



BUSINESSES A CAUSE, VICTIMS, AND SOLUTION TO THE CLIMATE CRISIS

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ABSTRACT

PURPOSE: The purpose of this article, and conference talk, is to discuss climate change in the context of businesses where the focus is on businesses as a cause, victims, and solution to the climate change crisis.

DESIGN/METHOD: This is a conceptual paper focusing on explaining some of the key concepts relevant to the framing of businesses as a cause, victims, and solution to the climate crisis using the so-called business-poverty framework in a new setting.

RESULTS/FINDINGS: The findings suggest that the business-poverty framework is useful when framing the discussion around businesses as a cause, victims, and solutions to climate change, drawing the attention to supply of and demand for fossil fuels, negative actions of industry leaders, and superficial reporting in this regard. Furthermore, various risk factors were identified, namely physical, transitional, market, and policy risks, financial and talent-related risks, liability, litigation, and systemic risks. Opportunities to address the climate crisis proactively by businesses entail low-carbon investments, cost management and access to finance, innovation, behavioural, and organizational changes, reputational enhancement, talent attraction and retention, and supply chain resilience.

ORIGINALITY/VALUE: The originality is to employ a framework used to evaluate business operations concerning poverty in a new context, namely, to address various aspects of climate change business implications relevant to the cause, implication for, and solution to the situation.

KEYWORDS: climate change, business, cause, victim, solution, women.

JEL: M1, M14, Q54.

1. INTRODUCTION

Climate change and the observed global warming have major implications for businesses and societies worldwide. “Human-caused climate change” is resulting in “widespread adverse impacts and related losses and damages to nature and people (high confidence)” (IPCC, 2023, p. 5). Businesses are a part of the problem and contribute to climate change in various ways. On the production side 100 fossil fuel producers, also called carbon majors, are responsible for 52% of global industrial greenhouse gas emissions since the industrial revolution (Griffin, 2017). On the demand side industrial processes and “industrial energy consumption is still dominated by fossil fuels, in particular coal, and accounts for about a quarter of energy-related CO₂ emissions”, “directly responsible for emitting 9.0 Gt of CO₂” (IEA, n.d.). Some of the waste generated by businesses, including food waste, decomposes as methane (Zhu et al., 2023), a potent greenhouse gas. Business and supply chain operations furthermore rely on transportation, on land, sea, and in the air, mainly driven by fossil fuels consumption (Fan et al., 2023). In addition, deforestation associated with business operations, where 13 companies are mainly responsible, releases carbon dioxide otherwise stored in forests. On the list are companies including Cargill that produces soy, beef, cocoa, and palm oil, BlackRock through unsustainable investments, Wilmar International, the largest company worldwide in refinery and trading of palm oil, and Walmart, through sourcing of palm oil, pulp and paper, soy, and beef from forest regions (Earth.org, 2023).

The World Economic Forum Global Risks Perception Survey 2023-2024 ranks global risks by severity over the short and long term. On the top 10 list of risk factors assessed for future scenarios of 10 years are extreme weather events (1st), critical change to earth systems (2nd), biodiversity loss and ecosystem collapse (3rd), natural resource shortage (4th), and pollution (10th) (Cavaciuti-Wishart et al., 2024), all of which entail implications for businesses. Based on these implications the purpose of this article, and conference talk, is to discuss climate change in the context of businesses where the focus is on businesses as a cause, victims, and solution to the climate change crisis, Section 2 explains the business-poverty framework (Blowfield & Murray, 2019) and provides examples in each of the categories of the framework. Section 3 explains that the framework is placed in a different context, where it is used to frame the business-climate change debate in the result section, that is Section 4. The concluding remarks are in Section 5.

2. LITERATURE REVIEW

The business-poverty framework (Blowfield & Murray, 2019), see Figure 1, was developed to explain business relationships to poverty, discussing how businesses can cause poverty problems, can be victims of the situation, or be regarded as solution to the problems, see the following sections explaining each of these relationships.



Figure 1. Business relationship to poverty

Source: Adapted from Blowfield and Murray (2019, p. 78).

2.1. Businesses as a cause of poverty

In the case when businesses cause poverty, they are not factoring the issue into the decision-making. This means that they fail “to generate wealth, create jobs, and provide goods and services” (Blowfield & Murray, 2019, p. 78), or when the working conditions are unsafe, working hours are excessive, and living wages poor, and the national circumstances are such that workers risk their lives and health by coming to work under abusive labour practices. Such examples exist, for instance in the textile industry, where more than “1,100 people – mostly garment workers – lost their lives when the Rana Plaza factory collapsed in the outskirts of Dhaka, Bangladesh, on 24 April 2013”. Furthermore, more than 2,000 were injured, consequently resulting in a reform of the business and employee working environment in the country (ILO, 2023; The Guardian, 2023), such as by revision of “supply chain and sourcing policies” (Schuessler et al., 2019, p. 552). The result had implications for cloth producers and importers in case of their reputation, mainly for those “sourcing from the collapsed factories” (Koenig & Poncet, 2022, p. 1) driven by stakeholder pressure (Schuessler et al., 2019).

Other aspects of business operations that influence poverty include unequal distribution of wealth (Blowfield & Murray, 2019), pressure for employment deregulation (Eurofound, 2017; Myant & Piasna, 2017; Peoples, 1998), undermining of the freedom of collective bargaining and freedom of association (Blowfield & Murray, 2019), and corporate tax avoidance (Blowfield & Murray, 2019; Duhon & Singh, 2023) sometimes related to money laundering (Kemsley & Kemsley, 2024). Such behaviour generally undermines the welfare of the society “associated with disenfranchisement, marginalization, and the lack of capacity or opportunity to advocate for one’s own interests” and issues related to “child labour, forced labour, and labour trafficking” (Blowfield & Murray, 2019, p. 79). Some of these issues are related to corrupt and ineffective governance.

Direct and indirect links between the business-poverty relationship, cause of the problem and climate change can also be made (Romanello et al., 2022), see section 4.1, as businesses contribute to the climate crisis through actions or inactions that result, or can result, in unwanted migrations or loss of income with consequent fall in living standards due to climate-related disasters, droughts, and rainfall impacting crops and livestock, properties and infrastructure, and thus people's health and general living conditions (Hallegatte et al., 2016; Romanello et al., 2022; WorldVision, n.d.). This situation is often worse for women and children in less affluent countries and poorer communities of the world (Hallegatte et al., 2016) and people older than 65 years (Romanello et al., 2022).

2.2. Businesses as victims of poverty

The claim is being made that the Sustainable Development Goals (SDGs) (United Nations, 2023) may reveal how businesses are victims of poverty, given that many of the 17 goals are related to poverty. This can hinder business operations in developing economies given that poverty hinders people from buying products or services. Furthermore, low education levels prevent businesses from hiring skilled people, even in low-skilled jobs. Relevant to this is also the disempowerment of women and inequality (Blowfield & Murray, 2019). The SDGs focusing on poverty, hunger, and well-being (Goals, 1, 2, and 3) have health implications that can harm business operations. Rising inequality may result in "mass migration, conflict over natural resources, and political unrest consequently having business implications" (Blowfield & Murray, 2019, p. 82).

Given climate-related implications for people, businesses might also consider themselves victims of poverty, see section 4.2, because of physical issues related to people, properties, and/or infrastructure. For instance, people might not be able to attend or maintain their jobs such as when climate-related disasters endanger infrastructure, e.g., unavailability of roads or transportation, loss of assets, properties and displacement, and/or physical or mental well-being of people, including deaths, illnesses, food insecurity and malnutrition, threatening their lives and health (Hallegatte et al., 2016). However, it is not only disasters that have climate-poverty implications for businesses, but so do issues such as heat exposure, resulting in loss of labour hours (Romanello et al., 2022). Work disruption related to climate change can result in productivity loss and loss of income for businesses (Hallegatte et al., 2016).

2.3. Businesses as a poverty solution

One of the business models suggesting that businesses can be a solution to poverty is the fortune-at-the-bottom-of-the-pyramid (BOP), where the idea is to transform low-income markets into profitable ones, thereby merging business "profit and purpose" (Prahalad, 2019). This is seen as a way for "the world's wealthiest companies – to seek their fortunes and bring prosperity to the aspiring poor" (Prahalad & Hart, 2008, p. 2). The ideas emphasising that companies can simultaneously be profitable while servicing the poor overlap with social entrepreneurship ideas (Blowfield & Murray, 2019). Three main reasons have merged for these types of business models: 1) opportunities associated with drastic poverty reduction around the globe, 2) technological advancement, such as extensive use of mobile phones lowering costs of learning and communication, and 3) rising expectation that businesses take responsibility for creating a better world (Prahalad, 2019).

Microfinance is an example of a BOP business model using entrepreneurial methods to address development issues (Blowfield & Murray, 2019). Microfinance has been defined “as the means of providing a variety of financial services to the poor, based on market-driven and commercial approaches. These services may include savings, insurance, money transfers, and credit” (Mueni Maina Kiiru, 2007, p. 64). The original idea comes from Muhammad Yunus, who received the Nobel Peace Prize in 2006 for founding the Grameen Bank, thus having a major influence on the microfinance sector (Bayulgen, 2008). Microfinance has been shown to significantly improve women’s economic empowerment (Mengstie, 2022), although such solutions have also been criticised. Furthermore, many other solutions have emerged that support BOP business development, including (Prahald, 2019, pp. 8-9) trust and community before transactions, design for a fraction of the cost, a blend of luxury and economy of scale, and creation of social codes and norms.

Through collaboration and coordination, businesses can become a part of the solution to the climate-poverty issue, see section 4.3, reducing vulnerability to the climate crisis, but finance does play a critical role, both in case of mitigation and adaptation (Romanello et al., 2022). Job creation and investments in low-carbon solutions, are of importance, resulting in output gain of climate actions (LSE, 2024), but the insurance sector has also a critical role to play in so-called “place-based public-private partnership models”, including “pre- and post-crisis policies, development, recovery, and risk transfer funding mechanisms” (Johannsdottir & Wallace, 2022, p. 79).

3. RESEARCH DESIGN AND METHOD

The paper’s analysis is based on the business-poverty framework presented as a triangle (Blowfield & Murray, 2019), see Figure 1. At the top, business as a cause, are issues such as labour exploitation, pollution, and corruption. In the lower right corner, business as a victim, are issues such as health implications for businesses, including HIV and AIDS, corruption, and poor infrastructure. In the lower left corner, business as a solution, are business models including bottom-of-the-pyramid models, microfinance, and other modes serving the needs of unserved markets for goods and services (Blowfield & Murray, 2019). This framework is used to frame the business-climate change debate in the result section.

4. RESULTS AND DISCUSSION

4.1. Businesses as a cause of climate change

The intensified impacts of climate change pose a threat to societies, ecosystems, and economies worldwide. Therefore, it is crucial to prioritise and include sustainability in all development objectives (IPCC, 2023). Through greenhouse gas emissions businesses share responsibility for the cause of climate change and the consequences. On the production side the “fossil fuel industry and its products accounted for 91% of global industrial GHGs in 2015”, mainly associated with 100 companies, the carbon majors, but among the highest emitting companies since 1988 are investor-owned companies, including “ExxonMobil, Shell, BP, Chevron, Peabody, Total, and BHP Billiton” (Griffin, 2017, pp. 7-8).

Demand for fossil fuel differs between countries and industry composition in each country, but 2022 numbers from the United States show that the consumption in trillion British thermal units (Btu) is such that the majority is consumed by the transportation sector (25,910 Btu or 32.8%), electric power sector (21,577 Btu or 27.3%), industrial sector (20,865 Btu or 26.4%), residential sector (6,136 Btu or 7.8%), and

the commercial sector (4,562 Btu or 5.8%) (Statista, 2024). This supports that the carbon emission problem, both on supply and demand sites, is quite significantly associated with industry and industrial processes.

To complicate the matter further research has shown that for decades leaders within the fossil fuel industry, including ExxonMobil, attempted to persuade the public that establishing a direct connection between fossil fuel consumption and global warming was complicated. The argument used was that the models used for the project were therefore not reliable (Supran et al., 2023). However, through investigative journalism, it was discovered by analysing ExxonMobil's internal memos that the company knew "since the late 1970s that its fossil fuel products could lead to global warming with 'dramatic environmental effects before the year 2050', and that the awareness was the same for the US largest industry trade association, coal industry, electric utilities, and car manufacturing companies" (Supran et al., 2023, p. 1). These companies have therefore been externalizing the true cost of their operations to societies by operating unsustainable business models (Bocken & Short, 2021).

Another issue is associated with the framing of climate change in annual sustainability reports issued by fossil fuel companies, but these reports are issued under pressure from a broad range of stakeholders, including shareholders, investors, and the public, who would like to see the industry becoming less harmful for the environment (Megura & Gunderson, 2022). The main themes emerging from the analyse were 1) techno-optimism, 2) necessitarianism, 3) compliance, and 4) countermeasures. The first theme suggests that technology, such as carbon capture and storage (CCS) of emissions, can solve the climate crisis without social transformation. The second one emphasises the necessary service provided by the industry that supports well-being. The third one highlights that the industry follows regulations and relevant standards, and the fourth that the industry has strategies in place to counteract the negative environmental harm it causes (Megura & Gunderson, 2022). The study also brings forth that the industry is neither focusing on risk mitigation, nor future development relying less on fossil fuel output, therefore not addressing the main problem, thus at the fault of greenwashing or justifying business-as-usual (Megura & Gunderson, 2022).

The topic is also gender-related as men have more negative climate impacts than women such as through decision-making and consumption (Carlsson Kanyama et al., 2021, p. 1602), however with more negative implications for women (Habtezion, 2016). This has to do with issues such as board structure diversification, but women are less likely to be on corporate boards, and thus less likely to make decisions relevant to greenhouse gas emission reduction or sustainability reporting and disclosures (Lagasio & Cucari, 2019; Shaheen et al., 2023). This is, however, of importance given that "companies with a higher percentage of female directors are more aware of environmental issues" (Gallego-Álvarez & Rodríguez-Domínguez, 2023, p. 16) and more positive attitudes towards protecting the environment (Cosma et al., 2021). Other gender-related issues relevant to greenhouse gas emissions and climate change include more negative impacts on and implications for women, including displacement from their homes, women's absence from decision-making, the links between women's access to education, or lack thereof, to and child mortality rate, illness due to indoor air pollution, physical risks and deaths due to tsunamis and hurricanes, and less access to financial means (Habtezion, 2016).

4.2. Businesses as victims of climate change

For instance, what an interconnections map showing the global risk landscape brings forth are links between extreme weather events and involuntary migration, chronic health conditions, infectious diseases, disruption to critical infrastructure, disruptions to systemically important supply chains, and indirect links to labour shortage just to name some examples (Cavaciuti-Wishart et al., 2024). The recognition of global risks

is not without consequences for businesses and their operations, but climate-related business risks include but are not limited to (Cavaciuti-Wishart et al., 2024):

- **Physical risks:** Growing frequency and/or severity of extreme weather events entail risk to people, property, and infrastructure, as well as to different economic sectors (Jóhannsdóttir et al., 2012). This may result in productive capacity loss with consequent economic losses (Benincasa et al., 2024), and although business leaders may have general ideas about the potential physical risk of climate change, they are less aware of how these risks translate into specific risks for their businesses, including daily operations, infrastructure, supply chains, or transitional risks (Cox et al., 2022).
- **Transitional, market, and policy risks:** New “multilevel governance, institutional frameworks, laws, policies and strategies” will influence effective actions (IPCC, 2023, p. 32), and such solutions will have to be continuously developed to address the climate change crisis. The regulatory risk may be related to requirements resulting in the heightening of costs or potential opportunities (Demertzidis et al., 2015). There will also be accelerated changes in technology developed (IPCC, 2023) and products designed to solve the issues, as well as in customer preferences, where there will be a decrease or increase in demand for products, including reduced demand for fossil fuels given transition towards a low-carbon economy. This, furthermore, means the risk for businesses of having stranded assets whose value is worthless or deteriorated (van der Ploeg & Rezaei, 2020), because of transition in technological solutions or customer preferences. This also leads to reputational risk (Demertzidis et al., 2015), and pressure from internal and external stakeholders felt by companies, including (Deloitte, 2023) customers, board members/managers, employees, regulators/government, civil society, shareholders/investors, competitors and banks/lenders (Coppola & Blohmke, 2019).
- **Talent-related risks:** Among pressing issues identified by business leaders are competition for talent and talent pipeline issues (Deloitte, 2023). These risks are relevant to the lack of board management expertise in addressing climate change, difficulty in upskilling and retaining skilled talent, and lack of technology and data for carbon reduction, all of which may influence a culture of commitment without acting on climate-related risks (Gee, 2022).
- **Financial risks:** There are various aspects to financial risks, many of which are embedded in factors discussed under other bullet points, but in addition, climate change implications will be a matter of access to and cost of capital (Gee, 2022), company’s credit ratings, increasing insurance cost or reduced availability of insurance coverage (Boyles, 2022; Cox et al., 2022). Climate change will also put pressure on non-financial reporting requirements, such as with the European Directive on Corporate Sustainability Reporting (CSRD) and the European Sustainability Reporting Standards (ESRS) (European Commission, n.d.-b). Risk related to stranded assets, assets that become obsolete, is also on the horizon, particularly in the oil and gas sector (Colback, 2020). Employee productivity may also be influenced negatively during excessive heat (Kjellstrom et al., 2009), thus with potential financial losses for businesses.
- **Liability and litigation risks:** Climate litigation cases (Sabin Center for Climate Change Law, 2023; Setzer et al., 2022), including greenwashing cases against banks and fossil fuel financing are on the rise (Greenpeace, 2021; Investment Officer, 2022; Schmitt, 2021).
- **Systemic risk:** Given the interconnectedness of systems locally, regionally, or globally climate change can have huge implications for supply chains, disrupting business operations (Cox et al., 2022) resulting in increased supply cost, lower quality of products, or need to use alternative supply, and/or delay in delivery of supply, thus resulting in financial losses (Slay & Dooley, 2020). Investors may also face a systemic risk relevant to reputation risk in sectors including energy, materials, transport, and utilities (Guastella et al., 2022).

4.3. Businesses as a solution to climate change

Climate-related business opportunities also exist, particularly if businesses realise the risks and are at the forefront of developing solutions proactively to address the risks and consequent societal changes. Businesses at the forefront of seeking opportunities are in the field of climate diagnostics, either software companies and/or specialised consultants, businesses offering resilience-related solutions, or climate response companies, that are the ones offering “new goods and services, new revenue structures, or even new disruptive business models” (Sobue, 2021, p. 2). These include, but are not limited to:

- **Low-carbon investment:** Businesses can start by measuring and reducing their carbon footprint (Berkey & Orts, 2021), but policy can also shape the environment for low-carbon entrepreneurial and start-up projects relevant to battery storage, biofuels, environmental data, software development, consultancy, low carbon mobility solutions and more (Cojoianu et al., 2020). Investment opportunities (Xia & Cai, 2023) are also evident in larger-scale projects, such as the ones relevant to the European Union Green Deal industrial plan where the focus is on net-zero startups, increased renewable energy production capacity, and green jobs development (European Commission, n.d.-a).
- **Cost management and access to finance:** Through investments in emissions reductions and carbon management (Xia & Cai, 2023) companies can reap financial benefits by reducing costs, increasing growth and earnings, but also through reduced capital cost of green or sustainability-related lending, providing access to lower-priced finance (Oliver Wyman, 2024), as well as faster access to funding (European Commission, n.d.-a). The benefits relevant to “financial, customer, employee, societal and planetary” values have been shown to exceed leaders’ expectations, thus challenging “the perception that there is a trade-off between financial and nonfinancial impact” (Varley, 2022).
- **Innovation in breakthrough technology and new products:** Innovation, research and development, including green technological innovation, holds the key to addressing climate change on a corporate level (Berkey & Orts, 2021; Xia & Cai, 2023). This also included innovation relevant to new business models, including circular economy models (Bocken et al., 2014), smart grids, battery technology (Berkey & Orts, 2021), and more.
- **Behavioural and organizational changes:** Businesses can capitalize on behavioural change and changes in consumption patterns (Ivanova et al., 2020), by developing new low-carbon products and services servicing market needs, thus creating opportunities for new or adapted revenue streams (Oliver Wyman, 2024). Transition to plant-based protein is just one such example (Aschemann-Witzel et al., 2021; Magkos et al., 2020). This is also relevant to business operations, given that collaboration may help strengthen knowledge, advance the development of solutions, and support proactiveness (Berkey & Orts, 2021). Of similar importance is a proactive strategic approach and pro-climate pressure, support, and restraints businesses can provide to policy-makers and regulators, where they lobby for more stringent legislation (Berkey & Orts, 2021).
- **Reputation enhancement:** Through non-mandatory disclosure, which is in some cases becoming mandatory such as through the CSRD directive, social media activities, and regular media news companies may be able to enhance their corporate climate-related reputation (Guastella et al., 2022). The actions however need to be genuine, “communicated through standardized and externally verified reports”, not entailing greenwashing (Lashitew, 2021), but the trend is showing an increased market preference towards sustainable brands (Oliver Wyman, 2024).
- **Talent attraction and retention:** Firms’ sustainability and climate performance are becoming a topic for job seekers and a part of their decision-making when considering employees. Millennials, for instance, prefer to work for companies demonstrating responsibility in this field, but this responsibility can be

shared through sustainability reports or in job interviews where information on carbon reductions actions are shared (Beck, 2022). Influencing a company's leaders and employees' knowledge, skills, and attitudes is essential for achieving high performance (Lacy et al., 2009). This also has to do with the sense of urgency to act, but studies are showing climate change on the top of the list, of similar urgency as economic outlook (Deloitte, 2023), followed by many other environmental issues such as biodiversity loss, water scarcity, food security, plastic waste, and water pollution (GlobeScan & Sustainability Institute, 2022), thus providing opportunities for actions.

- **Supply chain resilience:** To prevent “widespread business disruptions” due to extreme climate-related events, supply chain risk management strategy and supply chain resilience, “has emerged as a critical tool to sustain business performance” (Ali et al., 2023, p. 1). There are different strategic pathways businesses can take including collaborative planning and control, financial support, and strengthening relationships with suppliers, all of which are categorised as bridging strategies, but buffering strategies centre around inventory, capacity, liability, lead time, and cost (Slay & Dooley, 2020). It should, however, be noted that opportunities are greater in less complicated supply chains, given factors such as the willingness of supply chain members to collaborate and the possibility understanding of the perspectives and positions of other members within the supply chain (Ali et al., 2023).

5. CONCLUSIONS

The findings from this analysis suggest that the business-poverty framework (Blowfield & Murray, 2019) is a useful tool for analysing business implications resulting from and deriving from climate change. The risk factors identified, can consequently be portrayed in such a way that businesses are, at least to some extent, causing these problems by externalizing the environmental and climate costs of the daily business, they can furthermore be seen as victim to these problems, but hopefully are willing, through foresight leadership, become a solution to these problems, thus benefiting their own business in the long run, while simultaneously benefiting the society and the environment.

The finding, furthermore, suggests that unless drastic measures are taken, we are doing too little, too late, given that the business-as-usual pathways are followed. This means that businesses will have to stop contributing to the problem, and cannot portray themselves as victims, rather they need to become a part of the solutions (Blowfield & Murray, 2019), thereby minimizing their risks, utilizing opportunities, and minimizing global risks through actions (Cavaciuti-Wishart et al., 2024).

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