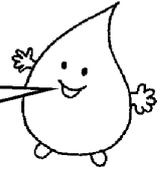


SECTION 2

EXAMPLES FROM AROUND THE WORLD

You have arrived now at Section 2. Here are some examples of village businesses running on water power.



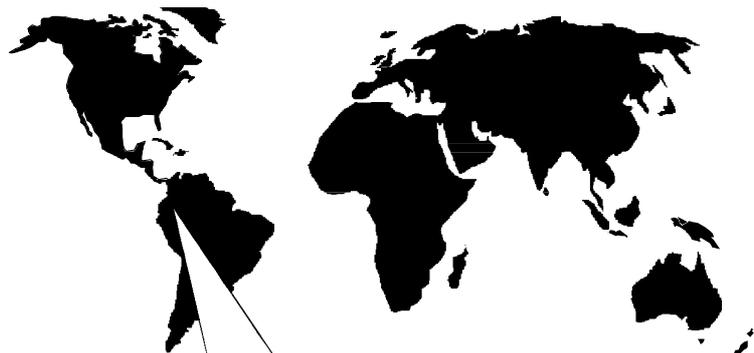
SUGAR CANE CRUSHING

The Gavito family live in a farm near the town of Villavicencio, in Colombia. It is in a mountainous area with many streams. Mr Gavito bought a sugar-cane crusher in 1972 so that he could make and sell sugar cubes. He already knew that other businesses made these sugar cubes using diesel engines to crush the sugar cane. Instead, he installed a water-turbine and attached this to his crusher using pulleys and a belt. Many people in Villavicencio buy his sugar cubes, and tell him they taste better than ones made with diesel engines, because there is no flavour of the diesel smoke.

The turbine is saving a lot of money. All the other local sugar businesses use diesel powered crushers. Usually they spend more than \$100 a month on fuel, and that's just for 3 hours operation per day. But with his turbine, Mr Gavito can crush sugar cane all day as there are no fuel costs. In the evenings the family use the turbine to drive a small generator for lighting, radios and TV.



Mr Gavito using his sugar cane crusher.



MILLING AND EFFICIENT LIGHTING

Rajesh Humagai lives in the village of Kushadevi, in the foothills of Nepal's Himalayan Mountains, some 30km south-east of the capital Kathmandu. There are 108 families in the village, all of whom make their living from farming. The main crop grown is Maize.

In 1999 the community contributed to the purchase and installation of a pico hydro, which is used in the evenings for lighting and during the day-time to drive a Maize mill. Rajesh is one of the operators of the turbine. He mills the grain and carries out minor repairs when necessary. The same turbine is used to drive the electricity generator and the maize mill.

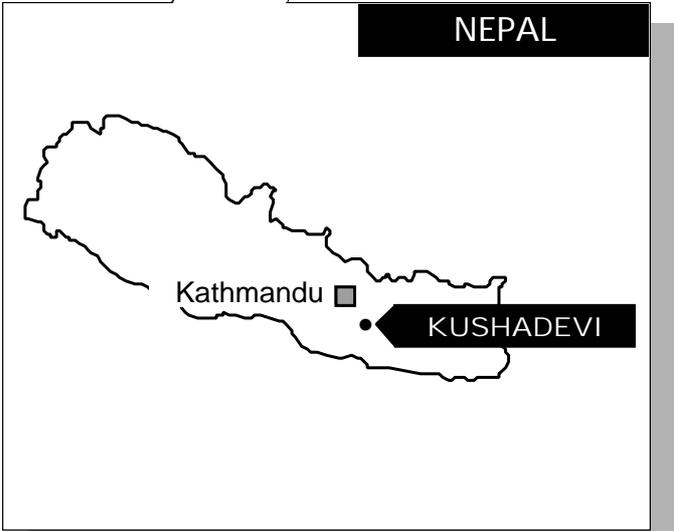
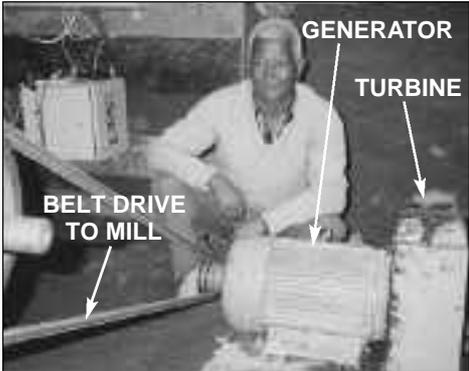
Energy efficient lamps (compact fluorescent lamps) are used in order to be able to provide lighting to the whole community from the small (4kW) generator. Energy efficient lamps require just one quarter of the power of standard light bulbs for the same brightness.



Rajesh (above) operates the mill.



Energy efficient lamp (above).

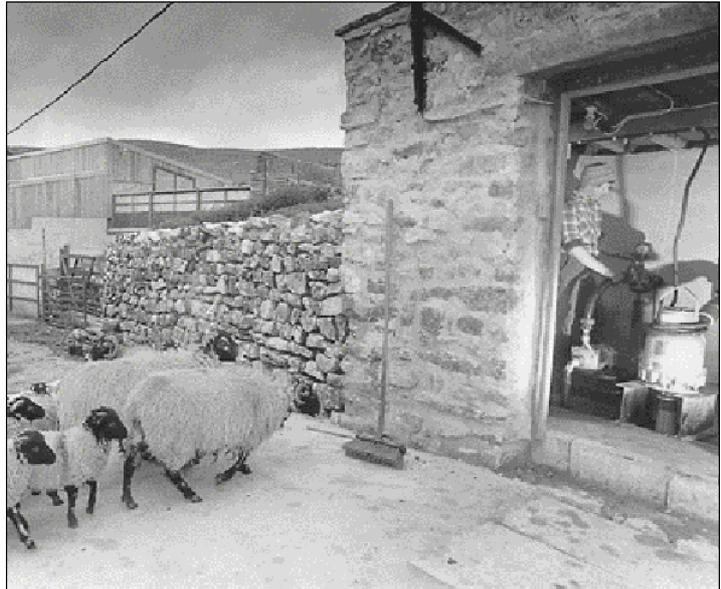


Harvested maize (below).



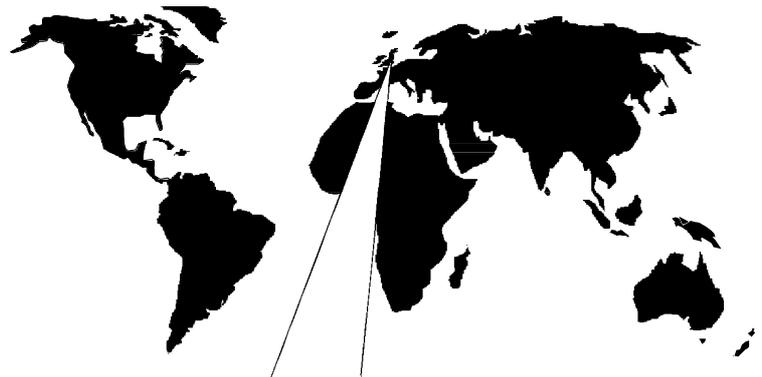
FARMING

Bill Cowperthwaite and his family run a sheep and cattle farm near Settle in Yorkshire, Great Britain. In 1992 Bill installed a water turbine which they use for electric lights in the house, cowshed and workshop. They also use the power for a grinder and a drill in the workshop, a freezer to preserve food, 3 TVs and a video player, a food processor, a hair dryer and an iron for clothes. In the winter the electricity also provides heat for the house.



The power house for the water turbine.

Before Bill installed the water turbine, they used a diesel generator, but the fuel was expensive and they could only afford to run it for a few hours each day. The water turbine can be run all the time and requires no fuel and less maintenance than the diesel engine.



Bill sharpens a tool with his electric grinder.

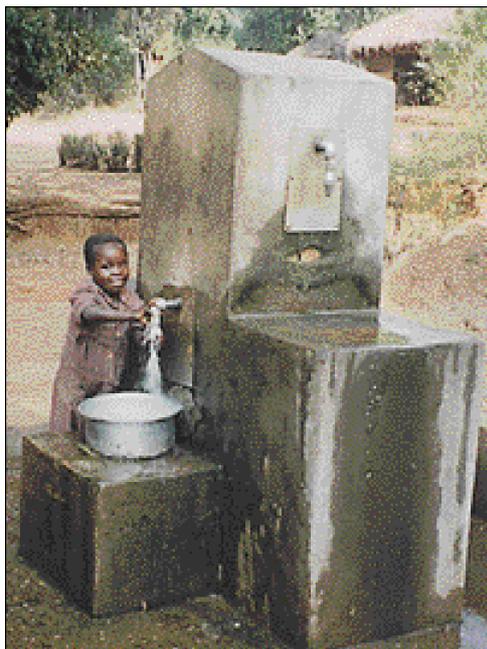


HOSPITAL

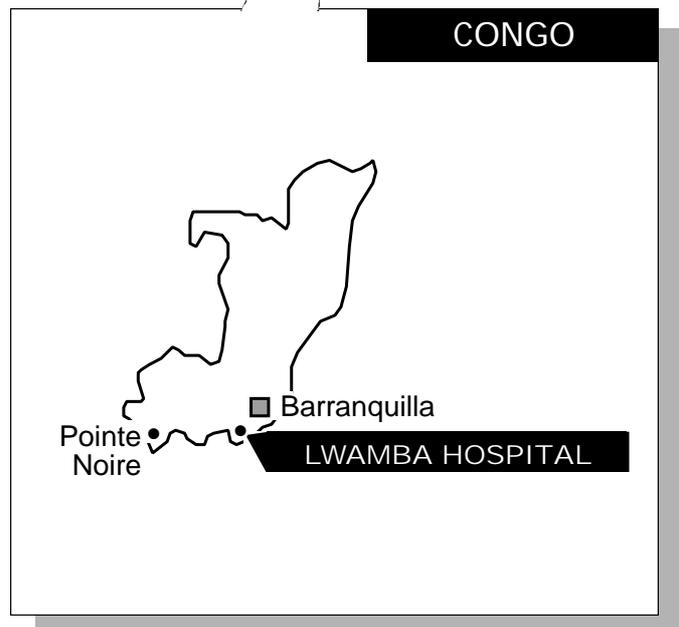
Mr Nseke is the hospital technician at Lwamba Hospital in Congo, Central Africa. He looks after the medical equipment in the operating theatre that is helping to save people's lives. This equipment is powered by a small water turbine and generator installed in 1993. The electricity is also used for fridges that store vaccines and food, and for lighting both inside and outside the hospital. Other uses for the power include workshop tools, computers and printers, rechargeable batteries for torches and radios, and hot water.

The water supply comes from protected springs and the same supply is used to provide safe drinking water for the hospital and local village.

Safe drinking water.



Mr Nseke in the operating theatre.



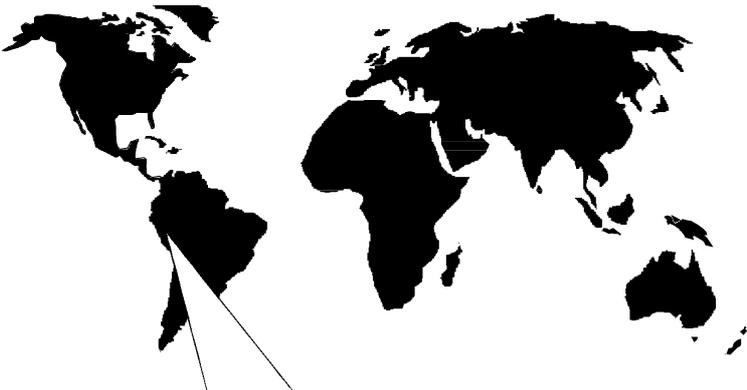
LIGHTING AND BATTERY CHARGING

We have already met Maximino and discussed his business. Maximino lives in the village of Trinidad, in Northern Peru. He owns a water powered electricity generating system. He supplies 24 families with electricity for lights and radios in the evenings by means of electric cables connected to their houses. This is as much as he can supply directly with his small turbine-generator.

In order to provide more families with electricity, he charges car and truck batteries during the day and people use these to power lights and radios.



Maximino charging batteries.



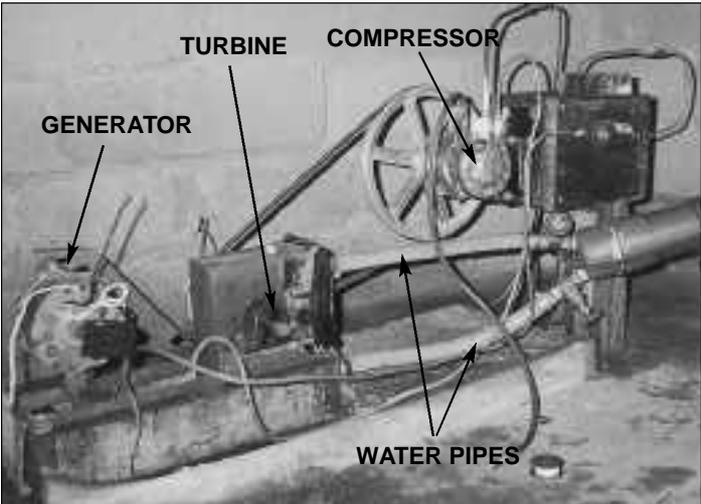
Charged batteries being collected.



ICE MAKING

We have already met Eusebio and discussed his business. Eusebio lives on the Pacific coast of Colombia near Buenaventura. This is a hot tropical region with lots of rainfall. He uses ice to preserve the fish he has caught while he takes them to market by boat. He used to have to buy ice, but now he makes it using water power and has enough to sell to his neighbours. He uses a small water turbine to operate a freezer mechanically driven from the turbine. This costs him less money and produces more ice than an ordinary electrical freezer.

He also has a small generator that he drives from his water turbine. This is used for lighting and a radio.



The water power system.

Eusebio with his freezer.



OTHER EXAMPLES

Photo studio



Poultry rearing - Nepal



Coconut extraction - Indonesia

Coffee grinder

Oil expeller



Rechargeable lamp - Kenya

Fax machine

Dentists

Rice huller



Bakery oven - Nepal

Equipment

Photocopier