

# Developing Indicators of Climate Change Adaptation for Scotland: A summary of the ClimateXChange adaptation indicator framework

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## Key points

- The ClimateXChange (CXC) adaptation indicator framework has been designed **to guide the development of climate change adaptation indicators for Scotland**.
- The CXC indicator framework takes a **risk-based approach** setting adaptation indicators within the wider systems in which adaptation will occur.
- The framework has been **designed to work across diverse themes and sectors**.
- It also **integrates with other important indicator frameworks** such as that produced by the UK's Adaptation Sub-Committee and Drivers, Pressures, States, Impact, Response (DPSIR) framework.
- **Indicators** will be used to track adaptation actions, and associated risks/opportunities and impacts. The aim being to better understand whether actions are leading to successful adaptation or unintended consequences.
- The intention of the framework is to **capture the main components that contribute to key climate change risks or opportunities**, mapping the adaptation actions and the wider factors which affect them.
- The framework is able to accommodate a range of quantitative and qualitative data, including **spatial data**.
- It can also be applied at **different scales** depending on end user needs.

ClimateXChange is Scotland's Centre of Expertise on Climate Change, supporting the Scottish Government's policy development on climate change mitigation, adaptation and the transition to a low carbon economy. The centre delivers objective, independent, integrated and authoritative evidence in response to clearly specified policy questions.

## The ClimateXChange Adaptation Indicator Framework

### The Purpose of the Indicator Framework

The ClimateXChange (CXC) adaptation indicator framework (see Figures 1 and 2) has been designed to guide the development of climate change adaptation indicators for Scotland.

The indicators will be used to support the Scottish Climate Change Adaptation Programme and wider adaptation decision-making in Scotland.

The indicators aim to provide information about:

- **Progress in delivering adaptation actions and outcomes;**
- **Whether adaptation actions are contributing to desired outcomes and policy objectives** i.e. are they reducing the risks and maximising the opportunities of climate change?
- **Important relationships between sectors when delivering adaptation** e.g. areas of conflict or win-win opportunities which could be addressed by policy;
- **Priority areas for adaptation and for adaptation policy** by identifying areas of most risk or opportunity e.g. where multiple risks converge.

### The CXC indicator framework

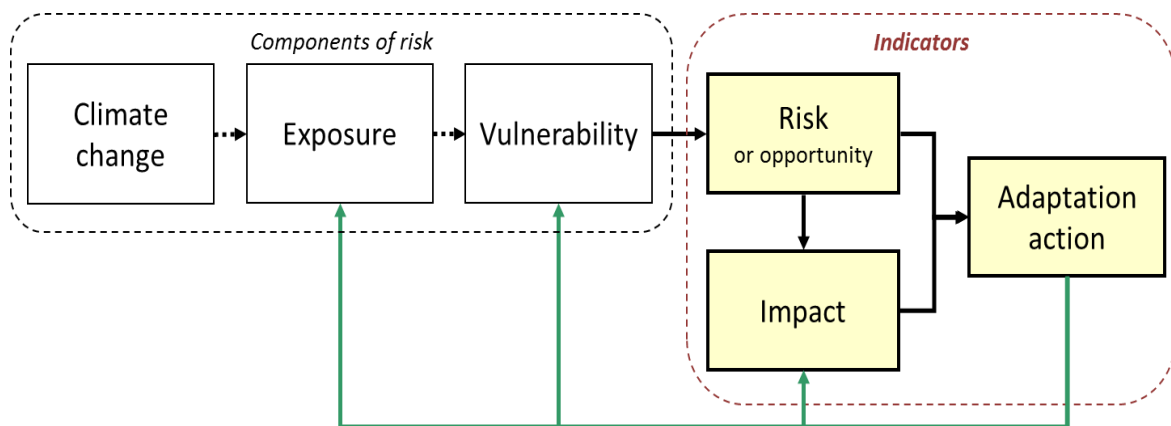


Figure 1: The CXC adaptation indicator framework

## An Explanation of the Framework

The CXC indicator framework takes a **risk-based approach** setting adaptation indicators within the wider systems in which adaptation will occur.

**Indicators** will be used to track adaptation actions and related risks, opportunities and impacts. The aim being to identify whether actions are leading to successful adaptation or unintended consequences.

The framework has been **designed to work across diverse themes and sectors** (see Figure 2). It also aims to **integrate with other important indicator frameworks** for example that of the UK's Adaptation Sub-Committee and the Drivers, Pressures, States, Impact, Response (DPSIR) framework widely used in environmental decision making.

The intention is to **capture the main components that contribute to climate change risks or opportunities**, mapping the adaptation process and the factors which affect them.

The framework will be populated using spatial and non-spatial quantitative data and qualitative data from national, regional and local scales.

The framework is also able to be applied at **different scales** depending on end user needs, for example it may be applied at a national, regional, local or site level. See figure 2 overleaf.

## Glossary of CXC Adaptation Indicator Framework Terms:

**Adaptation Actions:** Responses which exploit the opportunities of climate change or adjustments aimed at helping society and environment cope with the risks of a changing climate.

**Exposure:** The level of climate stress upon the system (e.g. upon the natural environment, built environment or on people).

**Impact:** The felt consequences of climate change. These may be economic, structural, social, or environmental.

**Risk and opportunity:** The potential impacts of climate change assessed according to their likelihood, magnitude of potential impact and urgency.

**Vulnerability:** The degree to which a system is susceptible to, or unable to cope with, adverse effects of climate change.

## For Further Information on CXC Adaptation Indicators

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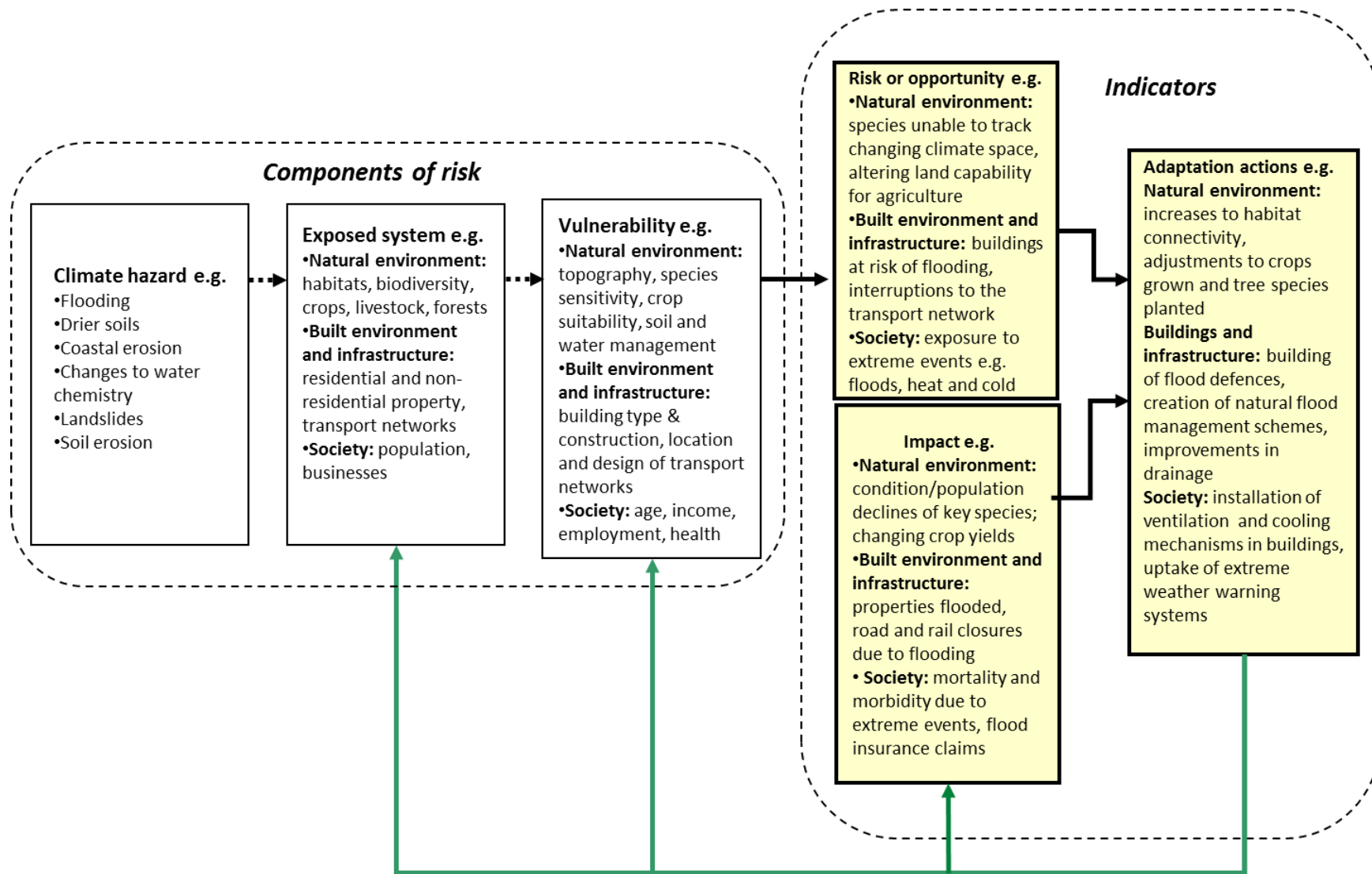


Figure 2 The CXC adaptation indicator framework with examples