

# UK Adaptation Inventory (version 1)

## User Guide

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Katie Jenkins, Tyndall Centre for Climate Change Research

### Introduction

The UK Adaptation Inventory (version 1) (Jenkins et al., 2021) has been compiled as part of the OpenCLIM project ([OpenCLIM | Tyndall Centre for Climate Change Research](#)). The UK is considered to be at the forefront of national adaptation planning. However, the extent to which plans and programmes translate into tangible risk reducing action on the ground, as opposed to adaptive capacity building, remains less clear. The UK Adaptation Inventory aims to address this by documenting adaptation on the ground, based on national reporting to government by public and private sector organisations and a systematic review of peer-reviewed literature.

### Data collection method

The UK Adaptation Inventory (version 1) documents examples identified using two methods:

1. A systematic review of academic literature following the framework of Berrang-Ford et al., (2011) to guide the document selection and analysis. The searches covered the time period 1<sup>st</sup> January 2010 to 30<sup>th</sup> September 2020.
2. Review of the second-round Adaptation Reporting Power reports (2013-2016) ([Climate change adaptation reporting: second round reports - GOV.UK \(www.gov.uk\)](#)). Several components of the UKs Climate Change Act 2008 focus on adaptation including the Adaptation Reporting Power (ARP), which enables the Secretary of State to ask key organisations with climate-sensitive services and infrastructure to report the steps and actions they plan to adapt to identified current and/or future climate change (Street et al., 2017). The ARP reports are available online.

The Inventory focuses on examples of delivering adaptation action ‘on the ground’. The definition of adaptation action on the ground used here relates to a process of adjustment to actual or expected climate and its effects, where actions reflect a tangible and physical change in response that delivers adaptation action as opposed to building adaptive capacity (UKCIP, 2018). For further methodological details please see Jenkins et al., (2021).

## Searching the UK Adaptation Inventory

The User can scroll through all entries in the Inventory, or filter entries based on one or more of the following categories:

1. **Sector:** Name of sector the reporting organisation belongs to. This reflects the terminology used by the ARP to group the reporting organisations.

Currently included: Agriculture; airport operator; electricity distributor; electricity generation; electric communications; gas transporter; housing; land/environment; lighthouse authority; livestock; other; port operator; public bodies; rail operator; road and rail; road network operator; SMEs, water companies

2. **Hazard:** The climate-related hazard/event leading to adaptation action. This uses the IPCC definition of ‘the potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources (IPCC, 2014, 2018).

Currently included: Drought; extreme rainfall; flooding; higher temperatures; sea-level rise; storms; storm surge; freezing/snow; drier conditions; heatwaves; increased wind speed; air and sea temperature change; fog; increased wetting/drying cycles; change in cloud cover

3. **Risk:** This uses the IPCC definition of ‘the potential for adverse consequences of a climate-related hazard, or of adaptation or mitigation responses to such a hazard, on lives, livelihoods, health and well-being, ecosystems and species, economic, social and cultural assets, services, and infrastructure’. Risk results from the interaction of vulnerability, its exposure over time, as well as the hazard and the likelihood of its occurrence (IPCC, 2014, 2018).

Currently included: Service failure; risks to public/private water supplies; damage to property; damage to infrastructure; reduced water quality; change in biodiversity/habitat; loss of power supply; water stress; heat stress; sewer flooding; disruptions to operations; coastal erosion; increased run-off; risk to wellbeing of staff/public; higher groundwater levels; rail buckles; landslip/reduced earthwork stability; lack of access; loss of natural capital; odour

The entries will automatically update based on the search criteria. The User can also search for entries by typing directly into the search box.

**Filters**  
Sector:  Hazard:  Risk:

[Export CSV](#) [Export PDF](#)

id	Hazard	Risk	Sector	Adaptation	Description
220	Drought / Water Scarcity	Risks to public/private water supplies	Airport Operator	Upgrade / new water pumping station	Upgrade Fresh Water Pumping Station increasing our resilience. We have also provided a contingency fire water supply in the event that of failure or interruption of the pumping station operation.
221	Drought / Water Scarcity	Risks to public/private water supplies	Airport Operator	Leakage reduction	On-going leakage detection and repair program
224	Drought / Water Scarcity	Risks to public/private water supplies	Airport Operator	Water recycling	Of particular concern is the impact of water shortages on vehicle washing. We have subsequently installed recycling/harvesting vehicle washes airside where there is a safety case for vehicle cleanliness.

Showing 1 to 3 of 3 entries
Previous  Next

**Selected adaptation**  
**Hazard:** Sea Level Rise  
**Hazard (desc):** Storm Surge  
**Risk:** Flooding, Service failure, Asset loss  
**Sector:** Port Operator  
**Organisation:** Associated British Ports  
**Sector type:** Private  
**Location:** UK  
**Location (desc):** Ports of Humber, Immingham; Hull; and Southampton  
**Adaptation (desc):** Flood protection  
**Adaptation (desc):** Damage to infrastructure including electricity supply (and backup generators), loss of operation. Potential knock-on effects to other critical infrastructure. Impact has occurred at Immingham and Hull. There has been significant investment to improve resilience of critical infrastructure (electricity substations, IT etc.). Including £4.7m on new lock gates and £0.5m on resilience measures.  
**Scale:** Infrastructure  
**Expected benefit:** reduce disruption to operations  
**Status:** Implemented  
**Timescale:**  
**Typology (mechanism):** Structural/Physical (Engineered and built environment)  
**Typology (objective/behaviour):** Vulnerability reduction action  
**Challenges:**  
**Reactive:** Reactive  
**Reference:** [link](#)  
**Reference type:** Adaptation Power Report

The table displays information on the hazard, risk, sector, type of adaptation, and a further description of the adaptation action. Selecting an entry (which will then be highlighted in blue) provides further information related to the adaptation action, displayed on the right-hand side of the screen. Table 1 below provides a description of the classification criteria.

Ten entries are displayed on the screen. To scroll through pages, click on the required page number or 'Next' button displayed on the bottom right of the table:

332	Drought / Water Scarcity	Water stress	Agriculture	Modify crop systems	Short-term coping strategies applied by farmers in the study area in response to drought and abstraction restrictions: To prioritise certain crops or varieties based on their drought tolerance and/or economic value
333	Drought / Water Scarcity	Water stress	Agriculture	Change irrigation practice	Irrigate reduced area to the full schedule: If there is not enough water to irrigate all the crops, the farmer will only irrigate a certain area/crop based on priorities
334	Drought / Water Scarcity	Water stress	Agriculture	Change irrigation practice	Irrigate full area to a reduced schedule: If there is not enough water to irrigate all the crops, the farmer will irrigate all the crops although the water requirements would be not fully met
335	Drought / Water Scarcity	Water stress	Agriculture	Change irrigation practice	Irrigate at night: Only Irrigate at night to reduce Evapo-transpiration
336	Drought / Water Scarcity	Water stress	Agriculture	Water trading	To trade water with other water abstractors, to obtain extra water during water shortage periods
337	Drought / Water Scarcity	Water stress	Agriculture	Increase reservoir capacity	Investment in alternative water resources and more efficient irrigation infrastructure (43% of n=26). This includes long-term investments to secure water supply (e.g. reservoir construction, multiple abstraction sources, rainwater harvesting), on-farm distribution networks and switching to more efficient irrigation application technologies.

Showing 1 to 10 of 15 entries

Previous   Next

The search results can be downloaded as a .csv or .pdf file by clicking on the Export buttons at the top of the table:

**Filters**

Sector:  Hazard:  Risk:

Search:

id ▲	Hazard ⇅	Risk ⇅	Sector ⇅	Adaptation ⇅	Description ⇅
327	Drought / Water Scarcity	Water stress	Agriculture	Adapt abstractions	Changes to the abstraction licensing system. Catchment Abstraction Management Strategies(CAMS), which aim to provide a framework for resource availability assessment and produce a licensing strategy which aids the sustainable management of water resources on a catchment scale, and can highlight where additional abstraction may take place sustainably.
328	Drought / Water Scarcity	Water stress	Agriculture	Land management	High and/or rising nitrate levels in some groundwater management units in East Anglia is restricting the use of that groundwater for drinking water. Groundwater Directive (2006/118/EC) will affect the way that the land overlying aquifers is managed in order to enhance water quality
329	Drought / Water Scarcity	Water stress	Agriculture	Efficient irrigation	Investment in more efficient irrigation technologies-reducing demand, demonstrating efficient use.
330	Drought / Water Scarcity	Water stress	Agriculture	Increase reservoir capacity	Installation of on-farm reservoirs. Diversifying supply, reducing summer abstraction demand, avoiding drought restrictions.

	<b>Description</b>	<b>Criteria recorded</b>
<b>1</b>	Climate-related hazard/event The potential occurrence of a natural or human-induced physical event or trend that may cause loss of life, injury, or other health impacts, as well as damage and loss to property, infrastructure, livelihoods, service provision, ecosystems and environmental resources (IPCC, 2014, 2018).	Drought; extreme rainfall; flooding; higher temperatures; sea-level rise; storms; storm surge; freezing/snow; drier conditions; heatwaves; increased wind speed; air and sea temperature change; fog; increased wetting/drying cycles; change in cloud cover
<b>2</b>	Climate-related compound hazard/event As above, where reports have listed two or more concurrent or successive hazards.	As above
<b>3</b>	Risk Risk refers to the potential for adverse consequences of a climate-related hazard, or of adaptation or mitigation responses to such a hazard, on lives, livelihoods, health and well-being, ecosystems and species, economic, social and cultural assets, services, and infrastructure. Risk results from the interaction of vulnerability, its exposure over time, as well as the hazard and the likelihood of its occurrence (IPCC, 2014, 2018).	Service failure; risks to public/private water supplies; damage to property; damage to infrastructure; reduced water quality; change in biodiversity/habitat; loss of power supply; water stress; heat stress; sewer flooding; disruptions to operations; coastal erosion; increased run-off; risk to wellbeing of staff/public; higher groundwater levels; rail buckles; landslide/reduced earthwork stability; lack of access; loss of natural capital; odour
<b>4</b>	Name of Reporting Organisation This could be the name of a private sector organisation, a NGO, or government/government department etc. Where possible specific examples from the peer-reviewed literature have been classified based on the name of the reporting organisation cited in the paper. Where this is not provided, the entry is classed as 'peer reviewed paper'.	Case specific
<b>5</b>	Sector Name of sector the reporting organisation belongs to. This reflects the terminology used by the ARP to group the reporting organisations.	Agriculture; airport operator; electricity distributor; electricity generation; electric communications; gas transporter; housing; land/environment; lighthouse authority; livestock; other; port operator; public bodies; rail operator; road and rail; road network operator; SMEs, water companies
<b>6</b>	Sector Type Defines if the sector is 'Public', 'Private', 'Other', or 'Individual', expanded from the classification of Tompkins et al., (2009), and as reported by organisations themselves.	Private; individual; public – corporation; public – non-departmental; public – non-ministerial department; public – local government organisation; public – government agencies; public – devolved administrations; public – local authorities; voluntary, community, NGOs, associations and networks
<b>7</b>	Geographical Location (NUTS1 region) Broad geographical location/s the Organisations cover - Categorized using NUTS1 statistical regions for consistency (Eurostat, 2018)	North East; North West; Yorkshire and the Humber; East Midlands; West Midlands; East of England; London; South East; South West; Wales; Scotland

<b>8</b>	Geographical Location (further details)	Further detail of the organisation's geographical extent, or where provided specific details of location/s where adaptation implemented.	Case specific
<b>9</b>	Adaptation action	The type of adaptation action.	Case specific
<b>10</b>	Further details on adaptation action	Provides further details on the example of adaptation action recorded, as provided by the reporting organisation/peer-reviewed literature.	Case specific
<b>11</b>	What is being adapted/where is adaptation action being applied?	This provides an indication of the level at which adaptation action is being applied, based on reporting.	Transport network; infrastructure; assets; properties; farm buildings; natural environment; operations; building; built environment; farm
<b>12</b>	Expected outcome/benefit of the adaptation option	What does the organisation aim to achieve by implementing the adaptation option? As detailed by the reporting organisation/within peer-reviewed literature.	Case specific
<b>13</b>	Status of the adaptation option	If the adaptation action has been implemented, is planned, or a potential option that may be used in the future.	Implemented; planned; potential
<b>14</b>	Further details on timescale of option	Where reported further details on the timescale of the adaptation option.	Case specific
<b>15</b>	Typology of Adaptation Option – Mechanism	Adaptation is categorised by mechanism into one of three general categories: structural/physical, social, or institutional, and one of ten sub-categories (Mimura et al., 2014, Table 14.1).	Structural/Physical (Engineered and built environment); Structural/Physical (Technological); Structural/Physical (Ecosystem based); Structural/Physical (Services); Social (Behavioural); Social (Educational); Social (Informational); Institutional (Economic); Institutional (Government policies and programmes); Institutional (Laws and regulations)
<b>16</b>	Typology of Adaptation Option – Objective	Adaptation is categorised by behavioural objective into one of five categories: hazard reduction and avoidance; vulnerability reduction; preparing to respond; coping during a crisis; and preparing for recovery (Power et al., 2020).	hazard reduction and avoidance; vulnerability reduction; preparing to respond; coping during a crisis; and preparing for recovery
<b>17</b>	Challenges / Barriers to adaptation	Details any specific challenges and/or barriers to action that are reported.	Case specific
<b>18</b>	Was adaptation reactive?	Whilst extremely difficult to separate out if actions are anticipatory or reactive, where actions were clearly described as reactive following e.g. an extreme weather event, this has been recorded.	Reactive
<b>19</b>	Reference	Link to source material.	Case specific
<b>20</b>	Type of literature	If the literature is based on peer-reviewed papers or ARP reports.	Adaptation power report second round; adaptation power report third round; grey literature; peer-reviewed literature

Table 1: Overview of the UK Adaptation Inventory framework

## Contact

For more information contact Katie Jenkins ([Katie.Jenkins@uea.ac.uk](mailto:Katie.Jenkins@uea.ac.uk)) or Craig Robson ([craig.robson1@ncl.ac.uk](mailto:craig.robson1@ncl.ac.uk)).

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