

The impact of global climate change on the UK lending landscape

The global impact of climate change has rarely been more visible. From wild-fires, extinct glaciers, the loss of sea ice, accelerated sea level rise and longer, to more intense heat waves, many of the effects that scientists had predicted are now occurring. But how do such global catastrophes impact upon lending risk at a local level?

The lack of strategic information on how climate change will affect the financial services industry prompted the Prudential Regulation Authority (PRA) and the Bank of England to set out their expectations of responses and responsibilities for financial institutions in April last year. This culminated in the published policy statement, "Enhancing banks' and insurers' approaches to managing the financial risks from climate change – PS11/19".

So, are we any further down the road? And, if not, what steps ought lenders to be considering?

When it rains, it pours!

Meteorological sources such as the Met Office's UKCP18 uses climate science to provide updated observations and climate change projections out to 2100 in the UK and globally. This project builds upon UKCP09 to provide the most up-to-date assessment of how our climate may change over the 21st century. It points to drier summers, and warmer, wetter winters; both of which are prime ingredients for increased risk of subsidence and flooding respectively. Rising sea-levels and increased storm surges will undoubtedly increase the rate of coastal erosion.

Wetter winters with more concentrated rainfall events will increase the likelihood of flooding. According to the Environment Agency, around 5.2 million properties in England are currently considered at risk of flooding, with remedial repairs typically costing between £20,000 and £45,000. All forms of flooding, from storm surge, river, pluvial and rising groundwater are set to increase in the coming years.

In terms of our building history, many of the UK's large towns and cities grew up around bodies of water, which facilitated trade and transport. As settlements expanded, housebuilding began to spread to available land on floodplains, which previously had served as natural barriers when rivers burst their banks.

We know flooding impacts property value in particular when it is flooded for the first time. But if it was built post 2009 and is not eligible for Flood Re (or it is not occupied by the owner and the flood risk has greatly increased), then the property may not be insurable, which will again reduce the property value.

There have been numerous high-profile flooding incidents across the UK in recent years with South Yorkshire and the East Midlands particularly badly hit in 2019. The ABI reported that insurance payouts to people hit by the recent floods in Yorkshire and the Midlands are expected to reach £110 million. So far just over 4,000 flood claims have been received, of which 2,250 relate to flooded homes and businesses and 1,788 for damaged vehicles. While incidents like these are generally caused by heavy rainfall and making the headline news, there are numerous smaller flooding incidents that aren't widely reported and occur due to localised rainfall or groundwater swell.



Last year a large-scale study published in the journal 'Nature' analysed data from thousands of locations across Europe and found flood events are becoming increasingly severe in the north-west – including the UK – but are decreasing in severity in the south and east of the continent. The Vienna University of Technology's research involved institutions in 24 European countries including the University of Bath and University of Liverpool. Researchers analysed records from 3,738 river flood measurement stations across Europe over five decades. Northern England and southern Scotland have seen an increase in flooding of more than 11%, while the study observed a 23% decrease in Russia. The UK has seen a pattern of severe flooding over the past 10 years which the Environment Agency says is linked to an increase in extreme weather events.

Sir James Bevan, chief executive of the Environment Agency since 2015, said of the findings, "To prepare for this risk, as a nation we need to move from a strategy of protection and building higher flood defences to improving the resilience of our communities and our infrastructure... Our new flood strategy ... includes a record £2.6 billion investment we are making now to protect 300,000 homes from flooding and coastal erosion."

This move from 'defence' to 'resilience' illustrates policy makers' dilemma. How much can government spend in anticipation of the problem but, by cutting its own cloth, it puts the risk squarely in the hands of the private sector.



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Coastal erosion is also a feature of the Met Office's UKCP18 report and suggests that an increase in storm surge and rising sea levels will increase the rates of erosion in coastal areas. This may affect not only properties located close to the shoreline itself but also buildings located in tidal river basins away from the coast. In areas which are already susceptible to coastal erosion, climate change will increase the rate at which the cliff edge retreats. Swathes of land of the East Anglian shoreline have vanished into the sea over the last two decades. In 2013 three houses in the seaside village of Hemsby in Norfolk, fell into the sea and others were badly damaged by storms. In 2018, five properties in the same village were demolished because of severe coastal erosion, and many are still at risk after strong winds and high tides claimed six metres of cliff in two days. But no area of the British coast is immune. Earlier this month a huge crack opened in a cliff on the coast at Hornsea, Yorkshire, just metres from holiday homes. The climate change committee warned that building defences was unaffordable for a third of the country's coast. Instead, discussions about 'hard choices' must be started with communities that will have to move inland, it said.

Exceptional summers

Of course, flooding is only one part of the equation. Hotter, drier summers will increase the potential for subsidence, particularly on shrink-swell clay. Thousands of homes are affected every year and consequently lose up to 20% of the property resale value. Older homes built with shallower foundations can be particularly at risk, but that doesn't mean that newer properties are immune.

The dry summer of 2018 caused exceptional subsidence losses for insurers. In December 2018 the ABI reported that the figures for July, August and September 2018 were the highest for subsidence claims since the record-breaking heatwaves of 2003 and 2006. Claims jumped from around 2,500 with a value of £14 million in the second quarter to around 10,000 with a value of £64 million in the third quarter. Although 2019 figures have yet to be released, many of these 2018 subsidence claims will still be subject to ongoing investigations and repairs, and new claims will continue to have been reported throughout 2019.

Ground stability presents itself as an increasing risk factor that lenders should be aware of using available data to provide a precise picture of the land's geology, and proximity of large trees. Cranfield University's UK soil map is one resource that helps avoid costly reputational and financial damage by identifying environmental risks, which makes it easier for even non-soil scientists to understand soil risks and resources.

Political weather fronts

Of course, one other very real risk is not from the natural environment but from our political system. The UK's commitment to reduce greenhouse gas emissions to net zero by 2050 is clearly laudable, but the challenges ahead are immense. How can the nation build houses and deliver affordable net zero housing?

Alterations in public policy to address carbon emissions or increase energy efficiency can come with relatively little warning. If the government progresses any changes relating to the energy efficiency of properties – requiring homeowners to upgrade F and G rated properties with expensive remediation work – this could create a negative effect on property values with low-rated homes becoming blighted by their ratings. This is a serious risk to current portfolios. Understanding not just what a property is made of but what improvements may have affected or decreased its value in energy efficiency (not to mention issues of older and newer materials under increasing heat stress) is a huge undertaking – one that we, for example, understand.

Well-designed and constructed housing is also critical in mitigating the risks that climate change poses in the UK. Studies have shown that in the UK we tend to spend about 90% - 95% of our time indoors and that about 66% of that indoor time is at home. New builds will have to be designed and built of materials that can withstand the effects of climate change – keeping owners cooler in warmer weather and dryer and safer in extreme wet weather, free of subsidence risk. They will incorporate a range of new technologies to reduce their energy use, and to cut the energy needed to build them, including the embodied energy in the materials they contain.

Finally, the law of unintended consequences has shown the issue that arrives first is often the one that we least expect. Many in the insurance world are waiting to see how global insurers react to the events in Australia and elsewhere. Insurance is ultimately a global market and if the UK and other less affected markets have to subsidise the pay-outs in other areas already affected by climactic events, this may affect domestic markets. If buildings insurance were to increase to unaffordable levels, this would greatly affect lending decisions for more borrowers. In short, people, data and systems are required to better understand the feedback loops and interconnectivity between insurability and mortgageability.

Lenders need to be better prepared as climate change is happening right now and will inevitably change our national and lending landscape. Any risk to lending should be understood in terms of the probability of any impact as well as the impact itself.

What is Legal & General Surveying Services doing to help lenders?

Driven by a need for greater efficiency and evolving consumer expectations, our mortgage valuation business has leapt forward in realising the benefits of technology, and how it can streamline, safeguard and ultimately improve our clients' valuation process. In today's environment, with the rise of intelligent rules-based risk modelling and the use of complex data models to support them, digital valuations are a significant part of most of our lenders' valuation business. These fulfil a financial and economic brief but now lenders are aware of their positive impact for reducing carbon in their businesses. We expect this year to conduct over 50,000 digital valuations saving many thousands of road miles per annum with the associated reduction in emissions.

But we are planning much more. This year will see the launch of a series of Climate Change Summits. If you are interested in attending these sessions please get in touch with paula.matthews@lgsurveying.co.uk





New Homes in flood zones

With the UK in the grips of a housing shortage, the government has promised to build 300,000 more homes a year by the mid-2020s. But targets given to authorities fail to take into account local flood risk and are instead based on factors including expected demand and recent construction rates.

Thousands of new homes are to be built in areas of England at high risk of flooding, as local authorities struggle to balance housing targets with a dearth of suitable land and the growing threat from climate change. The 10 English authorities with the highest number of homes already at serious flood risk plan to build a total of about 35,000 homes in what the government considers “high-risk” areas – defined as having a 1 per cent or greater chance of flooding in any year – and more in lower-risk flood zones,

according to local planning documents analysed by the FT. In Doncaster, where the town of Fishlake flooded in November, about 6,000 new homes are intended in and around flood zones, and in Cambridgeshire, the Fenland district council is planning a new garden town of up to 12,000 homes in and around a flood zone.

Despite increasing warnings from scientists, the proportion of new homes built in areas at high risk of flooding has risen dramatically this decade, up from 7 per cent in 2013-14 to 11 per cent in 2016-17, according to government figures.



Getting down and dirty with soil types

Understanding soil data is an important part of analysing risk exposure. One of the most common soil types susceptible to subsidence is clay which is made up of approximately 1/3 water. The level of moisture in the ground can cause clay soils to shrink, crack and shift during the summer heat. There are more than 700 different soil types in England and Wales alone, and each reacts to weather and stresses in different ways.

- There are three types of clay in the UK, classified by their ‘plasticity’ (or how much they can change volume because of their water content):
- Clays with the highest plasticity (and so the highest risk) are generally found in the South East of England, stretching up through the East Midlands to the Humber in the North and down to Bath in the West.

- Medium plasticity clays are found in the rest of the South East, across the Midlands and up beyond the Humber Estuary towards the North East. There are also some isolated areas in the North West of England near the coast.
- The rest of England and Wales are generally low plasticity clays - but they still carry some risk.
- Seasonal changes affect clay soils - causing them to swell in winter and shrink in summer. That’s why there are minimum foundation depths for each type of clay. Strip, trench fill or pad foundations must be cast at a minimum of 750mm in low plasticity clays, 900mm in medium, and 1000mm in the highest risk areas.



A change in the weather

Measurements show that the average temperature at the Earth’s surface has risen by about 1°C since the pre-industrial period. 17 of the 18 warmest years on record have occurred in the 21st century and each of the last 3 decades have been hotter than the previous one. This change in temperature hasn’t been the same everywhere; the increase has been greater over land than over the oceans and has been particularly fast in the Arctic.

The UK is already affected by rising temperatures. The most recent decade (2008-2017) has been on average 0.8 °C warmer than the 1961-1990 average. All ten of the warmest years in the UK have occurred since 1990 with the nine warmest occurring since 2002.

Although it is clear that the climate is warming in the long-term, note that temperatures aren’t expected to rise every single year. Natural fluctuations will still cause unusually cold years and seasons.