



Adarsh Shikshan Mandal's

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(Affiliated to University of Mumbai) (Hindi Linguistic Minority College)

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Ideal Nature Club **Presents**

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- **Climate change: 'Sea levels will rise even if carbon emissions are cut'**

Sea levels will continue to rise for years to come even if the world cuts emissions of greenhouse gases, Prof Ed Hawkins, the lead author of the UN's climate change report, has warned.

He told BBC World News that if the world achieved net zero emissions it would stop extreme weather events getting worse, but sea levels would continue to rise "for centuries or even thousands of years, even if we manage to stabilise global temperatures".

The UN's Intergovernmental Panel on Climate Change (IPCC) report says human activity is changing the climate in unprecedented and sometimes irreversible ways, and warns of increasingly extreme heatwaves, droughts and flooding,

- **Climate change: The IPCC environmental warning India cannot ignore**



If the Intergovernmental Panel on Climate Change (IPCC) report was just about rushing countries to cut their carbon emissions to avoid a climate catastrophe, India could perhaps afford to look the other way.

The third largest carbon emitter of the world, after China and the US, India has maintained that it is on course to outperform its Paris climate agreement pledge to reduce its carbon footprint by 33-35% from 2005 levels by 2030.

The Paris climate goal is to keep global average temperature rise to well below 2C and strive for 1.5C to prevent runaway climate change.

But the IPCC report has indicated that the latter target is fast slipping out of reach because countries are not cutting down carbon emissions fast enough, causing global temperature to rise.

India has not followed suit even after several other major carbon emitters announced that they would become carbon neutral by 2050, not even after China set for itself the 2060 deadline.

But this IPCC report has something that the second most populous country in the world - that was ranked seventh in a major climate risk index of 2019 - cannot ignore.

Among the most serious findings of the sixth assessment report of the UN's climate science organisation is that some of the climate systems of the planet have already seen irreversible changes due to unabated global warming.



"The scale of recent changes across the climate system as a whole and the present state of many aspects of the climate system are unprecedented over many centuries to many thousands of years," the report says.

Climate scientists say that can mean extreme weather events influenced by such disturbed climate systems like oceans and atmosphere will keep getting worse and so will their impact.

- Climate report is 'code red for humanity'
- What do world leaders need to agree to stop climate change?

"Some climate systems have locked in [because of the warming humans have caused]," Professor Jonathan Bamber, a glaciologist with University of Bristol and one of the authors of the latest IPCC report, told the BBC.

"So, even if we stopped all carbon emissions, there will be some damages."

- **Climate change: New report will highlight 'stark reality' of warming**



UN researchers are set to publish their strongest statement yet on the science of climate change.

The report will likely detail significant changes to the world's oceans, ice caps and land in the coming decades.

Due out on Monday, the report has been compiled by the Intergovernmental Panel on Climate Change (IPCC).

It will be their first global assessment on the science of global heating since 2013.

It is expected the forthcoming Summary for Policymakers will be a key document for global leaders when they meet in November.

The politicians are due to gather for a climate summit, known as COP26, in Glasgow.

- World at risk of hitting temperature limit soon
- Starmer attacks government record on green jobs
- Research shows millions more at risk of flooding

After two weeks of virtual negotiations between scientists and representatives of 195 governments, the IPCC will launch the first part of a three-pronged assessment of the causes, impacts and solutions to climate change.

It is the presence of these government officials that makes the IPCC different from other science bodies. After the report has been approved in agreement with governments, they effectively take ownership of it.

On Monday, a short, 40-page Summary for Policymakers will be released dealing with the physical science.



It may be brief, but the new report is expected to pack a punch.

"We've seen over a couple of months, and years actually, how climate change is unfolding; it's really staring us in the face," said Dr Heleen de Coninck, from Eindhoven University of Technology in the Netherlands, who is a coordinating lead author for the IPCC Working Group III.

"It's really showing what the impacts will be, and this is just the start. So I think what this report will add is a big update of the state of the science, what temperature increase are we looking at - and what are the physical impacts of that?"

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- **Single-use plastics: Isle of Man could ban sale and distribution**



It follows an EU Plastic Directive aiming to ban 10 different items frequently found on European beaches.

The Manx government has launched a consultation to see if people support the axing of items such as drink stirrers and food containers.

Laws needed to introduce a ban could form part of the Climate Change Bill, expected to become law later this year.

If introduced, it would make the island the first in the British Isles to ban everything covered by the EU directive.

It is not the first time the government has proposed the ban, but it is the first time it has gone out to consultation.

Under the proposals, businesses would be allowed a six-month grace period to use up their existing single-use plastic stock before the sale of them would become an offence.

The Manx government has committed to achieve net zero carbon emissions by 2050.

Environment Minister Geoffrey Boot said: "It is predicted that the amount of plastic entering our oceans will treble in the next 10 years.

"We must act now as a responsible biosphere nation."

The legislation also recommends a ban on some personal care products that contain micro-beads.

• **Floods: Research shows millions more at risk of flooding**



A new study shows that the percentage of the global population at risk from flooding has risen by almost a quarter since the year 2000.

Satellite images were used to document the rise, which is far greater than had been predicted by computer models.

The analysis shows that migration and a growing number of flood events are behind the rapid increase.

By 2030, millions more will experience increased flooding due to climate and demographic change, the authors say.

- Finance firms plan to close coal plants in Asia
- COP26 'should be hybrid event' says ex-climate chief
- UK already undergoing disruptive climate change

Flooding is the environmental disaster that impacts more people than any other, say researchers.

That view was echoed around the world in recent weeks, with huge inundations destroying lives and property.

In Germany and China, record downpours overwhelmed defences, amid arguments about levels of preparation.

One of the challenges with flooding, according to researchers, is that most maps of where the waters will likely penetrate are based on models.

These simulate floods based on information such as elevation, rainfall and data from ground sensors.

But they have significant limitations: they fail to consider population or infrastructure changes and are unable to predict random events such as dam breaches.

So when Hurricane Harvey hit Texas in 2017, around 80,000 homes were flooded that were not on government risk maps.

In this new study, researchers looked at daily satellite imagery to estimate both the extent of flooding and the number of people exposed to over 900 large flood events between 2000 and 2018.



They found that between 255 and 290 million people were directly affected - and between 2000 and 2015, the number of people living in these flooded locations increased by 58-86 million.

This represents an increase of 20-24% in the proportion of the world population exposed to floods, some 10 times higher than previous estimates.

The increase was not evenly spread throughout the world. Countries with increased flood exposure were mainly in Asia and sub-Saharan Africa.

In European and North American nations, the risk was stable or decreasing.

Around 90% of the flood events observed by the scientists were in South and Southeast Asia, around the basins of major rivers including the Indus, Ganges-Brahmaputra and the Mekong.

"We were able to capture a lot of floods in Southeast Asia more than other places, because they're so slow-moving and so the clouds move, and we're able to get a really clear image of the flood," explained lead author Dr Beth Tellman from the University of Arizona and chief science officer at Cloud to Street, a global flood-tracking platform.

"But there was also just a lot of flooding, really high impactful flooding in southern Asia and Southeast Asia. There's also a large human population that settled near rivers for really important reasons [such as] agriculture," Dr Tellman explained. But she added that this "also, unfortunately exposes people to a lot of flooding events".



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- **Climate change: Europe's extreme rains made more likely by humans**



The heavy rainfall behind deadly flooding in Europe in July was made more likely by climate change, scientists say.

The floods in Germany, Belgium and other areas killed at least 220 people as towns and villages were swamped.

Researchers say global heating made rainfall events like this up to nine times more likely in Western Europe.

Downpours in the region are 3-19% more intense because of human induced warming.

- Climate report is 'code red for humanity'
- What is Extinction Rebellion what are its aims?
- First-ever water shortage on US' Colorado River

The dramatic and deadly floods that hit Germany, Belgium and elsewhere in mid-July were a shock to weather forecasters and local authorities.

Lives were swept away and houses, motorways and railway lines destroyed by the rapidly rushing waters.



The severe flooding was caused by heavy rainfall over a period of 1-2 days on already sodden ground, combined with local hydrological factors such as land cover and infrastructure.

To analyse the impact of climate change in events like this, researchers from the World Weather Attribution group focused on the heavy rainfall that preceded the floods.

They did this in part because some of the hydrological monitoring systems, which would have given them more accurate information about the floods, were destroyed by the waters.

The rainfall data showed that in the areas around the Ahr and Erft rivers in Germany and in the Meuse region of Belgium, intense downpours brought 90mm of rain in a single day.

- **Climate change: Arctic warming linked to colder winters**

The scientists found that heating in the region ultimately disturbed the circular pattern of winds known as the polar vortex.

This allowed colder winter weather to flow down to the US, notably in the Texas cold wave in February.

The authors say that warming will see more cold winters in some locations.

- Weather-related disasters increase five-fold
- Climate change summit 'make or break' for planet
- One in three wild trees face extinction



Over the past four decades, satellite records have shown how increasing global temperatures have had a profound effect on the Arctic.



Warming in the region is far more pronounced than in the rest of the world, and has caused a rapid shrinkage of summer sea ice.

Scientists have long been concerned about the implications of this amplification of global change for the rest of the planet.

This new study indicates that the warming in the Arctic is having a significant impact on winter weather in both North America and East Asia.

The researchers detail a complex meteorological chain that connects this warmer region to a rotating pattern of cold air known as the polar vortex.

The authors show that the melting of ice in the Barents and Kara seas leads to increased snowfall over Siberia and a transfer of excess energy that impacts the swirling winds in the stratosphere above the North Pole.

The heat ultimately causes a stretching of the vortex which then enables extremely cold weather to flow down to the US.

There has been an increase in these stretching events since satellite observations began in 1979.

The scientists believe this vortex stretching process led to the deadly Texas cold wave in February this year.

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- **Climate change: Big increase in weather disasters over the past five decades**

The number of weather-related disasters to hit the world has increased five-fold over the past 50 years, says the World Meteorological Organization.

However, the number of deaths because of the greater number of storms, floods and droughts has fallen sharply.

Scientists say that climate change, more extreme weather and better reporting are behind the rise in these extreme events.

But improvements to warning systems have helped limit the number of deaths.

- Queen to attend COP26 climate conference in Glasgow
- Europe's 2020 heat reached 'troubling' level
- How much can wetlands protect from coastal flooding?

As global temperatures have risen in recent decades, there has been a significant uptick in the number of disasters related to weather and water extremes.

In the 50 years between 1970 and 2019, there were more than 11,000 such disasters, according to a new atlas from the WMO that charts the scale of these events.



Over two million people died as a result of these hazards, with economic losses amounting to \$3.64 trillion.

"The number of weather, climate and water extremes are increasing and will become more frequent and severe in many parts of the world as a result of climate change," said WMO Secretary-General Prof Petteri Taalas.

"That means more heatwaves, drought and forest fires such as those we have observed recently in Europe and North America. We have more water vapour in

the atmosphere, which is exacerbating extreme rainfall and deadly flooding. The warming of the oceans has affected the frequency and area of existence of the most intense tropical storms," he added.

- **Four ways climate change links to extreme weather**

More than 90% of the deaths related to weather disasters have occurred in developing countries.

The biggest killers have been droughts, responsible for 650,000 deaths; while at the other end of the scale, extreme temperatures took nearly 56,000 lives.

But over the 50-year period, the overall death toll from disasters fell rapidly.

"Behind the stark statistics lies a message of hope," said Prof Taalas.

"Improved multi-hazard early warning systems have led to a significant reduction in mortality. Quite simply, we are better than ever before at saving lives."

While more people have been saved in the face of an increasing number of extremes, the economic toll has mounted.

Reported losses in the decade between 2010-2019 were around \$383m per day, a seven-fold increase on the \$49m per day between 1970-1979.

But over the 50-year period, the overall death toll from disasters fell rapidly.

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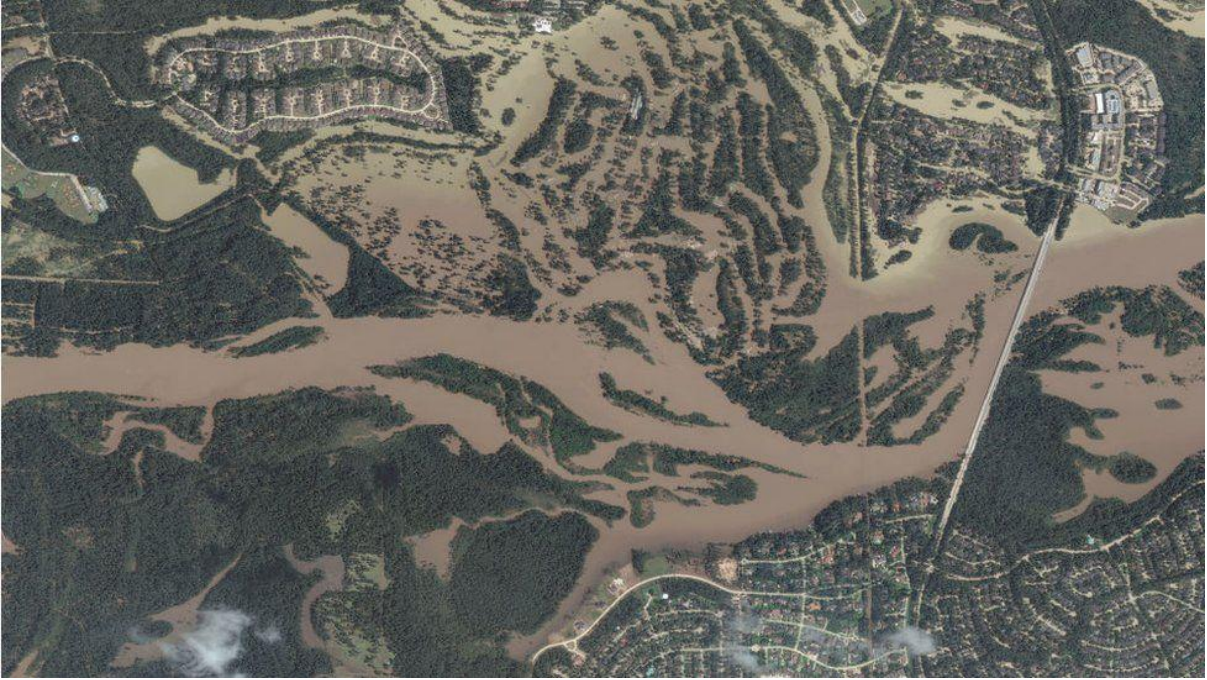
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There are also huge gaps in weather and hydrological observing networks in Africa, some parts of Latin America and among island states in the Pacific and Caribbean.

"More lives are being saved thanks to early warning systems but it is also true that the number of people exposed to disaster risk is increasing due to population growth in hazard-exposed areas and the growing intensity and frequency of weather events," said Mami Mizutori, special representative of the UN's Secretary-General for Disaster Risk Reduction.

"More international cooperation is needed to tackle the chronic problem of huge numbers of people being displaced each year by floods, storms and drought.

"We need greater investment in comprehensive disaster risk management, ensuring that climate change adaptation is integrated in national and local disaster risk-reduction strategies," she said.



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- **Climate change: UN warning over nations' climate plans**



Despite all the promises to take action, the world is still on course to heat up to dangerous levels.

That's the latest blunt assessment of the United Nations.

Its experts have studied the climate plans of more than 100 countries and concluded that we're heading in the wrong direction.

Scientists recently confirmed that to avoid the worst impacts of hotter conditions, global carbon emissions needed to be cut by 45% by 2030.

But this new analysis shows that those emissions are set to rise by 16% during this period.

That could eventually lead to a temperature rise of 2.7C (4.9F) above pre-industrial times - far above the limits set by the international community.

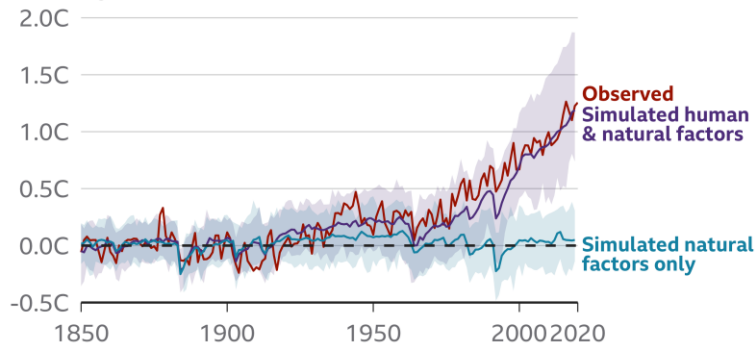
- How do world leaders stop climate change?
- Climate report is 'code red for humanity'

"The 16% increase is a huge cause for concern," according to Patricia Espinosa, the UN's chief climate negotiator.

"It is in sharp contrast with the calls by science for rapid, sustained and large-scale emission reductions to prevent the most severe climate consequences and suffering, especially of the most vulnerable, throughout the world."

Human influence has warmed the climate

Change in average global temperature relative to 1850-1900, showing observed temperatures and computer simulations



Note: Shaded areas show possible range for simulated scenarios

Source: IPCC, 2021: Summary for Policymakers

BBC

It's a stark warning about the scale of the challenge faced at the COP26 climate conference, scheduled to take place in Glasgow in just over six weeks' time.

The central aim of the giant event is to keep alive hopes of limiting the rise in global temperatures by persuading nations to cut their emissions.

Under the rules of the Paris Agreement on climate change, countries are meant to update their carbon reduction plans every five years.

But the UN says that of 191 countries taking part in the agreement, only 113 have so far come up with improved pledges.

Alok Sharma, the British minister who will chair the COP26 conference, said nations that had ambitious climate plans were "already bending the curve of emissions downwards".

"But without action from all countries, especially the biggest economies, these efforts risk being in vain."

A study by Climate Action Tracker found that of the G20 group of leading industrial nations, only a handful including the UK and the US have strengthened their targets to cut emissions.

In another analysis, the World Resources Institute and Climate Analytics highlight how China, India, Saudi Arabia and Turkey - together responsible for 33% of greenhouse gases - have yet to submit updated plans.

It says that Australia and Indonesia have the same carbon reduction targets they did back in 2015 - while the Paris Agreement is meant to involve a "ratchet mechanism" of progressively deeper cuts.

And the study finds that Brazil, Mexico and Russia all expect their emissions to grow rather than to shrink.

For the poorest countries - most vulnerable to rising sea levels and new extremes of heat and drought - seeing a rapid fall in the gases heating the planet is a priority. Sonam P Wangdi, chair of the Least Developed Countries group, said: "G20 countries must take the lead in quickly cutting emissions to mitigate climate change."

"These are the countries with the greatest capacity and responsibility, and it's well past time they step up and treat this crisis like a crisis."

There are hopes that China may revise its climate plans ahead of the Glasgow conference.

As the world's largest emitter, it has previously said it aims to peak its emissions by 2030 and achieve carbon neutrality by 2060.

An announcement soon of more ambitious targets would give the talks a significant boost but there are no clues about when - or even whether - that might happen.

- **Climate change: IPCC report is 'code red for humanity'**



Human activity is changing the climate in unprecedented and sometimes irreversible ways, a major UN scientific report has said.

The landmark study warns of increasingly extreme heatwaves, droughts and flooding, and a key temperature limit being broken in just over a decade.

The report "is a code red for humanity", says the UN chief.

But scientists say a catastrophe can be avoided if the world acts fast.

There is hope that deep cuts in emissions of greenhouse gases could stabilise rising temperatures.

Echoing the scientists' findings, UN Secretary General António Guterres said: "If we combine forces now, we can avert climate catastrophe. But, as today's report makes clear, there is no time for delay and no room for excuses. I count on government leaders and all stakeholders to ensure COP26 is a success."

The sober assessment of our planet's future has been delivered by the UN's Intergovernmental Panel on Climate Change (IPCC), a group of scientists whose findings are endorsed by the world's governments.

Their report is the first major review of the science of climate change since 2013. Its release comes less than three months before a key climate summit in Glasgow known as COP26.

- Mass evacuations as wildfires spread across Greece
- Time nearly up to stop climate catastrophe - Sharma
- Research shows millions more at risk of flooding
- A really simple guide to climate change

In strong, confident tones, the IPCC's document says "it is unequivocal that human influence has warmed the atmosphere, oceans and land".

According to Prof Ed Hawkins, from the University of Reading, UK, and one of the report's authors, the scientists cannot be any clearer on this point.

"It is a statement of fact, we cannot be any more certain; it is unequivocal and indisputable that humans are warming the planet."

Petteri Taalas, Secretary-General of the World Meteorological Organization, said: "By using sports terms, one could say the atmosphere has been exposed to doping, which means we have begun observing extremes more often than before."

The authors say that since 1970, global surface temperatures have risen faster than in any other 50-year period over the past 2,000 years.

This warming is "already affecting many weather and climate extremes in every region across the globe".

Whether it's heatwaves like the ones recently experienced in Greece and western North America, or floods like those in Germany and China, "their attribution to human influence has strengthened" over the past decade.



IPCC report key points

- Global surface temperature was 1.09C higher in the decade between 2011-2020 than between 1850-1900.
- The past five years have been the hottest on record since 1850
- The recent rate of sea level rise has nearly tripled compared with 1901-1971
- Human influence is "very likely" (90%) the main driver of the global retreat of glaciers since the 1990s and the decrease in Arctic sea-ice
- It is "virtually certain" that hot extremes including heatwaves have become more frequent and more intense since the 1950s, while cold events have become less frequent and less severe.

- **Climate change: Whisper it cautiously... there's been progress in run up to COP26**



With just five weeks left until world leaders gather in Glasgow for a critical climate summit, the BBC's Matt McGrath and Roger Harrabin consider progress made at this week's UN gathering and the outstanding issues that remain.

Climate change was the dominant theme at this year's UN General Assembly (UNGA) as countries recognised the seriousness of the global situation.

All across the planet, the hallmarks of rising temperatures are being keenly felt with intense wildfires, storms and floods taking place on scales rarely seen.

- World on course to heat up to dangerous levels
- World now sees twice as many days over 50C
- Wildlife and plant species decline 'a crisis'

Against this backdrop, Boris Johnson told the UN it was "time to grow up" on the climate issue.

The prime minister fought to bring November's UN climate summit to Britain, and it's clear he sees himself and the UK as global leaders in tackling this planetary threat.

His bizarre if powerful speech at the UN harnessed the Greek tragedian Sophocles and TV's Kermit the Frog to accuse some other leaders of behaving like adolescents waiting for someone else to tidy up their mess.

Did it encourage or annoy them? That's not yet clear.

But how's Mr Johnson faring with his own policies?

Well, even the most grudging environmentalist would give him high marks for target-setting. The UK pledges to cut 78% of its emissions by 2035 - that's from a 1990 baseline.

That doesn't include emissions created abroad in the process of manufacturing the goods bought in the UK - but leave that to one side for the moment, because Britain is not on course for that 78% target anyway.

A report showed its current plans are projected to deliver less than a quarter of the cuts needed to meet the goal. The government didn't deny that.

It warned little progress has been made recently in areas such as agriculture, power, and waste (a major source of emissions).

The government has promised to put effective policies in place before the November conference, known as COP26, is held in Glasgow. But it's had policy rows over gas boilers, farm subsidies, aviation - and especially over how the zero-carbon revolution will be funded.

What's more, several of Mr Johnson's current policies will send emissions up, not down.

He's not opposing a coal mine in Cumbria or oil drilling off Shetland; he's cutting taxes on flying; and he's building new roads and the HS2 railway despite the massive amount of CO2 created to make the infrastructure.

Environmentalists warn these will prove embarrassing during the Glasgow summit.

- **Climate change: Green groups call for COP26 postponement**



Green groups say that the COP26 climate conference due to be held in Glasgow in November should be postponed.

They argue that vaccine inequity and unaffordable accommodation will lock out "huge numbers" of developing country delegates.

But the UK government now says it will fund quarantine hotel stays for delegates, observers and media arriving from red list countries.

Vaccines are being rolled out for any delegate who needs one, ministers say.

- Global warming linked to colder winters in the US
- One in three wild trees face extinction
- Riot training for thousands ahead of COP26
- Thunberg: Scotland not world leader on climate change

The COP26 negotiations are seen as the most crucial gathering on climate change since the Paris agreement came into being in the French capital in 2015.

Around 200 heads of state and government are expected to attend, with thousands of delegates, civil society members and media.

Environmental groups are an important element in these global talks process.

While they have no direct power to influence outcomes, they act as observers and as advisers to many poorer countries that have limited personnel and resources to cover every aspect of this sprawling negotiation.

The Climate Action Network represents more than 1500 civil society organisations in over 130 countries.

They have been concerned for some time that the global response to Covid-19 was likely to impact delegates, campaigners and journalists from Global South countries, many of which are on the UK's red list for the virus.

In a statement, they point to the fact that, according to the WHO, around 57% of people in Europe are now fully vaccinated, while in Africa the figure is around 3%.

"Our concern is that those countries most deeply affected by the climate crisis and those countries suffering from the lack of support by rich nations in providing vaccines will be left out and be conspicuous by their absence at COP26," said Tasneem Essop, executive director of Climate Action Network.

"There has always been an inherent power imbalance within the UN climate talks and this is now compounded by the health crisis. Looking at the current timeline for COP26, it is difficult to imagine there can be fair participation from the Global South under safe conditions and it should therefore be postponed," she added.

While the UK has repeatedly said that vaccines will be made available for any delegate who needs them, environmentalists point out that attendance at COP26 is about far more than just access to a job.



The green groups say there are major issues with travel, quarantine costs and new surges in Covid-19.

"The UK has been too slow in delivering its vaccines support to delegates in vulnerable countries and their quarantine requirements come with some eye-watering hotel costs," said Mohammed Adow, who's a long-time observer of the talks and director of the Nairobi-based think tank Power Shift Africa.

"Some delegates are finding they cannot transit because some of the major travel hubs are closed and the alternative travel costs are beyond the reach of poorer governments and smaller civil society organisations."

But in a statement, the UK minister tasked with running the talks said that every step would be taken to ensure inclusivity, including paying for quarantine hotels.

"We are working tirelessly with all our partners, including the Scottish Government and the UN, to ensure an inclusive, accessible and safe summit in

Glasgow with a comprehensive set of Covid mitigation measures," said COP26 President-Designate Alok Sharma.

"This includes an offer from the UK government to fund the required quarantine hotel stays for registered delegates arriving from red list areas and to vaccinate accredited delegates who would be unable otherwise to get vaccinated.

"Ensuring that the voices of those most affected by climate change are heard is a priority for the COP26 Presidency, and if we are to deliver for our planet, we need all countries and civil society to bring their ideas and ambition to Glasgow," Mr Sharma said.

The government says that the offer of funding the required managed quarantine stays is for party delegates, observers and media who are arriving from red list areas who would otherwise find it difficult to attend COP, including all those from the Global South.

For some observers the row over vaccines goes to the heart of the Paris agreement which includes a reference to the "right to health" in the pact.

"The right to health and concern for fellow humans lie at the heart of the Paris Agreement - no one is safe until everyone is safe," said Laurence Tubiana, who was a climate change ambassador for France during the Paris negotiations and is now the head of the European Climate Foundation.

"Covid-19 is a global challenge and the G20 must show solidarity with the Global South and equitably share vaccines - beyond just offering them to delegates attending the COP negotiations in Glasgow."



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- **Climate change: Consumer 'confusion' threatens net zero homes plan**



Government plans to decarbonise homes are too complicated and confusing, according to a coalition of consumer and industry groups.

They've written to the prime minister to say that current schemes to adapt homes go wrong far too often.

The open letter, from Citizens Advice and others, calls for more financial support for making changes.

Otherwise, they argue, efforts to curb emissions from millions of homes in the UK will be at risk.

- Europe's extreme rains made more likely by humans
- Talks resume on global plan to protect nature
- Climate change protesters erect giant pink table

Tackling energy use in the residential sector is seen as key to the government's aim of getting to net zero by 2050.

Net zero involves reducing greenhouse gas emissions as much as possible and then balancing out any further releases by absorbing an equivalent amount from the atmosphere by, for example, planting trees.

The carbon generated by home heating amounts to about 20% of all UK emissions.

But the government's current efforts to help householders to adapt their homes are "too complicated", and too often things go wrong, say industry and consumer groups.

The coalition includes Citizens Advice, the Federation of Master Builders, the Aldersgate Group and Which?

They argue that the process of installing low-carbon heating, upgrading insulation or putting in smart technologies is "time consuming, confusing and stressful". They cite the example of the Green Homes Grant, a scheme that was designed to help people insulate their homes.

It was scrapped in March this year after reaching just 10% of the houses that the government had promised would be improved.

According to the coalition, simply choosing the right technology or finding a reputable installer demands huge amounts of time, knowledge and effort.

Far too often, things go wrong with poor installation and technologies not working as expected.

The letter to the prime minister says there are three key concerns that need to be addressed to ensure that plans to decarbonise homes don't fail.

- **Information:** According to the coalition, people need more accessible and unbiased information on steps, including installing low-carbon heating and upgrading their insulation.
- **Consumer protections:** The letter points out that previous energy efficiency schemes, such as the Green Homes Grant, have been marred by scammers and rogue traders. The coalition says consumer protections for decarbonising homes must be fit for purpose.
- **Costs:** The coalition is calling for a comprehensive, long-term policy framework that provides certainty for businesses and consumers and which offers financial support such as grants, low-cost loans and financing.

"Our evidence is clear. Right now, making green changes to homes is too confusing and too often things go wrong for those trying to do the right thing," said Dame Clare Moriarty, chief executive of Citizens Advice.

"The public is behind the net zero transition, but they need the right information and tools, particularly when it comes to adapting their home.

"By getting things right now, the government can give people the confidence to make changes and play their part in getting to net zero."



• **Climate change: Technology boosts efforts to curb tree loss in Amazon**



Technology can help indigenous communities to significantly curb deforestation, according to a new study.

Indigenous people living in the Peruvian Amazon were equipped by conservation groups with satellite data and smartphones.

They were able to reduce tree losses by half in the first year of the project.

Reductions were greater in communities facing threats from illegal gold mining, logging and drugs.

- Brazilian minister quits amid illegal logging probe
- The activist whose fight created a national park
- Illegal miners fire on indigenous group in Amazon

Over one-third of the Amazon rainforest lies within the territory of approximately 3,344 acknowledged indigenous communities.



But for decades, these areas have been under attack from outsiders who are determined to cut down trees for a range of purposes including mining, logging and the planting of illicit crops like the coca plants used to manufacture cocaine. Over the past 40 years, governments and environmentalists have invested heavily in the use of satellite technology to monitor the removal of trees.

Governments in Brazil, Peru and Colombia have put in place a system of high-resolution deforestation alerts, but there is little evidence that this information reaches the indigenous communities most affected.

This new research set out to see if putting information directly into the hands of forest communities would make a difference.

In this randomised, controlled study, the authors identified 76 remote villages in the Peruvian Amazon, with 36 randomly-assigned to participate in this new monitoring programme.

Thirty-seven other communities served as a control group and continued with their existing forest management practices.

Three members of each selected community were trained in the use of technology and shown how to carry out patrols to verify deforestation.

When satellite information showed suspected deforestation activity in an area, photos and GPS coordinates were loaded onto USB drives and carried up the Amazon river and delivered by couriers.

The information was then downloaded onto specialised smartphone apps which would guide the community monitors to the suspected locations.

When the forest patrols confirmed any unauthorised deforestation, they would report back to a general assembly of community members to decide on the best approach.

In cases where drug dealers were involved, the community could decide to report the issue to law enforcement.

If the activity was perceived as less risky, community members could intervene directly and drive the offenders off their land.

When the researchers examined the impact of the new approach, they found that deforestation dropped by 52% in the first year, and by 21% in the second.

"It's quite a sizeable impact," said Jacob Kopas, an independent researcher and an author on the paper.

"We saw evidence of fewer instances of tree cover loss in the programme communities compared with control communities."

"On average, those communities managed to avert 8.8 hectares of deforestation within the first year. But the communities that were most threatened, the ones that had more deforestation in the past were the ones pulling more weight and were reducing deforestation more than in others."

Indigenous groups welcomed the research, saying it is among the first peer-reviewed studies to show the benefits of empowering local communities.

"The study provides evidence that supporting our communities with the latest technology and training can help reduce deforestation in our territories," said

Jorge Perez Rubio, the president of the Loreto regional indigenous organization (ORPIO), where the study was carried out.

- **Climate change: 'Last refuge' for polar bears is vulnerable to warming**



new study finds that an area of the Arctic Ocean critical for the survival of polar bears is fast becoming vulnerable to climate change.

The region, dubbed the "last ice area" had been expected to stay frozen far longer than other parts of the Arctic.

But this new analysis says that this area suffered record melting last summer.

The researchers say that high winds allied to a changing climate were behind the unexpected decline.

- Right to repair rules come into force
- UK government's 'toothless policies' fail nature
- Courts set for rise in climate compensation claims

The Wandel Sea area, to the north of Greenland, is part of what scientists call the "last ice area".

Normally, this region retains thick, multi-year ice all year round.



"Sea ice circulates through the Arctic, it has a particular pattern, and it naturally ends up piling up against Greenland and the northern Canadian coast," said Axel Schweiger, from the University of Washington and lead author of this latest study.

"In climate models, when you spin them forward over the coming century, that area has the tendency to have ice survive in the summer the longest."

Scientists consider the area to be an important last refuge for Arctic marine mammals including polar bears, ice-dependent seals and walrus.

Polar bears in the area use the ice to hunt for seals who build dens to raise their young on the frozen water.

In August last year, the German research vessel, the Polarstern sailed across the Wandel Sea, and unexpectedly encountered stretches of open water where thick ice would normally be found.

Researchers have now used a combination of satellite imagery and sea ice models to understand what happened in the region.

Adding to the puzzle were satellite measurements from spring last year showing that sea ice in the Wandel Sea was thicker than in recent years.

However, by August 2020, the images showed a record low of just 50% ice concentration.

According to the researchers, unusually strong winds moved much of the sea ice out of the area - but this was enhanced by a thinning trend, related to warming, that's been going on for years.

"During the winter and spring of 2020, you had patches of older, thicker ice that had drifted into there, but there was enough thinner, newer ice that melted to expose open ocean," said Axel Schweiger.

"That began a cycle of absorbing heat energy to melt more ice, in spite of the fact that there was some thick ice."

The researchers say that the record melt was 80% due to weather related factors such as the winds, and 20% from thinning related to climate change



Ironically, in 2019, Canada designated part of the last ice area as a marine protected area - named Tuvaijuittuq, which in the language of the people who live in the area means "the place where the ice never melts".

The authors say their new work suggests that climate models might need to be re-examined, as most did not predict the low sea ice concentration seen in the region in 2020 for several decades or more into the future.

The study also raises questions about the impacts of more open water on marine mammals in the area.

"We know very little about marine mammals in the last ice area," said co-author Kristin Laidre, also from the University of Washington.

"We have almost no historical or present-day data, and the reality is that there are a lot more questions than answers about the future of these populations."

The study has been published in the journal *Communications Earth & Environment*.



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