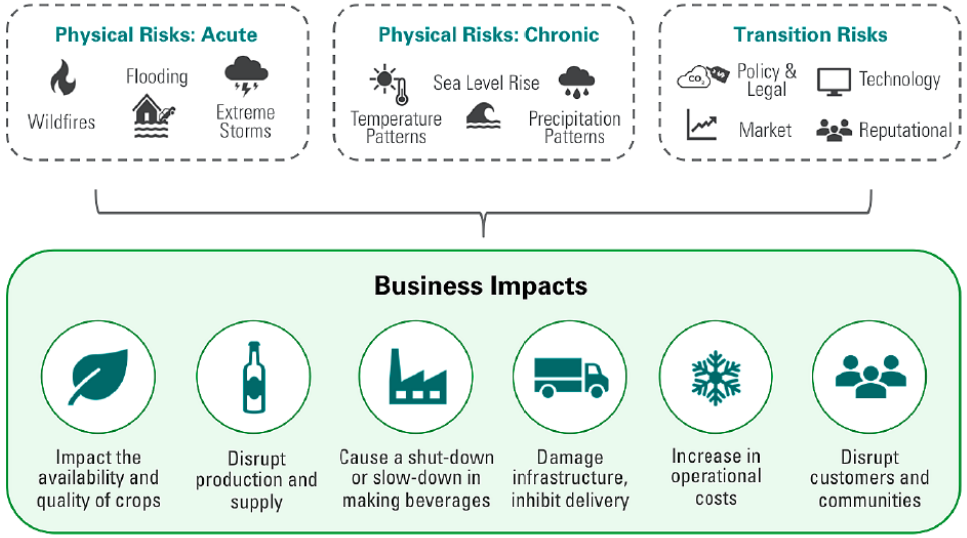
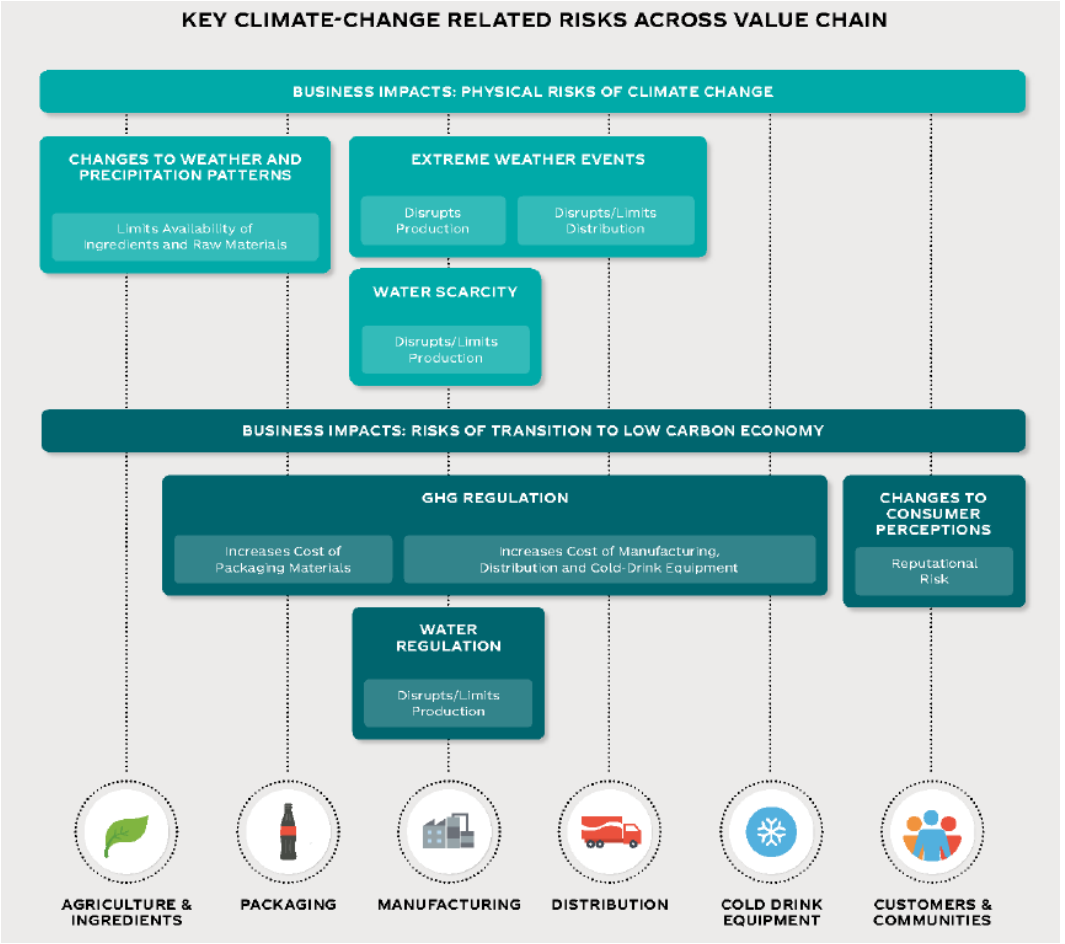
Climate risks assessment approach for value chain





Source: The Coca-Cola Company Climate Strategy Guidebook

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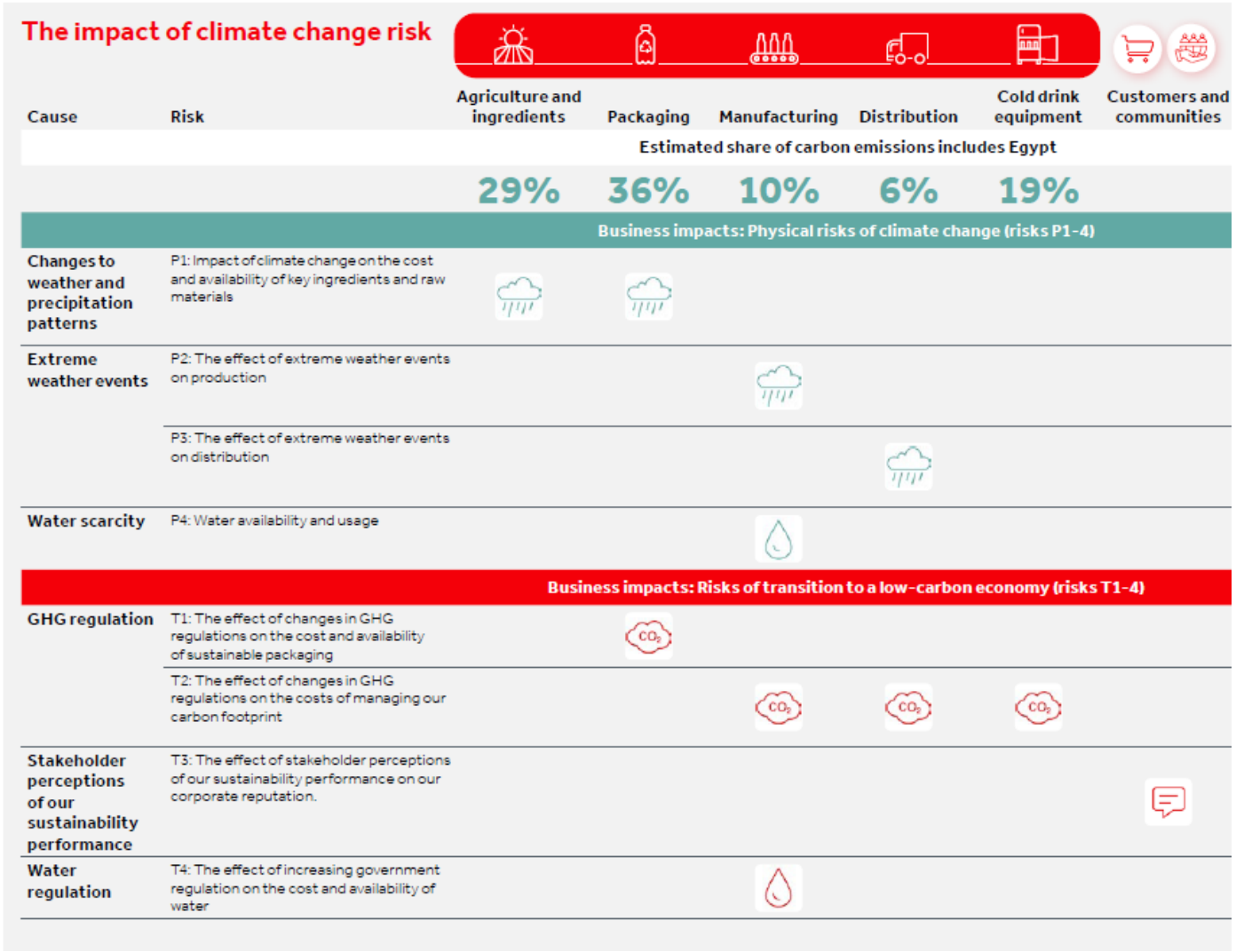
The impact of Climate Change Risk in CCHBC



The impact of climate change risk

Cause	Risk	Agriculture and ingredients	Packaging	Manufacturing	Distribution	Cold drink equipment	Customers and communities
		Estimated share of carbon emissions includes Egypt					
		29%	36%	10%	6%	19%	
		Business impacts: Physical risks of climate change (risks P1-4)					
Changes to weather and precipitation patterns	P1: Impact of climate change on the cost and availability of key ingredients and raw materials						
Extreme weather events	P2: The effect of extreme weather events on production						
	P3: The effect of extreme weather events on distribution						
Water scarcity	P4: Water availability and usage						
		Business impacts: Risks of transition to a low-carbon economy (risks T1-4)					
GHG regulation	T1: The effect of changes in GHG regulations on the cost and availability of sustainable packaging						
	T2: The effect of changes in GHG regulations on the costs of managing our carbon footprint						
Stakeholder perceptions of our sustainability performance	T3: The effect of stakeholder perceptions of our sustainability performance on our corporate reputation.						
Water regulation	T4: The effect of increasing government regulation on the cost and availability of water						

Source: Coca-Cola HBC Integrated Annual Report 2023, pg 111

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(1) Climate Financial Risks - Climate Transition Risk

Based on the climate risk and opportunity assessment we have quantified the following transition risk to our business:

1. Transition Risk

We assess the effect of changes in GHG regulations on the costs of managing our carbon footprint. To calculate the impact, we have used estimates of carbon cost and applied them to Scope 1 & 2 emissions, as per our NetZeroby40 roadmap, to estimate the impact of climate change on future annual operating costs for generating carbon.

In detail:

- We estimated Scope 1 and 2 emissions under our new carbon reduction glidepath to meet NetZeroby40 commitments
- We used data from external consultant specialising in risk assessments to come up with estimates of carbon costs to 2040 under multiple climate scenarios RC1.9 (Paris Ambition), RCP2.6 (Paris Agreement), RCP4.5 (Stated Policy) and RCP8.5 (Current Policy)
- In the disclosed calculation of risk, we have used projected carbon costs considering RCP1.9 (Paris ambition) scenario to 2030 & 2040 (average scope 1 & 2 CO_2 cost @164€/tCO_2 in 2030 & @ 316.4€/tCO_2 in 2040)
- We used projected carbon costs as a proxy for increased cost – we considered that other cost variables are market driven, not climate change related and therefore out of scope
- Based on the Paris ambition scenario, increased costs of scope 1 and 2 emissions will peak at an additional annual cost of around €39.6m by 2030 (241,230 tCO_2 * 164€/tCO_2) , reducing to €17.3m annually by 2040 (54,540 tCO_2 * 316.4€/tCO_2).
- The future annual risk is calculated as the average of the two amounts.

Risk >> (39.6 + 17.3)/2 = 28.5 million Eur per year

Mitigation Actions:

a) We have public sustainability commitments to reduce carbon emissions in own operations (Scope 1+2) and increase the use of the renewable energy and electricity use in our operations. We have also internal target on the energy use ratio per litre of beverage produced. These goals and objectives are under close monitoring and actions tracking.
b) We use since 2015 Internal Carbon Price/ Shadow Carbon Price as fully integral part of sustainability, including energy improvement, related CAPEX investment assessments
c) We have 2030 carbon emission targets approved by Science-Based Target Initiative, covering entire value chain (Scope 1+2 and Scope 3) and the Science based NetZeroby40 commitment
d) In 2023, we invested 29.0 million Eur to implement energy saving programs and solutions in our plants and 1.2million euro for green buildings and fleet. In addition, we paid 0.9 million Eur to sourcing Renewable electricity in our operations.

Mitigation cost >> 29.0 + 1.2 + 0.9 = 31.1 million Eur per year

(2a) Climate Financial Risks - Physical Climate Risk (1/2)

Based on the climate risk and opportunity assessment we have identified the following risks to our business:

2a. Physical Climate Risk: The effect of changes to weather on the cost and availability of key ingredients and raw materials
Upstream value chain: We focused on Sugar, as it represents the most significant component of our ingredient spending. On availability, we estimate climate change impact to be neutral, as we have flexibility to change from supply points negatively impacted to those positively impacted. In this case, we need to apply Supplier development methods to reach compliance to Principles of Sustainable Agriculture (part of our public Sustainability Commitments Mission 2025). We also expect the cost of carbon emissions for sugar producers to increase and then to be passed on to us as higher input cost.

Estimated risk impact is calculated by switch of the supply to new alternative supplier and increased commodity price from the new supply point. Based on experience, this will be in the range of 0.3-0.8% of total increase of CoGs (cost of goods sold) due to the wide range of the suppliers available for Sugar. Total spend for Sugar & Sweeteners in 2023 was €783 million. A 0.3%-0.8% increase in CoGs would result between €783*0.3% = €2.349 million and €783*0.8% = €6.264 million impact on CoGs.
Risk >> So, on average, risk is calculated at €4.306 million per year (0.55% of CoGs)]

Mitigation Actions:
a) We have public sustainability commitment to source 100% of key agricultural ingredients in line with sustainable agricultural principles by 2025
b) We are actively engaging with all our Key Ingredients and Commodities suppliers for risk assessment via the EcoVadis platform
c) We engage our Key Agricultural Ingredient suppliers to the Principles for Sustainable Agriculture (PSA) development program. Estimated cost of the development is 1 - 3 million EUR per supplier (average cost 2million per supplier). In 2023, we achieved 79% PSA certification of agricultural ingredients.

Mitigation cost >> 2 million Eur per one supplier

(2b) Climate Financial Risks - Physical Climate Risk (2/2)

Based on the climate risk and opportunity assessment we have identified the following risks to our business:

2b. Physical Climate Risk: Water availability and usage
Own Operations: Availability and quality of clean water is fundamental to our business, our suppliers, and the local communities in which we operate. Climate change has significant impact on water availability and usage. Climate change is expected to increase water stress in a number of areas where we operate, resulting in additional OPEX and requiring additional Capex to ensure sufficient water volumes for our plants. We have identified that 19 of our plants, including two key ones in Schimatari, Greece and Asejire, Nigeria, are located in water stress areas.

The financial impact of climate change on water availability is calculated using an own-developed methodology, considering several inputs, such as: data from Aqueduct Water Risk Atlas to assess impact of climate change on water stress in the area plants were located within under Optimistic (RCP2.6) and Pessimistic (RCP8.5) climate scenarios, current water sources capacity, production volume increase forecast, water stress increase in the watersheds, and the local economic value of water (=true cost of water). In general, the negative impact of increased water stress coupled with higher production volume demand, will result in increasing the utilization rate of our water sources from current average value of 55% to 94% in 2030, meaning that until 2030 there will be primarily an Opex financial impact due to more intense use of the current sources. After 2030, the current capacity of our water sources will not be sufficient to cope with increased demand for production and increased water stress in the watersheds, therefore, Capex investment programs will be introduced to ensure the expansion of the water infrastructure and optimization of water processes.

In detail, we estimate that annual baseline costs related to water usage will increase by €10million by 2030 following the current climate scenario (due to a variety of reasons, including increased water fees, internal cost of water treatment, wastewater disposal fees). Under the RCP8.5 climate scenario, we estimate that this incremental cost would increase by 40%, thus the risk related to climate change is estimated at €4 million per year. (€10m * 40% = €14m opex increase in 2030 compared to current status under the RCP8.5 climate scenario).

Risk >> 4 million Eur per year

Mitigation Actions:
To meet expected production demand and to mitigate the impact of climate change by 2040, additional capex is required, which will improve water availability and lower operational costs. We estimate that there is a requirement of €111 million in capital expenditure until 2040 to meet our production needs (under the impact of climate change on water stress) and to also replenish watersheds for local communities in water priority areas. The additional Capex will be required to expand the water infrastructure with new water sources, pipelines, water storage or water treatment facilities. With our current assessment, the €111million investments will not be evenly distributed throughout the 16 years until 2040 but will accelerate after 2030.

In 2023, we have invested €3.2 million in water sustainability projects, mostly in Egypt and Nigeria. Main projects: new water treatment facilities and upgrade of existing ones.

Mitigation cost >> €3.2m annually

Climate financial risks calculations

	Description of the Risks	Estimated annual financial implications of the risk before taking action	Estimated annual costs of these actions
1	**Transition Risks driven by changes in regulation** Effect of changes in GHG regulations on the costs of managing our carbon footprint	**28.5 Million Eur** *Carbon emission tax applied to Scope 1 & 2 emissions*	**31.1 million Eur** *Annual Capital investments for energy reduction/ optimization/ innovative solutions and renewable electricity/ energy sourcing via GoO/ iRECs*
2a	**Physical Climate Risks driven by change in physical climate parameters or other climate-change related developments:** a) Upstream value chain – disrupted supply of key ingredients (sugar)	**4.3 Million Eur** *Activating new alternative supplier impacting availability of the ingredients with contracted price level*	**2 million Eur per one supplier** *Investing into new alternative supplier development to reach PSA compliance*
2b	b) Own operations – Water availability and usage	**4 million Eur** *Climate change impact on incremental operating expenses related to Water usage*	**3.2 million Eur** *Annual capital investment for water sustainability projects*
	TOTAL	**36.8 Million Eur**	**36.3 Million Eur**

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(3a) Climate Financial Opportunities (1/2)

Based on the climate risk and opportunity assessment we have identified the following opportunities to our business that directly contribute to our sustainability commitments:

a. Energy efficiency at customers

Downstream value chain: We improve energy efficiency at customers, by supplying them with energy efficient coolers. Dual positive impacts calculated, from lower cost of energy for our customers and reduction of scope 3 emissions for CCH. We use CCH Internal Carbon Price to quantify the carbon emissions cost and average CCH energy cost for electricity, as coolers use electricity only.

i) Electricity saving = 348 Million kWh, multiplied by the average energy cost for electricity 2023 @ €0.19/kWh = €66.1 million

ii) CO_2 emissions saving = 127,461 tonnes of CO_2e, multiplied by CCH internal carbon price @ €89/tonne CO_2e = €11.3 million

iii) Total opportunity = i) + ii)

Opportunity >> €77.4 million per year

Annual costs associated with developing this opportunity:

- We have publicly committed as part of our Mission 2025, to reduce emissions in customers' outlets (50% of our refrigerators in customer outlets will be energy efficient)
- In 2023, coolers were contributing 19% of our total CO_2 emissions. By installing energy efficient coolers, we contribute significantly to achieving our NetZeroby40 target
- In 2023, we invested €91 million in energy efficient coolers

Cost associated with developing the opportunity >> €91m annually

(3b) Climate Financial Opportunities (2/2)

Based on the climate risk and opportunity assessment we have identified the following opportunities to our business that directly contribute to our sustainability commitments:

b. In-house rPET production

Upstream value chain and own operations: By developing in-house recycling capabilities in three plants (Italy, Romania & Poland), we achieve lower cost of recycled PET (rPET) compared to sourcing it from external suppliers while reducing emissions. CO_2 saving is the difference between the CO_2 factor of the rPET (0.67) vs. vPET (2.19) as per the LCA by IFEU, for the 44,000 MT of rPET. We use CCH Internal Carbon Price to quantify the carbon emissions cost.

i) Lower cost of rPET = €315.8/MT (average cost per MT of rPET purchased - (minus) average cost per MT of rPET in-house produced), multiplied by the volume production capacity @ 44,000MT = €13.9 million

ii) CO_2 emissions saving: 44,000MT multiplied by the difference of emission factors @1.52 → 44,000MT x (2.19-0.67) = 66,880 tonnes of CO_2e saved → multiplied by CCH internal carbon price @ €89/tonne CO_2e = €5.9 million

iii) Total opportunity = i) + ii)

Opportunity >> €19.8 million per year

Annual costs associated with developing this opportunity:

- We have publicly committed as part of our Mission 2025, to source 35% of the total PET we use from recycled PET and/or PET from renewable material. Switching to rPET also supports the decarbonisation to achieve NetZeroby40 commitments
- Over the last four years, we have invested more than €50 million in three in-house recycled plastic (rPET) production units in Italy, Poland and Romania. These investments reflect our commitment to a circular economy, while allowing us to decrease the cost of buying rPET from outside and enhancing our security of supply in a tight market.
- The relevant investments have now been completed and all plants are fully operational. As a result, we should not expect any further major investment in these plants as we move forward.

Cost associated with developing the opportunity >> €50 million / 4 years (2020-2023) = €12.5million annually on average

Climate financial opportunities calculations

	Description of the Opportunity	Estimated annual financial implication of the opportunity	Estimated annual costs of these actions
3a	**Climate change related opportunity:** a) Downstream value chain – Installation of energy efficient coolers in customers' outlets	**77.4 Million Eur** *Benefit from lower energy consumption for customers and lower carbon emissions for CCH*	**91 million Eur** *Investing into energy efficient coolers*
3b	b) Own operations & upstream value chain – In-house rPET production	**19.8 million Eur** *Benefit from lower price of rPET produced in-house vs. externally procured and lower carbon emissions of rPET vs. vPET*	**12.5 million Eur** *Invested capital to develop in-house rPET capabilities in three locations (total €50million in four years)*
	TOTAL (a+b)	**86.2 Million Eur**	**103.5 Million Eur**

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