

# PHYSICAL RISK ASSESSMENT AND IMPACT EVALUATION POLICY

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## 1 Physical Risks

**PCA recognises that the changing climate poses new risks and challenges to real estate.** The world is currently on track to see substantial climate change throughout the 21st century.

Extreme weather events pose significant risks for the real estate sector. These extreme weather events include exceptionally high precipitation and flooding, hurricanes, and wildfires, as well as chronic risks such as subsidence and sea level rise in low-lying areas. Physical risks for the real estate sector are related to the damage caused to properties from weather events that are intensified by climate change.

PCA recognises its responsibility to assess the physical risks in the projects it is invested and has implemented a comprehensive system for managing physical risks, with its core strategy being a systematic process for identifying physical risks that could be financially material to PCA and its partners.

PCA works in two different stages to assess physical risks:

- Identification, where we differentiate between acute hazards, such as heat waves or floods and chronic stressors, such as drought and rising sea levels.
  - Acute Hazards: Acute hazards refer to sudden and severe events or conditions that pose immediate risks to real estate properties. These hazards are often associated with extreme weather events and can result in significant damage or destruction. Examples of acute hazards include:
    - Floods: Sudden, heavy rainfall or storm surges can cause rapid flooding, leading to property damage and potential displacement of residents.
    - Hurricanes and cyclones: These intense tropical storms bring strong winds, heavy rainfall, and storm surges, which can cause structural damage, flooding, and destruction of properties.
    - Wildfires: Climate change can contribute to drier conditions, increasing the risk of wildfires. These fires can spread quickly, causing damage to homes and surrounding areas.
    - Severe storms: Intense storms, including hailstorms and severe thunderstorms, can generate high winds, hail, and lightning, resulting in property damage and power outages.
  - Chronic Stressors: Chronic stressors, on the other hand, refer to long-term, gradual changes or ongoing conditions that gradually impact real estate properties over time. These stressors are typically associated with shifts in climate patterns and environmental conditions. Examples of chronic stressors include:
    - Sea-level rise: Rising sea levels due to climate change can lead to gradual inundation and erosion of coastal areas, posing long-term risks to properties located in these regions.
    - Changing precipitation patterns: Climate change can alter precipitation patterns, resulting in shifts in rainfall distribution and water availability. These changes can affect water resources, irrigation, and the viability of specific regions for agriculture and other land uses.
    - Temperature changes: Gradual increases in average temperatures can impact real estate by increasing cooling demands, straining energy

- systems, and potentially reducing agricultural productivity in certain regions.
    - Ecological disruptions: Climate change can disrupt ecosystems, leading to changes in biodiversity, invasive species, and the spread of pests and diseases. These ecological shifts can indirectly impact real estate, affecting property maintenance, landscaping, and property values.
    - Chronic stressors develop over time and often require long-term adaptation strategies and planning to mitigate their impacts on real estate properties.
  - Understanding the differences between acute hazards and chronic stressors is essential for real estate stakeholders to assess climate change's immediate and long-term risks. This knowledge can inform decision-making processes regarding property location, design, and resilience measures.
- Impact assessment, where we distinguish between direct and indirect impacts.
  - Direct and indirect impacts refer to the different ways climate change can affect properties and their surrounding areas.
  - Direct Impacts: Direct impacts are the immediate and observable consequences of climate change that directly affect real estate properties. Extreme weather events and changes in environmental conditions typically cause these impacts. Some examples of direct impacts include:
    - Increased frequency and severity of storms: Climate change can lead to more intense hurricanes, cyclones, and other storms, resulting in increased risks of property damage from high winds, storm surges, and flooding.
    - Rising sea levels: As global temperatures rise, glaciers melt, and sea levels increase, coastal properties are at greater risk of erosion, coastal flooding, and saltwater intrusion into freshwater systems.
    - Heatwaves and droughts: Climate change can contribute to more frequent and prolonged heatwaves and droughts, which can impact real estate by increasing the demand for cooling systems, straining water resources, and increasing the risk of wildfires.
  - Indirect Impacts: Indirect impacts are the secondary effects of climate change that can have implications for real estate beyond the immediate physical damage. These impacts are often related to social, economic, and regulatory changes. Some examples of indirect impacts include:
    - Insurance costs and availability: As the frequency and severity of extreme weather events increase, insurance companies may raise premiums or restrict coverage for properties in high-risk areas.
    - Infrastructure and utilities: Climate change can strain infrastructure systems such as transportation networks, power grids, and water supply systems. Disruptions in these systems can impact real estate properties' livability, functionality, and desirability.
    - Regulatory changes: Governments and local authorities may introduce new regulations and zoning restrictions to mitigate climate risks. For example, stricter building codes may be implemented to enhance

resilience against extreme weather events, which can affect construction costs and property values.

- **Market perception and demand:** Growing awareness of climate change and its impacts can influence consumer preferences and market demand for real estate. Properties located in low-risk areas or designed with sustainability features may become more desirable, while high-risk or unsustainable properties may face diminished demand.

<b>Physical Risks</b>	<b>Sea level rise and coastal flooding</b>	Sea level rise and coastal flooding will become more frequent and severe, increasing property damage and causing higher repair and maintenance costs.
	<b>Inland flooding</b>	Inland flooding due to the greater frequency and severity of coastal storms or extreme precipitation events can increase property damage. Driven by rapid urbanisation, it can also cause the costs of repairing and maintaining properties to rise.
	<b>Extreme storms and wind</b>	Greater severity and frequency of extreme storms, such as hurricanes, can cause damage worth billions of dollars. Extreme storms can negatively impact the value of commercial real estate in the near term.
	<b>Wildfires</b>	Millions of residential and commercial buildings have been built in areas prone to wildfires. With the intensity and severity of such fires increasing, the likelihood of these properties being destroyed by a wildfire rises.
	<b>Subsidence</b>	An increasing number of real estate assets are likely to be at risk of subsidence in the coming years, potentially causing serious structural damage to buildings.
	<b>Heat and water stress</b>	Rising heat will create new cooling needs for buildings, increasing operating costs. Water stress will also lead to higher operating costs due to increased water prices, the need to improve water efficiency, and the regulation of water use.

As said before, PCA recognises the importance of identifying physical risks that could adversely impact our operations and investment returns. We employ a systematic approach to ensure a comprehensive assessment of these risks. Here's an outline of our process, that PCA will implement when appropriate:

## 2 Identification

1. **Risk Mapping and Site Analysis:** the first step is mapping our existing and possible investments, analysing the location of possible investments in the DD process, and conducting site-specific analysis. This includes assessing the geographic areas, climate zones, and specific characteristics of each property and investment opportunity. By understanding the unique attributes of each site, we can identify potential physical risks that may vary based on location, such as natural disasters, extreme weather events, geological hazards, or rising sea levels. We aim to differentiate between Acute Hazards and Chronic Stressors at this stage.

2. Historical Data: when appropriate, we gather historical data on relevant physical risks, such as historical weather patterns, natural disaster occurrences, and environmental changes during the DD process. This data provides valuable insights into past events and helps us identify trends and patterns.
3. If necessary, we use climate modelling techniques to project future climate scenarios, considering temperature changes, precipitation patterns, and sea level rise. This modelling allows us to anticipate potential physical risks associated with climate change.

### 3 Impact Assessment

4. Risk Assessment and Quantification: We conduct a thorough risk assessment and quantification exercise to evaluate the potential financial impact of physical risks. This involves analysing the vulnerability of our properties or possible investments to specific risks and adapting the design of new projects or refurbishments to the identified risks. We assess each risk's probability of occurrence and potential severity, enabling us to prioritise our risk management efforts and take the appropriate measures.
5. External Expertise and Partnerships: To conduct the process above, we engage with external experts, such as environmental consultants, engineers, and risk modelling firms, to enhance our understanding of physical risks. These experts provide specialised knowledge and insights, helping us identify risks that may not be immediately apparent. We also collaborate with industry associations, research institutions, and government agencies to stay informed about emerging risks, best practices, and regulatory requirements related to physical risks.
6. Risk Mitigation and Resilience Strategies: We develop risk mitigation and resilience strategies tailored to each property and risk profile based on our risk assessment. This may involve implementing physical modifications to enhance property resilience, investing in advanced monitoring systems, securing appropriate insurance coverage, and establishing emergency response and business continuity plans. We also consider integrating sustainable design and construction practices that account for climate change adaptation.
7. Ongoing Monitoring and Review: We establish a robust monitoring and review process when necessary and appropriate to track changes in physical risks and assess the effectiveness of our risk mitigation measures. This includes continuous monitoring of relevant data sources, periodic property inspections, and regular reviews of our risk management strategies. We remain proactive in updating our risk profiles as new information emerges or as physical risk landscapes evolve.

During the investment process analysis ideally in the origination stage and before the DD we will asses if the described process is necessary.

By employing this systematic approach, we can effectively identify physical risks that could be financially material to our real estate portfolio. It enables us to make informed decisions, implement appropriate risk mitigation measures, and enhance the resilience of our properties. This approach ensures that we protect the long-term value of our investments and maintain the financial sustainability of our real estate private equity firm.