3.5 CLIMATE-RELATED PHYSICAL RISKS

Case Study 1: Flooding – example of acute physical risk

Important notice
This unit is part of a package of learning materials designed to support understanding of foundational concepts relating to climate-related financial disclosures. These learning materials do not constitute application or regulatory guidance for the preparation of climate-related financial disclosures and are not intended to represent legal or professional advice. We encourage you to seek your own professional advice to find out how the Corporations Act 2001 (Corporations Act) and other relevant laws may apply to you and your circumstances, as it is your responsibility to determine your obligations and comply with them.

The company featured in this case study is entirely fictional and presented for illustrative purposes only. It is not intended to represent any real business, past or present. Any resemblance to actual entities is purely coincidental. Different entities have different climate-related risks and opportunities, and so this scenario may not be relevant for your entity.

Key topics

- Climate-related physical risk
- Acute physical risks for entities – extreme rainfall and flooding
- Impacts on the operations and resilience of entities

Relevance for climate-related disclosures

This unit's case study will help you to understand how an acute physical risk, in this case extreme rainfall leading to flooding, can impact entity operations and financial performance, financial position and cash flows.

Overview

This unit explores a case study designed to illustrate key concepts related to climate-related physical risks, specifically acute physical risks. It is a hypothetical example involving a fictional South East Queensland crop grower, grounded in a plausible scenario and based on the latest climate science and recent climate-related events in Australia.[1] It may give you practical insights into:

- identifying acute physical risks
- assessing financial and operational impacts
- considering recovery and adaptation strategies.

Introduction

This case study may help you to reflect on how similar acute physical risks of climate change could affect the operations and financial performance of your entity. The scenario is intended to prompt consideration of potential vulnerabilities and resilience strategies. This scenario does not describe real events or a real entity but is grounded in realistic conditions experienced by agricultural producers in Australia.

Sector: Agriculture – crop production
Entity: Large farm
Location: South East Queensland
Acute climate risk type: Acute, extreme rainfall leading to flooding

What is the scenario?

In early 2025, Greenridge Horticulture, a mid-sized crop producer and reporting entity based in Queensland, was severely affected by a major flooding event across South East Queensland and Northern New South Wales. Torrential rainfall led to rapid flooding of their fields, submerging crops and damaging key infrastructure such as irrigation systems and access roads. The floodwaters remained for several days, causing extensive root damage and soil degradation that delayed replanting.
The business faced immediate operational disruption. Workers were unable to reach the farm due to road closures, and logistics breakdowns prevented the delivery of undamaged produce.

What are some potential business impacts?

Financial

- Loss of revenue
- Reduction in production and profits
- Costs associated with recovery and adaptation

Operational

- Interruptions to business operations from damaged facilities or inaccessible locations
- Transport and logistics disruptions
- Supply chain disruptions
- Disruption to telecommunication networks (affecting communications)

Physical

- Loss of machinery
- Loss of crops and stock
- Repair and replacement of buildings and infrastructure
- Soil erosion

What is the response strategy?

In the aftermath, Greenridge Horticulture invested in soil rehabilitation and infrastructure repairs, supported by government support programs and community-led resilience initiatives. While the recovery efforts started promptly, the climate event had long-lasting impacts on planning, logistics and productivity.

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[1] Heavy rainfall events in Australia are becoming more intense as the climate warms, increasing flood risks. Bureau of Meteorology and CSIRO (2024) *State of the Climate 2024*, Government of Australia