Should businesses be concerned about the effects of climate change on workers? Make reference to issues of technology, jobs, and just transition in your answer.

Climate change has been at the center of scientific debates in the 21st century. [1] The word has become the heart of many articles, newspapers, and media. Climate change generally refers to the long-term changes in the temperature and weather patterns. [2] Earth's climate has changed many times since the planet was formed 4.5 billion years ago, from the ice ages to a new high rising temperature world [3]. The main reasons for these climate changes were natural events. [4] However, Swedish scientist Svante Arrhenius first touched upon the concept of human-causing climate change in 1896. In his seminal paper, he predicted that altering carbon dioxide levels in the atmosphere could change the earth's temperature. [5] In the 21st century, according to a survey of 88,125 climate-related studies, more than 99.9% of peer-reviewed scientific papers agree that humans have mainly caused the recent climate change. [6] The industrial revolutions and development of steel industries, car manufacturers, and oil & gas companies have all caused the situation that we are currently facing. The profound effects of climate change on the environment, including melting glaciers, rising sea levels, increasing heat waves and droughts, and intense storms, have raised concerns. These severe conditions can implicitly and explicitly endanger human lives and societies. [7] The consequent social and business threats can affect many workers' productivity, mental health, psychological issues, and job security. [8] Likewise, climate change poses significant challenges to economic growth and employment today. [9] Companies, as a result, should be concerned about the effects of climate change on their employees to maintain a sustainable economic climate.

To understand why businesses should be concerned about the effects of climate change on their workers, it is essential to explore how climate change is linked to the world of work. For this purpose, one must acknowledge the implications climate change has on workers. Exposure to extreme heat, air pollution, and extreme weather briefly exemplify some of the direct impacts on employees. Accordingly, prolonged work in hot environments can cause heat stroke, exhaustion, muscle tissue breakdown, and even death. Exposure to polluted air in the long term can lead to heart diseases and respiratory diseases. Extreme weather conditions such as floods, storms, lightning, and drought are correlated with injuries, deaths, illnesses, and mental stress. [10] Although outdoor workers are the most vulnerable group of workers, they are not the only ones vulnerable to climate variations; indoor workers are also threatened. [11] As the temperatures increase, there is a growing demand for climate-controlled buildings. Poor indoor air quality in manufacturing plants and warehouses with poor air conditioning can lead to building-related illnesses. These health-related consequences, hence, can impact the workers' quality of life and productivity at work indeed. The mentioned health issues give rise to the concern of providing better insurance according to the severe conditions by companies. Also, health workers and medical practitioners will more likely experience more patients due to climate change. Therefore, the businesses should, as a result, more work should offer them higher salaries.

The societal implications of climate change on workers and communities should not be overlooked. The direct damage costs to health are estimated to be from 2 to 4 billion US dollars annually by 2030, making it harder for people facing poverty to receive medical treatment. [12] A case study in the US shows that heat was a contributing factor in 1,577 US deaths in 2021, a 56% increase from 1,012 in 2018. Older Americans faced higher heat-related death rates than younger Americans. 85-year-olds and older people, with 0.98 annual deaths per 100,000 residents due to heat waves, were the most vulnerable group in 2021. In contrast, this number was 0.01 per 100,000 for under 15-year-old Americans. American Indians and Alaska Natives die due to temperature increases with a death rate of 0.71 per 100,000 residents annually, the most among all races. Whereas this amount was 0.29 death rate per 100,000 for white people. [13] Last but not least, for worker populations such as low-income laborers who may have inadequate housing, the adverse climate-related impacts on their health in the workplace along with their home can exacerbate the situation for them. [11] All in all, the damages associated with climate change seem to affect vulnerable workers the most, including women, people in poverty, indigenous and tribal peoples, disabled individuals, the elderly, and other disadvantaged groups, thereby reinforcing inequality. [14] Even in workplaces, transition adaptation among the young generation is considered by employers to be much easier, hence, invoking them to lay off some of their older workers.

Regarding productivity, the ILO estimates that between 2000 and 2015, 23 million working-life years were lost annually because of environment-related hazards, equivalent to 0.8 percent of a year's work, assuming on average 2.8 billion people aged 15 to 64 are in employment in any given year.[15] "Working Life years" means the number of years you spend working, considering each country's retirement and working age. Moreover, prolonged hot temperatures make it necessary for workers to spend more work hours cooling down their bodies to maintain the body temperature below 38°C. As one of the consequences of climate change, heat stress will continue to reduce productivity as slowing down is a natural defense mechanism against heat exposure. Jobs that highly depend on outdoor and daytime work (e.g., in fields such as agriculture, construction, or transportation [16]) and workplaces where insufficient adaptation measures have been taken will be the most affected (Kovats and Hajat, 2008). Globally, 1.4 percent of the total hours worked were lost in 1995 because of high temperature, equivalent to around 35 million full-time jobs worldwide (ILO, 2018a). Predicting a global temperature rise of 1.5°C by the end of the century estimates that by 2030, 2.0 percent of total work hours will be lost due to heat stress, making the labor productivity loss equivalent to 72 million full-time jobs. [17] Southern Asia and western Africa are expected to be the worst affected by rising temperatures, with projected losses in 2030 of 5.3 percent and 4.8 percent of working hours, corresponding to about 43 million and 9 million full-time jobs, respectively.[18]

Climate change does not only impact the workers' health and productivity but can also change the nature of the work itself. On the one hand, it can intensify or destroy jobs; on the other, it can create new jobs as a transition to a low-carbon, greener economy. Many job sectors which directly rely on the services that ecosystems provide, such as jobs in agriculture, fisheries, forestry, and tourism, will be affected adversely due to drought, low levels of rainfall, and loss of species. Many industries that implicitly depend on the ecosystem, such as paper companies, oil & gas companies, and manufacturers, will most probably experience downsizing and recession due to a lack of resources. Around one-third of industrial sectors have strong links with ecosystem services (GHK Consulting, CE, and IEEP, 2007). In 2014, around 1.2 billion jobs, accounting for 40 percent of total world employment, were dependent directly or heavily on ecosystem services. These sectors include agriculture, forestry, fishing, food and drink, paper companies, biofuels, renewable energy sources, the pharmaceutical and chemical industries, and tourism. The share of employment that relies on ecosystem services varies widely across the G20 countries, with India, China, and Indonesia have the highest proportions, at 52, 50, and 41 percent, respectively. The European Union (EU) ratio is as high as 16 percent, with Germany, the largest European economy, being 6 percent. These estimates only consider jobs directly reliant on ecosystem services; for example, shop assistants selling seeds or drivers transporting food are not taken into account. Therefore, these are just underestimating how catastrophic climate change can affect industries making people jobless. [19] But again, the stats show that this will happen at a different rate in different countries, raising the number of migrant workers and reinforcing inequality.

On a more positive note, the International Energy Agency (IEA) reports that the pursuit of sustainability in the energy sector is predicted to create approximately 18 million "more" jobs globally by 2030 compared to what would pertain if the current path were continued. Accordingly, jobs in utilities, mining, and fossil fuel-related industries will be displaced by renewable energy, electric vehicles, and sustainable infrastructure industries. Nevertheless, not all jobs are related to utilizing green energy resources; some positions are created to address the climate change consequences that have already occurred. Some businesses have already taken advantage and lifted many workers from unemployment. For instance, floods accounted for about 95 percent of all economic damage caused by environmental disasters in Argentina in 2016. (e.g., Salta in February 2018). Argentina's National Water Plan ("Plan Nacional de Agua Potable y Saneamiento") was introduced to provide a framework for coordinating adaptation efforts. The National Water Plan at the time of introduction was expected to generate 300,000 new jobs by 2021. [14] However, there is concern that along with the process of displacement of jobs, how should businesses train and develop workers' skills as an adaptation measure for the transition? Skills development is an integral part that helps displaced workers move on to sectors with employment growth. Industries have experienced this many times in history, particularly during the industrial revolutions. Nonetheless, protecting workers against income losses and unemployment stress is of importance. Big social problems happen when workers and citizens become disempowered victims of change (Iskander and Lowe, 2020). To prevent such issues, anticipating skills related to climate change adaptation and providing training programs are crucial first steps. [14]

There are several measures that businesses can deploy to increase the positive impacts (or minimize the negative consequences) of just transition to employment. First, abiding by ILO's comprehensive guidelines and informing the employees of such policies can help them ensure that climate change adaptation can be employment friendly. Having a better view and knowing that their employers care about their status will reduce the workers' anxiety and unemployment stress as a result. This can increase their creativity and their willingness to accept the transition. Through the process, social dialogue can play an essential role in comforting employees through the unpredicted hardships they might go through. But it is important to realize that although climate change is a global issue, not all problems can be solved on a large scale. To create locally effective adaptation solutions, micro, small and medium-sized enterprises can play a crucial role in climate change adaptation. An example of local communities creating local jobs can be found in Indonesia, with around 60% forest land, making it the third largest area of tropical rainforest in the world. In 1996, a "Mega Rice Project" project in Central Kalimantan resulted in converting one million forests to rice paddies. However, people discovered that the soil was unsuitable for such a purpose, and the land was abandoned or used for industrial purposes. In 2007, the government decided to set ambitious targets for reducing CO2 emissions caused by deforestation. Since then, many local activities have started, creating employment for many local communities. Indeed, a regional resource-based approach to infrastructure development can contribute significantly to a more inclusive labor market. Alongside regional resource-based methods, gender-responsive practices by businesses are also critical. Given that male-dominated industries gain prominence due to the development of renewables, manufacturing, and construction sectors in a 2-degree temperature increase scenario, businesses should legislate laws to overcome gender disparities.[14] Ultimately, not everyone is aware of their actions' effects on the climate. Thus, besides providing free training programs to develop the workers' skills, giving presentations on how beneficial the workers' transition can be to help the climate, in the long run, is vital. This way, employees will not only become motivated to participate in the change; but also be given a sense of being part of an extensive and vital scheme that will make them feel appreciated.

A global survey by IBM found that 71 percent of employees and job seekers consider sustainable organizations "more attractive employers" to join. Interestingly, half of the surveyed people are also willing to get a pay cut to work for an organization with a commitment to the planet." [20]. Based on the results, organizations can, as a result of practicing environmentally friendly strategies, attract a larger talent pool. But what are these ecologically friendly strategies? Sustainable commuting: domestic transport is the most significant greenhouse gas emitting sector, producing 27% of the UK's total emissions in 2019. [21] 15% of all the trip purposes were allocated to commuting. [22] Therefore, if companies want to help their employees reduce their carbon footprint, their daily commute is one of the best places to start. Companies can use various innovative infrastructures and technologies to their help. First, by installing EV charge points at the office or switching company cars to electric ones, companies can help accelerate the encouraging green trend towards using electric cars as a replacement for petrol vehicles, which emit around three times more carbon dioxide compared to electric cars. Urging employees to use carpooling services and promoting workers to use public transport services and E-bikes are other influential ways of contributing to the green trend. For example, at the new Quai Zurich Campus headquarters in Zurich, no parking spaces have been built to encourage employees to take a greener route to the office. Furthermore, companies can provide secure bike storage and offer tax-deductible bike-purchasing schemes as their share of promoting cycling. [20] Remote working is another way businesses can provide to their employees, thanks to the development of many online communication services. Analysis by IEA illustrates that people who commute by car, if their office is further than 6 kilometers to their house, working from home is likely to reduce their carbon footprint even considering the potential increase in household electricity usage. Studies show that investing in eco-friendly infrastructure positively impacts employment and customers. Patagonia, a clothing company, is an example of creating a series of brand adverts to encourage people to repair old clothes instead of buying new ones, criticizing the current adverts most companies follow. "Unilever has made sustainability part of its corporate identity, including it within the company's updated logo." After which, Unilever found that its Sustainable Living Brands grew 69 percent faster than the rest of the business and delivered 75% of Unilever's overall growth. This, in turn, has led to attracting more new workers, half of whom cited Unilever's environmentally friendly policies as the main reason for joining the company. [20]

In the first stage, seeing some of the most catastrophic general consequences of climate change on societies and people's public life, it is logical that companies should be concerned about how climate change might affect their workers. It is rarely possible to face problems in private life but be creative at work. In addition, by considering the social and economic consequences of climate change on workers, stats show that companies can target an enormous talent pool and experience a smoother unstoppable transition. Moreover, inclusion and adaptation in the work transition are crucial matters, and several practices need to be taken by employers. Businesses can play a prominent role in decreasing the workers' anxiety and unemployment stress by informing them and guiding them through the process. The primary and essential factor is that everyone should realize that if these measures are not taken soon, there will be unpredictable consequences taking the lives of many individuals around the globe. Therefore, by increasing their tolerance, employers and workers can cope more effectively with climate change's effects. As a result of the plans being implemented, the adverse implications of climate change on workers and jobs can be limited.

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