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# Assessing the Impact of Climate Change on Business in Vietnam

Using Scenario Analysis as a Process to Understand Business Risks and Opportunities

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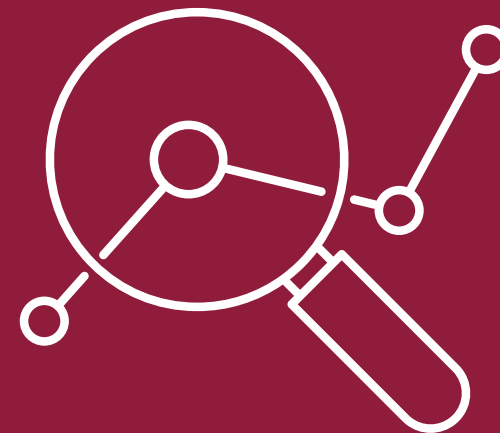
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# What is a Scenario Analysis?

Scenario analysis is a **commonly used process among businesses to explore different plausible futures**, understand how the business environment might change, and identify **how to improve decision-making** under conditions of uncertainty.

It allows companies to “stress test” business strategy to ensure it is prepared for a range of possible futures. Given there is so much uncertainty globally—not just with COVID-19—it is important to **build a business strategy that is resilient** to a range of different future possibilities.

The Taskforce on Climate-Related Financial Disclosures (TCFD)\* recommends businesses use scenario analysis to assess strategic resilience to climate change. This disclosure framework and its recommendations are considered the new norm, with support from over 1,500 organizations in all business sectors.



\*The Financial Stability Board created the Task Force on Climate-related Financial Disclosures (TCFD) in 2015 to improve and increase reporting of climate-related financial information.

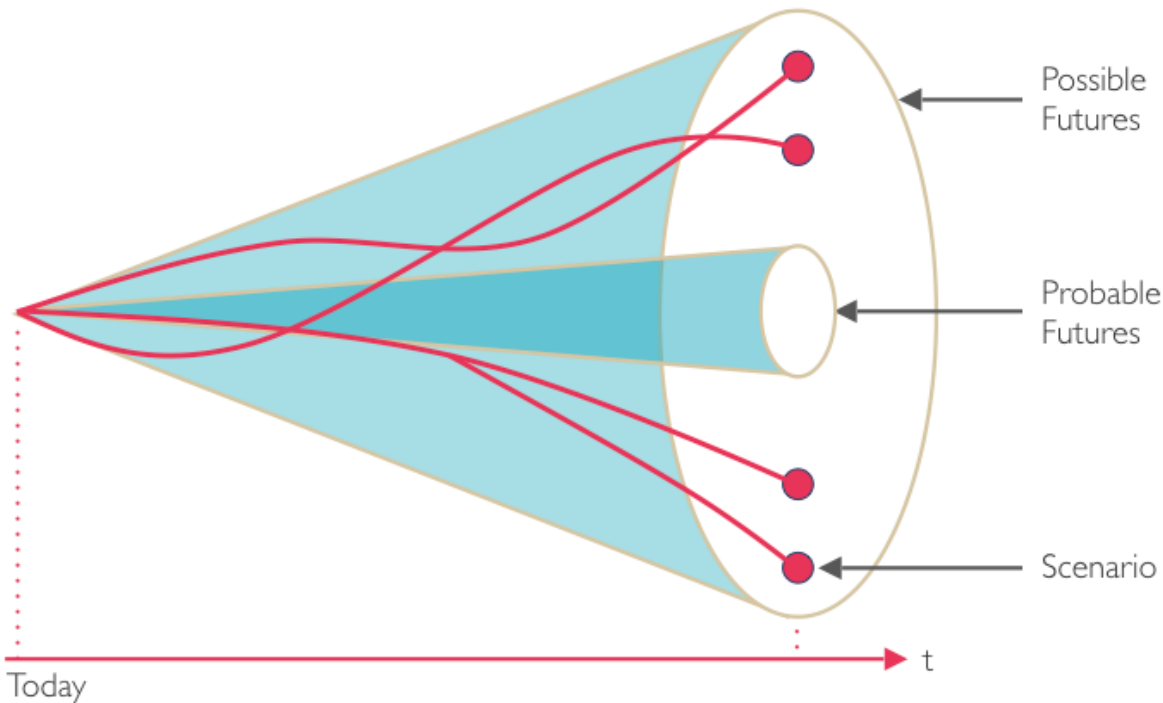
# We Live in a Time of Disruption and Crisis

- The world around us is **changing more rapidly** than ever before. The climate crisis is accelerating disruption and intensifying uncertainty. Disruptive technologies, geopolitical volatility, and new expectations from stakeholders are also shifting business strategies today—more than even a decade ago.
- In times of such uncertainty, we need to clearly discern what is happening in the world, how it might change in the future, and how it might impact our business.
- But too often we respond to future uncertainty with denial, paralysis, or confirmation bias. It is often difficult to think effectively about complex issues and unpredictable change.
- More than ever, we need to be able to think about complex and unpredictable change, and to **make wise strategic decisions in the face of uncertainty**.



# How Scenario Analysis Can Help

Scenario analysis is a process that enables us to explore uncertain futures and make wiser decisions today.



- Scenarios are written descriptions of **different plausible futures**.
- **Scenarios correct against cognitive biases.** Good scenarios challenge assumptions and help us identify blind spots in our thinking.
- **Scenarios are not predictions or forecasts about the future.** They describe a set of plausible hypothetical futures.
- Scenarios allow us to **stress test strategy as well as risk management processes and preparedness plans**.

# Benefits of Conducting a Scenario Analysis



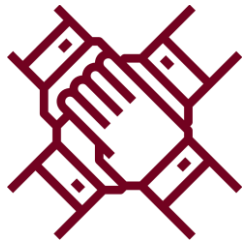
Identifies blind spots and challenges groupthink by testing assumptions about the future.



Supports the development of more resilient business strategy.



Builds capacity to understand sustainability and climate change.



Provides a platform for alignment and collaboration within a business.



Improves individual and organizational agility.

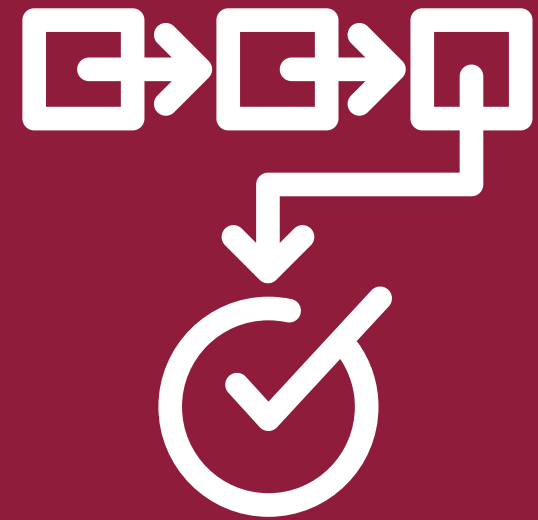


Encourages brainstorming and testing of possible solutions to future changes.

# Instructions and Guidance

# How to Use The Scenarios

BSR's climate change-related scenarios in this report imagine three different, plausible futures for Vietnam's business environment. These are **not predictions** for what the future will hold; rather, they hypothetically describe what the future could look like. None of these scenarios will progress exactly as written. However, as a set of three written future scenarios, they provide an important tool to **challenge our assumptions** about the future, **stress test** our strategies and business plans, and **identify opportunities** to build resilience within our organizations.





# How to Conduct a Scenario Analysis

A scenario analysis is best administered in a workshop with a diverse set of internal stakeholders. Key participants can include heads of multiple departments or teams—such as operations, finance, and human resources, among others—who can generate robust insights on future business strategy.

Once the workshop participants are assembled, follow these steps:



Read each of the three scenarios. Which scenario most closely describes the world you are preparing for? Do any of these scenarios describe futures you are ignoring but should not be?



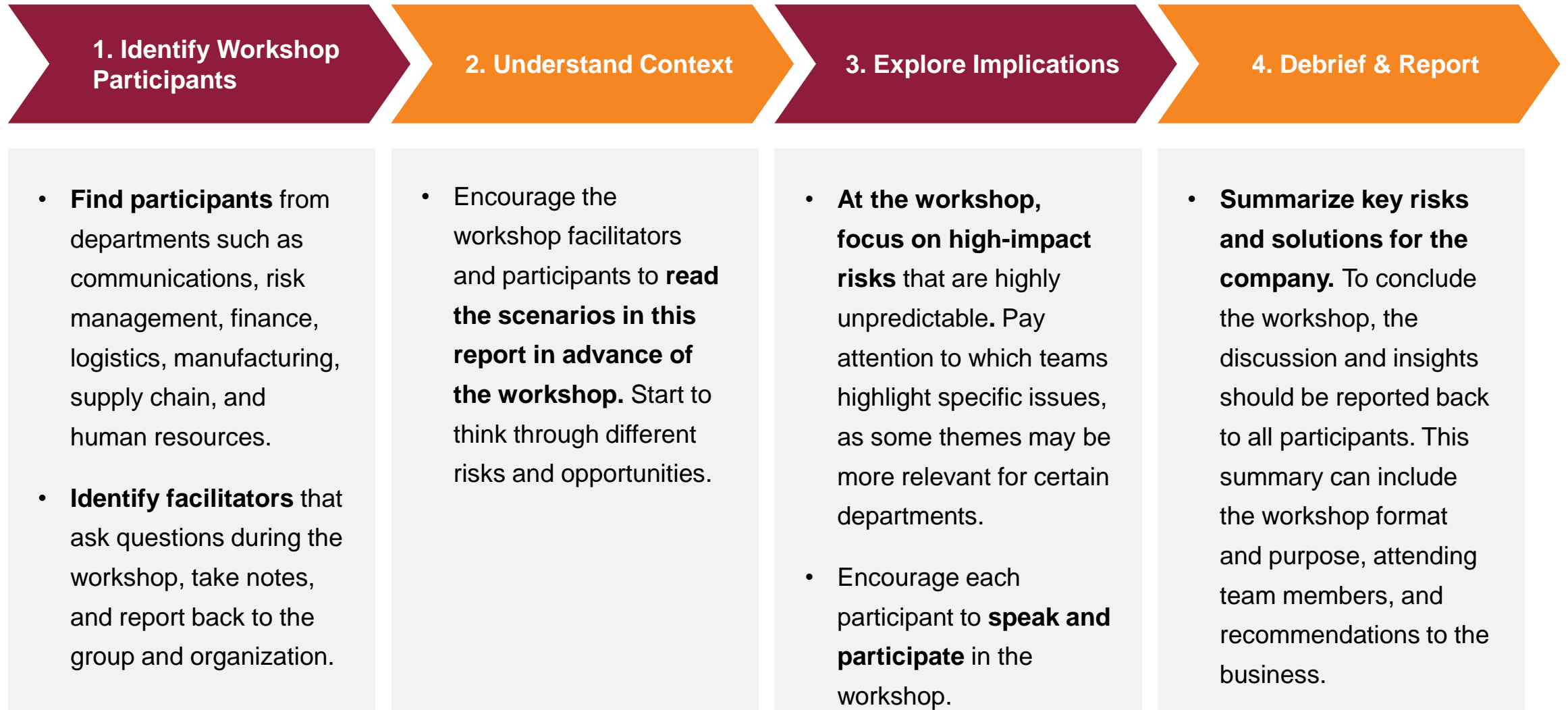
For each scenario, what **risks and opportunities** would be presented for your company as it currently operates?



What **actions** might you take to **reduce risks and pursue opportunities** that would work across *most or all of the scenarios*? Are any of the risks or opportunities so significant that even if they only occur in one scenario you should develop a contingency plan for them?

**While these scenarios describe possible future outcomes** that firms should prepare for, people influence what happens. A scenario analysis can help your company and its people imagine what a more climate-resilient future might look like for the business. Then, your company and its people can start to develop policies, programs, and other solutions to ensure the business is prepared and climate resilient.

# A Detailed Approach for the Workshop



# Workshop Agenda

Depending on your company's needs and preferences, the scenario analysis workshops can run between 2-4 hours. Below is a suggested agenda that is approximately 2 hours.

## Project Overview

### 15 Minutes

- Introduce the purpose of undergoing a climate scenario analysis workshop, referencing implications for business impact, risk management, and overall resilience.

## Scenario Overview

### 20 Minutes

- Briefly summarize the three scenarios in this report and note the key differences in each with regards to climate impacts and socioeconomic differences.

## Break-Out Sessions

### 20 Minutes

- Facilitators divide participants into teams of approximately 5-7 people per team to discuss each scenario, stimulating conversation with prepared questions. (See the next slide.)

## Discussion

### 60-80 Minutes

- Facilitators summarize findings from team discussions, particularly on key risks, their impact and uncertainty, and potential solutions to mitigate those risks.

## Recap/Next Steps

### 10 Minutes

- Facilitators summarize findings to all workshop participants and identify next steps to build a climate-resilient business. See slide 14 for suggested next steps.

# Break-out Discussions

Separate all participants into teams for a discussion. With a facilitator, each team will **answer the questions below for all three scenarios.**

- Each participant should first write down their ideas and answers individually before sharing with the group.
- Ideally, each group contains a variety of different business teams and departments.

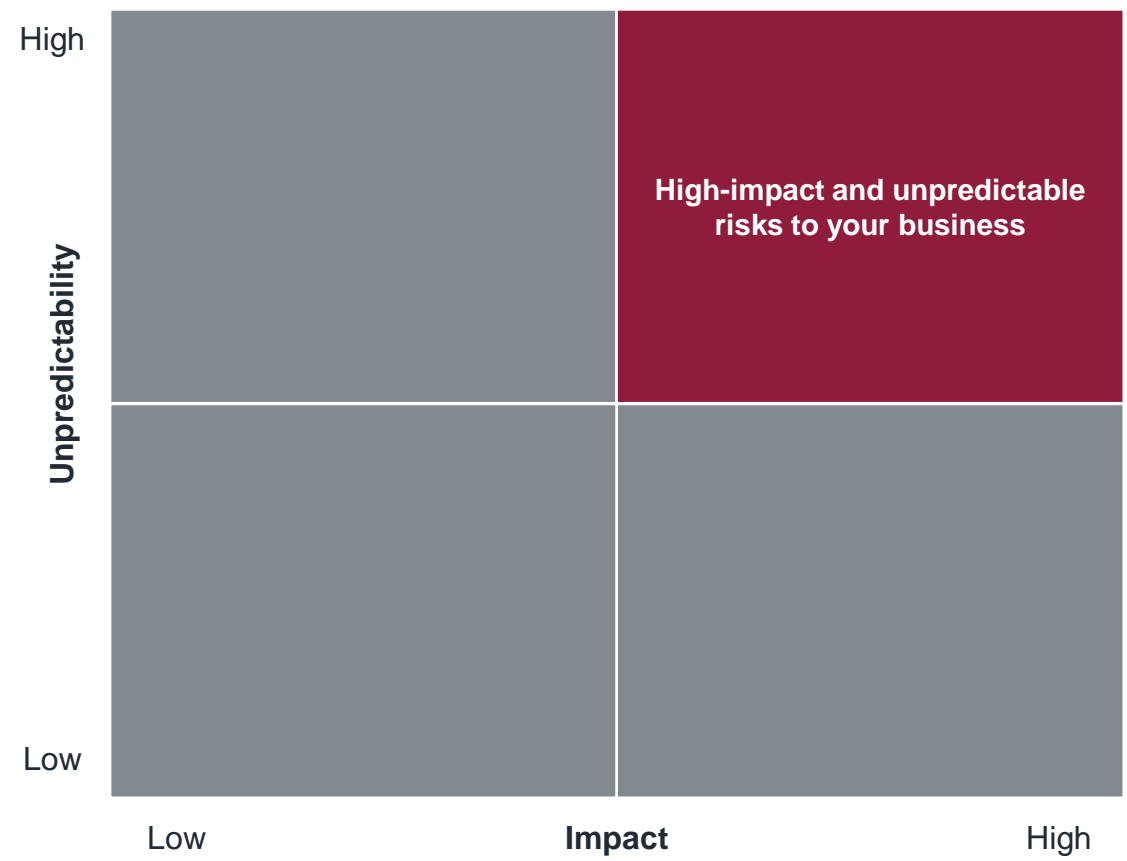


## Questions

1. What do you see are the top **risks** facing your business in each scenario?
  - ☐ Create a list of at least 5-8 risks
2. Of the risks you identified, what would have the greatest **impact** on your company in the next 10 years?
  - ☐ What do you think will have the **least impact** on your business in the next 10 years?
3. Of the risks you identified, what is/are the most **unpredictable**? What is/are the most predictable?
4. What are the possible **solutions** for your company to address the risks you identified?
  - ☐ Do any potential solutions mitigate more than one risk?
  - ☐ What assets does your business currently have or could create to mitigate these risks?

# Feedback Framework

During the workshop discussion, facilitators can organize risks to the company based on **Impact** (low to high) and **Unpredictability** (low to high). Each risk can be placed in the appropriate quadrant based on participation input. This can help visually prioritize issues the company should focus on, and suitable solutions that could address them.



# Enhancing Climate Resilience for Business in Vietnam

BSR suggests these next steps after the scenario analysis workshop. Your business can prioritize climate risks, delegate team resources to address risk and opportunities, and enhance business resilience to external shocks.



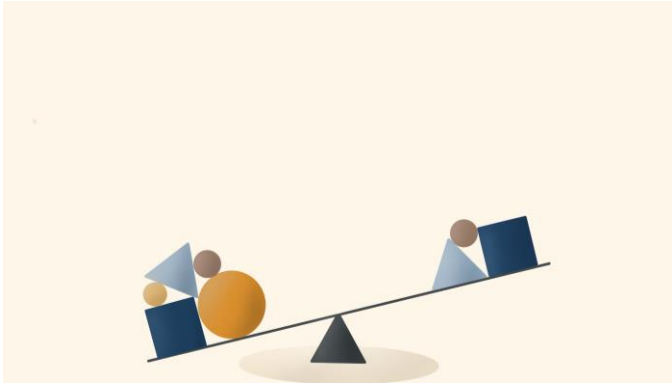
**Improve your company's understanding of climate-relevant risks and opportunities, and prepare the business to be climate-resilient.**

- **Prioritize risks and opportunities by time.** Risks and opportunities can be identified as short-term (0-24 months), medium-term (2-3 years), and long-term (3-5+ years). This can generate an action plan and enable company decision-makers to prioritize resources for risk management and to capitalize on appropriate opportunities.
- **Categorize the types of risks and opportunities, and delegate to teams.** Differentiating by types, such as physical or regulatory, can help your business identify which departments are most suitable to address and prepare for specific issue.
- **Review the supply chain to identify vulnerability to risks and areas for enhancement.** Each scenario has implications for your company's supply chain. Identify which suppliers are most susceptible to climate change.

# Climate Change Scenarios for Businesses in Vietnam

# High-level Summaries

This section contains three climate change scenarios for 2030 that can be used to stress-test your company's strategy, risk management, and overall climate resilience in Vietnam.



## 1. Inequitable Expansion

*Vietnam and the global community have largely transitioned towards low-carbon economies, but societal development has lagged and seen greater urban inequity.*



## 2. Braving the Heat

*The reality of climate change is no longer debated globally, and the international community focuses on sustainable development. Comparatively however, Vietnam sees limited progress.*



## 3. Acute Fragmentation

*Intensifying climate change has worsened country relations, resulting in many markets like Vietnam to emphasize energy security through extractive resource and protectionist policies.*



# Inequitable Expansion\*



- RCP 2.6 – This is the most ambitious scenario for greenhouse gas emissions reduction. Emissions peak by mid-century, then fall due to active removal of CO<sub>2</sub> from the atmosphere. This scenario requires early participation of all main emitters, including those in developing countries, in systemic emissions reduction programs.
- SSP4 – There are low challenges to mitigation and high challenges to adaptation.

Now in 2030, Vietnam and the global community are using more low-carbon energy sources. Renewable energy expanded, thanks to long-term government incentive programs and a modernized electricity grid. Enterprises are able to meet operational energy and emissions reduction targets, and grow their businesses without relying heavily on coal. However, jobs within renewable energy systems are available to highly educated local Vietnamese or foreign talent, as trainings for ‘reskilling’ are not commonly available.

Increased precipitation leads to stronger and more frequent flash floods in cities like Ho Chi Minh. The slow recovery times, including long power outages and food supply shortages repeatedly devastate poorer populations that lack proper sewage and wastewater systems. Recurring damage interrupts workstreams and rental payments, leading to higher evictions rates, tension within communities, and looting and violence.

With the increase in consumption and product packaging, waste generation in Vietnam nearly doubles compared to a decade ago, and low recycling and reuse rates result in overcapacity treatment plants and increased water pollution. The toll on human productivity and health is evident. Longer dry spells hurt agricultural stocks and rural incomes, yet water scarcity leaves some communities with little choice but to rely on compromised water systems. Public health worsens as rural communities increasingly seek care in urban areas, straining clinic and hospital infrastructure.




Global financial services firms implement environmental risk guidelines when funding projects in sensitive geographies and sectors, such as fossil fuels. Vietnamese companies looking for international funds increasingly adhere to stricter reporting regimes, international certifications to verify ethical raw materials, and greater sustainability transparency.

# It's 2030—How We Got Here

- Vietnam creates a more investor-friendly financial and regulatory infrastructure for renewable energy expansion, such as a more transparent project approval process between multiple government agencies.<sup>1</sup> Financial services companies encourage capital flows and lending to renewable projects in Vietnam.
- Grid infrastructure modernization has enabled strong expansion from renewable sources like solar or wind. Investment in low-carbon sites and projects continues. Fossil fuel subsidies are phased out and more generous incentives for renewables are established, such as solar feed-in-tariffs.<sup>2</sup>
- Education programs are sparse and underfunded, leading to a fragmented collection of low-income groups in labor-intensive, low-tech jobs.<sup>3</sup>
- Climate-related pressures, such as drought, coastal erosion, and water shortages increase migration and force rural communities to seek employment in cities as their agricultural livelihoods experience heavy losses.<sup>4</sup>
- Water basins are at risk of contamination, leaving millions vulnerable to illness and chronic disease. Urban settings experience dire natural resource shortages, such as freshwater, delaying post-disaster recoveries.<sup>5</sup>

# Physical Impacts In 2030

As the average global temperature is on track to rise 1.5°C, businesses in Vietnam can expect the following:

Average Outcome	1 in 10 Chance
<p><b>More Heatwaves:</b> Ho Chi Minh City is experiencing a 5% higher chance of <b>more heatwaves</b> on an annual basis.</p> 	<p><b>More Hotter Days:</b> Ho Chi Minh City is experiencing 12 more days each year where the <b>maximum daily temperature</b> exceeds 35°C.</p> 
<p><b>Increased Precipitation:</b> Vietnam is experiencing <b>nearly 6%</b> heavier rainfall during storms.</p> 	<p><b>Heavier Rainfall:</b> Hanoi is experiencing <b>annual rainfall</b> volumes grow by 180%</p> <p>180% ▲</p>

1. (2016) Evaluating sustainable adaptation strategies for vulnerable mega-deltas using system dynamics modelling: Rice agriculture in the Mekong Delta's An Giang Province, Vietnam  
2. (2020) Eco-Business: Vietnam approves second feed-in-tariff scheme for solar  
3. (2019) McKinsey: Exploring an alternative pathway for Vietnam's energy future  
4. (2018) The World Bank: Vietnam's Future Jobs  
5 (2017) Remarks on the current quality of groundwater in Vietnam

# Braving the Heat\*

Now in 2030, the world has no choice but to adapt to a warmer climate and its more unpredictable physical impacts. Vietnam faces more intense seasonal flooding and more frequent 100-year storms, which ravage coastlines and low-lying urban areas. Despite governmental efforts and multilateral assistance programs aiming to adapt to a changing climate, some communities are unable to fully recover before another climate disaster overwhelms public resources.

While global effort towards sustainable development goals continues, Vietnam sees relatively muted progress. There is limited progress made towards the UN Sustainable Development Goals. In Vietnam, social insurance programs undergo modest reforms, presenting only a few options for working and lower-middle classes to expand their pensions or education choices. However, low-income groups still struggle to access financial services, secure low-interest loans, and receive consumer protection. Urban centers see jobs growth in both manual labor as well as service-oriented roles, particularly in technology, and more women participate in new employment opportunities at domestic small- to medium-sized enterprises (SMEs).

Policymakers continue proposing new legislation that supports alternative energy sources, though a more systemic transition is hampered by a legacy power grid that struggles to absorb new capacity. Completion rates for Vietnamese hydropower dams remain on track, straining freshwater resources that are already pressured by improper discharge and disposal practices.

Prolonged dry spells disrupt agricultural harvests and add pressure to rural farming communities already losing individuals that migrate to urban cities for employment. Critical public housing and transportation infrastructure remains overwhelmed, and many residential districts become overcrowded with migrants from both rural communities and smaller urban towns.

Vietnamese stock exchanges require firms to disclose sustainability information annually, with foreign investors expecting greater transparency on climate risks, particularly greenhouse gas emissions reporting. Capital raises on projects increasingly rely on additional international funding to cover climate adaptation expenses—the cost to prepare for and recover from extreme weather events, flooding, or other climate-related physical impacts. Such expenses are now viewed as a standard cost of doing business.

- RCP 8.5 – This is a scenario with high emissions, arising from little effort to decarbonize, and represents a failure to curb global warming by 2100.
- SSP2 – There are medium challenges to mitigation and adaptation, as global social, economic, and technological trends do not shift significantly from historical patterns.



# It's 2030—How We Got Here

- Heatwaves reduce worker productivity, prompting manufacturing facilities to provide better ventilation and industrial air conditioners.
- Rural inhabitants are forced out of their communities as hydropower plants submerge significant portions of arable land.<sup>6</sup>
- Migration from rural to urban areas outpaces job demand and available infrastructure, putting strong pressure on housing and social welfare systems.<sup>7</sup>
- Manufacturing electronic components in Vietnam continues to grow, drawing labor into urban city clusters for higher wage opportunities. The demand for tech upskilling rises sharply, prompting companies and government programs to offer more targeted trainings and resources.<sup>8</sup>
- Financial institutions support enterprises to transition to more sustainable business practices. Exceptions are offered for sensitive sectors. For example, to secure funding, palm oil must be certified and coal-fired power plants must use carbon capture and sequestration technology.<sup>9</sup>
- Government social programs support vulnerable groups with education opportunities, and reskill workers with trainings.<sup>10</sup>

## Physical Impacts In 2030

As the average global temperature is on track to rise 4.0°C, businesses in Vietnam can expect the following:

### Average Outcome

**More Heatwaves:** Ho Chi Minh City is experiencing a 7% higher chance of **more heatwaves** on an annual basis.



**Increased Precipitation:** Vietnam is experiencing **nearly 11%** heavier rainfall during storms.



### 1 in 10 Chance

**More Hotter Days:** Ho Chi Minh City is experiencing 60 more days each year where the **maximum daily temperature** exceeds 35°C.



**Heavier Rainfall:** Hanoi is experiencing **annual rainfall** volumes grow by 150%

150% ▲

6. (2016) International Organization of Migration: Migration, Environment, and Climate Change in Vietnam

7. (2019) Exposure to Floods, Climate Change, and Poverty in Vietnam

8. (2019) Vietnam's IT Sector: 5 Industries to Watch

9. (2019) ING – Environmental and Social Risk Framework

10. (2016) UN Expert Group Meeting on Poverty Eradication: Social Protection in Vietnam

# Acute Fragmentation\*

The background of the slide features a teal-colored surface that is heavily fragmented by a network of dark brown, jagged lines, resembling cracks in a dry or broken material. Silhouettes of five people are positioned on these fragments: one on a large piece in the upper left, one on a smaller piece in the upper right, one on a central piece, and two on pieces at the bottom left and bottom right. The overall effect is one of isolation and fragmentation.

Prolonged heatwaves in the Mekong River Delta limits freshwater availability to southern Vietnam's rice fields and shrimp pond farmers.<sup>7</sup> At the same time, unpredictable freezing fogs hit cities in the Central Highlands and largely reset annual coffee and tea harvests.<sup>8</sup> The very long warm spells with high humidity affects public health and leads to greater hospitalization among the ill and elderly. Vector-borne diseases flourish and threaten worker productivity and business output.

Countries are engaged in fierce competition, leading the way to nationalism, trade disputes, and withdrawal from multilateral arrangements. Like its regional peers, Vietnam prioritizes domestic energy security at the expense of broader societal-based development, such as infrastructure to actively manage flooding and wastewater treatment. Instead of supporting employees with flexible working schedules or medical packages, local firms increasingly replace full-time staff with part-time contractors.

Government programs promoting renewable energy development eventually halt, and existing renewable projects see private capital flight due to risks and uncertainty. Policymakers favor legislation that enables fossil fuel extraction and exploration, lift nuclear power plant postponements and moratoriums.

Waste management and reduction remain low priorities, alongside conservation and environmental protection. Air and water pollution intensifies in Hanoi and Ho Chi Minh City worsens, and adds to the public health concerns. Most businesses do not prioritize sustainable sourcing or ethical purchasing, opting instead for quicker output and shorter product lifecycles to increase consumption.

- RCP 8.5 – This is a scenario with high emissions, arising from little effort decarbonize, and represents a failure to curb global warming by 2100.




- SSP3 – There are high challenges to mitigation and adaptation.

# It's 2030—How We Got Here

- Prolonged heatwaves decrease worker productivity. Some companies consider limiting medical coverage due to the costs, shifting from full-time employees to part-time contractors, or investing more in automation.
- Global fragmentation has resulted in withdrawal of foreign investment, collaboration, and trade between countries and multilateral institutions. Like many countries, Vietnam turns inward and decreases international trade and tightens domestic supply chain shortages.<sup>11</sup>
- International financial flows for hydropower and solar projects decline.<sup>12</sup> Member contributions to ABD decrease significantly, reducing the number of education, social mobility, and human development programs in Vietnam.
- Support for fossil fuel development increases, and urban transportation systems are largely fossil fuel powered.<sup>13</sup>
- Frequent public health crises are exacerbated by strained housing infrastructure and increased migration.
- Environmental conservation policies are unsupported, and waste and resources are poorly managed. Business expansion is prioritized over biodiversity protection and combating wildlife crime.

## Physical Impacts In 2030

As the average global temperature is on track to rise 4.0°C, businesses in Vietnam can expect the following:

Average Outcome	1 in 10 Chance
<p><b>More Heatwaves:</b> Ho Chi Minh City is experiencing a 7% higher chance of <b>more heatwaves</b> on an annual basis.</p> 	<p><b>More Hotter Days:</b> Ho Chi Minh City is experiencing 60 more days each year where the <b>maximum daily temperature</b> exceeds 35°C.</p> 
<p><b>Increased Precipitation:</b> Vietnam is experiencing <b>nearly 11%</b> heavier rainfall during storms.</p> 	<p><b>Heavier Rainfall:</b> Hanoi is experiencing <b>annual rainfall</b> volumes grow by 150%</p> <p>150% ▲</p>

11. (2020) Asian Development Bank: Projects and Tenders  
12. (2020) Bloomberg – Sharp's Energy Unit Builds Solar Farm in Vietnam  
13. (2020) The Diplomat: Vietnam's Big Air Pollution Challenge

# Thank You

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