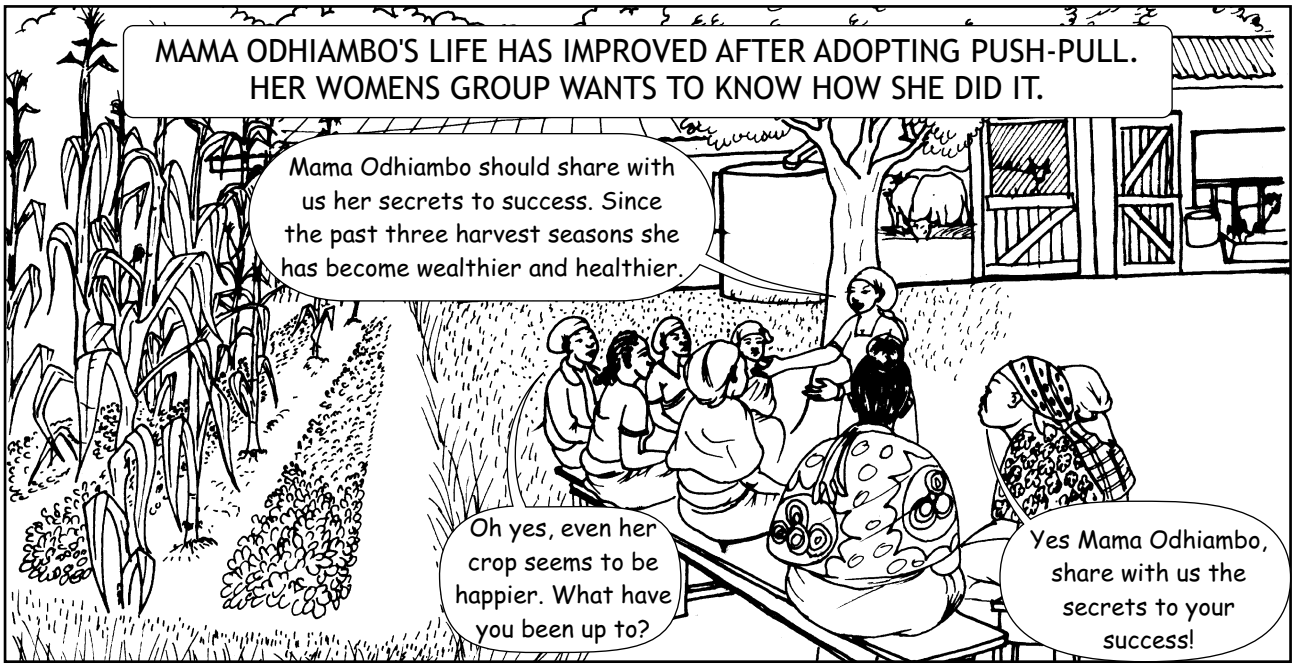
Push-pull
Improving Livelihoods

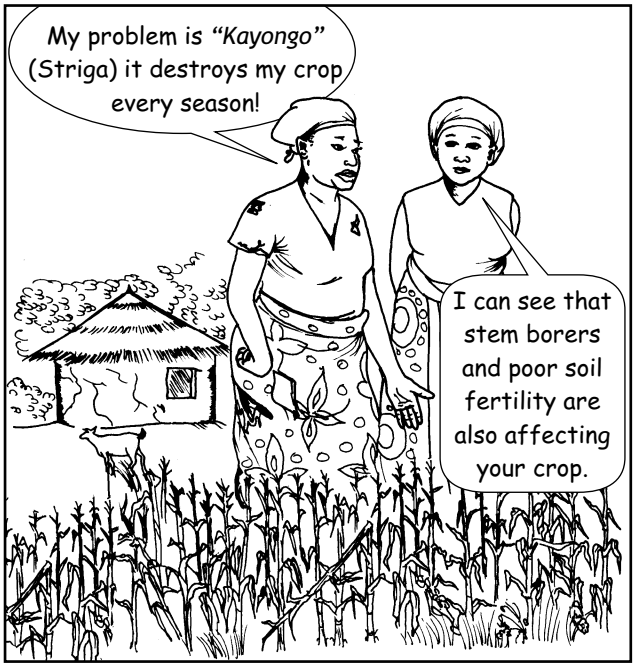
icipe

African Insect Science for Food and Health

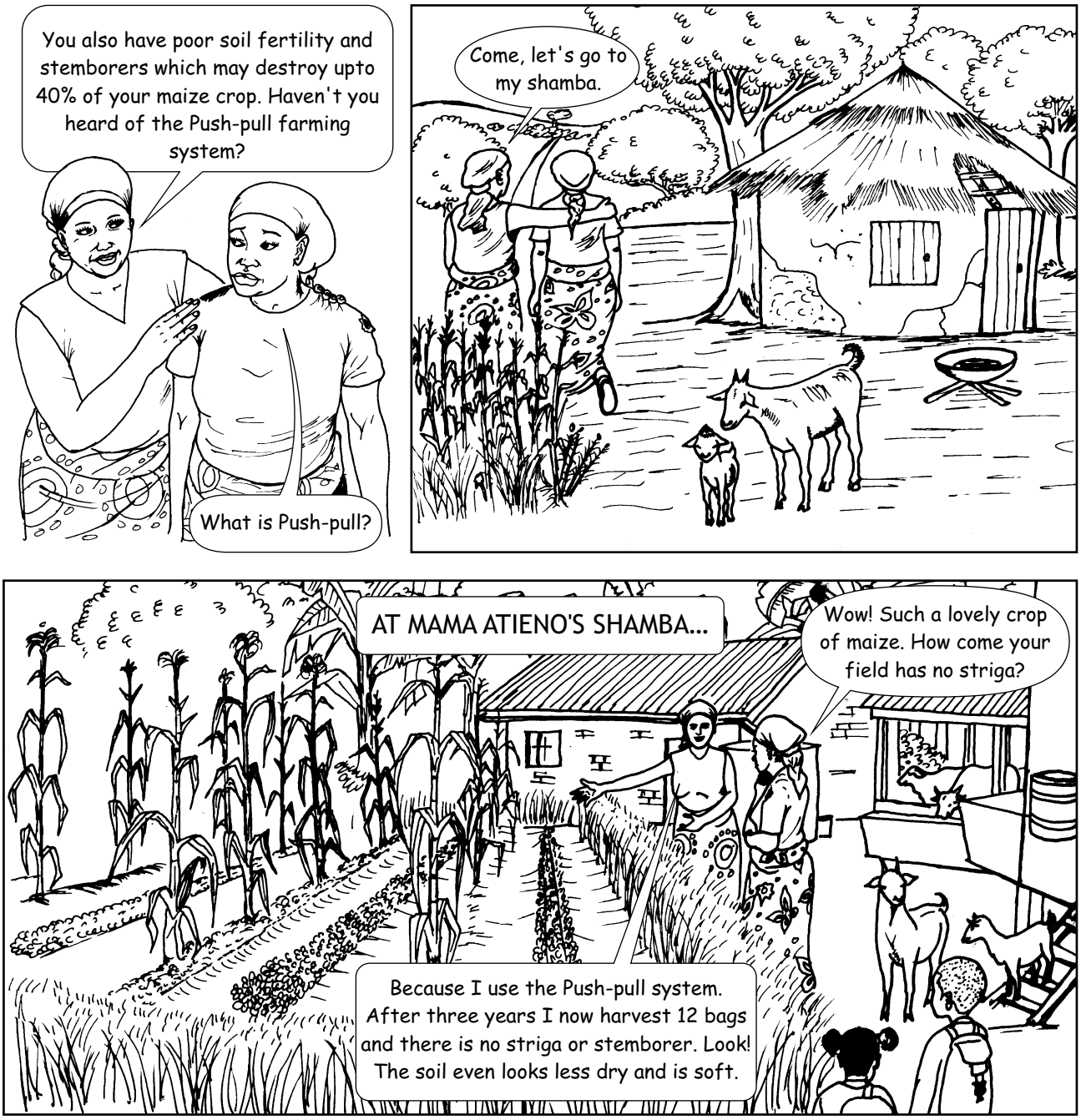

MAMA ODHIAMBO'S LIFE HAS IMPROVED AFTER ADOPTING PUSH-PULL. HER WOMENS GROUP WANTS TO KNOW HOW SHE DID IT.
Mama Odhiambo should share with us her secrets to success. Since the past three harvest seasons she has become wealthier and healthier.
Oh yes, even her crop seems to be happier. What have you been up to?
Yes Mama Odhiambo, share with us the secrets to your success!

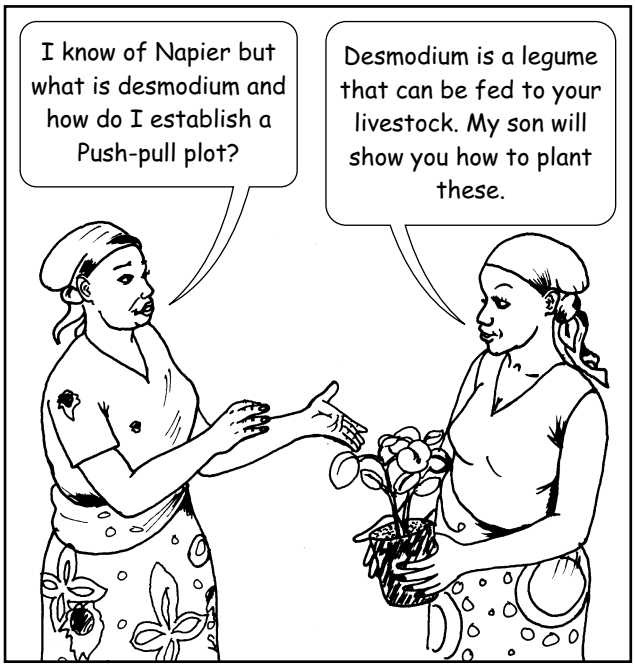

Well, it all started one Saturday afternoon when mama Atieno came visiting me…


Mama Odhiambo, What is the problem?


My problem is "Kayongo" (Striga) it destroys my crop every season!
I can see that stem borers and poor soil fertility are also affecting your crop.

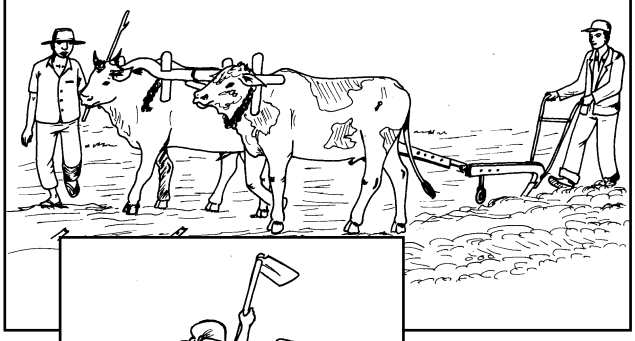

Look at your maize plant. Striga has attached itself to the roots sucking away the nutrients from the plant.


You also have poor soil fertility and stemborers which may destroy upto 40% of your maize crop. Haven't you heard of the Push-pull farming system?
What is Push-pull?
Come, let's go to my shamba.
AT MAMA ATIENO'S SHAMBA...
Wow! Such a lovely crop of maize. How come your field has no striga?
Because I use the Push-pull system. After three years I now harvest 12 bags and there is no striga or stemborer. Look! The soil even looks less dry and is soft.
Desmodium kills striga and stemborers don't like the smell of desmodium. Stemborers like to stay and feed on the Napier grass instead of maize
Did you know desmodium also adds fertility to your soil?



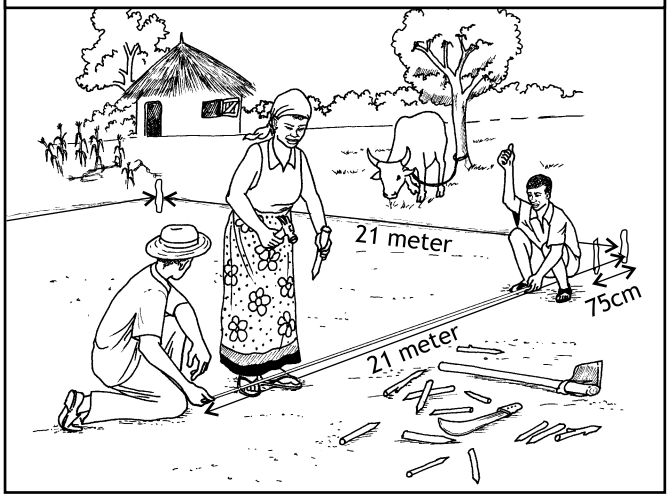
ESTABLISHING A PUSH PULL PLOT

We cleared the land, ploughed...

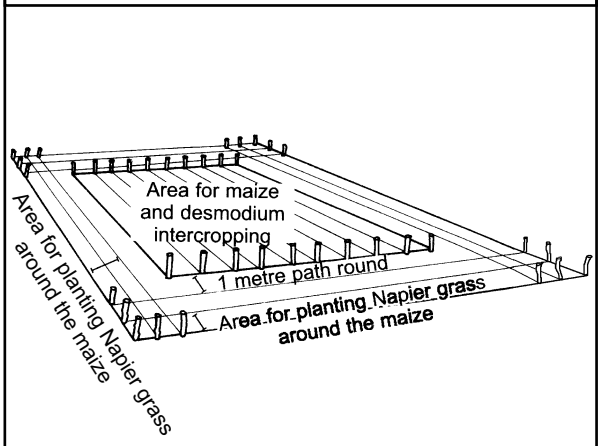


...and broke down the soil until it was fine.

Using pegs and ropes, we measured the first plot of 21m x 21 m. A Push-pull plot can be as small as 10m x 10m, or as big as any shamba, which you can divide into Push-pull plots of up to 50m x 50m.



We used a string to measure and ensured we had a square. We put pegs at opposite sides of the square at intervals of 75cm each When we finished marking the plot with pegs and strings it looked like this

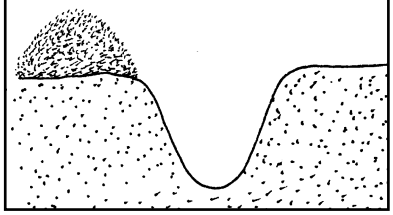


TO PLANT NAPIER GRASS

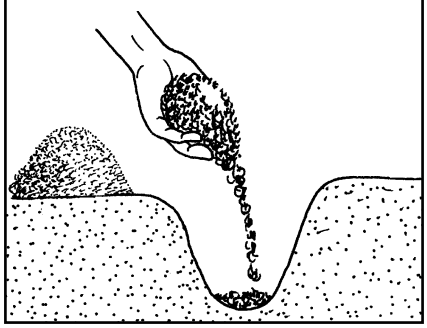
Dig hole ready for planting

Bana is the best variety of Napier grass for use in Push-pull. Follow these steps when planting Napier grass in your Push-pull plot.

1. Dig a hole at each peg on the border of the marked plot

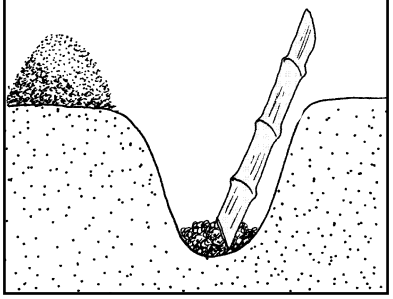


2. Apply one teaspoonful of triple super phosphate fertilizer or 2 hand-fulls of well decomposed farmyard manure in each hole.



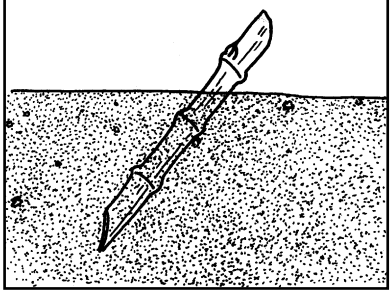
3

Place a three node cane into each hole at an angle of 30° to 40° all facing one direction.



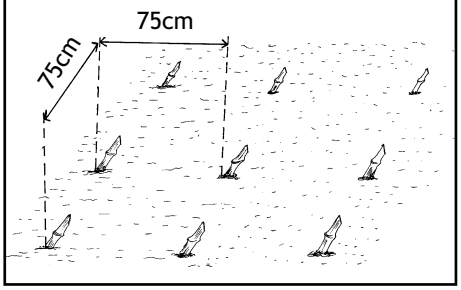
4

Cover with soil ensuring that two nodes of the cane are well covered.



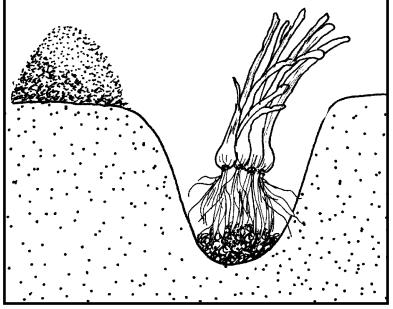
5

Repeat steps 1 to 4 for the second and third rows, ensuring that the rows are 75cm apart and 75cm between the plants within the rows.



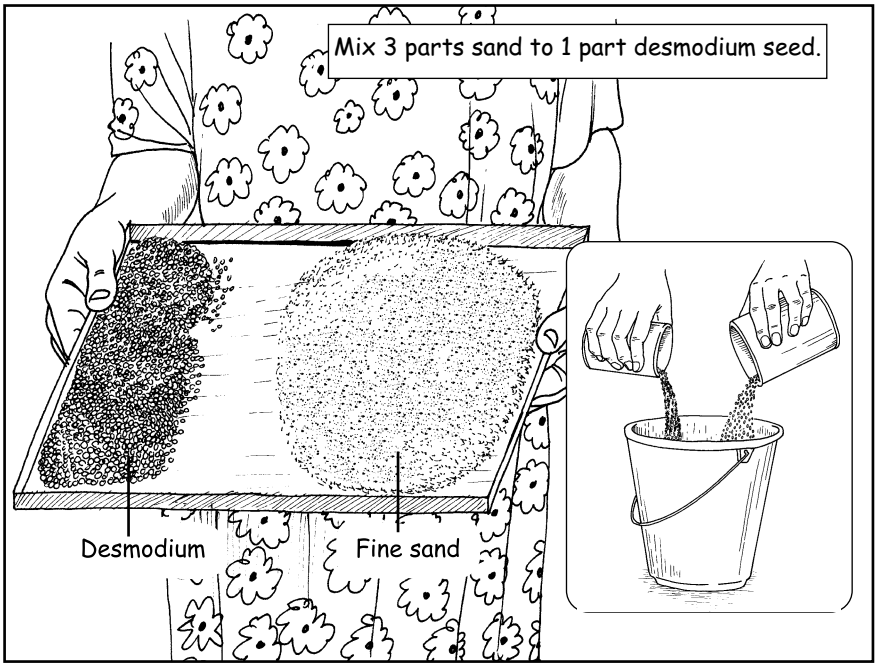
6

If you are using root splits, place them upright into the planting holes and cover with soil.

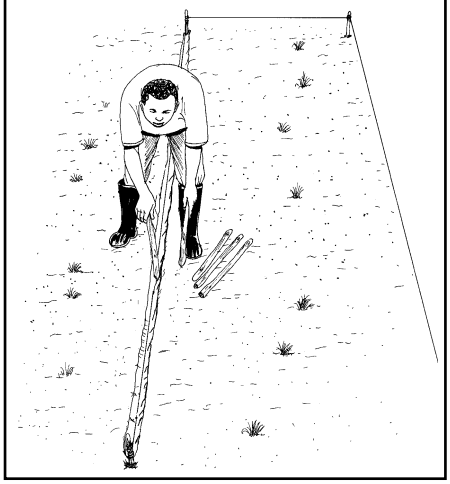


TO PLANT DESMODIUM

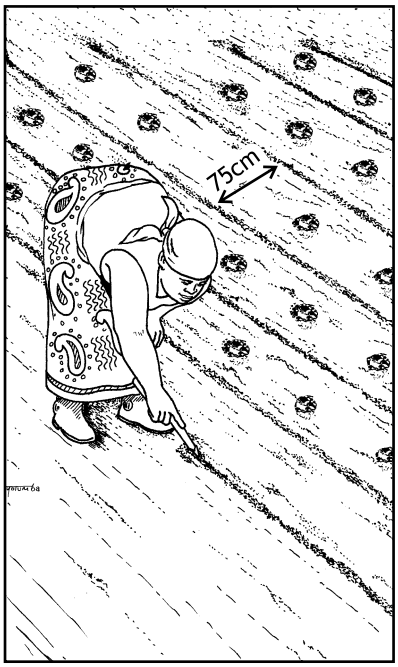
Next, we planted desmodium. We mixed 300g of desmodium seed with fine sand; one part desmodium to two parts dry sand



Drill fertilizer or farmyard manure along furrows, mix with soil using a stick, without covering or disturbing the furrow.



We drilled desmodium in the furrows at 75cm row-to-row distance

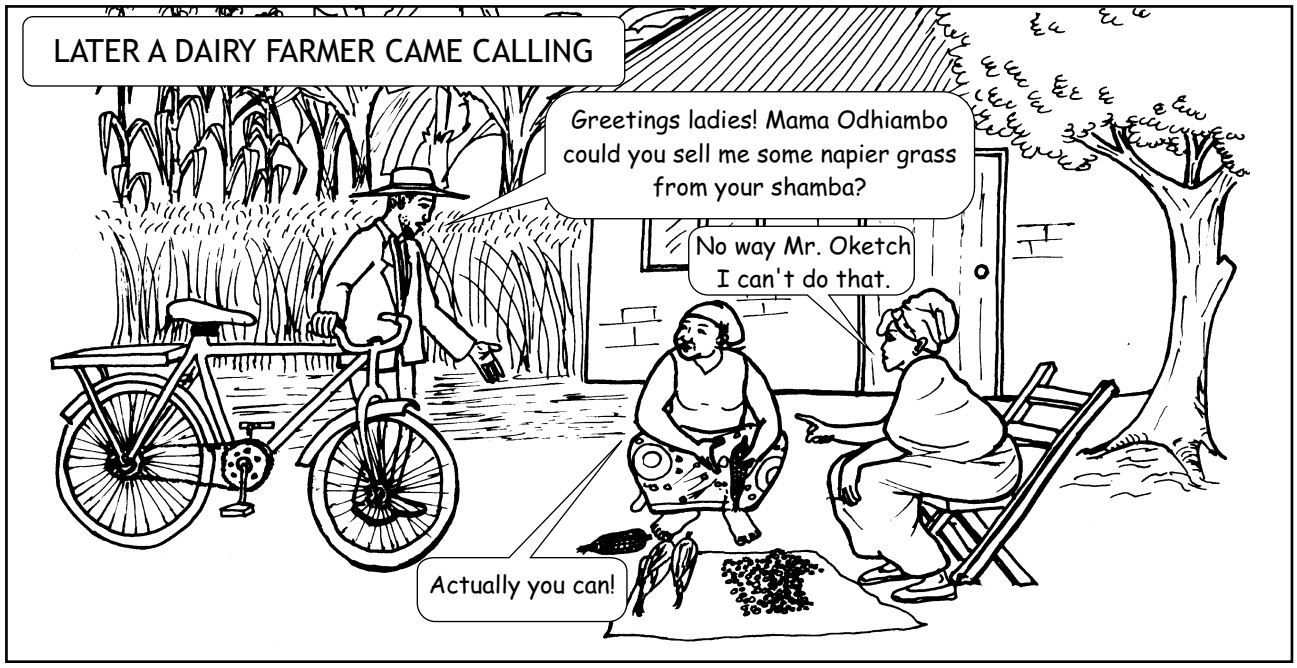


You can plant desmodium and maize

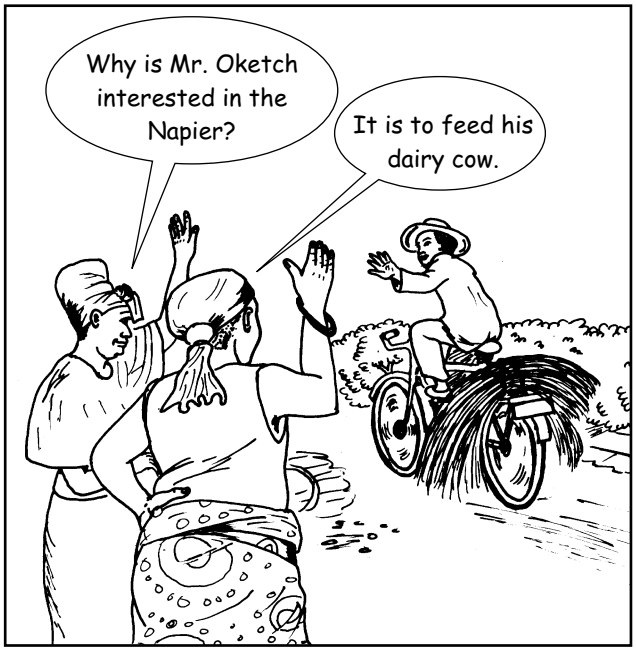
When I finally planted my maize crop I noticed that the crop was doing well

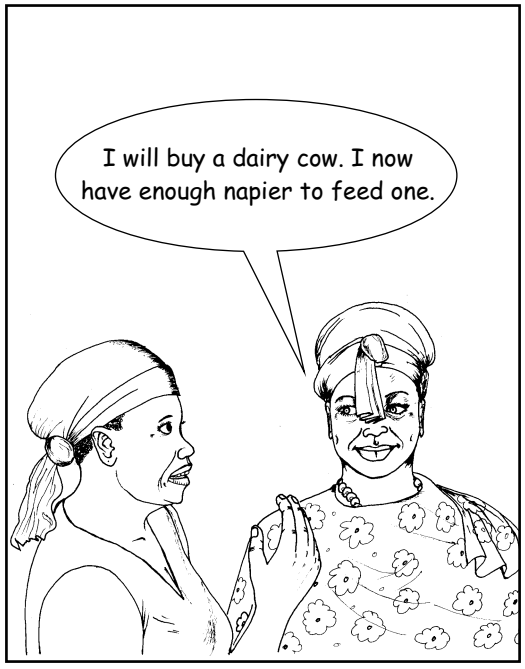
My first harvest was 3 bags.

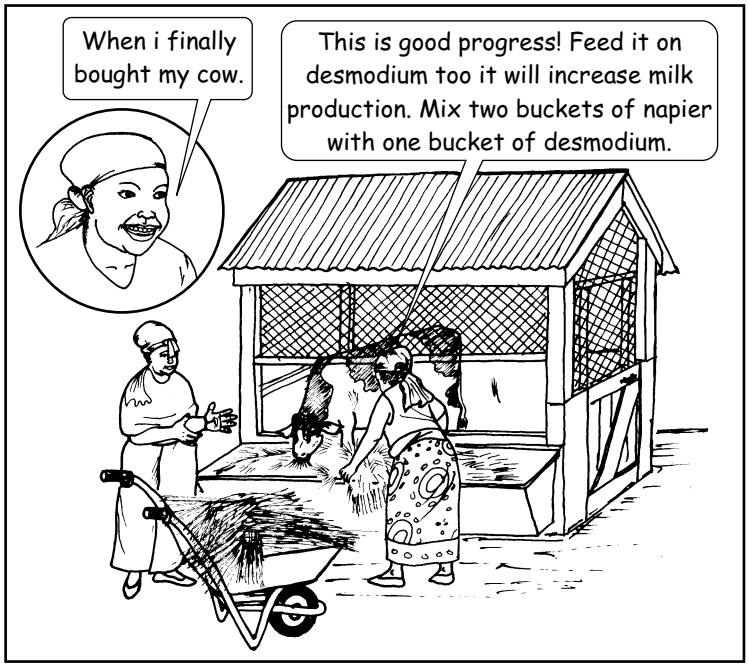
For the past three years I have harvested 15 bags each season.


LATER A DAIRY FARMER CAME CALLING
Greetings ladies! Mama Odhiambo could you sell me some napier grass from your shamba?
No way Mr. Oketch I can't do that.
Actually you can!

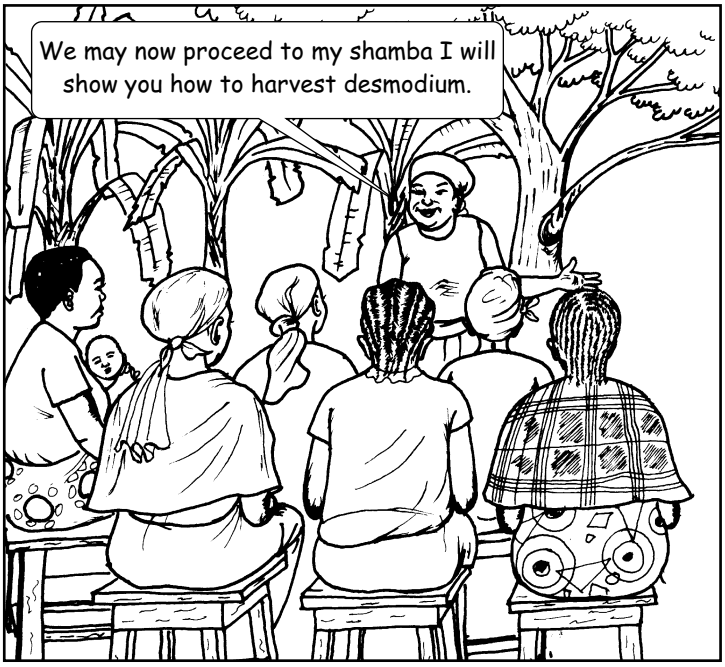

Just harvest the forage one at a time starting with the inner row. Give the harvested row time to grow before harvesting the next.


Why is Mr. Oketch interested in the Napier?
It is to feed his dairy cow.


I will buy a dairy cow. I now have enough napier to feed one.


When i finally bought my cow.
This is good progress! Feed it on desmodium too it will increase milk production. Mix two buckets of napier with one bucket of desmodium.

TWO WEEKS AFTER FEEDING THE COW ON DESMODIUM NAPIER MIX

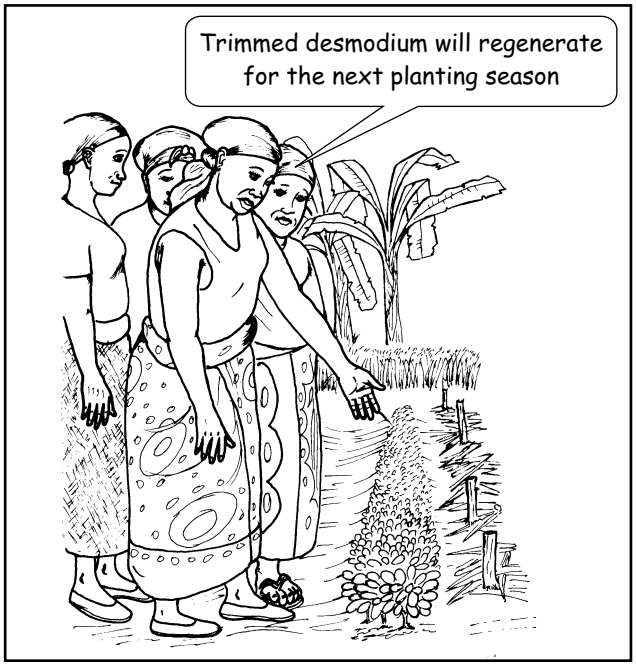


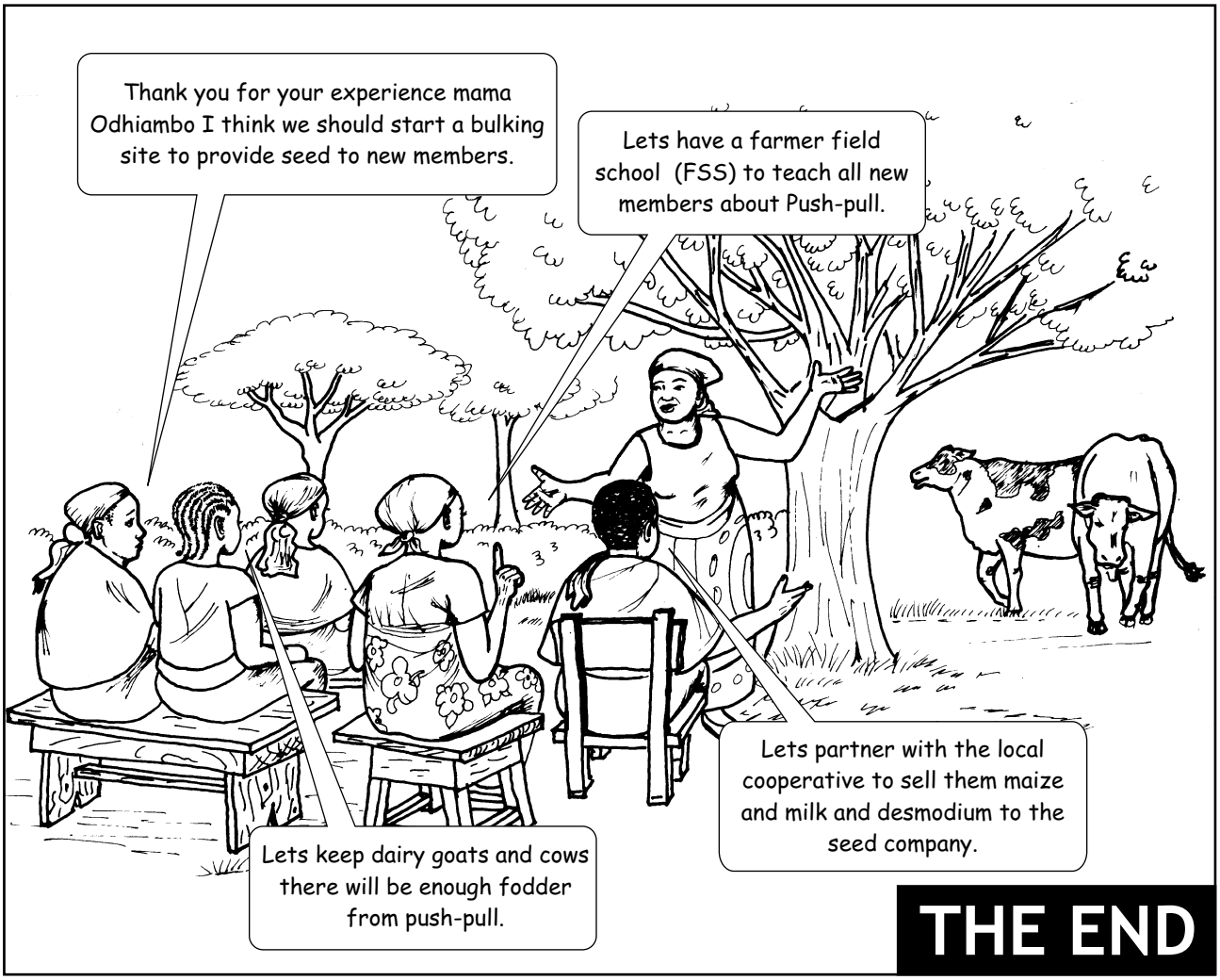
You harvest desmodium seeds for future use or for sale. Wear polthyne over your clothes to prevent the pods sticking to you.

Thresh desmodium seeds on a stone using an old rubber shoe

Winnow the threshed seeds

Harvest desmodium after harvesting maize from the field. During the first season do not harvest desmodium until it has established well





icipe's mission is to help alleviate poverty, ensure food security and improve the overall health status of peoples of the tropics by developing and extending management tools and strategies for harmful and useful arthropods, while preserving the natural resource base through research and capacity building.

Correct citation

ICIPE. 2007. Push-pull Changing Lives. International Centre of Insect Physiology and Ecology, Nairobi, Kenya.

ISBN ?? ???? ??? ?

Editors: Z. R. Khan, J Pitchar *(icipe, Kenya)* **Storyline, Illustrations, Design and Layout:** Skyward Marketing Ltd., *Nairobi, Kenya*

For more information, contact:

Director General
International Centre of Insect Physiology and Ecology (ICIPE)
P. O. Box 30772-00100 Nairobi, Kenya
Tel: +254 (20) 365 2000
Fax: +254(20) 3652997/98
E-mail: icipe@icipe.org

or

ICIPE-Mbita
P. O. Box 30, Mbita
Suba District, Kenya
Tel: +254 (57) 22217/18/95 Fax: +254(57)22190

or

Director
Kenya Agricultural Research Institute
P. O. Box 57811 Nairobi, Kenya
Tel: +254 (20) 4183301-20
Fax: +254(20) 4183344
E-mail: resourcecentre@kari.org

or

Centre Director
Kenya Agricultural Research Institute
P. O. Box 450
Kitale, Kenya
Tel: +254 (54) 20108

or

District Agricultural Officers