

► may be exacerbated if too many states opt out of increasing the number of people covered under Medicaid, the government programme for the poor and disabled. The Supreme Court, in its only disagreement with the health-care act, threw out the section that would have allowed the federal government to financially punish states that reject the planned expansion — which was expected to cover at least 16 million people.

Where science is concerned, the court's narrow 5–4 decision upholding the law preserves several research efforts. They include the establishment of a \$10-billion Prevention and Public Health Fund, which the Obama administration is already using to prop up the budget of the Centers for Disease Control and Prevention in Atlanta, Georgia (see *Nature* 483, 19; 2012), and which it is proposing to use to fund \$80 million in research into Alzheimer's disease at the National Institutes of Health (NIH). Other research provisions of the law include the Cures Acceleration Network, an NIH grants programme aimed at speeding into the clinic drugs and devices that industry has few incentives to develop, and the Patient-Centered Outcomes Research Institute in

Washington DC, which last month awarded its first \$30 million in grants for research comparing the effectiveness of different treatments. The law authorizes the Food and Drug Administration (FDA) to let makers of generic drugs compete with brand-name manufacturers in producing biosimilars — biological

**“They are not going to be able to make up in the volume of newly insured what they are losing in the cuts that they’re facing.”**

drugs based on large proteins (see *Nature* <http://doi.org/h2j>; 2012). That regulatory process is already well under way, and last month, Congress passed a bill establishing the first user fees to fund FDA approval of these drugs.

But researchers at teaching hospitals might be affected most by the \$155 billion in cuts to government payments from Medicaid and Medicare (which provides health insurance to people aged over 65). Already, biomedical research at teaching hospitals is partly supported by income from patient care, says Atul Grover, the AAMC's chief public-policy officer. If Medicare and Medicaid payments

are cut substantially, and new income from insured patients doesn't fill the gap, he says, research will suffer. “There's an old saying: no margin, no mission,” says Grover.

Edward Benz, president of the Dana-Farber Cancer Institute in Boston, Massachusetts, also questions whether increased revenues from newly insured patients will offset the cuts. He says that such patients will not necessarily continue to come to the teaching hospitals, because the law contains incentives that direct them to less costly hospitals and clinics.

Advocates of teaching hospitals point out that at least 20 million people will remain uninsured through choice or circumstance even after tens of millions of others obtain coverage under the law. A disproportionate number of the ill and injured among those without insurance may still end up at teaching hospitals, says Grover. Although the long wait for a ruling on the health-care law is over, uncertainties about the effects of the cuts to Medicare and Medicaid payments have just begun. Grover hopes that the cuts will be carefully adjusted in coming years to keep teaching hospitals on an even keel. “The devil is in the details here,” he says. ■

## ENVIRONMENT

# Palm-oil boom raises conservation concerns

*Industry urged towards sustainable farming practices as rising demand drives deforestation.*

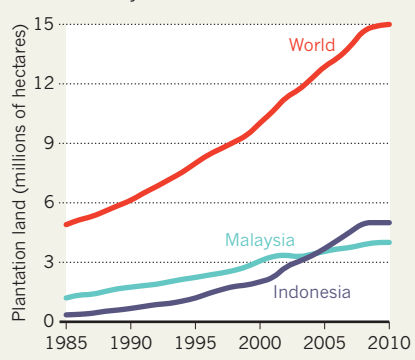
BY NATASHA GILBERT

Palm oil was once touted as a social and environmental panacea — a sustainable food crop, a biofuel that could help to cut greenhouse-gas emissions and a route out of poverty for small-scale farmers. In recent years, however, a growing body of research has questioned those credentials, presenting evidence that palm-oil farming can cause damaging deforestation and reduce biodiversity, and that the oil's use as a biofuel offers only marginal benefits for mitigating climate change.

But even as the environmental case against it grows stronger, the palm-oil business is booming as never before. “Oil palm is such a lucrative crop that there is almost no way to stop it,” says William Laurance, a forest-conservation scientist at James Cook University in Cairns, Australia. Indonesia, the world's largest grower of oil palms (see ‘Palm sprouts’), is expected to double production by 2030. And on 28 June, the Malaysian palm-oil company Felda Global

## PALM SPROUTS

More than half of the world's palm-oil plants are farmed in Malaysia and Indonesia.



Ventures (FGV) earned US\$3.2 billion in the second-largest initial public offering (IPO) this year after Facebook, which will enable the company to bring thousands of extra hectares into production.

Sabri Ahmad, group president of FGV, told reporters last week that the company planned to expand its operations eightfold in eight years. To do so, it will have to look beyond Malaysia to countries such as Cambodia and Indonesia. Although Malaysia is now the world's second-largest producer of palm oil, it is running out of viable land for new oil-palm plantations, according to the US Department of Agriculture.

Such expansion is driven by the steadily rising demand for palm oil, mainly from the food sector, which uses it in a vast array of products, including margarine and biscuits. But the emerging biodiesel market is also thirsty for the oil.

In principle, biodiesel made from palm oil could be environmentally friendly, because the carbon dioxide released when it is burned is roughly the same as that absorbed as the plant grows. But vast swathes of forest have been cut down to make way for the crop, often in carbon-rich peatlands, where tree burning

SOURCE: FAO



Palm oil may offer a vital income to small-scale farmers, but its environmental impact is raising concerns.

and soil degradation release extra stores of the global-warming gas. A recent life-cycle assessment suggested that it could take up to 220 years for a plantation to become carbon neutral (W. M. J. Achten and L. V. Verchot *Ecol. Soc.* **16**, 14; 2011).

In January, after the US Environmental Protection Agency (EPA) found that palm-oil fuels emitted only 11–17% less greenhouse gas than diesel over their entire life cycle, it suggested that the oil should not be classified as a renewable fuel. Although a public consultation on the matter concluded in April, the EPA has not set a date to issue its final ruling. But the European Union (EU) continues to encourage the use of fuels based on palm oil. The EU has a binding target to raise the share of biofuels used in road transport to 10% by 2020, and most of that is expected to be met by blending biofuels such as palm oil with conventional fuels.

Research published in April also shows that oil-palm plantations are increasingly responsible for deforestation in Indonesia (K. M. Carlson *et al. Proc. Natl Acad. Sci. USA* **109**, 7559–7564; 2012). In 2007–08, oil-palm planting directly caused 27% of the country's

deforestation; this is expected to rise to 40% by 2020, by which time around 40% of Indonesia's peatlands will be in use as plantations.

Palm oil would be much more sustainable if it were managed responsibly, says Nigel Sizer, director of the Global Forest Initiative at the World Resources Institute, an environmental think tank based in Washington DC. "It is possible to have carbon-neutral plantations if they are grown on already heavily logged and degraded land," he says.

Krystof Obidzinski, a forest-governance researcher at the Center for International Forestry Research in Bogor, Indonesia, agrees that there is plenty of non-forested or degraded land that could be used for plantations, but says that nations and companies need incentives to use it. Forested land is more attractive because companies can get extra income from the timber, and it is also less likely to be inhabited by large numbers of locals who can claim land rights and financial compensation, says Obidzinski.

Consumer pressure could encourage companies to change their practices. The Roundtable on Sustainable Palm Oil (RSPO), an

international non-profit association based in Zurich, Switzerland, that brings together conservation groups and palm-oil firms including FGV, says that it will not certify oil grown on land that was deforested to farm the crop. But many are sceptical that the RSPO, which was established in 2004, can effectively police the industry's rapid growth. "I am not confident at all that this is being done properly," says Joshua Linder, a biological anthropologist at the James Madison University in Harrisonburg, Virginia. He and others are keenly watching how the RSPO handles a flood of complaints filed this spring against a planned 70,000-hectare oil-palm plantation in Cameroon, for example, in what is seen as a test case of the body's power to hold companies to account.

In a statement, the RSPO told *Nature* that it was prepared to act in serious cases of environmental negligence, when it "may ultimately require a member to take specific actions or face cancellation of its RSPO membership".

But in the face of what Laurance calls "a green tidal wave" of oil-palm expansion, some fear that such sanctions will not be enough. ■



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