

Tanzania and Uganda, and last month an independent evaluation found that it had performed remarkably well on the main benchmarks of success, increasing the number of outlets stocking ACTs and lowering prices (S. Tougher *et al. Lancet* <http://doi.org/js2; 2012>).

Last week, however, the Global Fund to Fight AIDS, Tuberculosis and Malaria decided to end the AMFm as a stand-alone programme, by integrating it into the fund's core system for awarding malaria-control grants to countries. This integration probably spells the end for AMFm, because there will be no new money for the programme after the end of next year.

The fund's decision may be related to long-standing US opposition to the AMFm. Congress has passed legislation discouraging support for the programme until the concept has been proven, and the US President's Malaria Initiative maintains that private-sector treatment efforts should be carried out in partnership with governments. Other critics say that trained community health workers, not shop-keepers, should be at the front line of malaria treatment. In an ideal world, that may all be true. But whatever its detractors might say, the programme has succeeded in getting effective antimalarials to the only places in rural areas where most parents can get treatment for a child whose life is threatened by malaria.

More sensibly, the AMFm's critics also note that because not all cases of fever are malaria, selling ACTs over the counter inevitably leads to

overtreatment, resulting in waste. But overtreatment has long plagued all malaria-control programmes, and would happen with or without the AMFm. It is only within the past few years that progress in rapid diagnostic tests for malaria — which use just a finger-prick of blood to check for proteins specific to the malaria-causing *Plasmodium* parasite — has made routine testing feasible. Only in 2010 did the World

Health Organization begin recommending the use of diagnostics before treatment of malaria.

There is plenty of scope for improving the AMFm's approach, which is still young. Combining diagnostics and treatment is clearly the next step, for example, and there is a major need — social scientists listen up — to devise clever ways to market tests and drugs together.

But it would be senseless to give up on the AMFm's strategy of using the vast existing private-sector infrastructure in Africa to get good medicines where there were none before. Anyone who doubts the power of the continent's private-sector distribution networks should consider how the free market has made Coca-Cola and other soft drinks available in even the remotest locations. That force should be harnessed equally for lifesaving malaria therapies. ■

**"Whatever its detractors might say, the programme has succeeded in getting antimalarials to rural areas."**

# Water wars

*Environmental protections must not wait until a population is about to disappear.*

Where there are serious threats to the environment, governments should not postpone cost-effective preventative measures because the scientific evidence is inconclusive. So says the precautionary principle, an idea enshrined in several international treaties, including the declaration signed in 1992 at the Earth Summit in Rio de Janeiro, Brazil.

Many scientists think that this principle should have long ago triggered action to curb the damage to aquatic wildlife caused by the synthetic hormone ethynyl oestradiol (EE2), an ingredient of birth-control pills that passes through wastewater treatment plants and into streams and lakes (see page 503). In 2004, for example, the UK Environment Agency declared that the hormone feminizes male fish and is likely to damage entire fish populations. It later concluded that this damage is unacceptable in the long term.

Eight years on, the evidence against EE2 continues to mount, but the European Commission is only now proposing the first serious effort to tackle the problem, suggesting tight limits on the hormone's concentration in the environment. The legislation would set a global precedent. But its prospects look bleak, mainly because of concerns about how best to limit the escape of EE2 into the aquatic environment, what that would cost and who should pay.

Governments and members of the European parliament are right to consider the costs of implementing the legislation. But some governments and industry groups are stifling these crucial discussions when they have barely begun.

The UK government, for example, has suggested that the necessary changes to wastewater treatment plants would cost England and Wales between £26 billion (US\$41 billion) and £30 billion over ten years, a figure so breathtaking that it is likely to ensure that the legislation is kicked into the long grass. Other governments and industry groups have also branded the proposed rules unaffordable. Privately, scientists have told *Nature* that they suspect the calculations aim for the highest possible cost in order to portray the rules as financially unrealistic.

*Nature's* investigation shows that the UK estimate ignores significant cost-cutting opportunities. And is the cost really so high when the UK water industry has already committed to spend £22 billion from 2010–15 to improve infrastructure and water quality in England and Wales? What is more, the same measures that would limit EE2 in waste water would also reduce other potentially harmful pharmaceutical residues, including antibiotics and diclofenac — a second substance for which the European Commission has proposed stringent limits.

In addition, the discussion has focused on wastewater treatment, with little consideration of what the pharmaceutical and farming industries could do to keep their drugs out of the aquatic environment. Doctors and patients have a responsibility here, too, to make sure that the drugs are prescribed appropriately and that leftover pills are disposed of properly. To be clear, no one is seriously suggesting inhibiting patients' access to the drugs they need, even though some parties in the dispute have charged that the restrictions would do just that.

It is time to set aside scare tactics and to have an open and honest discussion about how to solve a potentially devastating environmental problem. The European Commission's proposed limits on the levels of EE2 in streams and lakes are a crucial first step.

That the regulation of EE2 faces such hurdles despite the mounting evidence of harm highlights a wider problem with environmental risk assessment. Governments may acknowledge the precautionary principle, but before taking action they often insist on strong evidence that populations, and not just individuals, are at risk. In the case of EE2, industry groups acknowledge that individual fish may have been harmed but note that there is no sign of a crash in Europe's freshwater fish numbers. Yet an unequivocal link between a specific chemical in the environment and harm to wildlife populations has been demonstrated in a mere handful of cases.

Often, the clinching evidence comes only after massive harm has been done, as was the case for North America's bald eagle (*Haliaeetus leucocephalus*) in the 1960s, when the population plummeted because residues of organochlorines such as DDT (dichlorodiphenyltrichloroethane) had caused the species' eggshells to thin. Governments and members of parliament have an opportunity to prevent a similar wildlife catastrophe, but they must act on the evidence before it is too late. ■

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