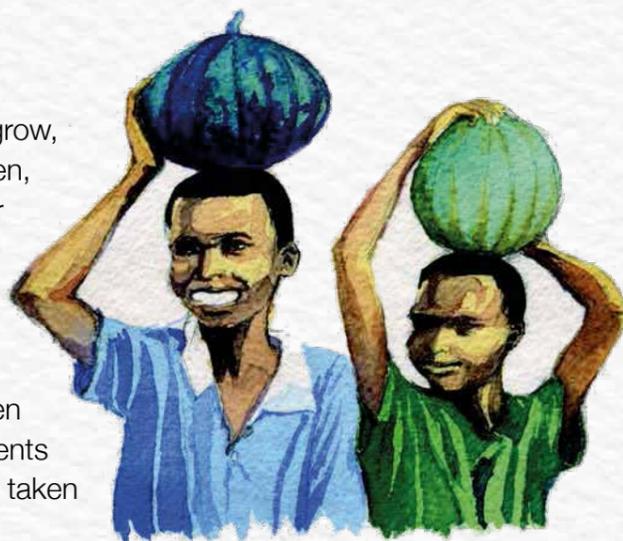


## FEEDING THE SOIL

Feed the soil lots of organic matter! In order to grow, plants need the essential elements carbon, hydrogen, oxygen, nitrogen, phosphorus, and sulphur. Matter can neither be created nor destroyed. This important law of physics applies to the nutrients which come from the soil to feed the plants. They must come from somewhere. They will not magically reappear in the soil for the next crop. When the crop is harvested, and removed, the nutrients which the plant has absorbed during growth are taken away. They need to be replaced.



You can feed the soil artificially. If you have money to buy them, you can use chemical fertilisers to add nutrients to the soil. They work quickly and improve harvests, sometimes hugely. Yet they can bring many problems. They do not improve the texture and water-retaining abilities of the soil. They do not help provide a home for all the creatures, like beetles and earthworms, which make the soil. The nutrients can leach out of the soil into the rivers and sea, causing eutrophication (See page 51). They cost money. Unlike compost and mulch, they do not help create new soil, so the soil is soon exhausted. Organic matter is a much better soil food.

### Compost

Compost is one perfect way to make the soil healthier. It improves the structure of the soil, making it stronger and less susceptible to erosion. The organic matter holds water in the soil, and of course breaks down to feed the plants with nutrients.

One Ugandan school has started a composting project. This girl is collecting up left-over organic matter from her food preparation - leaves, carrot tops, egg shells, banana and other fruit skins. She feeds the compost heap with this waste matter.



The boy pictured is turning the compost. This brings in air and allows the creatures living inside to breathe. The living organisms, including tiny fungi, bacteria, worms, beetles and flies, gradually turn the household waste into a very rich compost for adding to the soil. All you have to do is build a compost heap and feed it your rubbish.

**i** ACTION SHEETS - 31: Practical Composting



### Leguminous trees – Plants that nourish the soil

This tree is *Gliricidia sepium*. Originally from South America, it was brought to Africa to help feed the soil. It belongs to the family of plants called the legumes. We have many native legumes, Acacias and Faederbia are examples. Leguminous plants have bacteria living in their roots which fix nitrogen from the air, delivering it to the plant to use in growth. Gliricidia or other nitrogen-fixing trees can be grown as a cover crop on fallow land – land which is resting between crops – to enrich the soil with nitrogen. Cover crops also stop soil being whisked away by wind or washed away by water. The leaves of leguminous trees can also be cut and dug in to feed the soil, as a green manure.

**i** ACTION SHEETS - 36: Planting nitrogen fixing trees, 39: Green Manure/ Cover Crop for Biomass Transfer