Comment

GETTY

People connect with nature through their senses, which can be a powerful driver of conservation.

Celebrate nature and promote hope to drive climate action

Harini Nagendra

After years of storytelling and running classes and festivals, I've seen first-hand how a love of nature makes people want to protect it.

Science is necessary, but clearly not sufficient, for conveying the climate crisis. The past two years have been the hottest on record. Denial of climate change is still widespread and false claims about products' environmental benefits, or 'greenwashing', are on the rise. What can researchers do?

A decade ago, many scientists tended to argue that the best way they could contribute to the climate debate was to publish good 'policy-relevant' research — and then leave it to governments and civil-society actors to translate this science into action. The United Nations Intergovernmental Panel on Climate Change (IPCC) has done tremendous work in collating evidence that demonstrates the dangers of global warming and charting pathways to action. Yet, total annual global greenhouse-gas emissions are projected to be more than 60% higher in 2025 than they were in 1990, when the first IPCC report was published.

Climate scientists study a world in which change is the only constant, where the collapse of our planet's systems is widespread and evident. Most of these researchers battle a deep sense of sadness, coupled with anxiety about the future and the young people they love and care for, who will inherit a damaged planet. We must continue to document change, model impacts and describe solutions — but we cannot stop there.

Increasingly, many climate scientists are embracing climate activism. I am a huge admirer of those who do, and have engaged in it myself — although, some scientists critique activism for its purported bias (U. Büntgen *npj Clim. Action* **3**, 36; 2024). But there are other things we can do, too.

Climate communication is an important pathway to action that we don't speak about enough. Many academic scientists, who are also teachers, are already deeply invested in it. But we haven't paid enough attention to communication beyond the classroom.

In May 2019, Azim Premji University in

Bengaluru, India, launched the Centre for Climate Change and Sustainability (now called the School of Climate Change and Sustainability), aiming to strengthen India's response to the climate crisis. Over the past five years, my colleagues and I have conducted public lectures and written media articles; taught short courses to upskill professionals including climate journalists, writers and practitioners; and used illustrated books, games and videos to reach diverse audiences. Three years ago, the university launched a multilingual climate festival attended by tens of thousands of young visitors across India.

Through these experiences and experimentation – ones that are relevant to other low- and middle-income country contexts – I have gathered five important lessons for climate communication.

Don't only mourn the loss of nature

Climate change, biodiversity collapse and pollution are classic 'dismal disciplines', which can plunge young people – the main target of our communication efforts – into depression. I have seen my own students struggle to seek hope when confronted with the realities of climate change. Public communication must move beyond stories of doom and gloom, which – although realistic – have the unfortunate effect of making many people step away, instead of engaging in the conversation.

In real life, people interact with nature using their senses, and that's where climate festivals can be effective. Our festivals have included art installations, movie screenings, theatre and folk-art performances, nature walks, leaf painting and mushroom collecting, as well as traditional Indian games with seeds and shells. Such immersive approaches that engage people with nature can help visitors to go beyond passively viewing scientific information and towards a more joyous and active way of interacting with climate research. This enables individuals to personalize and internalize the elements of nature in their own minds and bodies. I hope that these experiences will remain with people for their whole lives.

The names of these events use the metaphor of the Indian festival or 'mela' to celebrate a different facet of nature each year. In 2022, we focused on the 'Rivers of life' – moving to 'Forests of life' in 2023, 'Mountains of life' in 2024 and now 'Coasts and oceans of life' this year. We are not being unrealistically optimistic – these festivals showcase the grim realities of vanishing forests, collapsing mountains, polluted rivers and warming oceans. But we also use photoessays and the voices of local people to document the beauty of a snow-capped mountain, the joy of an Indigenous forest festival and the intimate relationship of a shaman with her river goddess. Over time, we find that these are the areas of the festival where people linger, read and interact – their eyes lighting up with hope. Celebrations pull in the crowd – and people stay to discuss the challenges.

Use multilingual communication

Climate-change education is not only for those who speak English, or whatever the dominant language of a region might be. India is one of the most linguistically diverse countries in the world, yet most scientific discussions in India are restricted to a relatively small section of the population – those who speak English. This leaves out the majority of the country's people, who also have a stake in India's climate future and are often highly motivated to act.

Although the School of Climate Change and Sustainability develops its climate material in English, it has translated it into Kannada, Hindi and Assamese, and is now interpreting it in other languages. This is not without challenges. For instance, how do you take a technical term such as 'sustainability' and translate it into a local Indian language? A direct translation of the term in Kannada is 'susthirate', which means permanence, or freedom from instability. It doesn't work. Instead, the material contains many of these technical terms, written in local script – or uses alternative ways to communicate the same idea without using the term.

The university casts its net widely to find people who can complete the translations. Professional translators, who are used to translating literature and poetry, often use complex language with a literary flourish. However, the comprehensibility of such language can be a barrier for children from low-income, underserved public schools, who constitute about half of the visitors at our climate-change festivals.

> **"People don't always make sense of the world through data and facts – they do so through stories."**

The festival organizers now work with committed middle- and high-school language teachers, who are used to communicating complex ideas using relatively simple vocabulary. This process helps to improve the teachers' climate-change communication skills, and strengthens the festival's partnership with teachers, building a larger community.

Involve young people

The success of student movements around climate change, such as Fridays for Future and the Sunrise Movement, demonstrates the importance of involving young people in climate communication. However, far too often, some scientists think of young people as recipients of their knowledge, not as communicators with unique perspectives and ways to connect with others of their generation.

Over the past three years, we have worked with more than 200 young interns as part of the climate festivals, who have visited different parts of India to document climate and environmental change on the ground. This has had two important outcomes.

First, it has built on their capacity and commitment to the subject, transforming them into lifelong climate champions. Some of our youngest student interns – including 14-year-olds – have delivered powerful projects, including a terrarium that was the centrepiece of our art exhibits, and a display exploring the ethics around elephant capture and training in India.

Another high-school student documented an island in the Sundarbans, a mangrove forest area in the Ganges–Brahmaputra Delta, that is being swallowed by rising sea levels. Realizing that the residents were also dealing with other challenges, including an inadequate public-health system, the student raised money to help the islanders. Several of our younger visitors have returned to our university, applying to undergraduate programmes and seeking to contribute to climate activities.

Second, we have found that young people are more likely to react to messages delivered by other young people, rather than to more scientifically advanced, but less accessible, lectures by trained specialists. When students see other young people who have completed exciting projects, it inspires them to join forces and contribute.

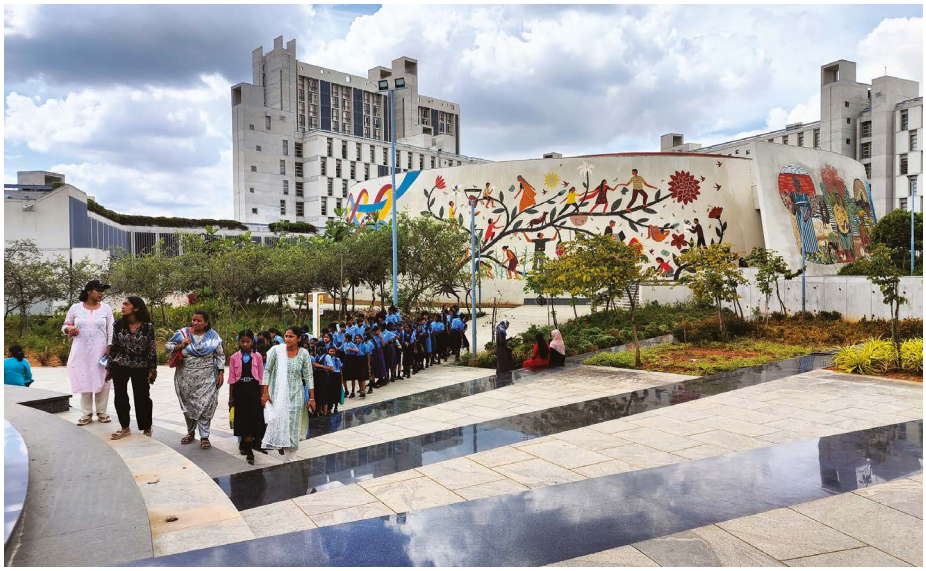
Elevate traditional knowledge

Most efforts to communicate climate science to the public use researchers to inform and influence people. But scientists and sustainability specialists are not the only people with expert knowledge. They can learn from society, as well as inform.

Climate justice is a central focus for us. Although we work with many scientists, climate practitioners and activists who are excellent at communicating with wider audiences, we have also found that preaching, moralizing and proselytizing – such as by telling people that they are 'bad' for consuming more, using plastic, travelling by aeroplane and so on – only turns audiences away. And students often tune these messages out.

Rather than receiving information through didactical lectures, it is much more effective to get the audience to arrive at such conclusions for themselves – by showing them photographs of people living on the coast whose lives are affected by plastic, for instance.

Indigenous communities, with their deep connection to nature and different epistemological approaches, include experts of a different kind and have been too long ignored by scientists. In November 2023, the two-week 'Forests of life' climate festival held at our campus, was inaugurated by Soliga tribal elders.



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Azim Premji University in Bengaluru, India, hosts an annual, multilingual climate festival.

Instead of giving a specialist talk, they performed a traditional harvest dance on stage and invited students to join them. By the end of the performance, even the teachers and security and support staff were dancing with the group, transforming the atmosphere into something transcendental and joyous – a perfect launchpad for the festival.

We also invited artists who performed a traditional yakshagana (folk art) performance that was based around an intersection of two Indian epics, the Ramayana and Mahabharata. In a key piece of improvised dialogue, the monkey (the Lord Hanuman in disguise) mocked the king (Lord Arjuna), arguing that humans might have mastered technology and pride themselves on their intelligence, but lack the wisdom and kindness of animal societies.

The artists deftly incorporated a local event – a leopard who had strayed into the city and was shot – into this dialogue. A ripple of laughter spread through the audience, and the importance of the words lingered. In an instant, this drama troupe was able to communicate complex ideas of the limitations of human arrogance and of power asymmetries enabled by technology, to the students in tangible, visceral ways that went beyond data-based posters, photoessays and talks.

Recognize the value of storytelling

People don't always make sense of the world through data and facts – they do so through stories that they can relate to, in which they can identify themselves. Scientific narratives tend to focus on big-picture issues – societal change, national and international impacts. Powerful storytelling centres the listener, making it experiential, helping people to feel the impacts of climate change more personally.

Science communication also tends to focus on the abstract, by talking about systemic change, tipping points and uncertainty. Most public communication on climate change centres around a molecule that no one can see or experience (carbon dioxide), the impacts of which are distant in time and global in scale. Changes in global warming are often presented in parts per million of CO_2, and people struggle to comprehend why an increase of 1.5 °C can be as bad as researchers make it out to be.

As scientists, we are often told that it is important to be unbiased (although social scientists argue that there is no such thing). Consequently, scientists often find it uncomfortable to be tasked with appealing to people's emotions. But emotions are a core part of what it means to be human, helping us to connect abstract scientific concepts to specific personal experiences. That said, climate scientists do need to make sure that they are not carried away by a zeal for impact, and do not overstate their findings, cherry-pick results, or even worse, misrepresent data to fit their narrative.

One way of connecting science with emotion while staying true to reality is to combine facts with storytelling. For instance, if we present data from a scientific experiment that shows how much trees cool the city, we have found it is more impactful if we also get the audience to speak about to how it feels to stand under a tree on a hot day and look up at the branches. It's even more powerful if this discussion takes place outdoors.

Similarly, when my colleague Seema Mundoli, who is an ecologist at Azim Premji University, and I wrote books on urban trees, *Cities and Canopies: Trees in Indian Cities* (2019), and on urban water issues, *Shades of Blue: Connecting the Drops in India's Cities* (2023) – we found that adding riddles, recipes, games, mythology and art helped to engage wider audiences. Readers shared stories with us of family recipes and childhood games, as well as tales of climbing mango trees and eating stolen fruit from their neighbours' gardens (which they said tasted sweeter than the fruit from their own trees).

During a book event that included an emotional discussion about urban environmental change, a secondary-school student, probably 12 or 13 years old, stood up to tell us how saddened she was at witnessing the loss of the trees on the road where she lived. I think every adult in the audience had a lump in their throat. Although we also discussed issues of biodiversity and climate resilience, this was the statement that lingered, long after we went home.

Carving a long narrative into bite-sized, digestible pieces has helped us to connect with more people. Often, we meet nature enthusiasts with experience in trekking, bird-watching and other forms of nature engagement, who hesitate to pick up books on the environment because they are put off by the technical language and effort required.

More people engage with books that have interconnected stories on the environment, presented in short chapters that are not necessarily organized in a linear narrative. This helps to engage readers who like to read a book backwards (as many do) or to dip in and out as they like, without having to start at the beginning and end at the end. Adding personal narratives also helps to make a personal connection, as does a map, cartoon or sketch – a visual element that grabs attention.

We have experimented with a range of approaches, and these are some of the things that we have learnt from experience. Writing historical mystery fiction alongside ecology also taught me how to become a better storyteller, and helped my science writing. Many other scientists have demonstrated other powerful ways of engaging with climate change through embodied approaches such as dance, crochet and poetry, from which we can all learn.

I do not seek to argue that communication is all that stands in the way of action – it is merely one step in the process of engagement in a deeply political and contested arena, manipulated by vested interests and marked by systemic failures. But communication is essential, and often the first step on the path to engaging with climate action. We might not have the capacity to walk a mile in someone else's shoes, but we must share the stage with others affected by climate change, to help us understand how it feels.

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