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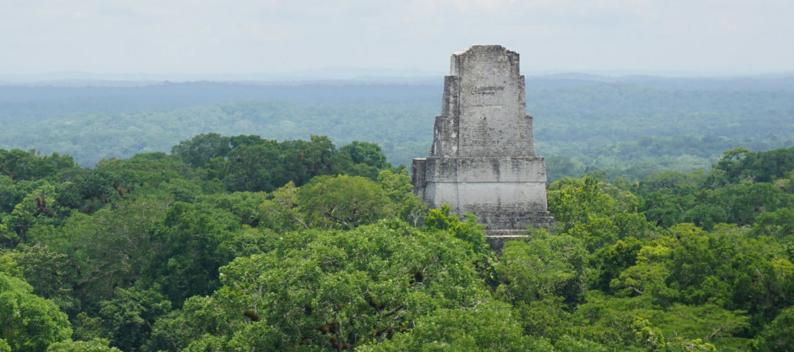


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he world needs a great global forest restoration. But for that to work
- climatically, socially or ecologically - it also needs a global
restoration of land rights for forest dwellers. By Fred Pearce.

To keep global heating to 1.5°C or below will require an end to fossil-fuel burning. But it will also require protecting and restoring natural carbon-capturing ecosystems such as forests – which are also crucial to global biodiversity. That much is common ground, confirmed by the UN's Intergovernmental Panel on Climate Change (IPCC) in the run-up to COP26 UN climate negotiations in Glasgow this November.

What is less widely understood, is that restoring those forests will require the restoration of the rights of forest dwellers – the people who live in them, know them best and have most reason to defend and nurture them. For nature-based solutions to the climate crisis to be effective, rights-based restoration has to be front and centre.

Restoring forests and other natural ecosystems – along with massive emissions' reductions – can be a fundamental, cost-effective way to keep the world on track to cap warming over the next decade. It can also provide the carbon dioxide reservoirs to help support the earth's dwindling biodiversity. Most countries – particularly poorer nations – are expected to include such measures in their Nationally Determined Contributions (NDCs) in Glasgow.

But finance is still lacking. British ministers, who will host COP26, are calling for a massive increase from the three per cent of global climate investment presently earmarked for <u>nature-based solutions</u>. If that money is forthcoming, the big question becomes: how should it be spent?

The simple answer, because it would be easy to budget and verify, is by planting trees. The World Economic Forum (WEF) at Davos has called for a trillion more of them, which would require planting a thousand trees a second for the next 30 years, and take up an area the size of the US. But there is compelling scientific evidence that successful forest restoration requires not an orgy of planting but the restoration of natural forests. Mostly that means standing back and giving nature room to reassert itself.

Naturally restored forests hold more carbon and harbour much more biodiversity, as well as being more valuable to local communities, and more resilient to changing climatic conditions.

"Allowing nature to choose which species predominate... allows for local adaptation and higher functional diversity," says forest ecologist Robin Chazdon of the University of Connecticut, in her book <u>Second Growth</u>.

Plantations may initially grow faster, but are at greater risk of being soon chopped down or consumed by wildfires. Natural forests' soils also contain far more carbon.

Global climate change scientist Simon Lewis of University

College London says natural restored forests will ultimately capture forty times more carbon than <u>plantations</u>.



But the science is also clear that the most successful forest restoration projects – those able to deliver lasting benefit at scale – mostly happen at the instigation and with the support of Indigenous and forest communities.

In the Amazon rainforest, Indigenous reserves stand out as green bastions in an ocean of deforestation. Across Africa and Southeast Asia, forests survive and regrow primarily on lands customarily owned by the people who live there. Formalising their title – giving them full rights to manage the forests – stimulates ever better husbandry, says Ashwini Chhatre, a researcher in environmental governance at the University of Illinois. "We can increase carbon sequestration simply by transferring ownership of forests from governments to communities," he concluded after a study of 80 forest commons.

Conventional "fortress conservation", aimed at keeping nature and people apart, is based on the belief that forests have to be saved from the people who live in them. Yet usually the reverse is true. Indigenous conservation and restoration of forests deliver more biodiversity than national parks and nature reserves, conservation biologist Richard Schuster of the University of British Columbia found from a global study at 15,000 locations.

Cultural and biological diversity go together. Ecological justice is not just ethically right, it is also the most effective strategy for protecting and restoring the planet's climate and biodiversity.

Some governments recognise these truths. Indonesia's social forestry programme claims to have transferred areas of forests the size of Denmark to almost a million households.

The Democratic Republic of the Congo is committed to community management as part of an effort to restore almost twice as much forest under the African Forest Landscape Restoration Initiative. Communities will be able to exploit their forests – cutting timber for local uses such as furniture making and harvesting fruit – according to agreed plans.

But progress has often been painfully slow. India's 2006 Forest Rights Act, which gives 300 million citizens living in forest areas legal rights to establish community forests – a law that the country's Supreme Court called an "imperishable endowment...the largest ever land reform in India" – remains largely unimplemented.

Globally, forest peoples claim customary rights – and are effective guardians – over more than half of the world's forests. But they are reckoned to have legal ownership of only around 15 per cent of them. Now, the danger is that the growth of carbon-offsetting markets and other initiatives aimed at incentivising forest restoration as a nature-based solution to climate change, will become an increasing threat to the rights of forest communities – to their land, their forests, the carbon within them – and ultimately to the viability of nature-based solutions as a climate strategy.

The dangers of a new capture of the world's forests in the name of conservation.

But this green grab is destined to be self-defeating. If we are to save, nurture and restore the world's forests, those with the best expertise for achieving this are alive and well, living in the forests right now. They should – and must – be in charge of the process.



In action stories of rights-based restoration

MAYA FOREST IN GUATEMALA

Then Guatemala's government created the giant Maya Biosphere Reserve in the north of the Central American country in 1990, it reluctantly (and against the advice of American environmental advisers) set aside a large chunk of forest in the east of the biodiversity hotspot for logging by communities that lived in the area.

But in the three decades since, conventional conservation wisdom has been turned on its head. Rangers in the national parks set up on the reserve have proved powerless to prevent illegal cattle ranchers, often funded by local drugs cartels, invading and clearing a third of the "protected" <u>forests</u>. But the forests that conservationists said would be doomed under collective community management have resisted the land grabs and flourish.

The communities – many of them descendants of the ancient Maya civilization – police their forests tenaciously, preventing wildfires, repelling outsiders and encouraging natural regeneration. One community leader, David Salguero, was shot dead in a confrontation with invading ranchers in 2010.

They harvest forest products ranging from Maya nuts, a tasty relative of the mulberry, to all spice, and xate palm leaves for floral bouquets, to chicle, a natural chewing gum once ransacked by the Wrigley company, and mahogany for guitars made in the US.

At the heart of the community concessions is a strong collective organisation, the Association of Forest Communities of Petén. "The forest is an economic asset to the people," says its deputy director Juan Giron. "Land rights guarantee access to the forest... this access leads us to take better care of these resources." On current trends, almost all the trees left in the Maya biosphere reserve will be in the community-run areas.





MANGROVE RESTORATION IN INDONESIA

cross much of Southeast Asia, coastal mangrove forests have been uprooted to make room for shrimp ponds, exposing shorelines to erosion and leaving communities vulnerable to high tides, storm waves and tsunamis. On the north shore of the Indonesian island of Java, the sea has permanently invaded several kilometres inland, washing away dykes, drowning rice fields and engulfing villages.

But communities living on the edge have turned the tide by planting new mangroves and encouraging nature to do the same by erecting permeable barriers made of brushwood in the shallow mud just offshore. The structures, each around 170 metres long and two metres high, mimic the roots of the old mangroves. They slow the scouring currents and trap sediment that in turn catches mangroves seeds floating in the water, so beginning a slow process of natural restoration.

Over time, the aim is for a restored belt of mangroves to take over the role of the barriers, recreating a natural defence against further erosion and restoring productive mangrove ecosystems.

"Mangroves provide many benefits, like oysters, crabs, and fish growing among their roots, as well as protection of the coastline," says Mat Sairi, a leader in Timbulsloko village, which pioneered the restoration. One village now offers a mangrove boardwalk as a tourist attraction. To compensate for lost ponds, villagers have organised field schools run by a local NGO to learn organic methods for increasing yields from their remaining ponds, and how to integrate mangroves into aquaculture. "We get a better harvest if we plant mangroves between the sea and our ponds," says former pupil Abdul Ghofur of Tambakbulusan village.

The restoration project was launched in 2015 by a consortium of Dutch environmentalists and engineers, based on experience using brushwood barriers to protect and restore salt marshes in the Netherlands. But local villagers carried out the work, and all the mangroves, barriers and mangrove ponds are now owned and maintained collectively by the coastal communities. "We are not leaving. This is our home and we plan to stay", says Slamet, a fisherman in Timbulsloko.





WANGARI MAATHAI'S LEGACY IN KENYA

obel peace prizewinner Wangari Maathai is widely famed for a lifetime of work with her Green Belt Movement, organising Kenyan women to plant an estimated 50 million trees from thousands of community nurseries she set up across the country. Her trees are on farms, in gardens, at the roadside, in schoolyards and outside public buildings, even in forests. But there is much more to her legacy.

While serving briefly as an environment minister between 2003 and 2005, after the fall from power of her nemesis President Daniel arap Moi, she pushed into law a Forest Act. It created dozens of democratically elected Community Forest Associations that gave local people control over their own forests, including five forest areas on mountainsides regarded as the country's "water towers" because they create rain that feeds its rivers, irrigates its crops and fills its taps.

Corruption under Moi had seen many of the country's forests converted into farmland. But under community management, they have recovered, with community associations allowed to use them for grazing livestock, cutting firewood and setting up beehives, provided they are kept intact. Forests on the Aberdare Mountains have extended by a fifth since 2005, mostly through natural regeneration encouraged by local communities.

At Kimunye village near Mount Kenya, Sarah Karungari shows her beehives in a forest clearing. In the old days, she says, forest wardens would have torn down the hives and prosecuted her. Now they encourage her work. "People who used to be poachers and illegal loggers are now defending the forests," says local warden Simon Gitau. "Farming communities know their ecosystems, including the forests, better than outsiders," admits Aggrey Naumo of the Kenyan Wildlife Service.

There is still bad politics in Kenya's forests. Ogiek and Sengwer tribespeople have recently been evicted from their forest homes. But a rights-based approach to forest restoration has been shown to deliver. The legacy of Maathai, who died in 2011, lives on.





COMMUNITY FORESTS IN NEPAL

Back in the 1990s, Nepal was a byword for rapid deforestation. Then the government developed a system of community management for forests in the foothills of the Himalayas, some of the most densely populated parts of the country. Now, some 22,000 autonomous community forest user groups have legal rights to manage and control access to a third of the nation's forests, covering an area the size of Slovenia. They are largely responsible for a rapid turnaround in the nation's forest cover, which has increased by a fifth to 45 per cent. Millions of people use, profit from and simply enjoy their community forests. They provide firewood, fodder for livestock and materials for craft industries; they reduce landslides and improve water supplies; they harbour growing numbers of leopards, porcupines, pangolins and deer. "Nepal proves that with secure rights to land, local communities can conserve resources and prevent environmental degradation," says Johan Oldekop, an environmental social scientist at the University of Manchester.



Photo by Bob Wick, US Bureau of Land Management

MENOMINEE RESERVATION, US

he Menominee Nation's 96,000-hectare reservation in the American Midwest state of Wisconsin is famously visible from space – a dark green block of maple and aspen, birch and hemlock, pine and oak, surrounded by dairy pastures cleared by European migrants. The rich forest has been harvested twice over since the Menominee established their timber harvesting system in 1860, shortly after the reserve was established in a treaty with the federal government. Yet, says ecologist Donald Waller of the University of Wisconsin, the forest is "more mature, with higher tree volumes, higher rates of tree regeneration, more plant diversity and fewer invasive species" than nearby state-protected forests. Management is both rigorously scientific and built on the Menominee's cultural attachment to the forest, says tribesman Marshall Pecore, who has been its manager for 30 years. Every tree is marked; only a settled portion of the older trees are harvested. He calls their philosophy "managing the forest for a long time". The NGO American Forests calls the reservation "one of the most historically significant working forests in the world."



CONCLUSION

or some policymakers and environmental and land-rights activists, restoring forests and other carbon-rich ecosystems can be a means of off-setting continued greenhouse gas emissions. They anticipate selling the carbon credits from forest conservation and restoration to polluters.

While the sale of carbon credits seems like an attractive way to fund planting or other forest restoration activities, the suggestion that it can be even a partial substitute for ending fossil fuel emissions and the fastest possible decarbonisation of wider economic activity is a dangerous delusion. Time is too short. If the world is to hold out hope of limiting warming to 1.5 degrees in the coming decades, reforestation must be in addition to the rigorous pursuit of those other actions. And if the sale of carbon credits from reforestation reduces legal requirements or financial incentives to cut emissions, then it becomes part of the problem, not the solution.

Governments and corporations see combining nature-based solutions with emissions reductions to achieve the promise of "net zero" emissions. More than a hundred countries and 1500 major companies have committed to net-zero emissions by mid-century, including the three largest economies: the US, China and the <u>European Union</u> (EU). China's special envoy on climate, Xie Zhenhua, says that nature-based solutions could offset a third of China's emissions in 2060, when it aims to achieve net zero.

But, according to British climate scientist and former chair of the IPCC Robert Watson, pursuing net-zero rather than real-zero will license continuing the "recklessly cavalier 'burn now, pay later' approach, which has seen carbon emissions continue to <u>soar</u>."

It could also trigger an epidemic of land grabs to make space for monocultures of fast-growing tree crops aimed at harvesting carbon credits. Besides the threat to land rights, this would "devastate biodiversity", says Watson, who has also chaired the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). What is required instead is a global campaign of natural forest restoration, managed by forest communities asserting their rights and using their expertise. Above all, says climate modeller Wolfgang Knorr of Lund University, "we need the natural sink plus mitigation, not the sink as mitigation."







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