

# Coasts on the front line

Thank you very much for inviting me to open the first day of an inspiring programme of discussion.

The name of this conference – “coastal futures” – is a fantastic provocation. It invites us to look to the horizon and see what the future holds for us – and our coasts.

The Governor of the Bank of England, Mark Carney, has talked about the “tragedy of the horizon” – saying that “the catastrophic impacts of climate change will be felt beyond the traditional horizons of most banks, investors and financial policymakers”.

This conference gives us an opportunity to answer his call for “a new horizon”, to break the tragedy.

The future can be very frightening. Hollywood tells us it will be a grim place – the natural world entirely paved under super-conurbations, or a desert wasteland where humanity fights for survival. Maybe that doesn't seem like such a leap of the imagination anymore, given the scale of wildfires and other events we are seeing around the world now.

Sure, if we believe Hollywood then we might all have flying cars one day. But that's not much compensation for total environmental degradation.

Does the future have to be frightening?

Last year, Australian film-maker Damon Gameau released a documentary called 2040. He imagines the best possible world we could be living in, 20 years from now. It's not science fiction. It's based on technologies and initiatives which are already helping to mitigate and adapt to climate change.

To achieve the best possible future, governments, businesses, communities and individuals all need to make the right choices. About how they invest, and innovate, and build, and live.

We all need to start making those right choices, right now.

I want us to:

- search for new horizons
- imagine our best possible coastal future, and
- commit to doing what it takes to achieve it.

But first, let's acknowledge the severity of the position we are in – the climate emergency.

The theme for today is “coasts on the front line”. That pretty much sums it up.

We are drawn to the dynamic, ever-changing landscape of the coast as a place to live, work and seek inspiration.

But living and working on the coast comes with risks. They were very real this week, when Storm Brendan battered Britain and Ireland with winds up to 90 miles per hour.

Parts of the English coast are the fastest eroding in Europe. Last week a piece of Norfolk the size of two football pitches collapsed into the sea, leaving caravans balancing on the brink.

In England, 1.8 million homes are at risk of coastal flooding, and at least 2,000 properties are vulnerable to erosion over the next 50 years.

Crucial national infrastructure and industry are threatened too. Bacton Gas terminal in Norfolk – critical to 30 per cent of the UK's gas supply – is at risk from erosion and flooding. We've been working with the council and gas companies to help manage that risk with an innovative sandscaping scheme.

And we are losing valuable coastal habitat and heritage – we can expect to lose over 3,000 hectares of internationally important inter-tidal habitat by 2100. We've already lost 85 per cent of saltmarsh.

As well as being on the front line, our coasts are also one of our first lines of defence.

Beaches, cliffs, inter-tidal habitat and engineered defences absorb the power of the waves and help hold the rising tides at bay. But they are being put under more and more pressure by climate change, and they can only take so much.

The Intergovernmental Panel on Climate Change has said the world has until 2030 to hold global warming to 1.5°C above pre-industrial levels.

Even if we do that, the IPCC says that sea levels will rise by anything from 26 to 77 centimetres by 2100. And extreme once-a-century sea level events will become annual events by 2050, in all future climate scenarios.

Later today at this conference, the Marine Climate Change Impacts Partnership will launch its 2020 Report Card. With a focus on impacts here in the UK, one of its conclusions is that the compound effect of higher tides and extreme rainfall will greatly increase flood risk.

Met Office climate projections say higher, warmer seas will drive increased storminess and bigger waves. That means more pressure on coastal defences, and more risk for coastal economies, environments and ways of life.

That is one vision of the future. And it is the best-case scenario.

If we fail to get global warming in check by the 2030 deadline set by the IPCC, things look much, much worse.

Last month I attended the UN's climate summit, COP25, in Madrid.

I had the honour of speaking at the launch of the Coalition of Finance Ministers for Climate Action. It was the first time Finance Ministers came together at a COP – a sign that economic leaders now recognise the imperative for action.

The Minister of Economy for Fiji said that when Cyclone Winston hit in 2016, it wiped out a third of GDP within 36 hours. Preparing for climate change is now at the heart of the Ministry of Economy's work.

Sadly, COP25 did not deliver the kind of agreement many of us were hoping for, and which we urgently need.

UN Secretary General, Antonio Guterres, said "the international community lost an important opportunity to show increased ambition on mitigation, adaptation and finance to tackle the climate crisis".

Later this year, the UK will be hosting COP26 in Glasgow. This gives our new government – and all of us – a precious window of opportunity.

The UK has already demonstrated leadership, being the first G7 country to set a net zero target by 2050. We must build on this and make 2020 a year of ambitious climate action.

We have the chance to help shape new global coalitions to deliver carbon neutrality by 2050, and adapt our world to the climate future we know is coming.

We can all play a part in that.

Last year, the Environment Agency announced its commitment to be a net zero organisation by 2030.

We will adopt a tough, internationally recognised definition of net zero, including the carbon we produce ourselves and consume through our supply chain.

We will reduce our emissions 45 per cent by 2030, and offset what remains.

And we will do it while we continue protecting people and the environment, making this country more resilient to climate risks – including coastal flooding and erosion.

Doing this by 2030 won't be easy.

But we will show how it can be done. We will find new technologies and create an effective working model to share best practice with others.

Last week I was in Great Yarmouth, where I saw how we are using innovative "limpet dams" to refurbish existing flood defences. This:

- reduces the carbon footprint of construction 62 per cent compared to replacing those defences
- helps better protect 4,500 homes, businesses and infrastructure, and

- gives the people of Great Yarmouth confidence in a sustainable and resilient future.

In addition to tackling the causes, we must adapt to the impacts of climate change.

As well as being Chair of the Environment Agency, I am also the UK's Commissioner to the Global Commission on Adaptation.

Last year, the GCA released a report which says that investing \$1.9 trillion in adaptation globally this decade, could guarantee \$7 trillion in net benefits.

These benefits come in the form of a "triple dividend". They:

- avoid future losses
- generate positive economic gains through innovation, and
- deliver social and environmental benefits.

For example, preservation and restoration of mangrove forests pays back 10 times the cost – protecting 18 million people and providing more than \$80 billion a year globally in avoided losses from coastal flooding, plus \$40 to 50 billion a year in benefits to fisheries, forestry and recreation.

In the UK, investing in adaptation could help us drive economic, social and environmental benefits for people who live and work in seaside towns, many of which suffer some of the worst deprivation in Britain.

At the Environment Agency, we know that the costs of making this country more resilient to flooding are far smaller than repairing damage afterwards.

The National Audit Office says for every £1 spent on protecting communities, around £9 in property damages and wider impacts are avoided.

If it weren't for flood and coastal infrastructure in England, the January 2017 tidal surge alone could have caused £37 billion in economic damages.

Early indications show that the economic damages from the floods in November last year are around £78 million. But, without flood defences, the damages could have been £1.6 billion higher. Flood protections helped to reduce potential damages by 95 per cent.

In November through to Christmas, approximately 1,400 households were flooded in England, compared to over 45,000 at-risk homes which were protected.

I don't say that to minimise anyone's suffering. I visited communities and met with people who were affected, including in Fishlake.

I know how devastating flooding is.

That is why it is not easy to say this:

As we face future climate change, we have to accept that whilst we can better

protect hundreds of thousands of homes and businesses, there will always be residual risk.

We cannot build our way out of this crisis.

We must adapt to it.

This year the Environment Agency will launch its new Flood and Coastal Erosion Risk Management Strategy.

Some of you may already have been involved in helping us shape it, or have read the draft which we released for consultation last year.

Until now, we have designed defences to protect us from past events – asking what we need to do to prepare for a repeat of the 1953 or 2013 east coast tidal surges, for example.

We need to change our thinking from past events to future ones.

So our strategy looks to a new horizon – to what our climate will be in the year 2100 – and identifies what we need to focus on over the next 10 to 30 years to make our best possible coastal future a reality.

We need to move from a concept of protection to resilience.

We want to put people at the heart of determining how they achieve resilience for their place, including exploring resilience standards as a way of helping people and places live with, recover from and adapt to flooding and coastal change.

We already have the means to do this.

Shoreline Management Plans are locally-owned, long-term plans for managing coastal change, and we are already working with coastal groups to refresh them. My colleagues Catherine Wright and Nick Hardiman will be talking more about that, later today.

Of course we will continue to invest in engineered coastal defences, but we also need to draw on wider resilience tools.

We need robust planning rules and building standards that ensure new development is resilient. And when communities are affected, existing properties and infrastructure should be built back better.

Sometimes, this might mean building back somewhere else.

Where future climate risk is so significant, some people may choose to adapt by relocating out of harm's way. That needs to be part of a long-term, community-owned plan, but the conversations need to start now.

This approach has been tested, for example in Defra's pathfinder project at Happisburgh, where the council acquired and removed at-risk properties.

We also need to embrace natural solutions.

Tomorrow, my colleague Roger Proudfoot will speak about our work with partners to protect and improve estuarine and coastal environments – the Restoring Meadow Marsh and Reef initiative.

These habitats deserve to be protected in their own right – and they repay us with carbon sequestration, reduced flood risk, and benefits to water quality, fisheries and recreation.

At Medmerry, in West Sussex, the largest managed realignment of open coast in Europe created over 180 hectares of new intertidal habitat which attracts 22,000 visitors a year while reducing flood risk to over 300 homes.

In addition to flood and coastal risk, the Environment Agency regulates industry and waste, and oversees water resources and quality – including bathing waters. So we are used to thinking about how environmental challenges are fundamentally connected – and how the solutions might be too.

This afternoon, Jessica Hickie will be speaking about what the Environment Agency is doing to help tackle plastic pollution – from source to sea.

As a nation, we need to think holistically and future proof decisions about what we build where, and what resources we use, so that every pound spent on new homes and infrastructure is sustainable and resilient.

We want to make the right choices together – and you can help us shape the future of the water environment right now, through our Challenges and Choices consultation.

And we need “adaptive approaches” which can be reviewed in response to changing risks and opportunities. We’re already doing this in our plans for the Thames Estuary and the Humber – identifying different options for different potential futures.

What does the future hold?

For me, the best possible future holds a coast which is still the dynamic, ever-changing environment that thrills and inspires us today.

It will be clean and healthy, providing many of the solutions that deliver a carbon neutral world.

Buildings, engineering and infrastructure will work alongside natural habitats to support thriving coastal communities and livelihoods.

We won’t turn our backs to the sea.

People will still live with risk. They will live with more of it than we do today.

But they will understand it better, they will own it, and they will be empowered to make good choices about how to adapt to a changing climate.

We’ve already got the tools we need to achieve this. But we need to act now

if we want to make that future a reality.

Thank you very much.