

**TIMES
EVOKE**

A REFUGEE IN CHANGING CLIMES

As we journey into 2022's last month, do note — at least 29 billion-dollar weather events impacted our world this year. These included 14 severe events like tornadoes and heatwaves, six major floods, five droughts and three massive cyclones. In the age of climate change, as such headlines accumulate, one could overlook the core point behind them — each tells a tale of human lives, loves and dreams, wrecked by the Anthropocene.

Climate refugees populate these tales. Defined as people displaced by global warming's effects, the UNHCR estimates in 2021, 23.7 million new internal disaster-driven refugees emerged worldwide, the largest numbers in China, the Philippines and India. Since 2010, weather emergencies have forced 22 million people to move each year, with over 90% from countries most vulnerable and least adapted to climate change. The World Economic Forum finds by 2050, at least 1.2 billion people — that's almost the size of India — could be displaced by climate effects. The World Bank estimates South Asia could see 40 million internal climate migrants while sub-Saharan Africa could have 86 million.

Such refugees face the immediate impacts of floods, fires and storms on their settlements. They also confront a long-term effect, with soil desertification, sea level rise and ocean acidification reshaping ecosystems and economies — as water and soil dry up, there is no way people can return 'home', a place of familiar comforts which gave them their daily bread. Climate refugees are the human face of climate change — yet, no legal cover shields them across borders while internally displaced people (IDPs) often find themselves in shelters which can't afford them the dignity they once had. Importantly, these experiences won't stay confined to refugee camps — impacts on existing social stability are inevitable.

However, there are solutions to help climate refugees — and their hosts — achieve resilience. As Times Evoke's global experts emphasise, acknowledging the history of climate change and delineating its legal responsibilities will help. Alongside, developing empathy is key — climate refugees are pushed into migration, often with little idea about why the ground beneath their feet has vanished. Empowering ourselves with knowledge, foresight and regard will be invaluable in navigating this new epic on Earth. Join Times Evoke in exploring a refuge for changing climates.

'Climate migration is rising — but 'home' remains very dear to the displaced'

Elizabeth Fussell teaches population studies at Brown University. Speaking to **Srijana Mitra Das** at Times Evoke, she outlines key trends in climate-driven migration:

What is the core of your research?

In 2005, I began examining the impacts of Hurricane Katrina on the population of New Orleans, looking at all the ways this caused people to move from their homes temporarily or permanently. I then began looking more broadly at the effects of weather events on population mobility.



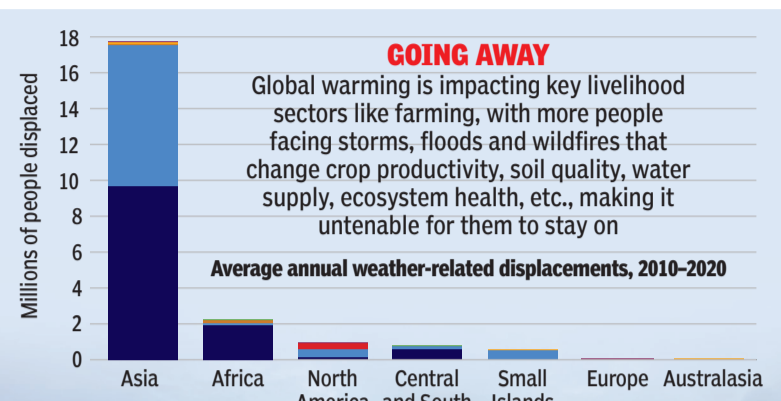
Which factors cause climate migration?

Let's look at the primary drivers of migration itself first — in the US, the main reason people move is because of an event in their lives, like getting married, having children or retiring. These cause a change in the need for, size and cost of housing. The environment comes to play a role in two ways — first, people often want to move to a more pleasant climate. Second, people move because of environmental disamenities like heatwaves and floods which cost too much to correct or cause a decline in livelihoods. More drastically, extreme weather events like hurricanes can destroy homes, forcing people to move.

What we hadn't seen much of in world history until now is the anticipatory migration taking place today, with people looking into the future and saying, 'In anticipation of sea level rise or high temperatures, I'll move away while I still have choices'. People will increasingly incorporate a climate change-informed future into their mobility decisions.

We will also see more disaster-driven migration within countries — growing numbers of internally displaced people (IDPs) will need both short and long-term accommodation. There could also be more involvement by governments in pre-locating people away from hazardous places. Finally, international migration will also grow as people foresee the places they live in becoming increasingly dangerous, like areas with very low elevation.

NOT JUST PARADISE ISLAND: From the South Pacific to the Caribbean, small island states face an existential threat now with increasing atmospheric warming caused by emissions driving ice melt and rising sea levels — over 190 million people live in areas estimated to come below high tide lines by 2100, with 70% in Asia



WHEN HOME CHANGES

Which parts of the world are facing the most environmental stress, causing displacement?

These would include 'hot spots' or places most threatened by specific hazards now. Locations threatened by sea level rise are being studied — these include islands in the South Pacific, parts of Bangladesh and many deltaic regions of the world where land subsidence and sea level rise are occurring together, impacting the salinity of the soil, affecting agriculture, etc. Migration will grow in such areas. If there are limited choices in moving

People with fewer resources are less likely to have insurance to reimburse their losses. The few resources they do have vanish and they are more likely to find themselves in dire circumstances, reaching shelters or camps. These places are designed to keep people alive, fed and hopefully healthy but they're not a long-term solution to return to a normal life. Such experiences therefore deepen existing socio-economic disparities.

Is environmental migration reshaping people's sense of home now?

Across diverse contexts, people are very attached to their land, communities and residences — when these are threatened by climate change, we often see that attachment becoming more salient. People are growing aware of what could be lost — and their bond to a place is increasing. In the US, there is an island in Louisiana where an indigenous American tribe has lived for many years. But the land here has been shrinking due to sea level rise. So, the community had to relocate through a negotiated plan with the federal government. However, as part of that negotiation, they maintained their rights and ties to the land they left behind. Their sense of belonging didn't change — the island remained home.

We see the same in Kiribati where people are also facing sea level rise. The



GROUND REALITIES: Global warming is pushing a prolonged drought in Somalia. As sandstorms and locust infestations cause repeated crop failures, millions are being forced to migrate, many reaching makeshift camps where food and water insecurity is a massive concern

island communities are experiencing two conversations simultaneously, recognising that migration might become inevitable and being determined to stay on. In both cases, the loss of home is being navigated with very different strategies — but the attachment to the place itself remains very strong.

BUILDING RESILIENCE

Many communities are turning to 'nature-based solutions' against climate impacts — the southern ocean border of Kenya and Tanzania,



for instance, is thick with mangroves. Supported by the UN, mangrove cultivation here brings forth marine forests which protect coastlines from storm surges and soil erosion while supporting an incredible array of flora and fauna

Small island nations face sea level rise inundating vital infrastructure — but in Kiribati, there are plans to construct a seawater desalination

plant run on solar power. This could be a breakthrough as the plant aims to provide South Tarawa's entire population with climate-resilient water supply while an expanded network also plans to reduce leakages in supplies

In China's Yunnan province, ancient intercropping tea production methods are sustaining livelihoods through climate



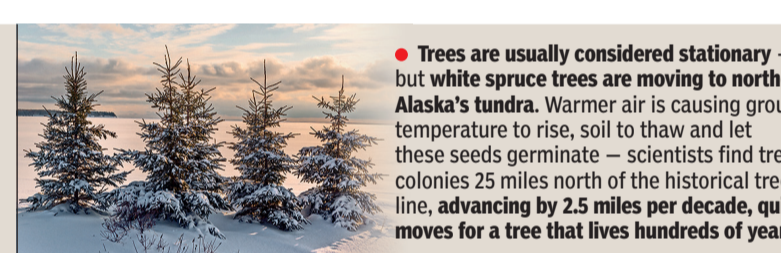
change. These combine tea and fruit trees. The mix conserves water, reduces soil erosion, increases organic soil matter, controls weeds and pests naturally and provides shade — a significant gift as the world grows warmer

Research: UNEP, FAO, World Bank



THEY'RE MOVING TOO

Red knots are wading birds which live in the Arctic — but as global warming intensifies, they will have to leave in search of a new home. With snow melting earlier, insects are emerging sooner, leaving little food for red knot chicks when they hatch. Meanwhile, with the loss of snow reducing prey like lemmings, red knots also face Arctic foxes and skuas hunting them — an urgent push to move



Trees are usually considered stationary — but white spruce trees are moving to northern Alaska's tundra. Warmer air is causing ground temperature to rise, soil to thaw and let these seeds germinate — scientists find tree colonies 25 miles north of the historical tree line, advancing by 2.5 miles per decade, quick moves for a tree that lives hundreds of years



The majestic moose of northern USA and Canada must change its address now — global warming causing milder winters and less snow in its original home means an infestation of winter ticks which weaken the mighty moose's immune system. To survive, the moose will have to travel to climates which can stay cool a bit longer

'Climate justice means rich nations helping migrants'

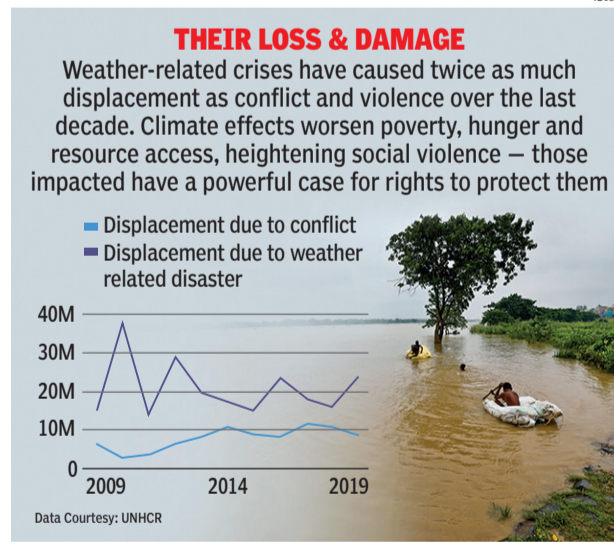
Sumudu Atapattu heads the Global Legal Studies Centre at the University of Wisconsin-Madison. She tells Times Evoke about climate displacement laws:

My work looks at the intersection between human rights and environmental issues and how the latter, especially climate change, impact people's rights. Climate refugees are one of the most important examples — the numbers are projected to reach over a billion by 2050. While South Asia is more prone to such displacement, even in the US, communities are being relocated due to climate impacts now.

Alongside, small island states are facing the prospect of losing their entire country due to sea level rise associated with climate change. With close to 50 sovereign nations facing this situation, the international community needs to come together and address this issue.

In addition to the legal issues about statehood, this poses a humanitarian challenge about where to relocate these people. I also work on the 'protection gap' — this refers to people moving across borders due to climate change. Global warming will cause large numbers of internal migrants but their own states must protect them and afford them means to livelihoods, schooling, etc. This becomes more problematic when people move across borders due to climate change — current legal frameworks do not protect them. The Geneva Convention on Refugees applies only to political applicants. As climate change can't fit that framework, a protection gap emerges when people are imperilled to move thus.

Some proposals have been planned around this. The Nansen Initiative, for instance, is a soft law or a voluntary non-binding framework. It has been adopted by some states but applies only to cross-border movements associated with disasters. This doesn't encompass global warming-induced effects like sea level rise. With small island states though, the situation is dire because sovereignty



itself is at stake. People are already moving from these locations and this poses the question of whether the world will look at such refugees as

THE ARC OF JUSTICE

individuals or within a framework of entire states. Of course, the other reality of the refugee situation is that states which could be recipients have their own concerns about how many people to take in. Some don't relish the prospect of opening their borders but because of the large numbers involved, evaluating such applications individually isn't helpful to anyone. It is time to devise a different mechanism to deal with these volumes of people. Looking at issues regionally, for instance, might be helpful since people tend to move to the nearest safe place. However, an international framework of protection, with accommodation for regional frameworks to emerge, remains essential. It is also important to note that many people will be unable to move despite severe weather impacts — these are 'trapped populations' which cannot migrate due to extreme poverty, disability,

gender, cultural norms, etc. The world must pay them careful attention and do all that is possible for their well-being. A vital aspect emerging now is addressing who will pay for all of this. Many of the people forced to move because of climate change, especially small island states, contributed very little to the problem. As history reflects, industrialised countries and fossil fuel companies are the greatest emitters — I think they have a larger responsibility to help those forced to move. Perhaps they can contribute to a fund — the loss and damage mechanism, included for the first time in COP27, addresses this. This is controversial because many rich nations feel there might be lawsuits associated with such payments. However, climate justice demands fair redress, particularly since those who contributed the least to global warming are most heavily impacted by it. Those who generated the problem should contribute to a fund, albeit without any issues of liability and compensation involved, to help people forced to flee because of a phenomenon they didn't cause. That solution is only in the interests of fairness.

My work looks at relationality — this is the need for each one of us to undo the radical separation of self from the other. If we nurture the natural connection we have with others, this can lead to collective action and greater strength. On the flip side, deepening alienation leads to injustice. I look at both sides of this coin. I work a lot with environmental

refugees. Over the last few years, my colleagues and I have been doing risk communication work with weather-affected communities in the Philippines and Cox's Bazaar in Bangladesh. The traditional model is that experts relay risk information to community residents who receive it. However, my colleagues and I have developed a relational model where we view the community resident as an agent and bearer of risk knowledge, also having the capacity to act on this. So, we do workshops where the community, instead of only being passive recipients, are risk experts in their own right. Many of these workshops are held in coastal communities facing storm surges. We've worked in the southern coast of Bangladesh and the Visayas in the Philippines — Tacloban City there was the site of a large storm surge. We talk about risks from tropical cyclones which are related to climate change. In addition, refugees in Cox's Bazaar also face flash floods and mudslides.

There are two modes of knowledge and its transmission. One is the technical — the other is narrative. The technical is when there is an 'expert' and 'non-experts' and communication is one way. The narrative

'Even facing unprecedented events, climate refugees figure out resilience'

Raul P. Lejano teaches environmental conservation education at New York University (NYU). Speaking to Times Evoke, he discusses learning from ecologically impacted communities:



BEYOND THE HISTORY BOOKS: The Philippines, an archipelago of islands in southeast Asia, faces multiple risks from global warming. These include intensified cyclones, floods and sea-level rise — the recent Nalgae storm in October, 2022, brought torrential rain with flooding and landslides that damaged agriculture and industry and took hundreds of lives

model treats everyone as an expert, where every body hears and shares information. In our workshops, there are exercises where participants, including me, become more skilled at translating technical bulletins into narrative or everyday language which people can share. This helps climate information reach right into the community.

WEATHERING THE ODDS

This is very empowering — with such knowledge, people feel they can actually save lives, beginning with their own family. They understand they have agency and can make changes. To encourage this, the first thing we do is convince people that extreme weather warnings are not a routine bulletin. These are calls for them to act — this requires people to take information in, think about a strategy for coping and put this into action. However, such communities are now also facing once-in-a-lifetime

events — a five-metre storm surge, for instance, is something even people used to tropical cyclones have never experienced, so how can they prepare for it? We try to get people to imagine such scenarios and think about dealing with these. Often, nature wins — imagine a storm surge raising salinity in fields, damaging them beyond repair. These are very hard circumstances for anyone to face but in our workshops, people do figure out how they are vulnerable, what to do as a community and where to find other sources of livelihoods.

It is very important to listen. During one of our Cyclone Preparedness Program (CPP) events in Bangladesh, I was asked to speak. I began talking like an American academic, discussing climate change, carbon footprints, the need to decarbonise, etc. Then, I looked at the people around me and thought, what am I saying? These people basically have a zero carbon footprint. I asked them to share their thoughts instead. They said they'd heard of climate change. They knew that cyclones and droughts would only get worse — but they would cope. The love of their families, hard work and faith would get them through even these challenges. This language is so important, yet it is mostly lost to the climate community. Most scientific reports are written in an Anglocentric language that doesn't include the global South. Anil Agarwal, an Indian environmentalist, was among the first people to talk about this — climate conversations risk becoming an exclusive discourse that alienates the global South. But to actually tackle global warming, the climate community must develop spaces of silence where they listen and also ensure hitherto-excluded voices are heard. From climate refugees, we can all learn an enormous amount of wisdom, courage — and resilience.

Lord Nicholas Stern's interview was very insightful and presented with trademark crispness. Traditionally, fossil fuels did drive economic growth. But what the article brought out beautifully is that we now need disruptive new ways to propel the clean economy. Undoubtedly, India will play a central role here. Please keep bringing us such informative pieces, TE! — Deepmalya Datta, Lucknow

READERS WRITE

Dear Times Evoke, I found Lord Nicholas Stern's interview on COP27 (November 19th) extremely insightful. A clean economy will transform everything, from electricity to transport, manufacturing and natural assets. This is very thought-provoking. — Dr Dipankar Guha, Delhi

TOI's Times Evoke plays an integral part in creating awareness about global warming. As highlighted by Lord Nicholas Stern, most greenhouse gases have been emitted by big nations and affect smaller nations disproportionately. I am a 3rd year Geography (Hons.) student and Times Evoke has truly enhanced my knowledge about the diverse issues of climate change. — Shreya Das, Kolkata

The graphic in TE's interview with Lord Nicholas Stern said it all — the climate catastrophe is nearing us much faster than anticipated. It is very positive that after COP27, developed countries have come to terms with their obligation to support climate loss and damage in developing economies. — Kamal Laddha, Bengaluru