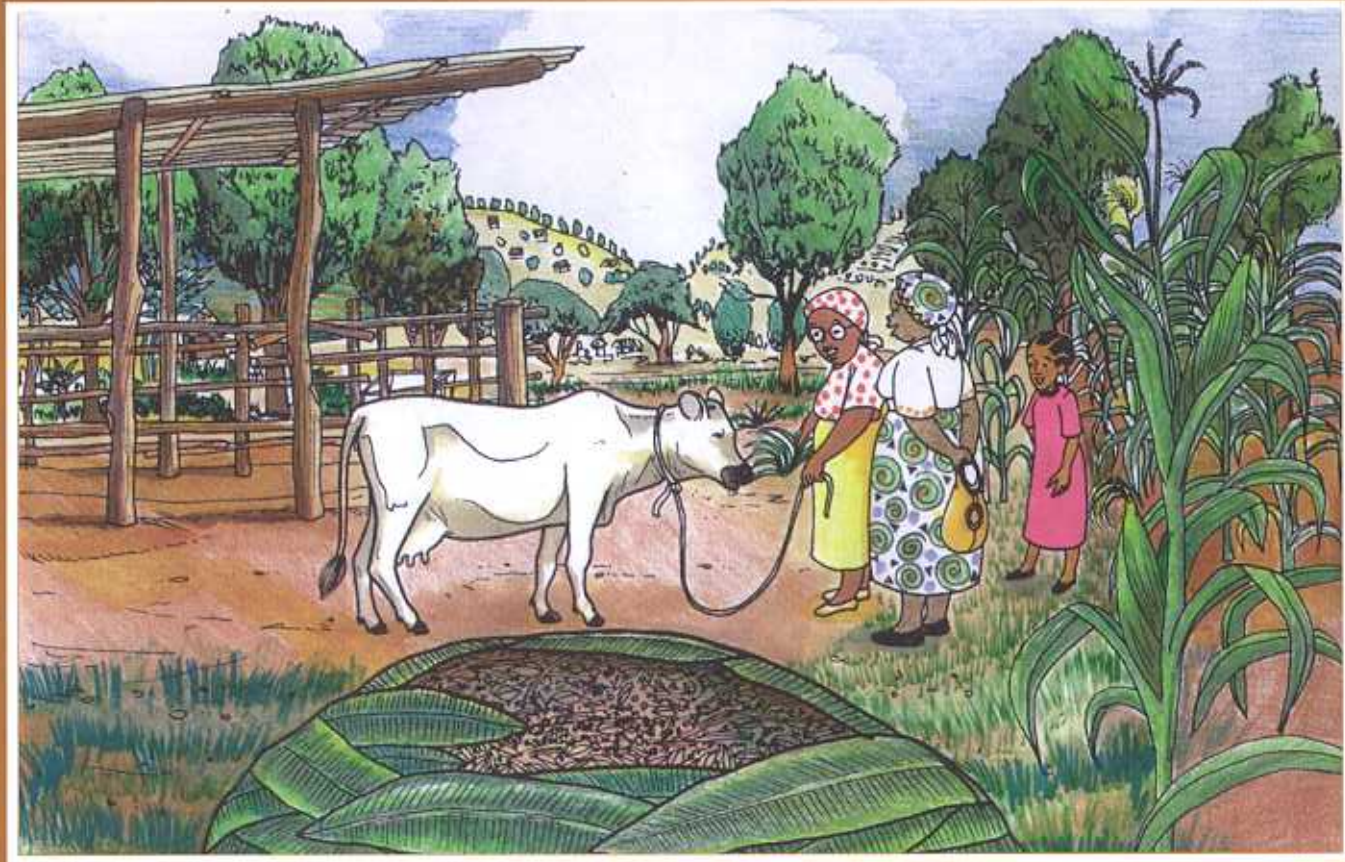


BETTER MANURE, BETTER CROPS



Wambui finds out...



Wambui and her mother look at a poor maize crop.

Wambui, we've had good rain this year but our maize looks so poor. Our soil is exhausted. We should have bought some fertilizer but we just didn't have enough money.

With such a bad crop we won't have enough Posho this year and we won't have much fodder for Ngunu, the cow.



It's the vacation and Wambui goes to stay with her Aunt in the next valley.

This maize looks very good and yet they have had the same amount of rain as us. I wonder how their crops do so well.



Auntie, the soil on our shamba is exhausted and we can't afford very much fertilizer.



Wambui, like your mother we can't afford to use much fertilizer so we feed our crops in another way. We use manure from our cows.



Manure provides food for growing crops in the same way as fertilizer. It also improves the structure of the soil making it easier to work with a Jembe and easier for the roots of plants to grow through.

Soil which has manure added to it is better at soaking up and storing water and so when the drought comes, our maize survives.



The following day, Aunt and Wambui go collecting for the local church. They meet the local agricultural extension worker.

Why is manure so good as a food for plants?

Manure contains the food which is not digested by the cow and made into milk.



When you feed your cow, some of that food will be used by the cow to make milk and some will end up in the manure. This food is used by plants when the manure is applied to the soil.



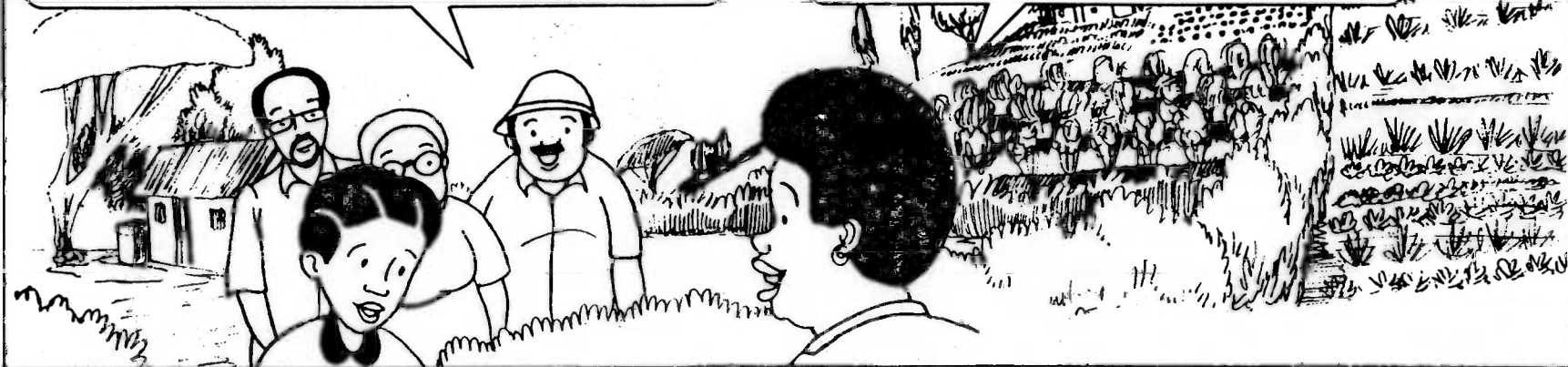
However, it is important that you look after the manure well before you use it otherwise this is a waste of a very useful product from your cow and so a waste of your money.

The milk and manure I get from my cow are both equally important to me. I can sell the milk and use the manure on my maize. This way, my cow makes money for me to send my son and daughter to school and also gives me a good maize crop so I don't have to buy Posho for my family.



I try to collect as much manure as possible from my cow. My Boma has a stone floor so it's easy for me to collect up the manure that way.

I collect urine from my boma in a covered drain and put it straight onto my Napier with a bucket each day. Urine is very good for growing napier.



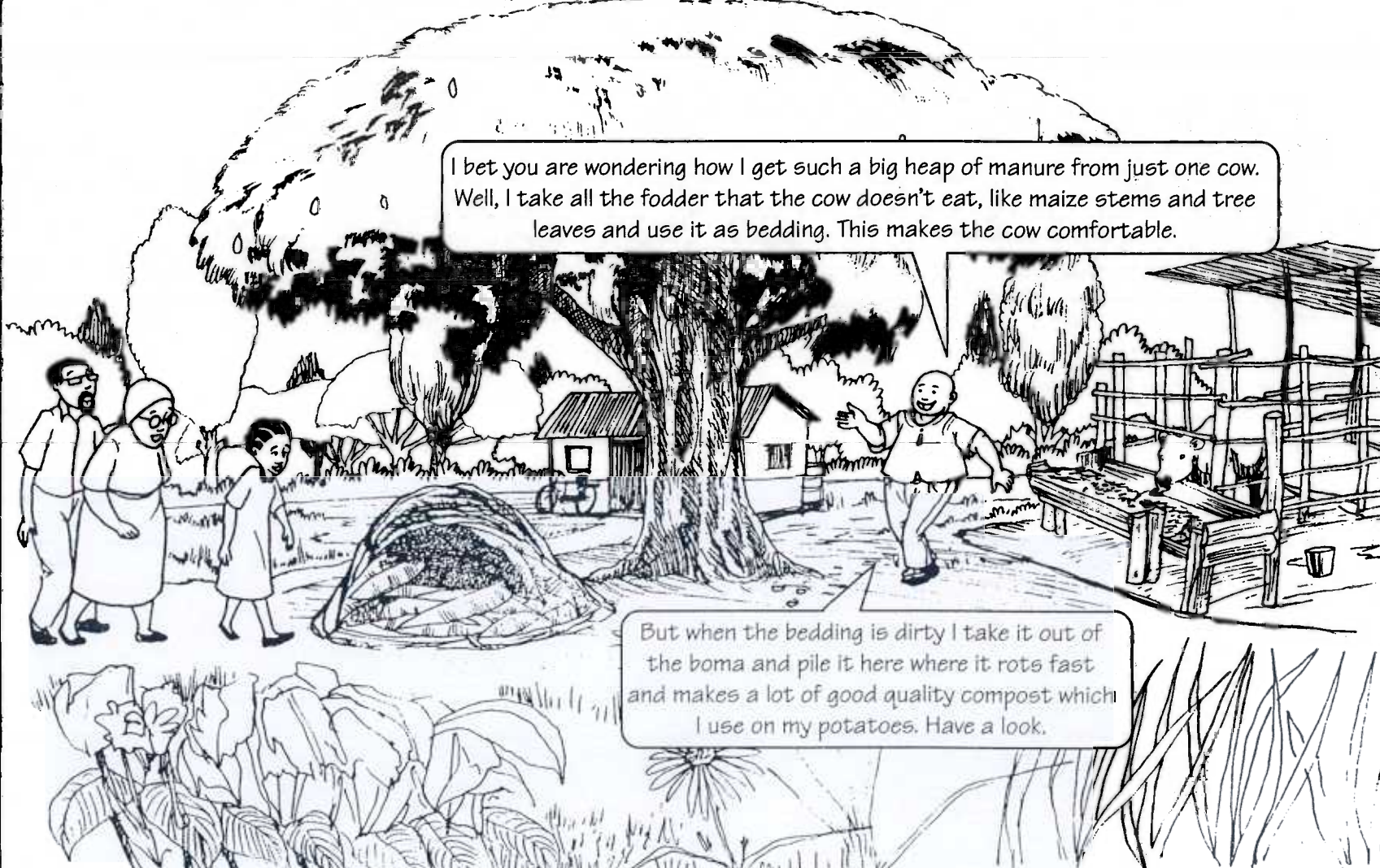
Urine is also good for maize but not when the plants are very young because the urine can kill them. I put urine on the plants when they are at least a foot high. Look how strong they are now.



Wambui, her Aunt and the agricultural extension worker walk to another farm.



At the next farm they see a very big manure heap. The owner comes over.



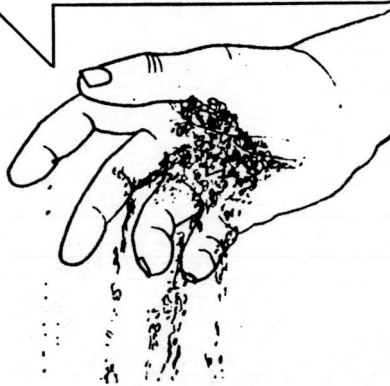
I bet you are wondering how I get such a big heap of manure from just one cow. Well, I take all the fodder that the cow doesn't eat, like maize stems and tree leaves and use it as bedding. This makes the cow comfortable.

But when the bedding is dirty I take it out of the boma and pile it here where it rots fast and makes a lot of good quality compost which I use on my potatoes. Have a look.

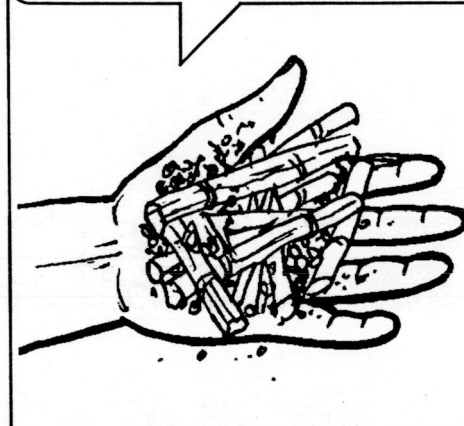
Well rotted manure is best for crops...



...You can see it is black and fine so that it falls between your fingers. It is now called compost and is ready to use.



... But this one is not well rotted. You can still clearly see pieces of maize stover.



I will leave manure and bedding to rot into compost for three months before using it. I use banana leaves to protect it from the sun and rain until I need it.

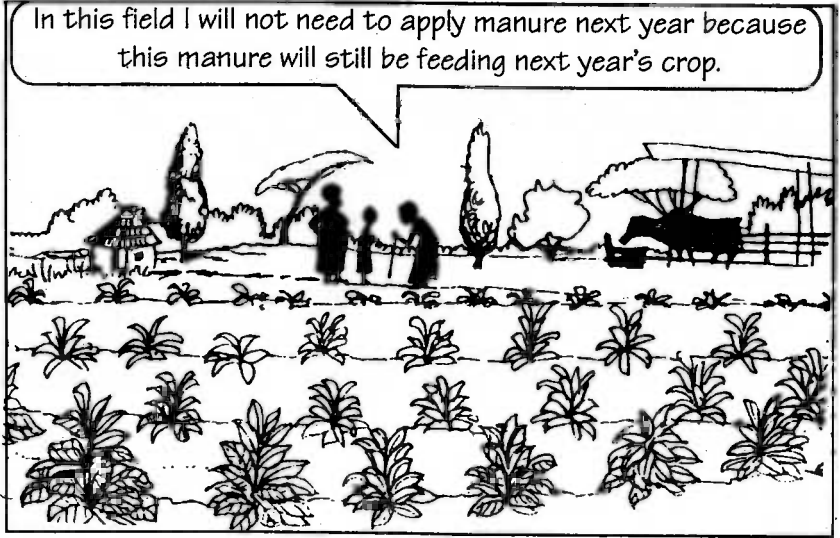
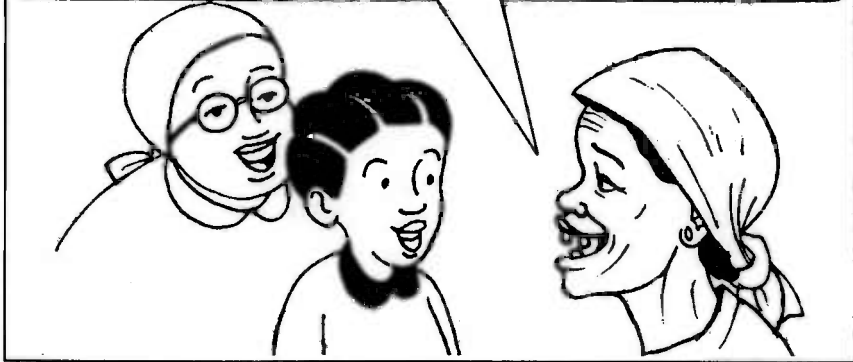


Wambui, her Aunt and the extension worker leave.





Yes! But I don't need to apply manure every year like you do with fertilizer. Fertilizer is quickly used up by crops or washed away by rain. Manure supplies food to growing crops more slowly and it is not easily washed away.

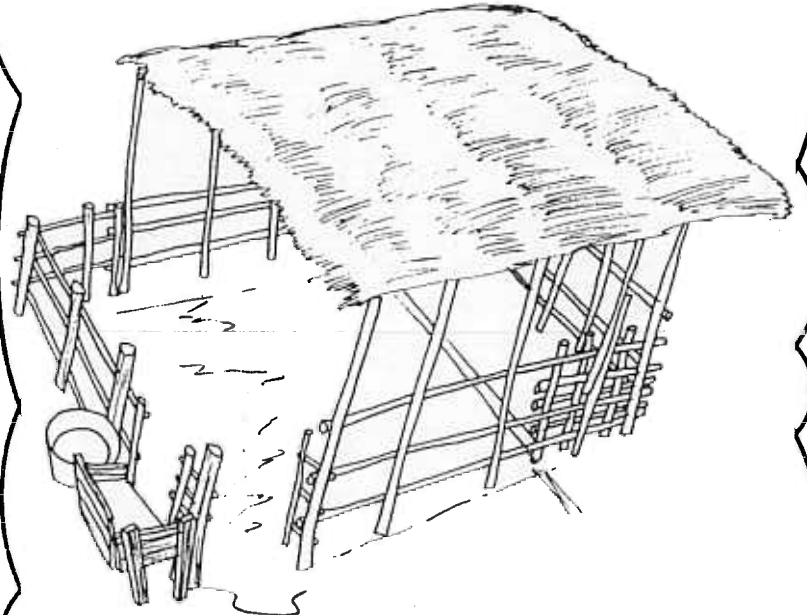


Wambui goes home and tells her mother what she has learned.

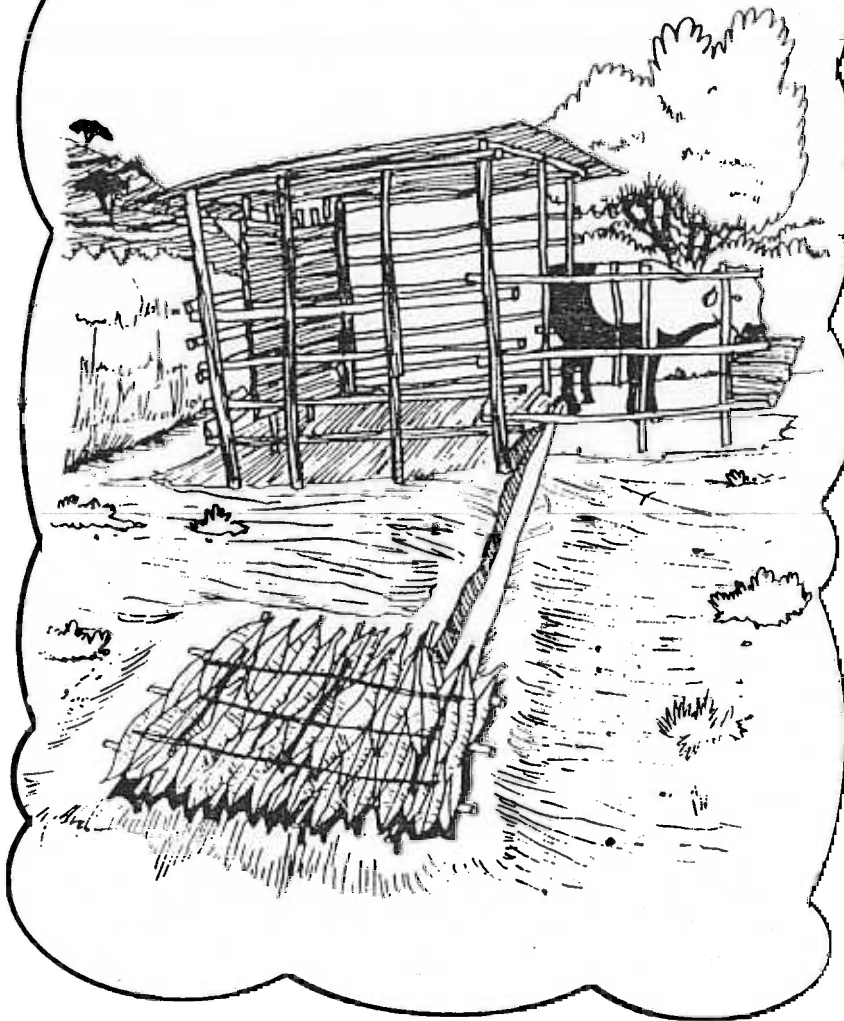
Mother, you know Ngunu's manure could help us improve our soil and our crops.



We need to build a better Boma so that we can collect all the manure.



A covered drain so that we can collect all her urine for pouring on the napier and maize.



We need to use all the fodder she doesn't eat as bedding and when it gets dirty mix it with the manure.



This way we will get a lot of good quality compost. We also need to protect our manure heap to stop us losing quality.



Start applying urine to napier and
maize when it is over 1 foot tall...

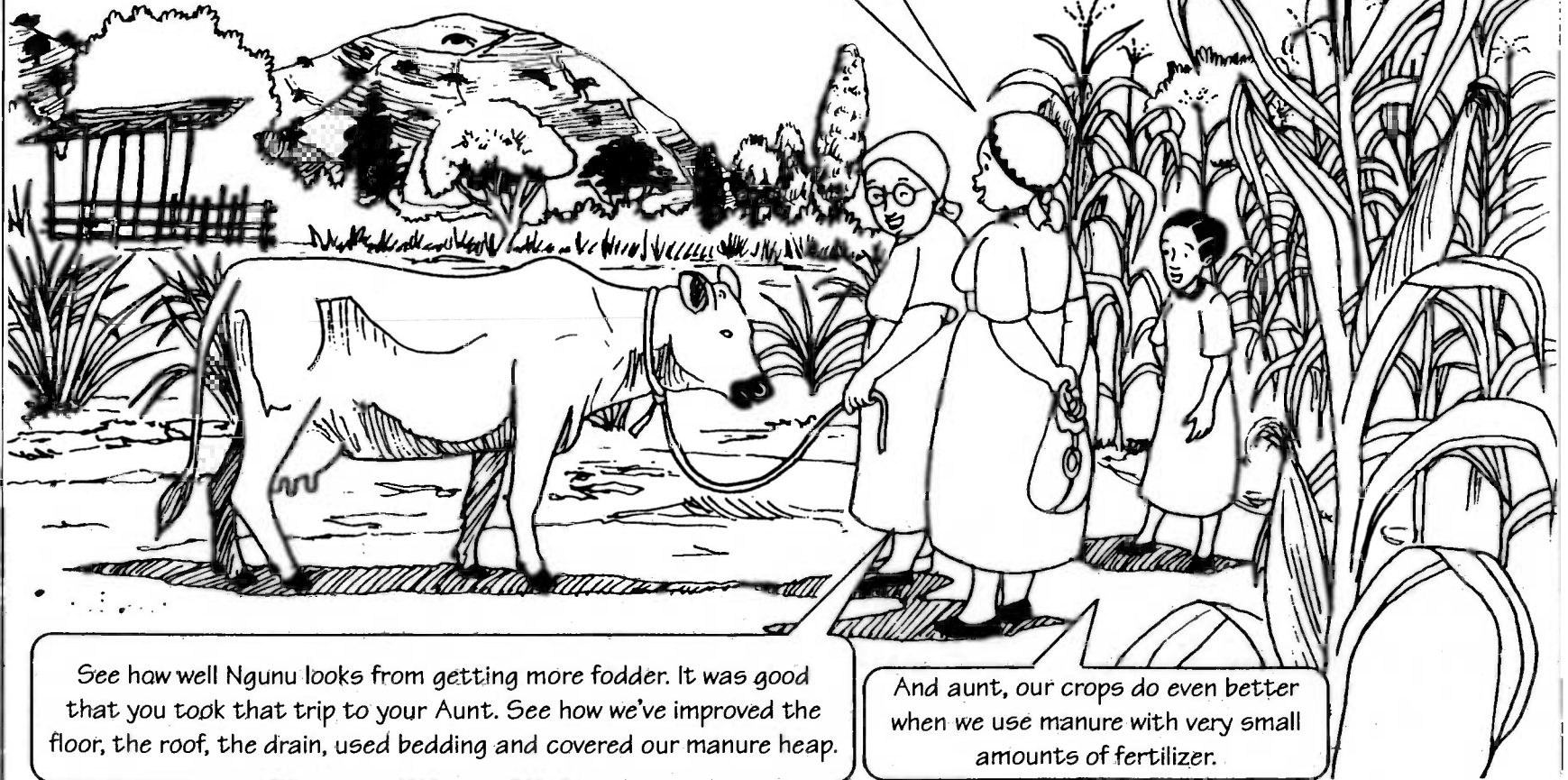


... and compost to the soil.



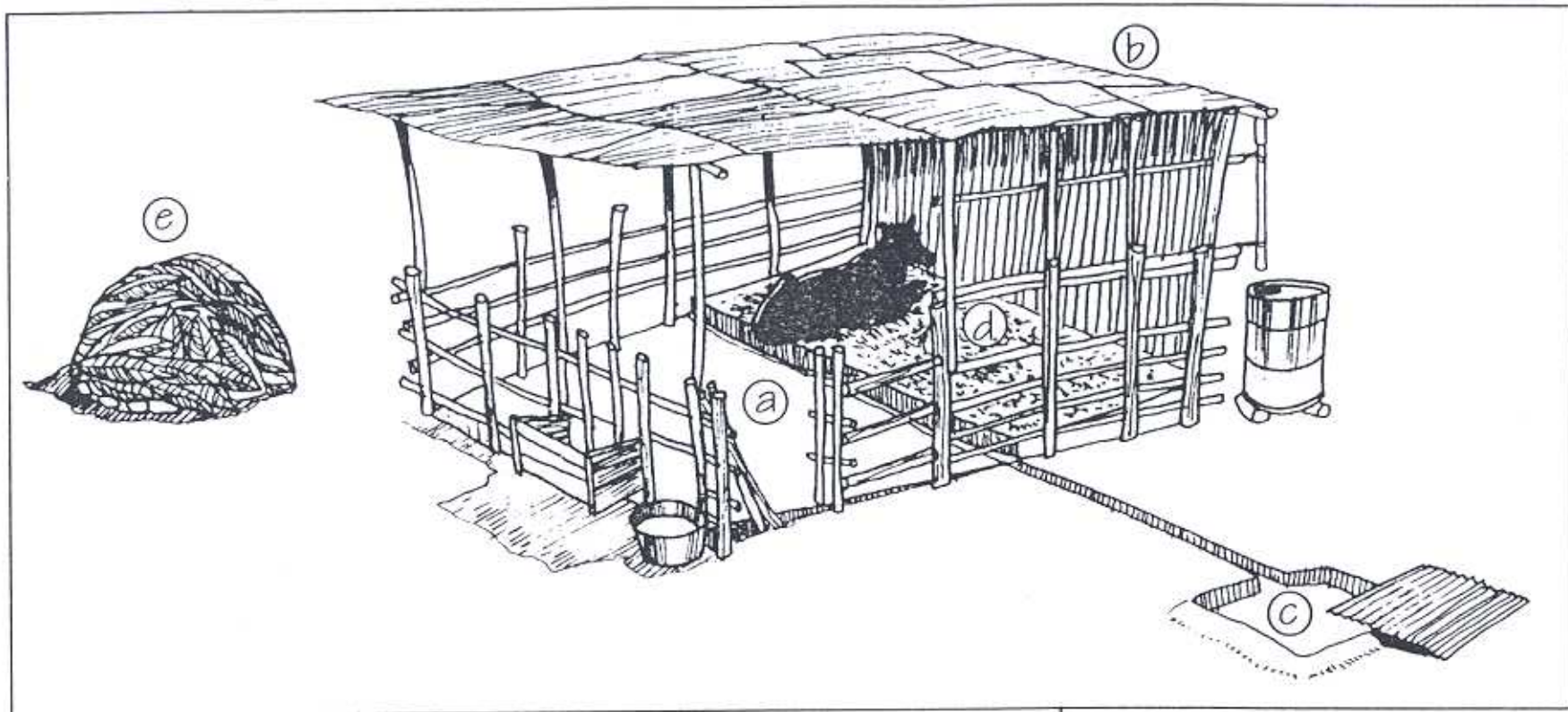
Two years later.

You know Wambui, that manure we applied last year is still allowing us to get good crops this year. The benefit of manure really does last and our napier looks so big and green now that we are using Ngunu's urine.



See how well Ngunu looks from getting more fodder. It was good that you took that trip to your Aunt. See how we've improved the floor, the roof, the drain, used bedding and covered our manure heap.

And aunt, our crops do even better when we use manure with very small amounts of fertilizer.



TAKE THIS BOOK HOME.

Look at your boma with your mother or father. Is your boma like Wambui's?

- Does your boma have a good floor (a) so that all manure can be collected?
- Does it have a roof (b) to keep the rain and sun off the cow and off the manure?
- Does your cow sleep on bedding (d) and is this added to the manure heap, and do your parents allow the manure and bedding plenty of time to rot before using it?
- And is your manure heap (or pit) covered to protect it from the sun and rain (e)?
- Does it have a covered drain (c) to collect the urine?
- Do your parents collect the urine and put it on the Napier and maize when it's over 1 foot tall?

