VETIVER SYSTEM

AGRICULTURE AND CROP PRODUCTION

THE VETIVER NETWORK (INTERNATIONAL)

The VETIVER SYSTEM in AGRICULTURE

Global applications for small medium and large landholdings

THE VETIVER NETWORK (INTERNATIONAL)

The principle

IMPROVES:

- yield through better soil structure and fertility
- moisture retention and water quality
- works with nature to reduce pesticides

Crop yield increase:

- On 6% slopes in Nigeria, results of trials over a 3 yr period using vetiver strips showed soil physical and chemical conditions improved for a distance of 20m above vetiver strips.
- Crop yields increased 11 – 26% for cowpea; 50% for maize under vetiver management.
- Soil loss and runoff water at the end of 20m runoff plots were 70% and 130% higher respectively in non-vetiver plots than vetiver plots.
- (Babalola *et al.* 2003).

Soil moisture retention

- Vetiver strips increased soil moisture storage by a range of 1.9% to 50.1% at various soil depths.
- **Eroded** soils on non-vetiver plots were consistently richer in nutrient contents than on vetiver plots. Nitrogen use efficiency was enhanced by about 40%.
- (Babolala *et al.* 2003).

In agriculture, vegetable beds produce more when vetiver is planted along borders (Thailand)

Vetiver mulch conserves moisture and improves soil fertility

Control section of banana plantation demonstration site:

(without vetiver, Gouloumbou, Senegal)

Same site : banana WITH vetiver hedge

With better humidity retention, production came 2 months earlier than control

Vetiver hedge as a windbreak protects seedlings (China)

A TAMARIND TREE

One year old Tamarind, circled with vetiver, Chiangrai Research Station, Thailand.

Tree of the same age, without help from vetiver.

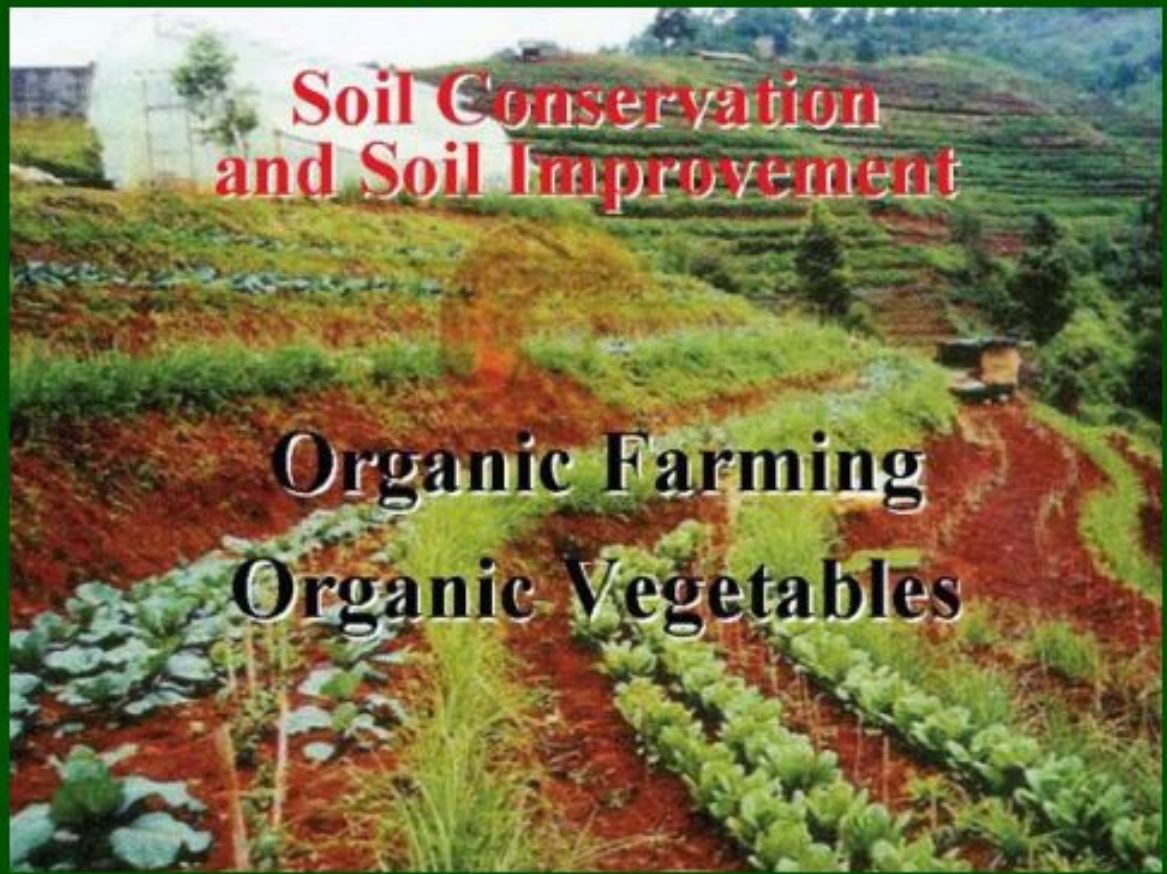
Dune invasion of banana plantation (Les Niayes, Senegal)

Before. Note condition of tree

Dune stabilized with one vetiver hedge

Preparation of a raised-bed banana plantation using vetiver to reduce root disease and excessive soaking during heavy rains (Casamance, Senegal)

VS used in organic farming
(Thailand)

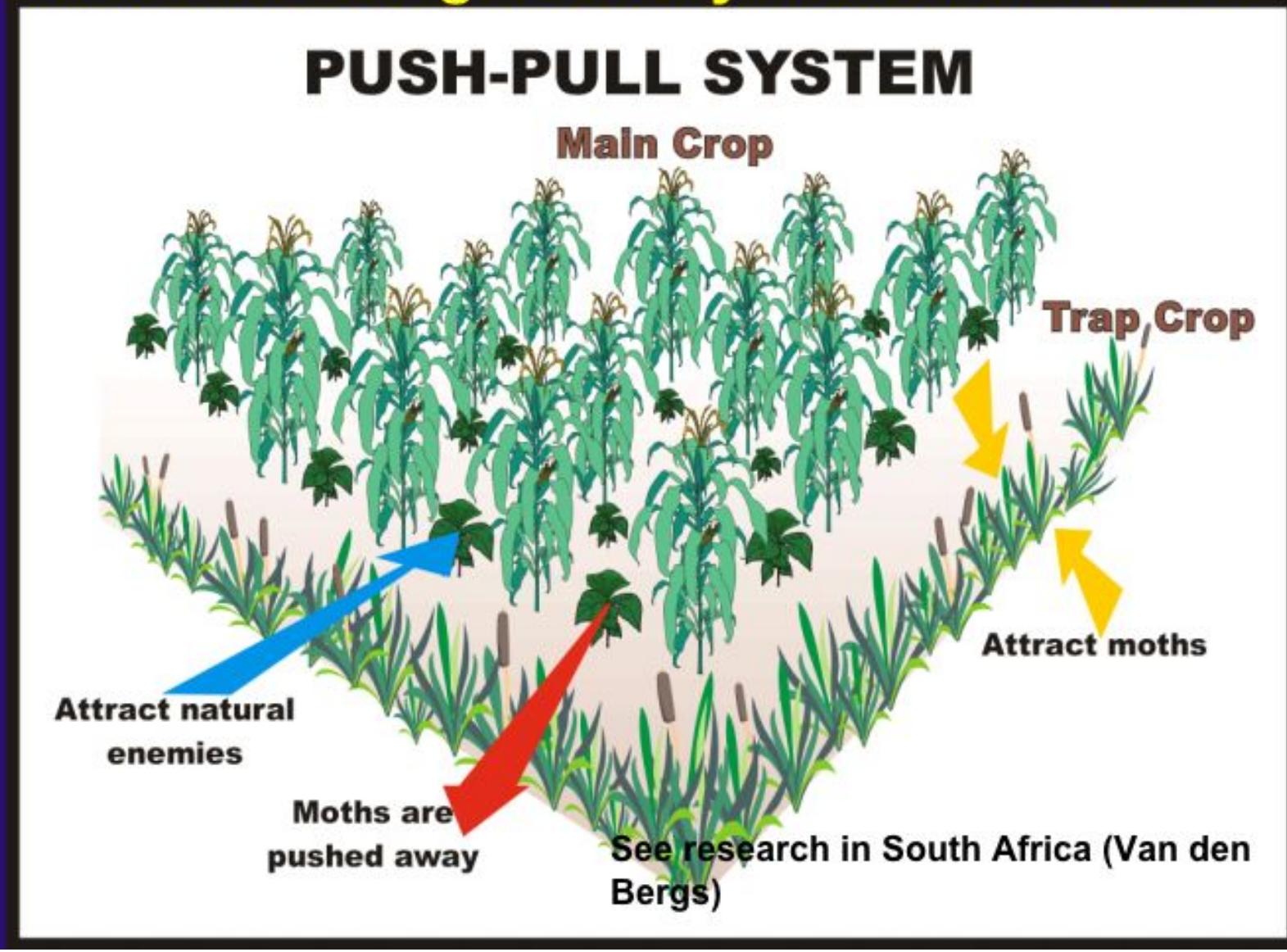


VS protects this maize field in Ghana in more ways than one:

- As soil & moisture conservation measure;

- As host to stem borers whose larvae die when associated with vetiver

Habitat management system with Vetiver



Stem bore larvae dropping from vetiver leaves, unable to survive

VETIVER PLANTS FORT SALE!!!!!

Vetiver can be sold as bare rooted planting slips or in pots (polybags). Gross income per ha can exceed US $10,000 per ha. Thus there is a real incentive to have vetiver used for non agricultural applications. Vetiver plant production as a farm crop has great potential.

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Vetiver makes a good fodder when managed correctly and harvested when the leaves are young. In periods of drought vetiver may often be the only forage available

Nutritional values of Vetiver, Rhodes & Kikuyu grass in Australia

Analytes	Units	Vetiver grass	Vetiver grass	Vetiver grass	Rhodes	Kikuyu
		Young	*Mature*	*Old*	*Mature*	*Mature*
Energy (Ruminant)	kCal/kg	522	706	969	563	391
Digestibility	%	51	50	-	44	47
Protein	%	13.1	7.93	6.66	9.89	17.9
Fat	%	3.05	1.30	1.40	1.11	2.56
Calcium	%	0.33	0.24	0.31	0.35	0.33
Magnesium	%	0.19	0.13	0.16	0.13	0.19
Sodium	%	0.12	0.16	0.14	0.16	0.11
Potassium	%	1.51	1.36	1.48	1.61	2.84
Phosphorus	%	0.12	0.06	0.10	0.11	0.43
Iron	mg/kg	186	99	81.40	110	109
Copper	mg/kg	16.5	4.0	10.90	7.23	4.51
Manganese	mg/kg	637	532	348	326	52.4
Zinc	mg/kg	26.5	17.5	27.80	40.3	34.1