

- For 1 acre of land 1kg of desmodium seed is needed.
- Prepare the soil carefully so that it is as fine and clean as possible.
- Using a strong pointed stick, make a furrow in the middle of the rows where maize will be planted.
- Mix the desmodium seed with super phosphate fertilizer (about one handful of seed and two handfuls of fertilizer).
- If you cannot afford fertilizer, then mix seed with fine soil. Sow it into the furrows you made and cover with soil.
- Plant desmodium with the rains for maximum germination.
- Plant your maize in the field surrounded by Napier grass.
- After 3 and 6 weeks, trim the desmodium so that it does not overgrow in between the maize plants.
- Keep the field weed free so that the Napier has a start on the maize. The moths will like the larger Napier even more than the maize.

A well-planted field should look like this:



For more details on planting methods, please read the following ICIPE brochure:

"Grow more maize and Napier grass: make more money"

"Grow desmodium and stop striga"

## Advantages of adopting the 'push-pull' method

When you adopt the 'push-pull' strategy you will get:

- Increased maize yield
- Continuous supply of cattle feed from the Napier grass and the desmodium
- Nitrogen fixed into your farm by desmodium legume, so you save on fertilizer costs
- Soil protected from erosion as desmodium acts as a cover crop
- Soil retaining water as desmodium acts as a mulch
- Money from sale of desmodium seed at a good price
- Money from selling more milk from your cattle
- Saving on farm labour as you do not have to pull striga
- Maize protected from strong winds when surrounded by Napier grass

A farmer feeding their cow on Napier grass and desmodium harvested from 'push-pull' fields.



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# Use "Push-Pull" Strategy

and produce more maize  
by controlling stemborers  
and striga weed



Plant Napier grass on border and  
desmodium in between the rows  
of maize to control stemborers  
and striga weed

International Centre of Insect Physiology and Ecology (ICIPE), with Rothamsted-Research, UK, KARI and MOA, Kenya

Donor: Gatsby Charitable Foundation, UK

Visit website: [www.push-pull.net](http://www.push-pull.net)



Have you seen stemborer, and striga weed damage on your maize crop?



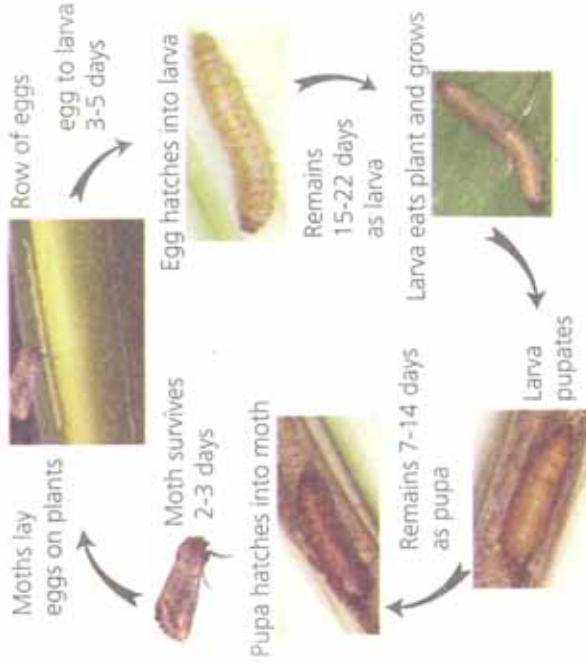
If you were to harvest 10 bags of maize, stemborer and striga cause a loss of 8 bags!



**How do stemborers get into your maize crop?**

Moths lay on maize plant. Eggs hatch into larvae that eat maize leaves and burrow into the stem as it grows

The stemborer hence eats the food the maize would use to fill the grains



**Life Cycle of Stemborers**



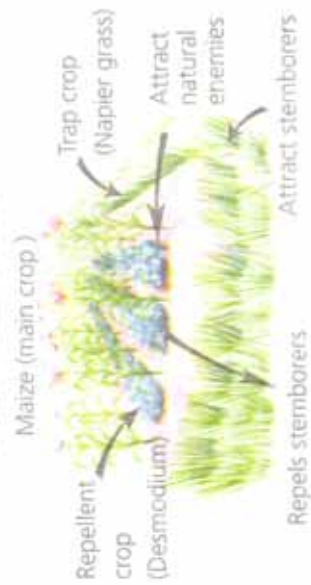
**How does the striga weed affect your maize?**

Striga weed puts its roots into the roots of maize plant. Striga weed takes the food the maize crop is trying to get from the soil before the maize uses it.

**What is "Push-Pull" Strategy?**

It is a cropping strategy to control both stemborers and striga weed. The farmers use Napier grass and desmodium legume for management of these pests in their maize fields. Desmodium is planted in between the rows of maize.

**"PUSH-PULL" SYSTEM**



It produces a smell that stemborer moths don't like. The smell "pushes" away the stemborer moths from the maize crop.

Desmodium also covers the surface of the ground between the rows of maize. It puts a chemical into the ground that stops striga weed from growing on maize.

Napier grass is planted around the maize crop as a trap plant. It is more attractive to stemborer moths and it "pulls" the moths to lay their eggs on it. But Napier grass does not allow stemborer larvae to develop on it. When the eggs hatch and the larvae bore into Napier grass, the plant produces sticky glue, which traps them in, and they die. So very few stemborer larvae survive, no striga grows and maize is saved in the 'push-pull' strategy!

**How to plant a "Push-Pull" field?**

1. Plant Napier grass (Bana variety is the best) in a border around the maize plot.
2. Plant at least three rows of Napier all around the maize field.
3. In the first year, plant Napier grass before the rains so that it has a start on the maize. The stemborer moths will like the larger Napier grass even more than the maize.
4. Get desmodium seeds from seed companies (Western Seed Co. or Kenya Seed Co) or your neighbour who has started growing it.