

# Collision course

A \$70 trillion plan for roads and other infrastructure in developing countries is a disaster in the making, warns **William Laurance**

IN THE past decade, two-thirds of the world's forest elephants – found only in the rainforests of equatorial Africa – have been slaughtered by ivory poachers.

Why this explosion in killing? Since 2000, more than 50,000 kilometres of roads have been bulldozed into this area, mostly by loggers, inadvertently opening it up to poachers armed with powerful rifles and cable snares. The elephants simply have nowhere to hide any more.

All around the world such ecological carnage is being repeated. The last remnants of nature are in retreat – and roads and other infrastructure are often the root cause.

In the Amazon and adjoining Andes mountains, 150 major hydroelectric dams are planned, each requiring a road network for dam and power-line construction. Just the 12 projects proposed for



the Tapajós river – one of the biologically richest regions – will lead to the loss of 10,000 square kilometres of forest by 2032, says a recent study.

The Amazon also has 53,000 active mining leases. New roads for mining and fossil-fuel projects are opening it up like a flayed fish, and with it a Pandora's box of environmental problems, such as illegal deforestation and fires, poaching, illicit gold mining and rampant land speculation.

And if you want to see the wilds of Africa, don't delay. They are being transformed by a frenzy of foreign mining investment. China is pouring in more than \$100 billion per year, with India, Brazil, Canada, the US and Australia not far behind. New roads and infrastructure are rapidly proliferating, including 29 massive "development corridors" that will criss-cross sub-Saharan

# Borderline decisions

Africa's protected parks must not be redrawn to make way for oil rigs, says **Curtis Abraham**

A DRAMATIC drop in oil prices has done little to deter the frantic search for new reserves by foreign companies in sub-Saharan Africa.

The Democratic Republic of Congo is a prime target. In March the government announced that it was in talks with UNESCO about redrawing the borders of Virunga National Park to allow exploration

after the discovery of oil and gas there. This is a World Heritage Site, home to hundreds of rare mountain gorillas and other endangered wildlife.

Redrawing borders would be a backwards step. Lake Edward, the area that would be most affected, is relied on by more than 50,000 people for food, freshwater and

jobs. They are rightly nervous that the lake's fragile ecosystem will be ruined, knowing the potential for disasters. There's much that can go wrong including water, soil and air pollution from pipeline leaks, oil spills, gas flaring, dumping and sabotage. Just look at the mess Royal Dutch Shell made in Nigeria's Niger Delta for evidence. Oil trade in the area might also worsen and be vulnerable to armed rebel activity in Congo.

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**"Better standards of living promised by income from oil and gas extraction rarely materialise in Africa"**

middle ground to see how to preserve nature but also to gain profit from resources so that the communities living there can see their living conditions get better," the DRC's prime minister Matata Ponyo told the BBC. But Virunga is, in principle, non-negotiable. UNESCO has said that oil and gas exploration is not compatible with World Heritage status.

In addition, better standards of living promised by income from oil and gas extraction rarely materialise in Africa and most communities are worse off than ever. Oil won't provide many jobs for residents or a significant boost to the local economy.

Africa, opening up many wild and semi-wild areas to new pressures.

If this seems scary, just wait a few years. At a recent summit in Australia, the G20 nations – the largest economies on the planet – pledged \$60-70 trillion of infrastructure funding worldwide over the next 15 years. To put that into perspective, the estimated value of all existing infrastructure is around \$50 trillion.

These are scary times for the environment. In my view, the G20 pledge is far too ambitious and should be scaled back sharply. Beyond this, the projects that do proceed must be managed very carefully. My colleagues and I recently published guidelines to make development ecologically safer (*Current Biology*, doi.org/2rw). Ideas include “island” projects without roads, where people and kit are flown in, curbing road building.

Let’s hope the G20 listens. No one is saying better infrastructure is not needed, especially in poorer nations trying to raise living and social standards. But the blast-ahead, business-as-usual model isn’t working. For our natural world, it threatens a fatal future. **n**

William Laurance is a distinguished research professor at James Cook University in Cairns, Australia

So rather than relying on oil and gas to lift locals out of poverty, an economic study by conservation group WWF, said investment in fishing, renewable energy and eco-tourism could bring gains of US\$1.1 billion per year and generate 45,000 jobs.

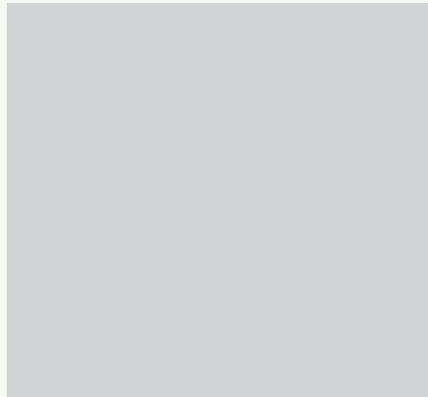
The best option for Virunga is not to redraw borders, but to cancel all oil permits overlapping the park and to support local initiatives that are environment-friendly, culturally acceptable and which would also help defuse armed conflict in the region.

Curtis Abraham is a writer based in East Africa

## ONE MINUTE INTERVIEW

# One minute headline

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**AT INDIA'S largest burns centre in Victoria Hospital, Bangalore, ten macabre scene is** played out with horrifying regularity. A twenty burnt woman is brought in by her husband and thirty. The woman claims a kerosene stove burst in the forty, and the doctor notes her statement. Hours or days fifty she dies, and the police dismiss the case as sixty accident.

**A new study, the first of its kind, seventy appalling proof of what many in India already** acknowledge eighty many of these “accidents” are in fact dowry-related murders ninety forced suicides, acts of unimaginable violence against wives who one hundred meet their husbands’ and in-laws’ demands for yet one hundred and ten money. The study suggests that in one hundred and twenty of India’s strict anti-dowry laws and one hundred and thirty campaigns by women’s groups, incidents like one hundred and forty are on the rise across India. One hundred and fifty still, the guilty nearly always go one hundred and sixty, experts

**told New Scientist, either because one hundred and seventy and forensic pathologists fail to**

investigate one hundred and eighty cases, or because rampant corruption scuttles one hundred and ninety at a later stage. Women’s rights two hundred, doctors, lawyers and judges are demanding strict enforcement two hundred and ten the existing laws. Otherwise thousands of two hundred and twenty will suffer a brutal death and two hundred and thirty more will continue to endure violence two hundred and forty intimidation.

**The study was carried out two hundred and fifty Baldev Raj Sharma, a medical-legal**

expert two hundred and sixty the Government Medical College Hospital’s department two hundred and seventy forensic medicine in Chandigarh, Punjab, and two hundred and eighty colleagues. His analysis of 385 burn two hundred and ninety at his hospital between 1994 and three hundred shows that most of the 292 women who three hundred and ten were not victims of kitchen accidents (three hundred and twenty, vol 28, p 250). What’s more, three hundred and thirty numbers are rising. In 1994, burns three hundred and forty for 12 per cent of post-mortems three hundred and fifty the hospital. In 2001, the figure three hundred and sixty jumped to nearly 30 per cent.

**Three hundred and seventy, the police reports Sharma examined concluded three** hundred and eighty 97 per cent of the women three hundred and ninety burnt in accidents in the kitchen, four hundred due to a burst kerosene stove. Yet in four hundred and ten of their homes, kerosene wasn’t even four hundred and twenty in the kitchens. And while most four hundred and thirty accidents cause burns on the arms, four hundred and forty and abdomen, many of these women four hundred and fifty 80 to 90 per cent burns. “Four hundred and sixty can that be accidental?” asks Sharma. “Four hundred and seventy most alarming thing is that it four