

Working together to prepare for climate shocks

Thank you.

This year, we've seen war return to Europe, international trade redrawn and the cost of living skyrocket in many parts of the world.

This has led some people to say now is the time to abandon ambitious climate policies.

At the same time, the Intergovernmental Panel on Climate Change says we are looking at average global warming of 3.2°C by 2100.

In recent years we've begun to see where this is going.

- Heatwaves in India and Canada;
- Flooding in Germany and Bangladesh;
- Wildfires in California and Australia.

Every life lost is a tragedy and a future removed.

We know such events are becoming more frequent and severe.

We know why this is happening.

We know there are things we can do about it.

So, claiming climate change is someone else's liability does not release anyone from their responsibilities.

And, neither will it save money.

In March, the Swiss Re Institute reported that last year, global economic losses from floods amounted to 82 billion dollars.

In 2021, floods accounted for 31 percent of global economic losses from natural catastrophes, only 2 percent less than tropical cyclones.

The UN says we need a global Race to Resilience to accelerate the investment needed to prepare for climate shocks.

However, the international community's ongoing failure to produce an integrated adaptation strategy, when contrasted against the gathering pace of physical impacts, means that no one can wait for instruction from the highest tiers of global governance.

People must form partnerships where they can to deliver action now.

In January this year, a report written by Helen Jackson for the think tank Bright Blue, looked at how flooding endangers all types of infrastructure,

increasing the vulnerabilities of schools, hospitals and energy supplies.

The report concludes the UK is not adequately prepared for the increasing risk of flooding due to climate change.

The UK's 2021 National Infrastructure and Construction pipeline sets out plans for nearly £650 billion of public and private infrastructure investment by 2030.

The Infrastructure and Projects Authority has analysed over £200 billion of this, up to 2024/25.

For the equivalent time period, England has about £3 billion of public money allocated to flood and coastal defences.

By comparison, this looks like a thin green line of defence.

At the same time, the Institution of Civil Engineers' survey "What makes good design?" has identified the most limiting factors to progress on reducing greenhouse gas emissions and climate adaptation are that "it's not part of the project brief."

Yet, we already know that climate resilience makes the UK economy stronger.

For instance, the Thames Barrier protects 125 square kilometres of central London and over £320 billion of infrastructure including 400 schools, 16 hospitals, and 86 train and tube stations.

Another example is the Bacton gas terminal scheme in Norfolk.

The terminal supplies up to one third of the UK's gas, but is at risk from cliff erosion.

Nearly two million cubic metres of sand created a 6 kilometre-long dune that will protect Bacton Terminal for another 15 to 20 years.

And, resilience isn't only about traditional "defences".

Around the country the Environment Agency delivers £6 of benefit for every £1 we spend on flood incident management.

For example:

In February – here in the UK – the Met Office named three major storms in one week.

In South Yorkshire, the railway line flooded at Rotherham Station.

However, the Environment Agency's warning and informing service allowed rail operators to prepare.

Rotherham station was closed before the flooding hit, allowing engineers to remove critical equipment from the ground.

This not only reduced the impact of flood damage.

It meant the line was operating again quickly once water was pumped away.

The returns on investment are compelling.

But, global understanding of the costs avoided and revenue generated by climate resilience is anecdotal and patchy.

Adaptation needs to be considered through a more strategic economic lens.

There is a crying need for global leadership and the UK government could step into this role.

We need the Treasury to commission a national assessment for adaptation investment, equivalent to the Dasgupta review on the economics of biodiversity.

This would form the basis of an investment strategy for UK adaptation, leveraging both public and private finance.

A review would inform strategy but no one should hold back from taking action before it's written.

We need to fast-track from data to deals and delivery.

The Coalition for Climate Resilient Investment (I am a co-Chair) currently has 120 members, featuring both governments and investors, with over \$20 trillion in assets.

By pricing climate risks, particularly for infrastructure, and including them in upfront financial decision-making, the CCRI is showing how to incentivise a shift towards greater resilience.

Earlier this year, the team launched an investment prioritisation tool in Jamaica.

The Systemic Risk Assessment Tool was designed by Oxford University in collaboration with the Jamaican Government and support from the CCRI and the UK's Foreign, Commonwealth and Development Office.

It helps identify where major infrastructure networks are most vulnerable to climate risk, ensuring effective and efficient investment of public and private resources.

For example, investing 2.5 million dollars to protect Jamaica's two most exposed electricity substations from flood risk would yield a benefit of over 5 million dollars in avoided flood damage and economic disruption.

The finance community knows that investors want to understand how their savings deliver green outcomes on the ground.

And, the government has identified a huge funding challenge to meet our environmental objectives.

Last week, along with Defra and Natural England, the Environment Agency announced the second round of projects funded through the Natural Environment Investment Readiness Fund.

The fund provides grants of up to £100,000 to help organisations develop projects to the stage where they can demonstrate a return on investment.

One of the four pilot schemes is the Wyre Natural Flood Management project.

This reduces flood risk to downstream communities.

Over several years, interventions in the Wyre catchment will include wetland creation, leaky barriers, sloped embankments, alongside peatland and river restoration.

It uses a new financial model which will see the upfront investment repaid through contracts with organisations that benefit from improvements, including water and insurance companies.

It is also the first environmental project eligible for Social Investment Tax Relief which was brought in by the government in 2014 with the aim of encouraging investment in social enterprises.

The use of Social Investment Tax Relief has helped bring in high net worth investment to the Wyre project.

Environmental tax relief of this kind could be extremely useful to finding finance for future environmental projects.

As we strengthen climate resilience, it is important we don't make global heating worse.

In an interview with The Guardian last week, Katharine Hayhoe, chief scientist for the Nature Conservancy in the United States, said:

"If we continue with business-as-usual greenhouse gas emissions, there is no adaptation that is possible."

At the Environment Agency 54 percent of our current carbon footprint comes from the construction of flood risk management infrastructure.

Over 80 percent of these emissions are embodied in materials, mostly concrete and steel.

Our new contracts commit our delivery partners to cutting carbon associated with the delivery of projects.

The newly opened Boston Barrier, which protects over 17,000 properties in Lincolnshire, was made with 14,000 tonnes of low carbon concrete.

90 percent of the weight of the whole structure.

It's important to share what we learn from this.

I'm currently a member of the Cabinet Office's Infrastructure Steering Group as a voice for climate resilient, net zero and nature positive infrastructure.

And, my colleagues sit on the Government Construction Board, the Major Projects Association and the Infrastructure Client Group among others.

This year, COP27 will be held in Africa.

The World Meteorological Organisation's State of the Climate in Africa 2020 report warned of the continent's disproportionate vulnerability.

Ensuring that the means to prepare for and respond to climate impacts is in the hands of affected countries is crucial.

People should not have to wait for aid.

They should have the ability to prepare and adapt using local plans and get swift assistance when disaster strikes.

Investment in climate adaptation for sub-Saharan Africa could cost between 30 to 50 billion dollars each year over the next decade, or roughly two to three percent of GDP.

This is enough to spark job opportunities and economic development while prioritising a sustainable and green recovery.

The whole world would benefit from what we could learn from this.

But, instead adaptation is falling behind what is needed, with growing risks of loss and damage everywhere.

The Environment Agency is taking action.

By working with others, as we are here at Flood & Coast, we develop vital skills for the economy.

By sharing technical innovation, we help UK businesses to thrive at home and overseas.

By sharing experience, we support international partners experiencing extreme weather.

The UK can be a leader in this global race.

We can home-grow capacity in the skills, strategies and tools that the whole world needs.

I hope this conference allows you to learn and create partnerships that will help everyone take action to prepare for the coming years.

Thank you.

Serious business: why our environment is the ultimate investment

There are few things more terrifying than the devastation that climate change brings. It has the potential to destroy our economy, our species, and our planet. And it's happening at a faster rate than we feared.

When I spoke to the Association of British Insurers (ABI) in February last year, I said that the climate emergency was the main thing we should all be tackling, because it's the greatest threat to us and future generations. And a year on, that threat has worsened.

Just last month the Met Office reported that there was a 50:50 chance that we would see a rise in the world's temperature by more than 1.5C over the next five years. Those are not good odds. And according to the Intergovernmental Panel on Climate Change, even just temporarily exceeding this warming level will result in additional and severe impacts, some of which will be irreversible.

This is scary stuff. The good news is that we can successfully tackle the climate emergency if we do the right things. Today's conference is right to be focusing on three areas in particular: the need to move from data analysis to practical action, the importance of evolving beyond emissions reduction to protecting ecosystems and biodiversity, and the alignment of climate action with social impact.

The insurance industry has been a leader in this fight, and it's great to hear that many ABI members have signed up to the UN-backed 'Race to Zero' campaign – committing themselves to net zero by 2050 and publicly reporting on progress against targets. I suggest that the wider financial sector might want to follow suit, because tackling climate change is as good for business as it is for our planet.

Why we should care: the power of investment

Why is it smart for the insurance industry to help tackle the climate emergency? Answer: because insurers and their customers are increasingly feeling its impacts. The changing climate is causing more extreme weather and increasing the frequency and severity of floods, heatwaves and droughts, which means more frequent and more serious impacts on people, homes and infrastructure – the very things that the insurance industry and its customers want to see protected from those impacts. As the climate risk rises, so too do the physical risks to people and property and the financial risk to insurers.

But you have agency. As Huw Evans, former ABI Director General, has said: "the biggest thing the industry can do is to use its sizeable investment

portfolios to move funding away from things that are polluting the planet and into greener initiatives". More investment is needed across the board if we are to make our communities climate resilient and protect the environment for future generations. And most of that potential investment will come from the private sector, which can marshal much bigger resources than any government.

That is why in 2019 the UK government launched the Green Finance Strategy, which is designed to mobilise finance for clean and resilient growth by making it easier for investors to identify attractive opportunities that don't just make good financial investment sense but will also help us tackle climate change and restore nature – the best of all the investments we can make in our own futures. The government is now looking to update this Strategy to take stock of progress so far and identify how we can ensure the financial services industry can support the UK's energy security, climate and environmental goals, and thrive as it does so.

As part of this we in the Environment Agency are working with the government and other independent experts to develop standards for green investment. This is the Green Taxonomy – a common framework that will set the bar for investments that can be defined as environmentally sustainable. And what it will do is help businesses, investors and consumers make informed choices and support investment in sustainable projects. It will also help clamp down on greenwashing – false, unsubstantiated or exaggerated claims that an investment or business is environmentally friendly or carbon neutral or otherwise helping tackle the climate emergency. That's important, because investors, markets and the public want to be assured that green investment really does meet the gold standard.

Mitigation and adaptation

Much of the focus in the media, and in investment to date, has been on Net Zero – getting to a position whereby cutting our carbon emissions and offsetting those that continue through measures like carbon capture and storage we emit no additional carbon overall into the atmosphere and therefore don't drive further change to the climate. The technical term for that is mitigation – reducing the rate of climate change.

But to tackle the climate emergency successfully mitigation alone is not enough. We also need adaptation – changing the way we live, run our economy and build our cities so that we are resilient to the changes in climate that have already happened, and will continue to happen whatever we now do, because of the carbon we've already pumped into the atmosphere.

Adaptation too is only possible with investment, which again will need to come from both private and public sources. Here too investment now will pay massive dividends in the future. It is much better value to invest early in climate resilience than to live with the costs of inaction.

What is the Environment Agency doing?

The Environment Agency is playing a substantial role on mitigation and adaptation – both sides of the climate coin.

We are mitigating the extent of climate change, by ensuring the progressive reduction of carbon emissions through our role as the regulator of most of the industries that produce those emissions and in administering the UK Emissions Trading Scheme.

We are helping the country adapt to the effects of climate change by building and maintaining flood defences, by managing water resources to ensure that we will have enough in future, and through our statutory planning role through which we help create better and more resilient places for people and wildlife.

And we are trying to walk the walk ourselves. We have made a commitment to make the Environment Agency itself and our whole supply chain Net Zero by 2030. And we are using our own Pension Fund to generate strong financial returns by investing in companies that contribute to a sustainable economy – proof, I hope you will accept, that we are literally putting our money where our mouth is.

So, what next?

None of us is as good as all of us. I'm much more optimistic than I was a few years ago that we will successfully tackle climate change. The main reason for that is that the three main ingredients for success are now in place – governments around the world are taking action, ordinary people are changing how they live, and businesses are investing in sustainable economic growth and a low carbon future. In doing that, businesses are not just doing the right thing for the planet and their customers, though they are. They are also doing the right thing for their shareholders and their bottom lines. Nearly a century ago US President Calvin Coolidge said, "the business of America is business". Today I say the business of business is climate.

[DASA supports Dstl to supercharge science and innovation for defence and security](#)

News story

Demonstrating to government and industry how DASA is helping deliver innovation for a safer future.



Innovation experts from the [Defence and Security Accelerator](#) (DASA) participated in the [Defence Science and Technology Laboratory's](#) (Dstl) Supercharging Science engagement day, held in Newport on 7 June 2022.

The event set out the [Ministry of Defence's](#) (MOD) most ambitious science and technology (S&T) programmes to date with details on Dstl's technical challenges and requirements.

Minister for Defence Procurement, Jeremy Quin gave a keynote during which he also previewed the Defence Technology Exploitation Programme (DTEP), a new UK-wide initiative from DASA, which will launch this summer.

DTEP will fund and support collaborative projects between small and medium-sized enterprises (SMEs) and higher-tier Defence suppliers and help them win new business delivering against MOD's technological priorities.

Presenting at the event Tom Adamson, DASA Innovation Partner for Wales and Anis Mourad, DASA Access to Mentoring and Finance Partner for the Devolved Nations both spoke about the different routes to engage with DASA, the additional support DASA offers to help innovators build the business behind their idea and provided more insight into DTEP.

Tom Adamson, DASA Innovation Partner for Wales said:

Collaboration is central to DASA's role in finding and funding innovation to support the defence and security of the UK. We were delighted to take part in Dstl's Supercharging Science event with government and industry working together to use science, technology and innovation to secure strategic advantage for the UK. DASA is committed to supporting innovation and we look forward to officially launching the Defence Technology Exploitation Programme in the near future to further support innovators in how they can work with the Ministry of Defence.

Sign up to the [DASA GOV.UK page](#), [Twitter](#) and [LinkedIn](#) channels for all DASA's latest news, including updates on the official DTEP launch.

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[Blue Belt extends to the Caribbean, as Turks and Caicos Islands join flagship marine conservation programme](#)

Turks and Caicos Islands (TCI) have become the latest Overseas Territory to join the UK Government's flagship marine conservation programme, Blue Belt, and the first located in the Caribbean.

The announcement was made today by Lord Goldsmith, Minister for Pacific and the Environment at the Foreign, Commonwealth & Development Office (FCDO) in an address at a UN World Ocean Day event celebrating the work of the UK Overseas Territories (UKOTs) within the Blue Belt Programme.

Lord Goldsmith commented:

The commitment shown by the Overseas Territories to marine conservation makes a crucial contribution to our target to protect 30% of the world's oceans by 2030. Well over 4 million square kilometres of ocean are now covered by the Blue Belt – a remarkable achievement. It is wonderful to meet with the Territories on World Ocean Day, as we celebrate our successes of the Blue Belt Programme and look ahead to the next three years.

The Blue Belt Programme is open to all Territories seeking to enhance marine protection. I congratulate the Turks and Caicos Islands, as they join the Blue Belt as our first Caribbean territory. Over the next three years, the Turks and Caicos Islands and the Blue Belt Programme will enhance protection for the incredible biodiversity found in the Islands. We will combat Illegal, Unregulated and Unreported (IUU) fishing, and seek to mitigate the effects of marine pollution and climate change. We will also support sustainable livelihoods for the islanders.

In addition, I am delighted that Bermuda has become the first Territory to join the Blue Shield Programme and look forward to working together to enhance marine protection for their marine environment.

TCI is known for its incredible biodiversity. It is home to the third largest barrier reef on earth, and one of the finest in the Caribbean, hosting a plethora of soft and hard corals, and a wide range of marine species – from reef sharks to parrot fish. These reefs are of huge importance both ecologically and economically for TCI.

Blue Belt Programme support will include work to protect these reefs, as well as the wider marine environment of TCI, which faces the impacts of both global and local threats – from climate change to illegal fishing. Support from Blue Belt includes:

- Work to monitor and conduct research into tackling coral diseases, such as Stony Coral Tissue Loss Disease, that is impacting reefs across the Caribbean.
- The creation of a new Marine Protected Area (MPA) covering over half of TCIs Exclusive Economic Zone (EEZ). This new MPA will act as a sanctuary for key species such as sharks and rays, protecting them from human activities.
- Work to prevent illegal, unregulated and unreported (IUU) fishing. IUU fishing has been a challenge for the TCI Government over recent years, and Blue Belt will work to strengthen enforcement regimes through enhanced data analysis, informing more strategic patrols, and funding more capacity on-island.
- Monitor, manage and minimise the impact of human activities such as tourism and marine pollution (e.g. plastics) across TCI.

The Hon. Josephine Conolly, Minister for the Environment, Turks & Caicos Islands Government commented:

I look forward to the great benefits and successes that we will achieve through the initiatives being implemented in collaboration with the UK Government Blue Belt Programme.

The programme will directly benefit the TCI; ensuring that marine protection brings lasting benefits to the marine environment and local communities for future generations. From this partnership, we will be purchasing a brand-new catamaran vessel that will be used in demarcating park boundaries and swim zones. The vessel will also be used for conducting industry-leading research in our waters, to help improve our knowledge and management of this precious resource.

TCI joins Ascension Island, the British Antarctic Territory, British Indian Ocean Territory, South Georgia & the South Sandwich Islands, the Pitcairn Islands, St Helena and Tristan da Cunha – within the Blue Belt Programme. These UKOTs are home to around 90% of the UK's biodiversity, hosting a huge range of unique and endangered species. Combined, their MPAs span over 1% of the global ocean, making a major impact in safeguarding precious marine environments and resources, as well as helping to combat global ocean

threats.

Today's Small Island – Big Impact World Ocean Day event, provided a fantastic opportunity for UKOT representatives to discuss their achievements and future ambitions in managing and protecting such environmentally diverse marine environments and habitats – as well the importance of inspiring their islands younger generations in the protection of their precious biodiversity.

The event also coincides with the publication of the Blue Belt Programme Annual Update 2021/22, which details the incredible commitment and work delivered by the UKOTs over the last 12 months.

Stephanie Martin, Blue Belt Programme UK Overseas Territory Representative said:

From the Tropics to the Atlantic and down to the Southern Ocean, UK Overseas Territories' marine areas feature incredible biodiversity. As part of the UK Blue Belt Programme, the local communities and other stakeholders are working to help understand and manage these special habitats for long-term conservation. Taking care of these marine ecosystems is vital for future generations.

UKOT representatives at the event were joined by a range of policy makers, Non-Governmental Organisations and Not-for-profits. These included OceanMind and Blue Abacus, who partner the Blue Belt Programme in the delivery of its two sub-programmes, [Blue Shield](#), and the [Global Ocean Wildlife Analysis Network](#).

Presentations will be given by a range of Ministers and UKOT representatives. During the intervals, guests had the opportunity to see some of the unique shelf water specimens collected off Tristan da Cunha, St. Helena and SGSSI, during the RRS Discovery 99 and 100 expedition.

[New tool to drive restoration of historic native oyster reefs](#)

A new tool to help increase the native oyster population around the English coast has been launched, the Environment Agency announced today (World Oceans Day 8 June).

Native oyster populations have decreased by 95% in England since the mid-1800s, mainly due to over-fishing.

The aim is to reverse this decline because they bring multiple benefits, including cleansing seawater through filtration and increasing biodiversity

and fish abundance.

Developed by academics from the University of Exeter and the University of Edinburgh for the Environment Agency, the new [map data layer](#) is on the ArcGIS (geographical information service) site and provides information on the location of historic native oyster records and distributions.

It will also sit on the Coastal Data Explorer, which is a public web mapping portal managed by the Catchment Based Approach initiative.

It can act as a tool to support local authorities, community partnerships and environmental organisations to make the case for native oyster restoration projects, one of the three estuarine and coastal habitats that are the focus of the [Restoring Meadows, Marsh and Reef \(ReMeMaRe\)](#) habitat restoration partnership project.

The layer works alongside the Environment Agency's [Native Oyster Restoration Potential maps](#) that highlight areas where oyster restoration could be successful, and the UK & Ireland Native Oyster Network and Environment Agency's [European Native Oyster Habitat Restoration Handbook](#) that provides guidelines on how to restore these valuable habitats.

The handbooks and maps aim to counter the huge loss in native oyster reefs over the last two centuries by encouraging and supporting new restoration projects.

The map layer was created using data from government, and scientific and maritime bodies, and historic media accounts that mention the use and presence of the native oyster, *Ostrea edulis*, across England.

Environment Agency Estuary and Coast Planning Manager Roger Proudfoot said:

The release of this information on where native oyster reefs were once present represents another milestone in our drive for more estuary and coast habitat restoration.

We have lost 95% of our native oysters mainly due to over-fishing. As well as being catastrophic for our marine ecosystem, we have also lost the multiple benefits that they once provided for us, including cleansing our waters through filtration and increasing biodiversity and fisheries.

We hope this new information on the historic locations of once thriving oyster reefs will lead to new opportunities for restoring what has been lost. We know that oyster restoration is possible, we just need more capacity to upscale the current efforts and we look forward to this new information inspiring more projects to restore this magnificent mollusc.

Dr Ruth Thurstan, Project Lead and Senior Lecturer at the University of Exeter said:

Oysters once formed an understated but important part of British marine ecosystems and popular culture.

“In the 19th century we fished and consumed oysters by the millions, while their complex reef habitats were key to supporting other marine life that we valued and depended upon.

Much of this was lost as oyster habitats declined, and our marine ecosystems today are fundamentally different. This map of historical oyster fisheries is a step towards building the knowledge base required for successfully restoring this culturally and ecologically important species in our coastal waters.

Dr Philine Zu Ermgassen, Project Lead and Research Associate at the University of Edinburgh said:

The habitats formed by the native oyster have declined precipitously and are now rarely found. This largely happened outside of living memory.

Evidencing where fisheries were historically is the first step toward a greater understanding of the former extent and importance of oyster habitats. Knowing where oyster habitats were found is important both for public understanding and for local decision making. Both are critically important as habitat restoration efforts take off across England and the rest of Europe.

Further details of native oyster restoration efforts can be found through the Native Oyster Restoration Alliance <https://noraeeurope.eu>.