risk, we carried out more detailed risk assessments. In doing so, we developed a site-specific climate risk register, which will help us plan how to mitigate the risks. At each location, we looked at a combination of three things: the different activities carried out (e.g. malting, distilling, packaging and so on); the part of the process that might be affected (e.g. infrastructure, water supply, energy sources); and the physical risks that might occur (a total of 19). This level of detail is necessary because some activities are more sensitive to physical risks (such as higher temperatures) than other activities at the same site. In total, we analysed 316 site/activity combinations, which gave us an overall risk rating for each site.
- **Supply chain and logistics:** in each location we analysed the factories and warehouses of our key suppliers (e.g. those of our most critical or specialised ingredients and components); key agricultural commodities; and our most critical upstream and downstream distribution routes (road and rail, and sea ports), to determine those that might be exposed to physical risk in the future. We carried out the same analysis of physical risks for our supplier sites as we did for our own sites.

## Focus on water stress

Because we rely so heavily on water as a raw material and in our processes, we have been regularly assessing our own production sites for water stress since 2008. The most recent assessment was in 2021, and we updated it in 2022 to reflect changes in our operations due to disposals. The assessment – and our classification of a site as ‘water stressed’ – is based on external (WRI Aqueduct tool) and internal site surveys covering physical, regulatory, and social and reputational considerations.

### Our sites located in water-stressed areas in 2022



## Key climate risks to agricultural ingredients by region

### United States

Maize	T W
Barley	T P
Rye	T W
Sugar beet	T W P
American white oak	T W

### Europe

Barley	W D P
Wheat	W P
Rye	T W
Sugar beet	T

### Turkey

Anise	T D P F
Grapes	T W F Fi
Sugar beet	T W F Fi
Wheat	T W D

### Central and South America

Sugar cane	T W H F P S
Agave	T

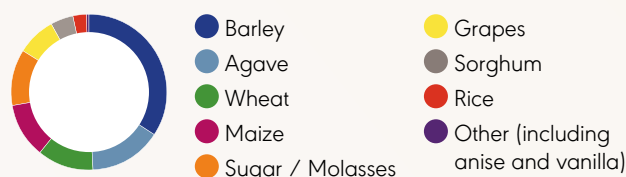
### Africa

Barley	T D P
Maize	T D F
Sorghum	T P
Sugar beet	T W
Sugar cane	T W P
Cassava	T D P
Vanilla	T S

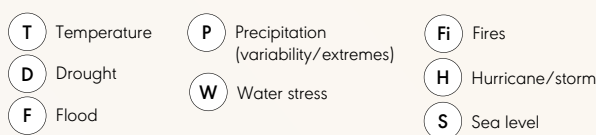
### India

Barley	T W D P
Grapes	T W D P
Rice	T P F
Molasses (sugar cane)	T W D P

### Priority raw materials by volume



### Climate risks likely to affect agricultural commodities



## Operational scope of our physical risk assessments

Region	Diageo and key TPO assets (detailed assessments)	Agricultural commodities	Supplier assets	Ports <sup>2</sup>
North America	12 (4)	8	86	6
Scotland	47 (5)	16	103	15
Africa	48 (5)	6	256	14
India	46 (7)	4	59	1
Mexico	16 (4)	1	68	2
Turkey	9 (4)	4	64	5
<b>Total</b>	<b>178 (29)</b>	<b>n/a<sup>1</sup></b>	<b>636</b>	<b>43</b>

- We analysed some commodities in more than one location
- Road and rail assessments were done at a country level and therefore not individually quantified

## Our physical risks – results

The assessments highlighted three key points:

- Risks are high and increasing:** the level of physical climate risk is already relatively high and is projected to increase in all regions, most severely in India, which accounts for the top 10 of our most 'at risk' activities. Risks ranged from medium to high in our top 10 most at-risk sites in each region.
- All agricultural ingredients are at risk:** all those we assessed are subject to some degree of climate risk, with the risk set to increase for most under the scenarios we analysed.
- Water scarcity and high temperatures:** water stress, drought and high temperatures are our most significant risks.

Overall, out of the 316 site/activity combinations we analysed, two are currently classified as high risk, and 29 as medium-high. Under the worst-case scenario, i.e. a temperature rise of 4-5°C, this rises to 11 high-risk site/activity combinations by 2050, and 42 medium-high.

### Trajectory of physical risk from 316 site/activity combinations<sup>3</sup>

Scenario	Combined number of sites/activities at medium-high risk, including % of total site/activities	Combined number of sites/activities at high risk, including % of total site/activities
Present day	29 (9%)	2 (1%)
2030, 2-3°C (RCP 4.5)	28 (9%)	9 (3%)
2050, 2-3°C (RCP 4.5)	34 (11%)	10 (3%)
2030, 4-5°C (RCP 8.5)	32 (10%)	9 (3%)
2050, 4-5°C (RCP 8.5)	42 (13%)	11 (3%)

### 3. Scoring methodology

- Relative risk score:** the physical risk assessment results are reported as relative risk scores (in comparison to the full sample of Diageo sites assessed) to help us prioritise the sites for which we should create mitigation plans. High-risk sites are above the 99th percentile; medium-high are in the 90th to 99th percentile; and medium are in the 55th to 90th percentile.
- Trajectory score:** the risk assessment also produces trajectory scores for each of the hazards assessed, indicating how they are expected to worsen or improve in the scenario and time frame in question.



## Physical risks in our supply chain

We focussed on three main areas in assessing risks to our supply chain, with the results as follows:

- **Suppliers' assets:** given the number and geographical spread of the sites we assessed, we found a greater range of risks than for our own sites. Nonetheless, as with our own sites, the most common risks, and those forecast to get worse, were water stress and higher temperatures. Other relevant risks, which may affect our packaging components, were humidity and wildfires. The information about our suppliers' sites was also useful to our suppliers themselves, and means we can work together to develop mitigation plans where it makes sense to do so.
- **Agricultural commodities:** through the analysis, we produced a risk register for each commodity (chosen for their strategic importance), detailing possible risks, their severity, how we should respond (e.g. whether to mitigate or transfer the risks), and control measures to put in place. The map (on page 50) summarises the main climate hazards to which our key commodities are exposed. Some (barley, wheat, maize, for example), are easier to procure in multiple locations than others (agave, for example); so the insights we've gained will help us find ways to adapt what we do for the most sensitive crops, and we will create contingency sourcing plans for the rest.
- **Distribution routes:** the analysis showed that in general, the risks to ports came from water stress and changing temperatures, while the risks to road networks were broader, including both chronic risks, such as temperature increases and sea level rises, and acute risks, such as storms, floods or wildfires. Both acute and chronic risks were assessed to be higher in the warmer geographies (India, Africa, Mexico and Turkey). The insights from this review will help us plan effectively for any contingencies in our distribution routes that may become necessary.

## Physical risk results by region – Diageo and key third-party supply sites

Overall, the main physical hazards we are exposed to are high temperatures and water stress. High temperatures may cause risks to employees' health and productivity, as well as affecting our processes (such as fermentation, which is sensitive to temperature variations) and cost. For example, higher water temperatures mean higher costs of cooling to the temperature we need to use water in our sites. Here we summarise the key findings by region, which may affect both our own and our suppliers' sites, and our agricultural commodities and packaging materials sourced in those regions.

Region	Risks increasing	Risks declining
North America	<ul style="list-style-type: none"> <li>Wildfires</li> <li>Storm winds</li> <li>High temperatures</li> <li>Water temperature</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>
Mexico	<ul style="list-style-type: none"> <li>Water temperature</li> <li>Water stress</li> <li>Wildfires</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>
Scotland	<ul style="list-style-type: none"> <li>Water temperature</li> <li>Wildfires</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>
Africa	<ul style="list-style-type: none"> <li>Water temperature</li> <li>High temperatures</li> <li>Rising sea level/ coastal flooding</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>
Turkey	<ul style="list-style-type: none"> <li>Water temperature</li> <li>High temperatures</li> <li>Rising sea level/ coastal flooding</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>
India	<ul style="list-style-type: none"> <li>Water stress</li> <li>Extreme heat</li> </ul>	<ul style="list-style-type: none"> <li>Cold temperatures</li> </ul>

## Summary of our key climate risks and opportunities

### Risks

Risk type	Water scarcity	Input costs	Consumer behaviour
	Increasing water stress and water scarcity negatively affects our ability to continue to produce beverages in areas of high water stress	Policy changes (carbon taxation, shift to renewables) cause increases in input costs, particularly glass	Consumers prioritise purchasing more sustainable products, rejecting products perceived to have a negative environmental impact
Category	Physical – chronic	Transition – policy/legal	Transition – market
Time frame	Short, medium, long	Short, medium	Short, medium, long
Trajectory	Increasing	Increasing	Increasing
Impact (if not mitigated)	Moderate <sup>1</sup>	Moderate <sup>1</sup>	Moderate <sup>1</sup>
Response examples	<ul style="list-style-type: none"> <li>Improvements in water-use efficiency</li> <li>Water replenishment plans in 100% of water-stressed areas</li> <li>Collective action programme to reduce water use in 'priority water basins'</li> </ul>	<ul style="list-style-type: none"> <li>Supply chain decarbonisation</li> <li>Engaging suppliers in alternative technologies for low-carbon operations</li> <li>Exploring technologies for reducing packaging weight</li> </ul>	<ul style="list-style-type: none"> <li>Packaging weight reduction</li> <li>Increased recycled content in packaging</li> <li>Developing circular product offerings (refill, reuse)</li> </ul>

### Opportunities

Opportunity type	Supply chain decarbonisation	Innovation in sustainable product offerings
	Reducing our Scope 1, 2, and 3 emissions reduces our exposure to carbon taxes and related costs, and improves our reputation with customers and consumers	Developing more sustainable products (lighter weight, higher recycled content, more refillable and reusable containers) meets consumers' increasing demands
Category	Transition – policy/legal	Transition – market
Time frame	Short, medium	Short, medium
Trajectory	Increasing	Increasing
Impact (if not mitigated)	Moderate <sup>1</sup>	Moderate <sup>1</sup>
Response examples	<ul style="list-style-type: none"> <li>'Society 2030: Spirit of Progress' goals for Scope 1, 2 and 3 emissions</li> <li>Decarbonisation programme and capital investment</li> <li>Renewable energy and regenerative agriculture</li> </ul>	<ul style="list-style-type: none"> <li>'Society 2030: Spirit of Progress' goals for sustainable packaging</li> <li>Innovation to deliver more sustainable products</li> </ul>

1. 'Low' impact is defined as having a negligible impact on customer service, or an absorbable disruptive impact on one or more brands. 'Moderate' impact is defined as disruption to production/supply chain creating an inability to service a small portion of our customer base, the impact of which is manageable; or a significant short-term impact on one or more of our core or local priority brands that is absorbable by the business. 'High' impact is defined as an inability to service a significant portion of our customer base, or major reputational damage.

## Identifying our transition risks and opportunities

In 2021, alongside our physical risk analysis for North America and Scotland, we also analysed, as defined by TCFD, the risks<sup>1</sup> and opportunities<sup>2</sup> in those regions of transitioning to a low-carbon economy. In doing so, we found that there were some opportunities as well as risks, and we concluded that most of these risks/opportunities were generally applicable to other regions as well. This year, we reviewed that analysis based on the latest insights from our working groups, and concluded that overall, the risks/opportunities identified in the 2021 assessment were still appropriate.

### Our transition risks and opportunities – results

The purpose of carrying out a transition risk assessment across our operations and value chain is to uncover our risks, strengthen our resilience, capitalise on opportunities and, ultimately, in the face of the changing market dynamics as we transition to a low-carbon economy, help us both protect and grow our business. The assessment examined our agricultural inputs, our production and packaging, and our distribution and sales channels. The greatest risks and opportunities were found to be in packaging and sales, respectively. In packaging, shifting to low-carbon production may well mean higher costs; we may also be subject to higher taxes, and need to meet requirements for more light-weighting, redesign, recycling and recycled content. On the positive side, however, there are potential sales opportunities for those businesses that offer consumers more sustainable products, making greater use of recycling, reuse and returnable products.

We identified 150 risks and opportunities overall, and assessed 105 that were relevant to our business. From this list we identified 24 that we need to manage, and, of those 24, identified those with the most potential impact on our business. These were:

- **Policy and legal risks** included carbon taxation, and legal and social considerations relating to land use, agricultural material use and water use.
- **Market and reputation risks and opportunities** related to GDP reduction, consumer rejection of particular brands, categories, materials or supply chains due to their perceived environmental impact, and consumers switching to more sustainable products.
- **Technology risks and opportunities** related to the decarbonisation of our supply chain and those of our suppliers.

## Strategy

*We have adopted the TCFD's recommendations for reporting on strategy, although we have included the identification of risks and opportunities in the risk management section since they are easier to understand in that context.*

We have a long history of creating world-class drinks experiences for consumers across the world, from a wide range of natural ingredients. Over the years, we have become more expert at managing scarce resources, particularly water, and adapting production of our drinks to use alternative ingredients when necessary. This is reflected in one of our six strategic priorities, 'pioneering grain-to-glass sustainability'. The insights we've gained from our recent work to identify the risks and opportunities from climate change is informing our strategy through the next stage of the process – scenario analysis based on those risks and opportunities. This analysis, carried out with the help of external experts, aims to estimate the financial impact of climate change on our business. Because of the limitations of climate risk scenario analysis, any estimate will have limitations; in fact, perhaps the greatest benefit of scenario analysis is that it helps us to understand where risks and opportunities are most likely to materialise, to understand trends, and to integrate them into our strategy.

## The limitations of climate change scenario analysis

Any scenario analysis is limited by the variables and assumptions included in the model, but it is particularly difficult with climate change. This is because of the considerable uncertainties in how the physical risks will play out under different temperature scenarios in different parts of the world, and the considerable uncertainties in how far and how quickly the world will be able to introduce the changes needed to limit the rise in temperature. No single scenario is likely to materialise in the coming decades by itself, and we are all likely to be exposed to both physical and transition risks as the world continues to warm as a consequence of emissions already in the atmosphere. The pathway to reducing emissions is also highly variable, as governments and industry pursue a variety of means, such as introducing regulation and developing new technologies. But, whatever the pathway, we are committed to playing our part in fighting climate change, through delivering our 'Society 2030: Spirit of Progress' goals.

### Summary of scenario analysis results

We analysed three temperature increase scenarios. The first envisages a successful transition to a low-carbon economy in time to keep the temperature rise to 1-2°C by 2100, and assumes a variety of decarbonisation challenges and opportunities relating to ingredients, energy, packaging and transport costs, and changes in demand for our products (to 2030 and 2050). The other two look at the likely effects of varying degrees of continued warming, and the impacts that will arise from the physical risks this presents (to 2030 and 2050). We looked at a moderate warming scenario (temperature rise of 2-3°C), and a severe warming scenario (temperature rise of 4-5°C). For both these warming scenarios, we assessed our assets, supply chain and critical ingredients for financial vulnerability to physical risk.

As discussed in detail below, the impacts of climate change are broad, and in many cases difficult to predict with certainty; however, some consistent themes have emerged. First, it is highly likely that we will be exposed to both transition and physical risks, and therefore should be prepared for both; and second, that the main impacts on our business, under any of these scenarios, are likely to come from water stress, the cost of decarbonisation and consumer demand for more sustainable offerings, although none of these are expected to have a material impact on the results of our operations, or on our financial condition by 2030. Our priorities should therefore continue to be to decarbonise our supply chain, adapt to water stress in water-stressed areas, and develop more sustainable products, to continue to reduce our impact on the environment. These will help us mitigate the risks and prevent them from becoming material to our financial performance.

The potential impacts of climate change are evolving all the time, and we need to stay on top of them in our planning. In the coming year, we aim to cover those countries we have not yet assessed; and we will continue to refresh our analysis of water stress and update our scenario analyses regularly. We will also continue to research consumers' attitudes to sustainability, and develop more environmentally friendly products – e.g. increasing the use of recycled content in packaging, and reducing the amount of packaging material we use.

As one example of a step change towards our 'Society 2030: Spirit of Progress' goals, in 2020 we launched Diageo Sustainable Solutions (DSS). This global programme involves partnering with early- to mid-stage technology businesses to find and apply cutting-edge technology in our supply chain – covering agriculture, energy, packaging, waste and water.

1. The TCFD's definition of transition risks: policy and legal, market, reputation, technology

2. The TCFD's definition of transition opportunities: resource efficiency, energy source, products/services, markets, resilience

In looking for bigger, bolder ideas and solutions that can transform sustainability in all areas of our products, DSS allows us to do far more than we could do on our own. At the launch of the programme, we published four challenges, and received more than 280 applications, of which we reviewed 30 pitches. We chose six partners for the first cohort, and are currently piloting their technologies. In December 2021, we published another four much more specific packaging challenges, around alternative formats and reusable technology, and received 73 applications. We shortlisted 27, and are currently finalising the choice of projects for pilots.

## Results of analysis of warming scenarios – effects of physical risk

As discussed on the previous page, we analysed the likely effects of the physical risks of two warming scenarios on the financial performance of our business, projected to 2030 and 2050. To calculate the financial impact, we assessed the value of the assets at risk, the likely loss of either asset or sales value in a year as a result of a risk materialising, and then calculated the total loss in value in each of 2030 and 2050. Importantly, the scenarios assumed that we will have taken no mitigating actions in the meantime. The risks are characterised as acute or chronic. Chronic risks include changes in temperature and precipitation that may cause increased water stress, water scarcity or decreased water quality, or may impact our ability to source agricultural materials. Acute risks include floods and storms, which may impact our sites, or the supply of raw materials and ingredients.

The results showed that overall, our sites are likely to be resilient to acute weather events, like floods and storms, although we are more exposed to the acute risk of drought, and to chronic changes like water scarcity. Indeed, water scarcity is the biggest climate-related risk to our financial performance, since we have many sites in water-stressed areas that may not be able to continue production at current levels should these temperature scenarios play out. Those sites most likely to be affected are in India, Mexico, Turkey and North America, with all of our production sites in Mexico likely to be exposed to extremely high water stress.

Under the medium warming scenario, the number of our production sites and thus our sales exposed to extremely high water stress is unlikely to change from the situation today, either by 2030 or by 2050. But, should the severe warming scenario occur, even though the number of sites affected won't change, those that are affected are likely to suffer even greater shortages of water, under both time frames. They will also have a greater impact on the health and wellbeing of employees at those sites. Flooding and storms are the next most likely physical risks to affect our financial performance, since they may damage our sites or disrupt our supply of agricultural commodities, and the price of most of the commodities we analysed is set to increase under these scenarios. The only physical risk likely to affect our operations or financial condition in any material way is drought, given our reliance on water to make our products.

Modelling the financial impact of drought is particularly difficult because there are many factors at play, not least the probability of drought occurring, the length of time operations would have to be suspended, the impact of any adaptation or contingency measures, and so on. Nonetheless, we have modelled what we can, using both the standard external models and our own analyses, and considering severe but plausible assumptions (e.g. concurrent downtime in all water-stressed sites due to drought). We concluded that, by 2030, drought is not expected to have a material impact on the results of our operations, or on our financial condition.

Beyond 2030 it is much harder to analyse, given the lengthy time frame; however, our models show that if we take no mitigating actions, by 2050 drought could have a material impact on the results of our operations, or on our financial condition.

This is why it is so important that we focus on water stress in our strategic planning.

## How we are mitigating physical risks

Our physical risk scenario analysis confirmed that, of all the physical risks of climate change, we are most exposed to water stress; and that we are most exposed in India and Mexico, as well as North America, Turkey and Africa. This serves to reinforce our commitments to using less water, and replenishing more water than we use, in areas of water stress. Water is a shared resource, so we cannot tackle water stress alone; this is why we launched the Diageo Collective Action Programme in 2020. Through this programme, we are working with partners in 'priority water basins' (areas suffering particular water stress, and which are strategically important) where our sites are located, namely 14 sites across 12 priority water basins in 10 countries. For more on our water replenishment and collective action work, see pages 30-31.

## Results of analysis of transition scenario – risks and opportunities

As discussed above, the successful transition to a low-carbon economy, which assumes we meet the Paris Agreement target of limiting global warming to 1-2°C, brings both risks and opportunities. To help us model the potential impacts on our financial performance, we worked with an external expert in this type of modelling.

### Methodology for analysing the transition scenario

We looked at two potential scenarios, and compared the likely difference in cash flows to 2030 and 2050:

- **Baseline scenario:** some drivers of the transition scenario, such as policy intentions and national targets, are already in place. This scenario therefore aims to analyse what the effects of these elements would be, insofar as they are backed up by detailed measures for their realisation, as well as other market trends and expectations that can be inferred from available data and analysis.
- **Transition scenario assuming we reach net zero emissions by 2050:** this sets out a narrow but achievable pathway for the global energy sector to achieve net zero emissions by 2050, alongside necessary changes in all other sectors of the economy to limit global warming to 1-2°C.

Both scenarios are based on a combination of internal and external models and data.

- **External models:** we used a variety of scenarios developed by the International Energy Agency (IEA), the IPCC and various other institutions.
- **Internal models:** for each of our product categories, we looked at production costs and margins; sales and consumption by region; and expected growth. It was important to look at each product category separately because they are exposed to different types of transition risk.

Together, these models gave us a range of plausible assumptions designed to capture a trajectory of changes in demand, costs, prices, regulation, technology, and capital investments in relevant markets and business segments, that could result in the world achieving net zero by 2050. We looked at how combinations of these changes might affect us both positively (increased demand for sustainable products) and negatively (higher costs), and estimated the combined effect on our cashflow to both 2030 and 2050.

Outlined in the table on page 54 are the materials that most affect our input costs, which may go up or down depending on the situation. We have modelled the costs based on our exposure to global versus local changes; so, for example, glass and aluminium are procured globally, while the cost of energy, for example, is always local.

## Input costs assessed in the scenario analysis by geography

Region	Global	UK	US	Canada	Mexico	Turkey	India	Africa
Glass	•							
Aluminium	•							
Land transport	•							
Ocean transport	•							
Energy		•	•	•	•	•	•	•
Electricity		•	•	•	•	•	•	•
Raw materials								
Barley	•							
Wheat	•							
Maize	•							
Rice	•							
Sorghum								•
Sugar	•							
Vanilla								•
Anise						•		
Agave					•			
Grapes						•		

For each scenario, we then estimated the prices of major input costs, where relevant by geography, and modelled the impact they would have on our operating profit.

## Transition risk and opportunity scenario analysis – findings

Transitioning to a low-carbon economy would generate both risks and opportunities for Diageo, and through our scenario analysis we have estimated the impact on our operations and financial condition to 2030, concluding that it is unlikely to be material by that date, even assuming all changes in production costs were borne by us. This is reflected in our assessment of viability and impairment (see page 46). We have not calculated the financial impact to 2050 because there are too many variables and unknowns to make such a calculation meaningful. However, what we do know is what the drivers are – namely water stress, decarbonising our supply chain and increasing demand from consumers for sustainable products. Within these drivers, the biggest cost comes from decarbonising the supply chain, and much of that comes from the price of glass, an important component of many of our products' packaging. The cost of glass is likely to continue to rise, pushing unit production costs up, even while other costs may generally decline over the longer term. While the impact on Diageo as modelled may not be material to 2030, the planet needs significant science-based action to create a sustainable low-carbon future. Therefore we have committed to decarbonising our own operations and partnering with our suppliers to halve the carbon emissions from our supply chain by 2030. For more on our plans to decarbonise our supply chain, please see the metrics and targets section (pages 54-55).

The scenario analysis gave us insights into which parts of our business would be most affected by transition risk. The markets most likely to be affected are India and Mexico, because of the high relative impact of packaging costs on overall profitability. Looking at product categories, Scotch whisky and tequila are most likely to be affected – because they can be produced only in Scotland and Mexico respectively, but are imported into many countries around the world, and are packaged mainly in glass. And today, consumers are increasingly sensitive to the perceived environmental impacts of imported products. Although not financially quantified, these changes in consumer behaviour could potentially result in lost revenue and profit, if we do not respond. However, there is an opportunity for companies that innovate, and that develop and produce drinks in a more sustainable way, for example through packaging reduction, reuse and recycling.

Δ Within PwC's independent limited assurance scope. Please refer to the reporting methodologies in our ESG Reporting Index for more information on how data has been compiled, including standards and assumptions used.

Metrics and targets<sup>1</sup>

We have adopted the TCFD's recommendations for reporting on metrics and targets.

We are committed to playing our part in transitioning to a low-carbon world and making a positive impact on the environment. Our 'Society 2030: Spirit of Progress' ambition includes stretching goals for decarbonising our operations and supply chain, and for water efficiency and replenishment. The figure (on page 55) outlines our pathway to net zero carbon emissions. Our annual targets to achieve net zero by 2030 in our Scope 1 and 2 emissions have been validated by the Science Based Targets initiative (SBTi). We have an interim target of a 50% reduction in Scope 3 emissions by 2030, and our Scope 3 target of net zero by 2050 has also been validated by the SBTi.

## Science-based targets for carbon emissions

By 2030, we commit to:

Target	KPI	2022 performance
Becoming carbon net zero in our direct operations (Scopes 1 and 2)	Percentage reduction in absolute GHG (ktCO <sub>2</sub> e)	5.3% <sup>Δ</sup>
Reducing our value chain (Scope 3) emissions by 50%	Percentage reduction in absolute GHG (ktCO <sub>2</sub> e)	(4.7)% <sup>2</sup>
Using 100% renewable energy across our direct operations	Percentage of renewable energy across our direct operations	41.2%

This year we achieved a further 5.3%<sup>Δ</sup> reduction in emissions from our direct operations, which keeps us on track to achieve net zero by 2030. However, increased production volumes across many of our markets is making it even more challenging to meet our net zero targets, so we reviewed our net zero roadmap and adjusted our interim decarbonisation trajectory accordingly. Our value chain Scope 3 emissions increased by 4.7%, mainly due to increased production and the associated increased use of raw materials, packaging, third-party operations and neutral-spirit sourcing. We recognise that this target is challenging given the complexities of enabling impactful change up and down the value chain, and we must work closely with suppliers, peers and others to ensure we meet this target.

Carbon emissions (Scopes 1 and 2) by region by year (1,000 tonnes CO<sub>2</sub>e)<sup>3,4,5</sup>

Region	2020 (baseline)	2021	2022
North America	128	127	100
Europe	153	130	145
Asia Pacific	37	15	14
Africa	151	172	150
Latin America and Caribbean	23	28	38
<b>Diageo (total)</b>	<b>492</b>	<b>472</b>	<b>447<sup>Δ</sup></b>
United Kingdom	87	71	84

1. Baseline year for 'Society 2030: Spirit of Progress' targets is 2020 unless otherwise stated
2. For commentary on performance against this target, please see page 37 and refer to our reporting methodologies in the ESG Reporting Index for more information on how data has been compiled, including standards and assumptions used
3. CO<sub>2</sub>e figures are calculated using the WRI/WBCSD GHG Protocol guidance available at the beginning of our financial year; the kWh/CO<sub>2</sub>e conversion factor provided by energy suppliers; the relevant factors to the country of operation; or the International Energy Agency, as applicable
4. 2020 baseline data, and data for the periods ended 30 June 2021, have been restated in accordance with the WRI/WBCSD GHG Protocol and Diageo's environmental reporting methodologies
5. Diageo UK total direct and indirect carbon emissions were 8,484ktCO<sub>2</sub>e, comprising direct emissions (Scope 1) of 84ktCO<sub>2</sub>e and indirect emissions (Scope 2) of 0. The intensity ratio was 80 grams/litre packaged. Total global energy consumption was 3,650,444MWh; total UK energy consumption was 1,091,403MWh, comprising 951,552MWh of direct energy and 139,851MWh of indirect energy.



## Water efficiency and replenishment targets

As a beverage business, water stewardship is critical if we are to adapt successfully to a changing climate, as outlined in the risk management section on pages 42-45. We carry out global assessments of water stress every two to three years, and any sites newly classified as water stressed are included in our more stretching targets for water efficiency and replenishment. The last assessment was conducted in fiscal 21.

We have set a number of water targets for 2030 or earlier, focussing particularly on water-stressed areas:

Target	KPI	2022 performance
Reduce water use in our operations with a 40% improvement in water-use efficiency in water-stressed areas and a 30% improvement across the company	Percentage improvement in litres of water used per litre of packaged product	3.7% <sup>Δ</sup> across the company
Replenish more water than we use for our operations in 100% of sites in water-stressed areas by 2026	Percentage of water replenished in water-stressed areas	15.3%
Invest in improving access to clean water, sanitation and hygiene (WASH) in communities near our sites and local sourcing areas in 100% of our water-stressed markets	Percentage of water-stressed markets with investment in WASH	88.9% <sup>Δ</sup>
Engage in collective action in all of our priority water basins to improve water accessibility, availability and quality and contribute to a net positive water impact	Percentage of priority water basins participating in our collective action plans	33.3%

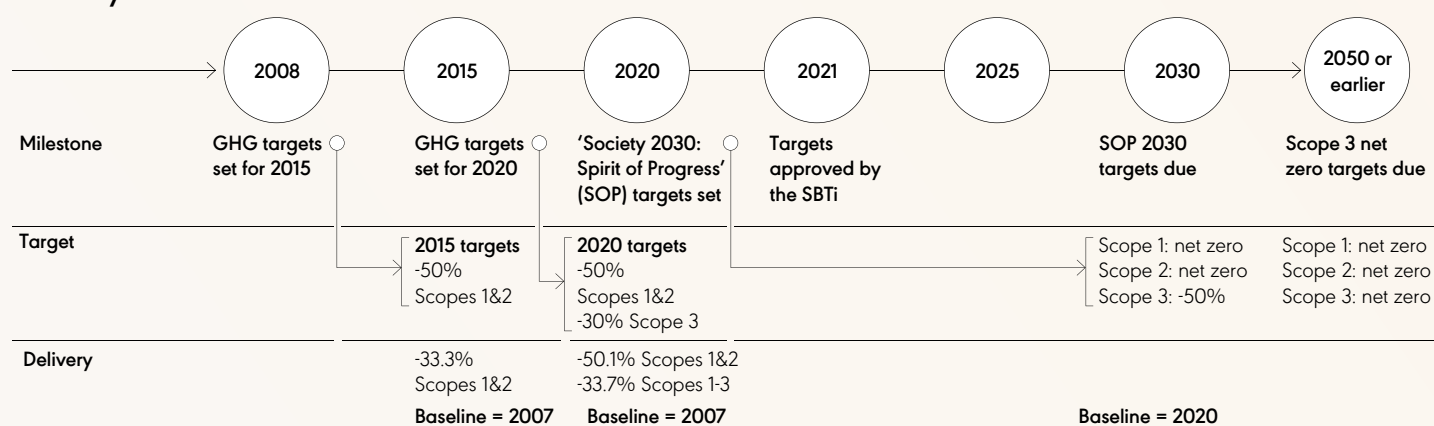
## Water efficiency (litres per litre packaged) by region by year<sup>1,2</sup>

Region	2020 (baseline)	2021	2022
North America	5.33	4.91	<b>5.06</b>
Europe	5.10	5.13	<b>4.87</b>
Asia Pacific	3.95	3.58	<b>3.57</b>
Africa	4.11	3.53	<b>3.29</b>
Latin America and Caribbean	4.93	5.07	<b>4.86</b>
<b>Diageo (total)</b>	<b>4.63</b>	<b>4.29</b>	<b>4.13<sup>Δ</sup></b>

- 2020 baseline data, and data for the periods ended 30 June 2021, have been restated in accordance with the WRI/WBCSD GHG Protocol and Diageo's environmental reporting methodologies
  - In accordance with our environmental reporting methodologies, total water used excludes irrigation water for agricultural purposes on land under our operational control
- <sup>Δ</sup> Within PwC's independent limited assurance scope. Please refer to the reporting methodologies in our ESG Reporting Index for more information on how data has been compiled, including standards and assumptions used.

This year we achieved a 7.8% improvement in water-use efficiency in water-stressed areas and a 3.7%<sup>Δ</sup> improvement across the company, which are on track against our 2030 targets. We report on our performance against our 'Society 2030: Spirit of Progress' targets in full on pages 35-38. Our overall approach to risk management is described further on pages 42-45. A commitment to pioneering grain-to-glass sustainability is central to our strategy – read about our approach on pages 30-31. Our ESG Reporting Index contains more detailed disclosures aligned with the GRI, SASB and UN Global Compact reporting frameworks.

## Pathway to net zero<sup>1</sup>



### Pathway to delivery

<b>Scope 1 (8%)<sup>2</sup></b>	Decarbonisation of direct operations through biomass, bioenergy and electrification as part of our £1 billion investment of capital expenditure in environmental sustainability Renewable energy certificates to close gap	New technologies and partnerships to close remaining gap
<b>Scope 2 (2%)<sup>2</sup></b>	Continue switch to renewable electricity Investment and partnership with governments and utilities to create required renewable infrastructure	100% renewable electricity
<b>Scope 3 (90%)<sup>2</sup></b>	Packaging: decarbonising glass manufacturing; reducing pack weights; increasing recycling and recycled content; circular packaging Regenerative agriculture pilots → Regenerative agriculture scale-up Reduce emissions from logistics, product refrigeration and cooling	

**Diageo Sustainable Solutions (DSS) technology partnerships with suppliers to decarbonise the end-to-end supply chain, e.g. pilot study on innovative glass coatings to enable radical glass light-weighting; and the development of innovative biofuel technology and heat energy storage solutions**

- This is an estimate based on current management expectations; the underlying assumptions and future developments may change over time, which would cause changes to management expectations and the information contained herein. Please see pages 47-56 for further information about the potential impact of climate change on Diageo and our current plans to manage and mitigate risks.
- Percentage of total carbon footprint

## How we have adopted the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD)

This table outlines how we have reported in line with the recommendations of TCFD and where we have more to do. Each year, with the help of expert partners, we expand the scope of our risk assessments and scenario analysis. The order of the table reflects the order in which we report on each recommendation.

TCFD recommendation	Alignment
<b>Governance – see page 48</b>	
a. Describe the board’s oversight of climate-related risks and opportunities	Yes
b. Describe management’s role in assessing and managing climate-related risks and opportunities	
<b>Risk management – see pages 48-52</b>	
a. Describe the organisation’s processes for identifying and assessing climate-related risks	Yes
b. Describe the organisation’s processes for managing climate-related risks	
c. Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisation’s overall risk management	
<b>Strategy – see pages 52-54</b>	
a. Describe the climate-related risks and opportunities the organisation has identified over the short, medium and long term	We have described risks and opportunities for our business in North America and Scotland (high-value markets), and in India, Africa, Mexico and Turkey (geographies most exposed to physical risk), as well as the impact of those risks and opportunities on our strategy. We have modelled the resilience of our strategy under three climate-related scenarios. We intend to extend this analysis to our remaining markets over the next two years, and include a quantitative analysis of the impact in our disclosure.
b. Describe the impact of climate-related risks and opportunities on the organisation’s businesses, strategy and financial planning	
c. Describe the resilience of the organisation’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario	
<b>Metrics and targets – see pages 54-55</b>	
a. Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management process	Yes
b. Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks	Yes for Scopes 1, 2 and 3
c. Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets	Yes