Reaching the most vulnerable: Sustainable sweetpotato vine preservation in dry land areas of Malawi

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Status of sweetpotato in Malawi

- Sweetpotato is one of the most widely grown crop

- It becomes a major food source in times of maize shortage with increasing contributions to the food basket

- Sweetpotato production expanded dramatically in the 1990s due to recurrent droughts and increased fertiliser prices which affected maize production

- Increased sweetpotato production & productivity facilitated by Government (release of variety Kenya [SPN/0]); IITA (vine multiplication) and NGOs (mass vine dissemination)

- Currently more efforts on seed systems by government, CIP and many other developmental partners

Table 1. Sweetpotato production trends in Malawi

Year	Area (ha)	Production (MT)	Yield (t/ha)
1994/95	60,701	317,714	5.23
1995/96	68,804	596,469	8.66
1996/97	91,884	860,085	9.36
1997/98	136,709	1,447,994	10.59
1998/99	140,904	1,561,345	11.08
1999/20	166,251	1,966,833	11.83
2000/01	**190,947**	**2,534,896**	**13.27**
2001/02	**219,766**	**2,783,307**	**12.66**
2002/03	112,287	1,444,087	13.43
2003/04	147,000	1,573,000	11.00
2004/05	122,000	1,041,790	10.40
2008/09	135,558	2,313,525	17.07
2009/10	164,255	2,340,286	14.25
2011/12	210338	3,786,086	18.00

FAO/FEWS 1995-2012

Sweetpotato for crop diversification

Government is promoting crop and diet diversification as:

Maintaining good caloric intake in the country has proved a challenge in some seasons due to adverse climatic effects, declining soil fertility, small landholding sizes, and high levels of poverty and under nutrition

Sweetpotato- one of the candidate crop for crop diversification

Main challenges affecting sweetpotato production

Mostly rain fed which is 4 to 5 months a year; shortening of rainy season and extended dry season >7months

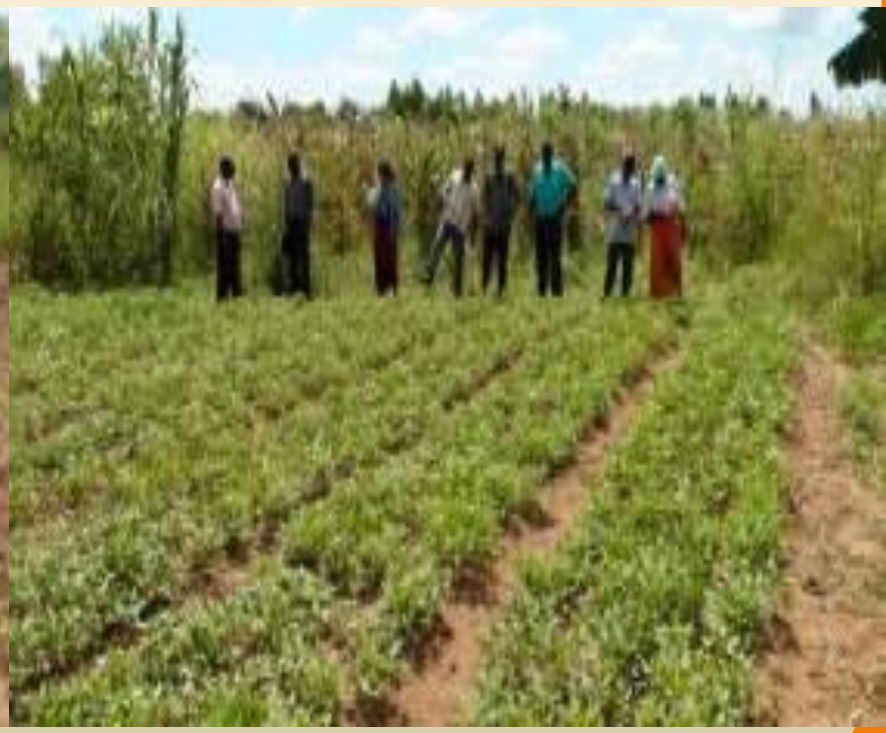
Sweetpotato normally planted late due to:

Lack of disease free planting materials at planting time: **farmers used to wait for re-growths from previous fields to sprout to be used as planting material for the next season**

Dependency on family labour: **farmers plant maize and other crops first which do not do well when planted late**. Farmers have realized that they still get reasonable yield from sweetpotato even when planted late.

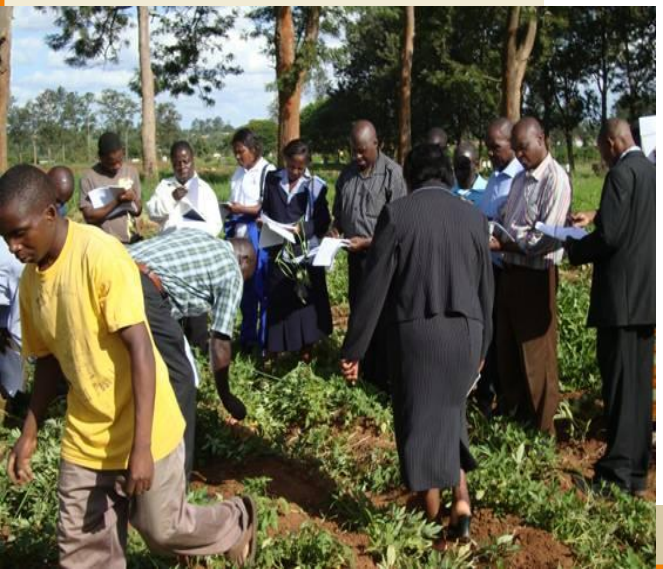
Importance of an effective seed system

Effective sweetpotato seed system that ensure farmer access to sufficient quantities of vigorous and disease free planting material for timely planting in the rainy season is the basis for increased sweetpotato productivity



Successes of CIP led decentralised vine multiplication in Malawi

Founded on training and building strong partnerships



Sweetpotato Project

Training

-NGOs : CU-Dedza & Phalombe, CADECOM-Chikwawa, MVPs-Zomba
-Extension-DAES : Dedza, Phalombe & Chikwawa
-DARS

Training

Farmers/groups

(secondary multipliers)

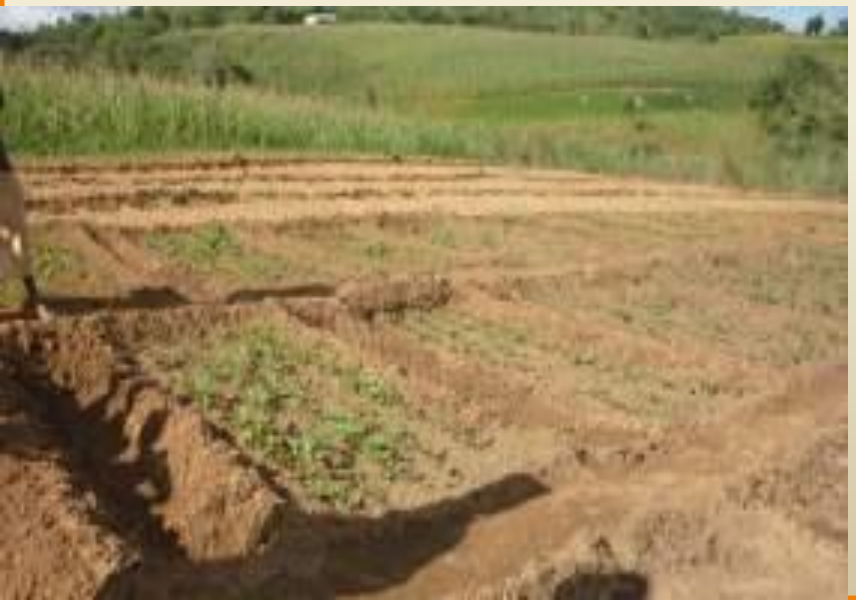
Training

Farmers/groups

(Tertiary multipliers or Beneficiaries)

More Malawians have skills and knowledge on OFSP and its importance as a source of Vitamin A

Farmers trained on both rapid and conventional multiplication methods



Target farmers with water source for DVMs

Farmers surrounding DVMs benefit

To note:

Farmers with water sources have other alternative crops to grow

And are a target for many other projects

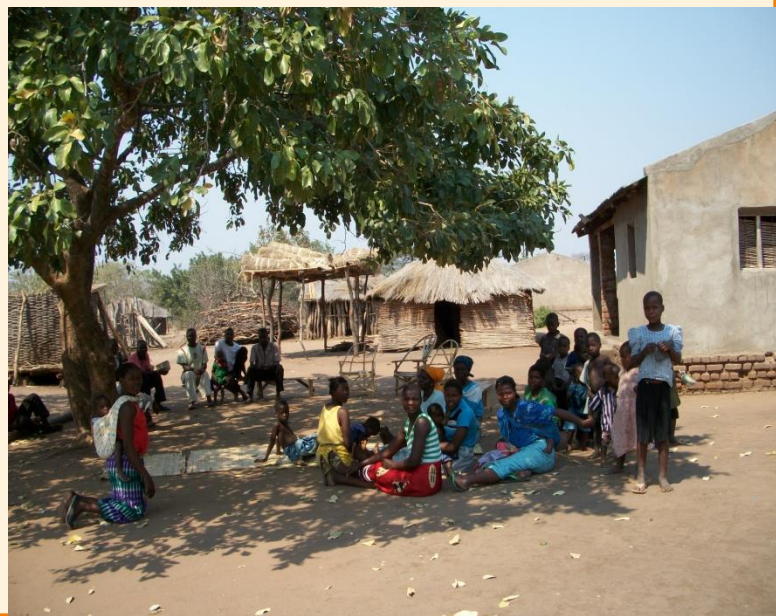
Status of the most vulnerable

In dry areas- no reliable water source to maintain vines

Sweetpotato has the potential to contribute much more to alleviate hunger and nutrition in such areas if supported

- Prolonged dry seasons, farmers are unable to access sweetpotato planting material from their previous field crop

- Problematic areas include flood prone areas



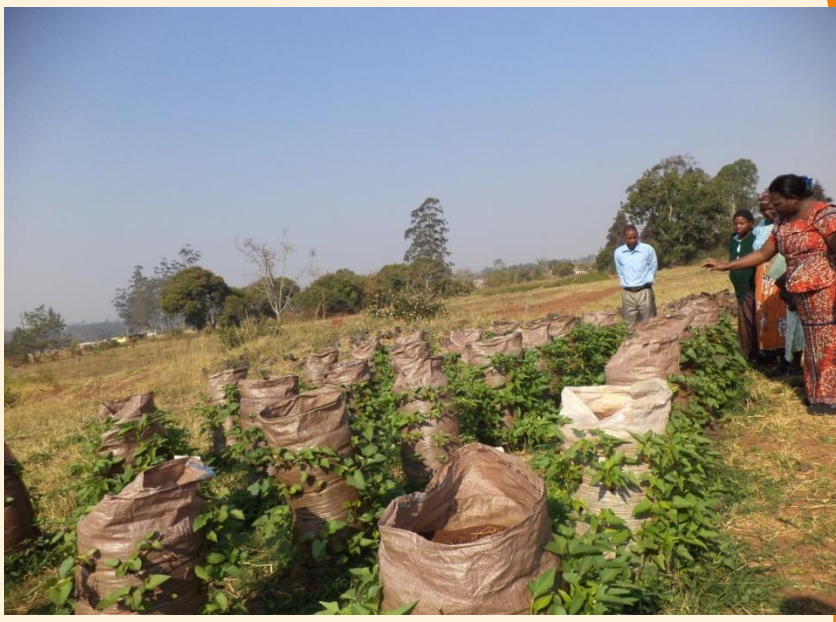
Sweetpotato vines 'in sacks'

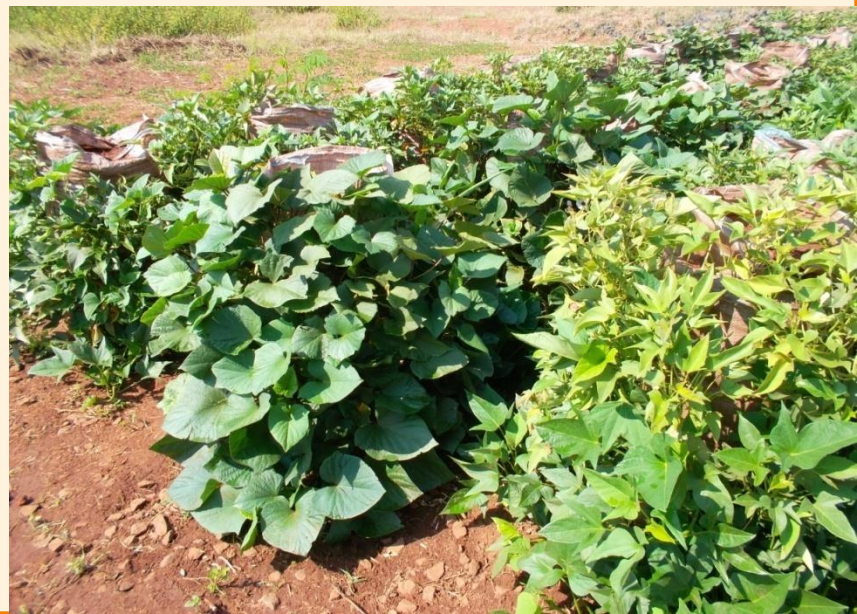
•Need for technologies suitable for the most vulnerable farmers to access and maintain their own planting vines.

•Such technologies facilitate flexibility in planting and harvesting dates which has been a challenge due to labour bottle necks.

An innovative way of ensuring the availability of planting material

Involves planting vines for multiplication in locally available resources such as used plastic and metal household ware such pails and basins, old sacks and baskets made of bamboos





Vines 'in sacks': irrigation regime

In polythene sacks; 55 holes for a 50kg size bag

Different varieties

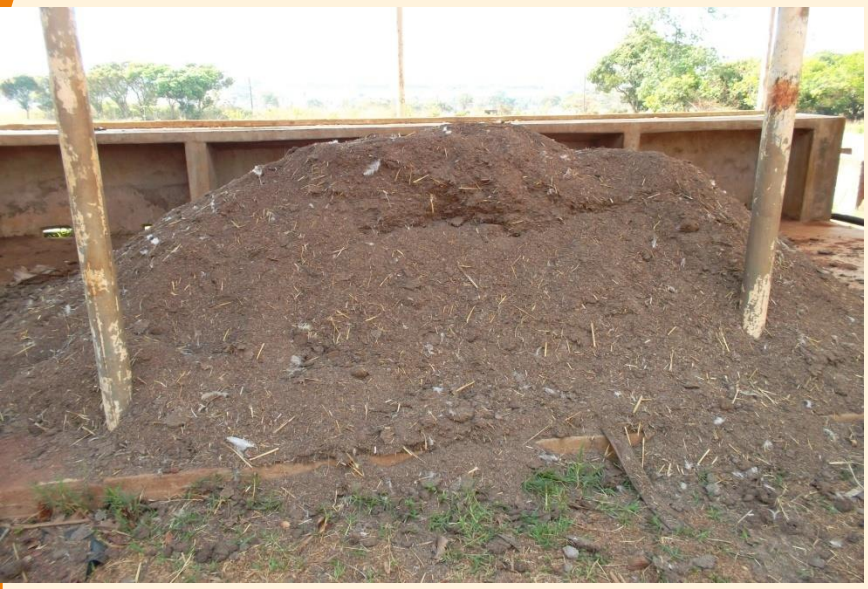
Different water regimes and watering times

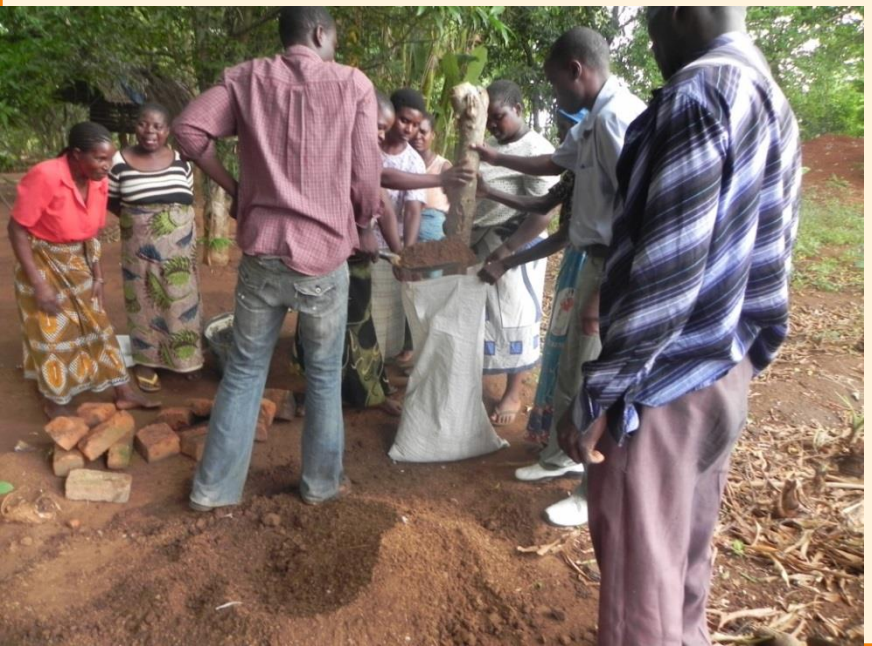
5 Litres; alternate days
2 Litres: 2x/day
3 Litres; 2x/day

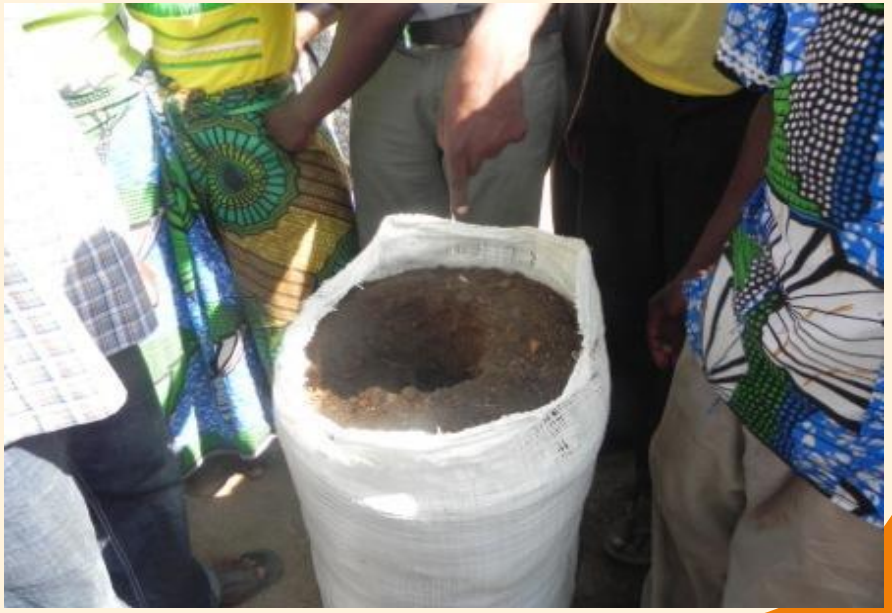
Done at Bvumbwe research station where mean maximum temperatures are 25^0 and mean min is 21^0 Celcius

Optimum irrigation regime: two times a day of three 3 Litres of water at each irrigation time (morning and evening).

Process







Advantages

- The method promotes usage of kitchen waste water
- Leaves for vegetables in dry season where greens are scarce
- Less disease and weevil incidence
- Very little weeding required, only around the sacks thus less labour used

Advantages...

- Ideal for children, the aged and physically challenged persons as it is done at homesteads and use waste water

- Can start with one sack and increase the number to at least 6 sacks assuming one started in March to May for Nov/Dec planting. In warm areas, the number of sacks could be high due to shortened ratooning period.

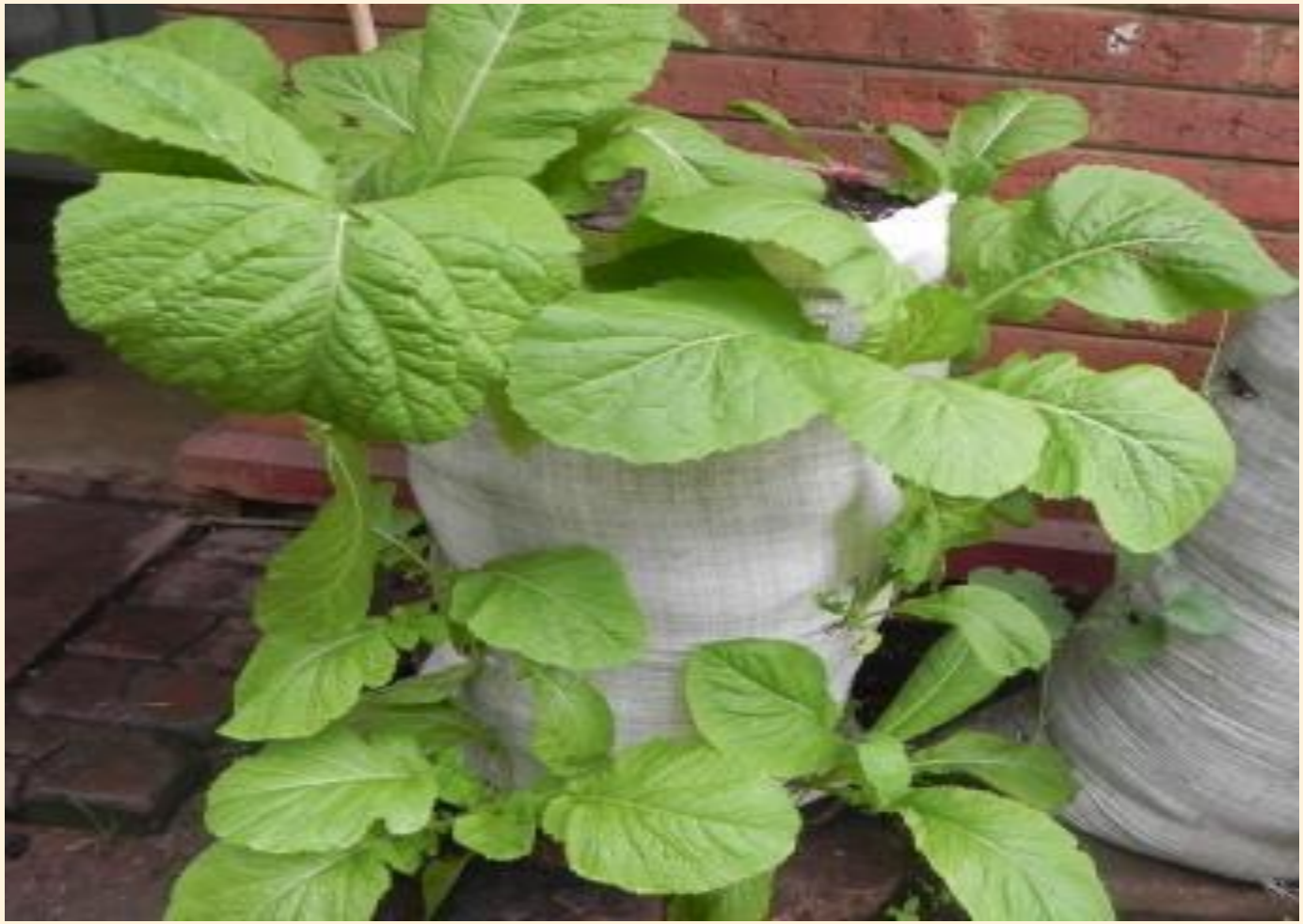
- The 6 sacks produces 330 vines on average of 25 to 30 cm long and enough to plant 16.5 ridges of 6m x 0.9m long for a 200kg of sweetpotato roots of improved varieties

- It allows early and staggered planting for staggered harvesting and therefore more and prolonged food availability at household level

Conclusion

Need to look at alternative materials for vine multiplication

Can be used to complement triple S and net tunnels



Thank you very much for your attention