Biogas has simplified life in Miombo

“My children no longer worry that I will send them out to look for firewood when they come home from school. They now have time to do their homework and I have time over for other things I need to do.”

Sarah Kapfunde-Mutoko looks up from her cooking pots with a contented smile on her face. The kitchen is no longer full of smoke from the fireplace and cooking is so much easier. The biogas even supplies enough energy to light the house. Sarah Kapfunde-Mutoko lives in the Mutoko district of eastern Zimbabwe, a part of what is known as Miombo. Miombo is an ecosystem with dry forest that covers close on 3.6 million square kilometres in eastern and southern Africa, stretching through parts of Zimbabwe, Zambia, Botswana and Malawi. The area extends roughly 2,500 kilometres from east to west and 2,000 kilometres from north to south and is more than one and a half times the size of India. Tanzania, Angola, South Africa and Mozambique also have Miombo forests.

The area is dominated by savannahs and soft rolling hills with majestic tree canopies that reach up to the sky. It is home to one of Africa's largest elephant populations, white and black rhinos and a rich birdlife. Other parts of Miombo, such as eastern Zimbabwe, are drier with a hot climate, low trees and little rain. Miombo is also home to people who need food, fuel and other things for their sustenance. As the population grows, so do the demands on the natural surroundings. Small game hunting puts many animal species at risk and the need for firewood is increasing the rate of deforestation. In Zimbabwe alone, an estimated 70 per cent of the rural population are dependent on firewood as their main energy source.

How can this vicious circle be broken?

With support from the Swedish International Development Cooperation (Sida) and local actors, WWF has begun a pilot project for biogas as an alternative to firewood. The project uses cow dung and other biodegradable waste materials (including from Jatropha cake) in the production of biogas. Biogas is produced when the cattle dung and agricultural waste is decomposed by bacteria (anaerobic digestion) in the bio-digester.. The biogas replaces the firewood that would otherwise have contributed to deforestation and greenhouse gas emissions. The residual product from the bio-digester is an excellent fertiliser that helps the villagers grow food in a region of drought-induced famine. The reduced need for firewood and artificial fertilisers also saves time and money.

All in all it is a vast improvement for the forest, the climate and the vulnerable people taking part in the project. In a very short space of time the first families have become self-sufficient in energy production and have learnt how to utilise agricultural waste by returning nutrients to the soil, hence reducing the need to purchase fertiliser in the process. From a financial perspective the project has also helped families to save money.

“Biogas has many advantages. It gives an even heat for cooking and we’ve got rid of the indoor pollution caused by the smoke,” continues Sarah Kapfunde-Mutoko. But her husband, Gumisai, was not as enthusiastic at first.

“I had to take a part of our maize field to make space for the digester that was needed. At the time it seemed a folly to destroy a part of our field, but the benefits are now clear to see. As you see, everything in the house – cooking, lighting and heating – is run on biogas. It’s just amazing! I’m really looking forward to the next growing season when we will be able to use our own biological fertiliser and hopefully completely replace the

chemicals. Also, it's great to see so many curious people. Our village has suddenly become very trendy," he laughs.

The plant has attracted so much interest that even school classes pay it a visit. The plan is for him and the others in the pilot project to help build other biogas plants.

This is not the only pilot project underway in the Miombo region. One is producing honey and another one is striving to find a solution to the conflict between humans and elephants along elephant trails between the various parks.

"People being able to sustain their livelihood is a prerequisite for the conservation to succeed. There has to be some form of interaction between the environment and the people of Miombo," explains Peter Roberntz from WWF in Sweden.

The Miombo Project

The aim of the project is to strengthen civil society while working towards improved management and care of the natural environment in the greater Miombo region. By supporting local organisations, WWF helps people in the villages and the wider community to form a better understanding of the importance and potential of their natural surroundings.

The support also empowers people in their dealings with authorities and companies over the management and protection of the natural resources. The project enables people in the villages – together and in harmony with nature – to develop alternative livelihoods and forms of energy consumption. Other projects in the Miombo programme include the production and sale of honey, the drying of tobacco leaves without deforesting and the creation of corridors between the villages where elephants can wander without coming into conflict with humans.