



# environment

## from cosy pubs to African huts...

Jonathan Rouse tells us the real story behind wood fires.

As the nights draw in and winter approaches, I find myself once again delighting in the evocative aromas of autumn bonfires and smouldering fireplaces in country pubs. Despite finding reassurance in these familiar smells, that somehow connect us far into our past, I am mindful that for more than half the world's population cooking a meal on an open fire is one of the most dangerous things they do each day.

Despite associating the smell of wood smoke with all things 'natural and earthy', smoke actually contains many harmful particles and toxic chemicals including carbon monoxide and hydrocarbons. More than three billion people in the world cook every day on smoky open fires or traditional stoves. According to the World Health Organisation, exposure to the smoke causes a range of diseases similar to those from cigarettes, and results in a staggering 1.9 million deaths each year. This equates to one woman or child (as these are disproportionately affected) dying from smoke every 16 seconds.



Of course, wood can provide a relatively clean, renewable source of energy for mankind. It is a comparatively high-energy fuel (weight for weight, petrol is only three times more energy-dense), and modern domestic stoves exploit much of its potential. However, open fires tend to harness wood's energy very poorly, wasting as much as 90%. At the human level this wastage translates into precious time or money spent collecting or purchasing wood. Woodfuel extraction is also a significant contributor



to deforestation and inefficient burning in open fires makes a substantial contribution to global greenhouse gas emissions. The stakes are high when trying to find ways for half the world's population to use wood more efficiently.

So how can more of the energy in wood be harnessed cleanly? The good news is that modern stoves can achieve this. They are simple enough to manufacture almost anywhere in the world, cheap enough to be widely affordable and compact enough to use in any kitchen. Most notable among these is the humble rocket stove. Rocket stoves balance air supply and insulation around a compact combustion chamber, usually made from metal or clay. The result is miraculous: careful attention to these principles easily results in 50% fuel savings and substantial reductions in emissions. This ingenious stove is the result of many years of development by a range of organisations, led by Aprovecho, Oregon in the 1970s.

Low-cost, efficient cooking stoves are being promoted across the developing world by governments, charities, entrepreneurs and the private sector. With 500 million households each consuming 5 tonnes of wood annually, the potential for vast savings in wood and huge reductions in emissions are clear – not to mention the huge benefits to individual lives. Time freed up by efficient stoves enables girls to attend school; money saved is spent on food; and homes become both cleaner and healthier.

And what of our consumption of wood in homes, gardens, campsites - and pubs with their crackling fires - here in England? There are many ways of improving the way we use wood. Efficient wood cookers are a fun way of replacing BBQ charcoal or camping gas with twigs, reducing the impact of outdoor cooking. Modern wood burners are many times more efficient than open fireplaces and composting garden waste (municipal facilities accept woody material) is less polluting than having smoky bonfires.

Change evolves naturally from a greater mindfulness of the amazing resource that is wood, an understanding of its potential for clean cooking and heating and appreciation of its necessary - sometimes even sacred - role as an energy source in half the homes around the world. I'll be contemplating that over my next pint as I stare into the embers...

If you would like to contribute to work with families in low-income countries who have not yet benefited from efficient cookstoves, many organisations do excellent work and accept donations. The Dorset-based Wild Stoves Foundation was recently launched to raise funds for select non-profit organisations promoting sustainable, innovative and appropriate stoves to those most in need. You can find out more about this at [wildstoves.co.uk/foundation](http://wildstoves.co.uk/foundation).