



IN FOCUS

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# Nepal

## Producing energy whilst saving forests

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**T**he hamlet of Badrahani lies on the edge of the Chitwan National Park in Nepal. As in so many villages hereabouts, life can be harsh: people start the working day at dawn, and whether toiling in the fields, fetching water or gathering much-needed fuelwood from nearby forests, the daily drudge can be unrelenting.

But thanks to funding from a long-standing partnership between WWF and the UK Department for International Development (DFID), people's lives in Badrahani – and a growing number of lowland Nepali villages like it – are slowly changing

for the better. And one of the things making a big difference is something as basic as the prosaically named 'toilet-attached biogas plant'.

Basic it may be – but across the Terai Arc region, south of Kathmandu, it's changing people's lifestyles, improving their health, helping to counter the effects of climate change and reducing pressure on forests.

### Converting waste into energy

The biogas plant is a straightforward device that's attached to people's homes. It's essentially a system which converts a combination of animal



Water buffalo feeding at a stall feeder.



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Grasslands sustainably managed by the Community Forest Co-ordination Committee (CFCC) in Khata, Nepal.

**4.5 tonnes  
of biogas  
plants can  
save up to  
26,000  
tonnes of fuel  
wood a year**

dung, human waste and water into methane that's used as a smokeless fuel for lighting and cooking. What's left over from the process is spread on the land as fertiliser.

Not far away from Badrahani – in Padampur village, 7km from the nearest main road – the story's the same. Here, one of our projects is providing loans which have so far directly enabled 80 families to install biogas systems – and, says the village's development committee, many more applications are pending.

Until recently, most villagers – mainly the women – would spend as much as three hours a day traipsing to and from the outlying forest to gather wood, then lighting it in the home for warmth and cooking. Huts don't have chimneys, so there was simply no way of avoiding the smoke that permeated the roof and walls, and people's lungs and eyes as well. But all that's changing in more and more

villages, as more than 6,000 biogas units have been installed already.

### **Benefiting people and nature**

"Biogas offers a deceptively simple energy solution for lowland Nepal, as well as other substantial benefits," explains Mark Wright, WWF's conservation science adviser. "Its use not only reduces pressure on the forests themselves, but it also has positive impacts on health, quality of life and soil fertility. In conservation, we often look for a solution where everyone and everything benefits – and that's exactly what we've found with biogas."

The project team are helping local people here as part of a wider plan to protect the environment. The biogas project is just one example of this. People's lifestyles and well-being, especially in rural areas, have a direct effect on how they use their environment and the available natural resources – which is why WWF's



Women carrying wood from community forests that are managed by CFCCs. The CFCCs were established with the help of WWF in order to allow communities to manage their forests sustainably.

programmes in Nepal and elsewhere are designed with people in mind, as well as nature. The two are inextricably linked.

Life for rural people in Nepal is tough. In the Terai Arc region, as much as 30% of the population earn less than US\$1 a day, and the diets of an estimated 20% of people fall below the UN World Food Programme's recommended minimum level of nutritional energy consumption. That's largely because they don't have access to enough land on which to grow crops regularly. But our work – not just on biogas

units, but on cattle management and community forest projects as well – is now getting things done where it matters.

Cattle management is an important part of village well-being. More often than not, animals are left to wander during the day – but with WWF's help, stalls are being constructed alongside homes so that cattle can be tended and fed there, their manure directly channelled for biogas conversion and overgrazing within the forests is reduced.

Biogas also can help to reduce deforestation. For years, people have been taking unsustainable amounts of fuelwood from their local forests, and the reason is simple enough – some 60% of households in the Terai Arc rely on this wood for their cooking needs, and the average family uses up to 25kg of wood every day. Which is where biogas comes in: it's estimated that a single installation reduces CO<sub>2</sub> emissions by 4.25 tonnes a year – and collectively, the biogas plants already constructed could be saving almost 26,000 tonnes of fuelwood annually.

This means that in a growing number of instances, pressure is slowly being taken off the forests. Many of the more than 14,000 community forest user groups, some supported by WWF, are planting out thousands of saplings across the Terai Arc and beyond, and are also defending their forests from encroachment by others. Each group has its own constitution, paving the way for decentralised decision-making and local democracy. In some places, this forest regeneration has led to a welcome rise in the water table and the re-emergence of springs, which are providing villages with much-needed clear running water for drinking and irrigation. The involvement of local people is essential to the success of these and other schemes. WWF has a long-standing commitment to Nepal. But whether we're advising the government in Kathmandu or helping to install biogas units in villages such as Badrahani and Padampur, there is still much to be done – and we're ready to meet the challenges ahead.

## PROVIDING DIRECTION IN A CHANGING CLIMATE

Climate change is already causing a rise in temperatures and a change in the timing, frequency, intensity and duration of rainfall in Nepal, so it's vital that people understand what's happening, and learn to deal with consequent events such as drought, flash flooding, landslides and food shortages. Through our 'Climate for Life' campaign, we have been raising public awareness of climate change throughout Nepal. We're also supporting the National Adaptation Programme of Action (NAPA), which is helping the government plan its strategy to deal with the effects of climate change. On a broader base, the NAPA is also focusing on good environmental management at a local level. It has, for example, produced a climate change information network for farmers, which advises on crop diversification, freshwater issues, and a choice of agricultural practices under changing climatic conditions. Community climate change centres are also being developed to monitor local climate variability – and we're working with regional government to ensure that adaptation is integrated into village and neighbourhood development plans.



Man walking in rice field, Lamahai, Nepal.



The mission of WWF is to stop the degradation of the planet's natural environment and to build a future in which humans live in harmony with nature, by:

- conserving the world's biological diversity
- ensuring that the use of renewable natural resources is sustainable
- reducing pollution and wasteful consumption

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