

Managing the risks from Climate Change



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A certain amount of attention has now been given to the impact that commercial and industrial activity is having on the climate. Most of it centres on mitigating greenhouse gas (GHG) generation. That is as it should be. But what has been neglected are the risks that a changing climate poses to businesses. A responsible management would need to address those because some of them, unless dealt with in the next few years, may be too late to mitigate.

The risks can be grouped into five major groups:

- A. Policy & legal
- B. Technology
- C. Market
- D. Reputation
- E. Physical

So, how should a business go about identifying them and developing a mitigation plan? A great deal of uncertainty attaches to each of these because nobody is certain how fast the climate will change. One way to deal with such uncertainty is to “crowdsource” what is likely to happen. Some may turn to experts to consider the probabilities of each risk. That is recommended to deal with some of the risks, those that managers will be unable to address. On the other hand, certain other risks, such as technology related, are better addressed by persons within the business. The most expert of bodies dealing with this topic is the UN’s Intergovernmental Panel on Climate Change. The Panel has issued five reports over the past 32 years and is on the verge of issuing the sixth. It comprises of the leading climate scientists from 195 countries. Every report has predicted climate change over a range of probabilities and strikingly, the predictions in successive reports have been increasingly dire. In other words, the only thing certain is that the situation is certain to worsen substantially with each passing year, not on a linear basis but much faster than even the experts are able to envisage.

The public and business leaders are confused even as politician from various countries grandstand on protecting their voters’ interests. One way to start the assessment of risks is to ask a set of open-ended questions to all senior executives and key stakeholders in the company. A collation of the responses will provide the board with a starting point. Because the risks will begin to impact at different times and because the time required to prepare for their mitigation will be different, it is also necessary to consider the response for different timelines. These questions could, therefore, be:

1. What specific time horizons (number of years in the future) should we use to consider the short-, medium- and long-term impact of climate change on the business? When suggesting the horizons bear in mind the business planning cycle, time required to modify products or operation processes, economic and technical lives of existing assets and products, obsolescence.

When responding to the below questions, please state your views for each of the time horizons you have chosen.

2. What actions (punitive or incentivisation) do you think the government is likely to take to deal with the impact of our businesses on the climate and the environment?
3. Do you believe that the organisation should support the likely actions or to lobby against them?
4. If we continue to do the businesses we are currently in and to continue doing them the same way, will our reputation be affected negatively, positively, or not at all?
5. What physical risks will be faced by our key assets? These risks could include event driven – floods, landslides, storms, drought. Or they could be chronic – rise in ambient temperatures, change in ambient humidity, sea level rise, water scarcity or contamination, change in wind patterns, drop of insolation, acidification of oceans, high PM. See below note.
6. Which of the products and services will become technologically or economically outdated before they are affected by climate change? Which product or service will have performance difficulties because of climate change?
7. Products & services:
 - a. What new ones should be developed to reduce use of inputs and energy?
 - b. Which new customer segments can we aim for?
 - c. How can they be made better reusable or recyclable?
 - d. Which one’s efficiency will be affected with a rise in ambient temperatures of less than 2.5°C and more than 2.5°C?
 - e. Which ones cannot work without water?
 - f. Which ones cannot work in an AQI of more than 500 MPI 2.5?
 - g. At what level of carbon emissions penalty will each of our products become uncompetitive? (Assume that about 700gm. Of CO₂ is emitted for each kWh of electricity used)..
8. What metrics should we use to measure our response to Climate Change? What targets should we set for each of those metrics?
9. What risk management processes and steps do you recommend for managing the risks (including identifying the opportunities) of Climate Change?

Having received and collated the responses, the management may assess each of the identified risks and opportunities. In collating the responses, those that

appear extreme should not be excluded because the rate of change is unpredictable but has, inevitably, outrun any predictions. A summary of the risks and conclusions should then be discussed in the board of directors and the exercise repeated annually.

Illustrative List of Climate Change Impact on Human Activity

1. Increase (in some places decrease) in ambient maximum and **minimum temperatures**.
2. Increase in severe cloud bursts and **precipitation**. Also, a disruption in the normal rainfall pattern – its frequency, its steadiness, its start and end dates (for monsoons).
3. Increase in severe **snowstorms**. Also changes as for rainfall patterns.
4. Increase in **water** scarcity due to changes in rainfall, snowfall, glacier and snowpack melt, scarcity or total depletion of ground water.
5. Increase or decrease or change in direction or speed or change of pattern of **wind**. Increase in frequency and intensity of cyclones.
6. Increase in ambient **humidity**.
7. Decrease of **insolation** due to smog and brown cloud.
8. Increased **ocean** acidification and temperature, decrease of dissolved oxygen.
9. Rise in **sea levels**.
10. Additionally, we also have the challenge of **high particulate matter** in the atmosphere.

An illustrative list of the impact of the above on a business could be-

- a. Production processes, including upstream and downstream processes, not working in the new ambient environment (temperature, humidity, particulate matter).
- b. Failures of water supply and sanitation systems.
- c. Failures of dams.

- d. Flooding. Contaminated water supplies.
- e. Loss of usable land due to soil erosion, soil salination, desertification & flooding.
- f. Unstable geology resulting in landslides.
- g. Loss of organic matter and biodiversity of soil.
- h. Non availability of raw materials or other inputs. Certain agricultural products or sea foods becoming scarce due to their inability to survive or because of shifting their habitat. Growth of pathogens, pests, predators and invasive species, including in the oceans. Oligotrops displacing copiotrops.
- i. Human habitation becoming challenging for a multiplicity of reasons.
- j. Population migrations into and out of key locations. (e.g., 2 crore Bangladeshis migrating into India to escape sea level rise).
- k. New and existing vector borne diseases.
- l. Reduction of educational, health-care and other social services due to habitability challenges.
- m. Deaths due to heat waves and air pollution especially of older employees, their relatives.
- n. Collapse of electricity grid, telecom and other communication systems.
- o. Ports and airports becoming unusable through parts of the year or permanently.
- p. Roads washed away.
- q. Collapse of transport systems.
- r. Loss of permafrost.
- s. Loss of tropical and other forests.
- t. Destruction of wetlands and lagoons.
- u. Wildfire increase.
- v. Geo-political conflicts.
- w. Failure of banks, insurers and other FSI sector stakeholders because of massive losses.
- x. Higher taxes to fund climate impact-mitigation schemes.
- y. Volatility in economic cycles, inter-relationships, prices, availability of economic factors.