

# Value Chain Analysis for Orange-fleshed Sweetpotato in Malawi



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# Introduction

- Sweet-potato remains a very important calorific and economic value chain commodity for the majority of Malawian farmers.
- While there have been efforts to improve productivity through the introduction of improved varieties, a big gap exists in knowledge of the value chain characteristics and linkages.



## KADYABWERERE

Country of origin: Malawi  
 $\beta$ -carotene content: 8900  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 35.0 t/ha  
Maturity period: 4-5 months



## ANAAKWANIRE

Country of origin: Seed from Uganda  
 $\beta$ -carotene content: 5500  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 25.0 t/ha  
Maturity period: 5-6 months



## MATHUTU

Country of origin: Malawi  
 $\beta$ -carotene content: 2900  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 25.0 t/ha  
Maturity period: 4-5 months



## KAPHULIRA

Country of origin: Malawi  
 $\beta$ -carotene content: 3200  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 35.0 t/ha  
Maturity period: 3-4 months



## ZONDENI

Country of origin: Malawi  
 $\beta$ -carotene content: 9000  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 8.0 - 16.0 t/ha  
Maturity period: 5-6 months



## CHIPIKA

Country of origin: Malawi  
 $\beta$ -carotene content: 3500  $\mu\text{g}/100\text{g}$  fwb  
Root yields: 35.0 t/ha  
Maturity period: 4-5 months

# Supporting the OFSP value chain

In Malawi, CIP is supporting:

- Farmers access to new varieties
- Strengthen planting material supply chain
- Sustainable production
- On-farm root storage
- OFSP nutrition
- Root preparation and processing
- Partnering for scale
- Capacity strengthening

# Objectives of the study

To analyze

- The planting material supply system
- The value chain and functions of actors
- Distribution channels
- Constraints and opportunities

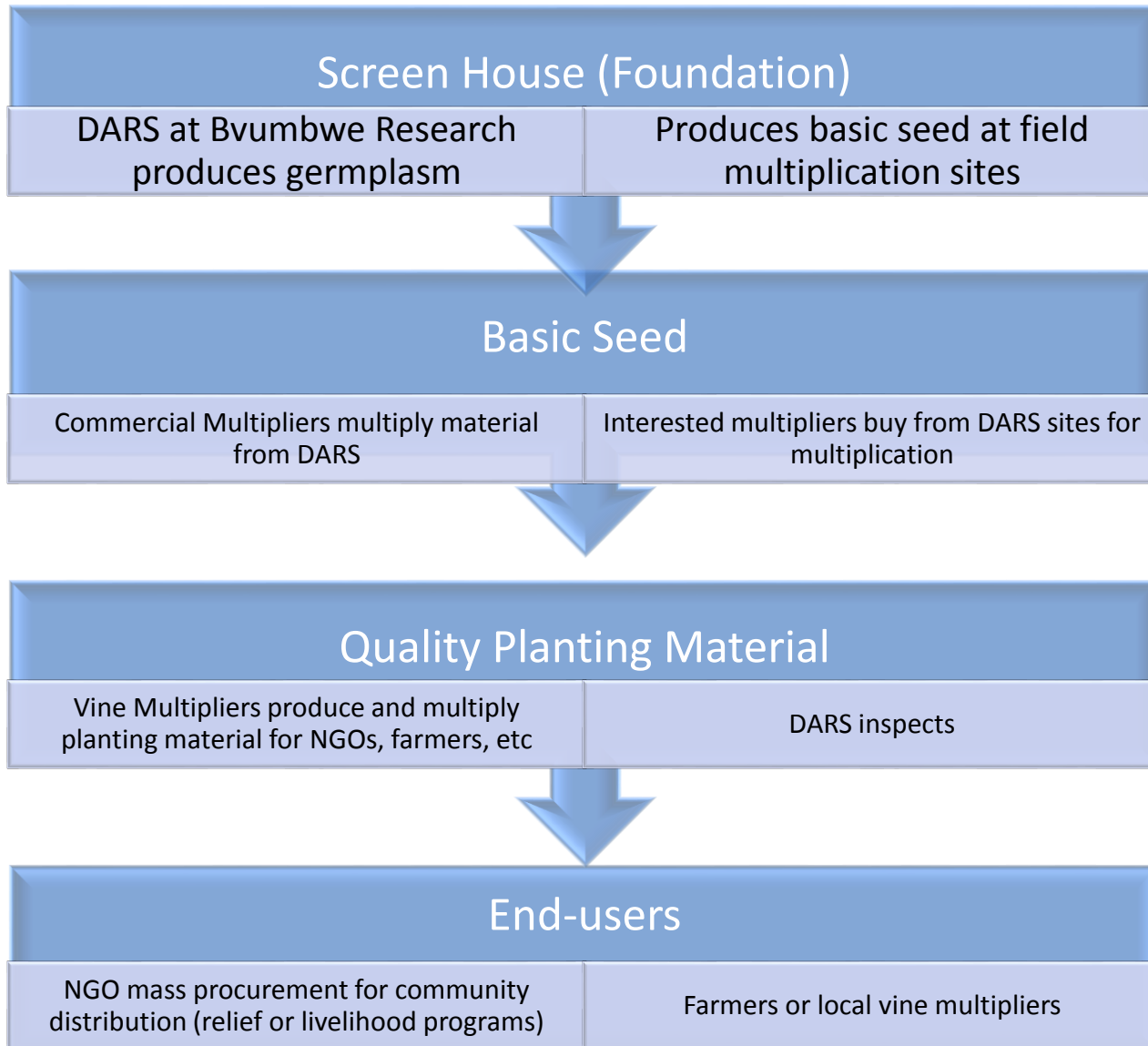


# Methods

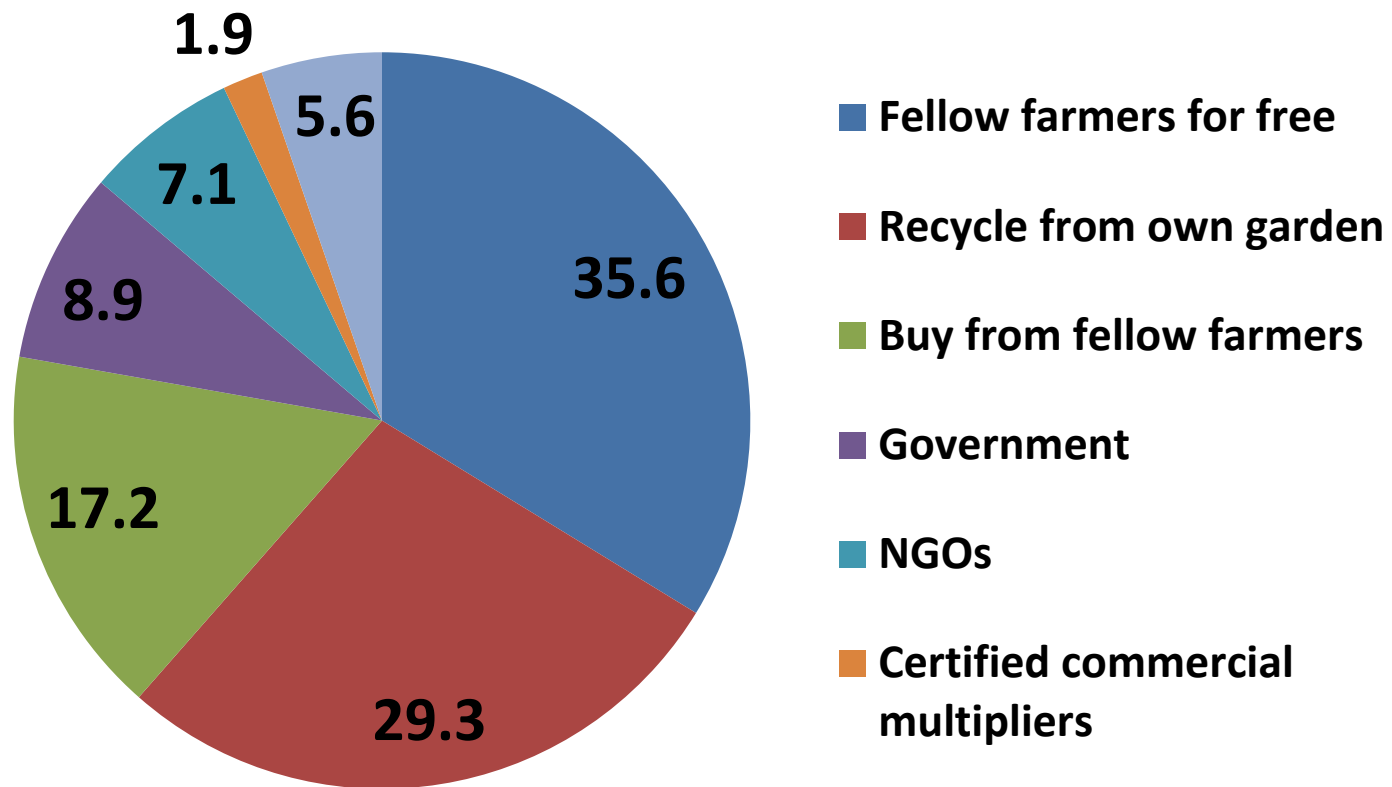
District	Sampling Level			Value Chain Actor			
	EPAs	Villages	Markets	Farm Households	Traders	Consumers	Vine Multipliers
Mchinji	4	23	7	62	28	52	2
Lilongwe	4	23	8	76	38	32	4
Dedza	4	18	8	48	40	45	3
Ntcheu	4	8	8	49	33	50	2
Balaka	4	13	4	48	25	44	3
Machinga	4	19	8	60	20	10	1
Mangochi	4	18	14	47	16	35	1
Blantyre		0	1	0	3	0	0
<b>Total</b>	28	122	58	390	203	268	16

Complemented with focus group discussions and key informant interviews

# Seed System in Malawi



# Farmers' sources of planting material

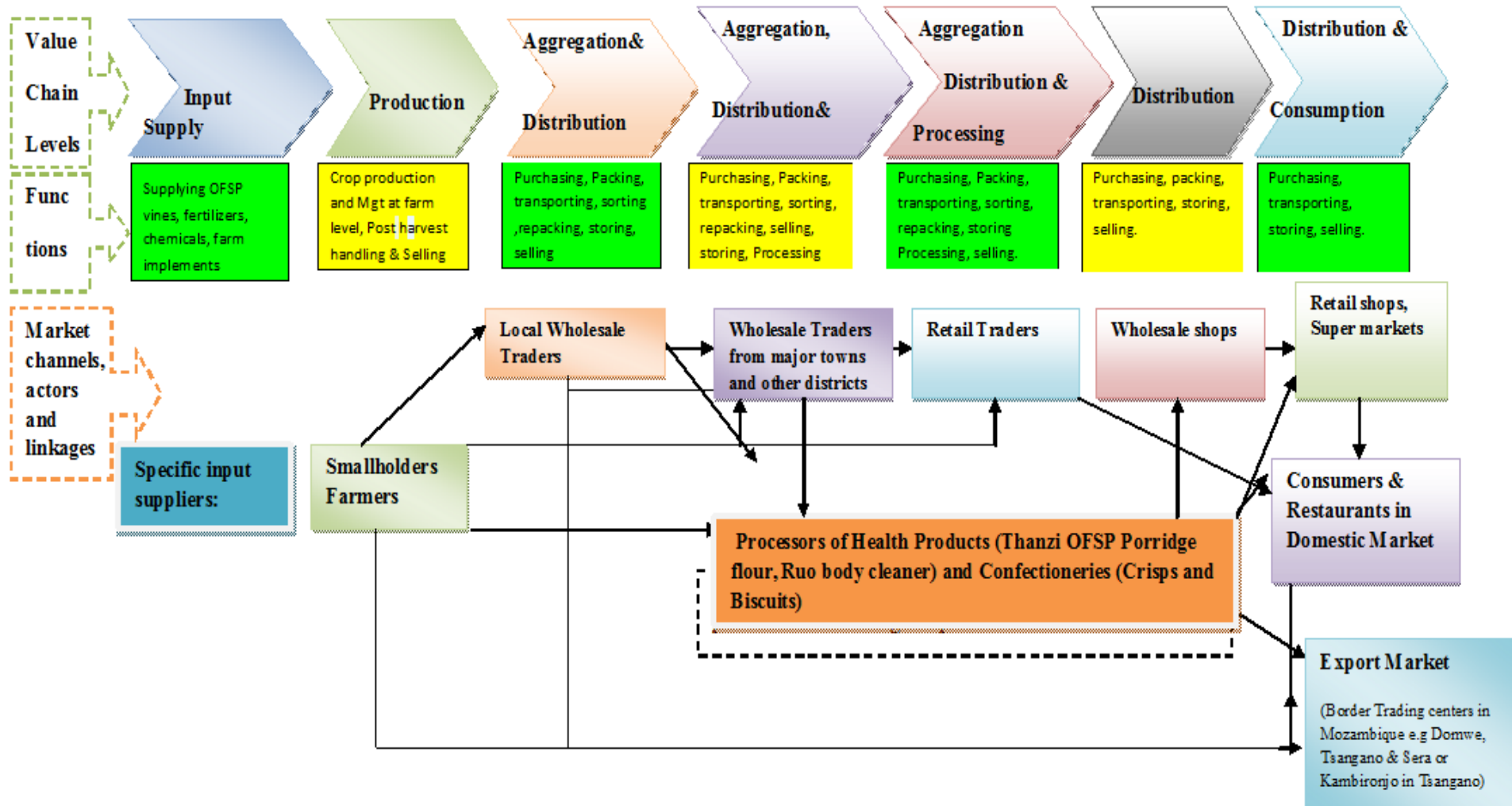




# Challenges to vine multiplication

- Supply response for commercial vine multipliers depends largely on the ad hoc demand by NGOs for relief programs.
  - > explore crop-livestock systems?
- Existing multipliers have limited access to clean planting material for multiplication and need training on producing disease free planting material.
- Multipliers don't keep records on costs-benefits.
- NGOs place tenders and buy cheap uncertified material.
- No official quality control system for sweet potato planting material.

# Sweet potato root value chain

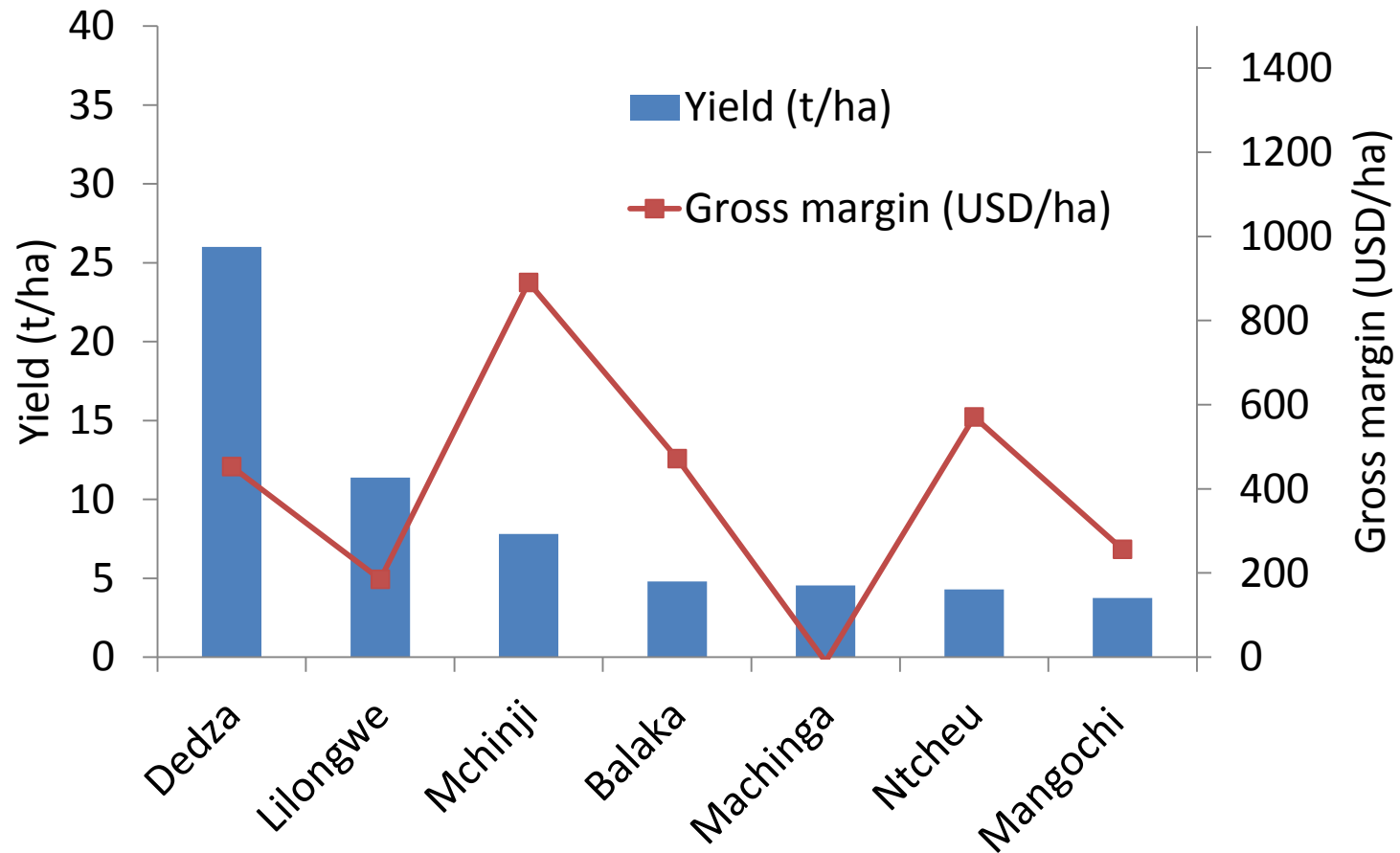


It	Value Chain Actors	Challenges
1.	<b>Input Suppliers</b> e.g. agro-dealers and multipliers	<ul style="list-style-type: none"> <li>• Access to credit facilities for bulk purchases which would eventually reduce the price paid by farmers.</li> </ul>
2.	<b>Producers</b> e.g. Smallholder farmers	<ul style="list-style-type: none"> <li>• Access to clean SP/OFSP vines.</li> <li>• Access to guaranteed market or market information.</li> <li>• Lack of collective marketing among famers as such local traders take advantage and dictate low farm gate prices.</li> <li>• Seasonality and perishability of the crop.</li> <li>• Lack of good storage technology for SP/OFSP.</li> </ul>

It	Value Chain Actors	Challenges
3.	<b>Local Traders</b> /stockists i.e. Aggregators	<ul style="list-style-type: none"> <li>● Lack of access to credit facility to purchase large quantities.</li> <li>● Lack of access to good transportation.</li> <li>● Low or no supplies from farmers in lean months of September, October, November, January which pushes up prices to consumers.</li> </ul>
4.	<b>Wholesalers and bulk distributors</b>	<p>Same as local traders, plus:</p> <ul style="list-style-type: none"> <li>● Lack of storage facilities to enhance regular supply to processors.</li> <li>● Lack of promotion for OFSP to improve production to ensure adequate and sustainable supply of sweet potato throughout the year.</li> </ul>

It	Value Chain Actors	Challenges
5.	<b>Retailers</b>	<ul style="list-style-type: none"> <li>● Lack of capital to buy in bulk.</li> <li>● Lack of good product handling techniques.</li> </ul>
6.	<b>Local Processors</b> e.g. cooking/boiling /roasting at local and urban markets.	<ul style="list-style-type: none"> <li>● Lack of or poor quality product packaging.</li> <li>● Poor capacity to develop new forms of acceptable OFSP products.</li> <li>● Inadequate knowledge of the diverse products they can make from OFSP roots</li> </ul>
7.	<b>Industrial Processors</b> E.g. adding value through changing the states of SP/OFSP tubers.	<ul style="list-style-type: none"> <li>● Lack of access to credit for procurement of processing facilities.</li> <li>● Lack of storage technology for preservation of roots.</li> <li>● Lack of good marketing strategies.</li> <li>● Inadequate supplies.</li> </ul>

# Producers yields and gross margins



# Root marketing

- 74% to informal fresh root markets (homesteads, community markets, roadside).
- Less than 1% to commercial or industrial processors (Universal Industries Ltd and CN&F Ltd)
- Main road side markets and urban outlets provide premium prices for fresh roots for middle traders, retailers and hawkers.
- Sweet potato is usually bought and sold on the basis of volume, rather than weights.

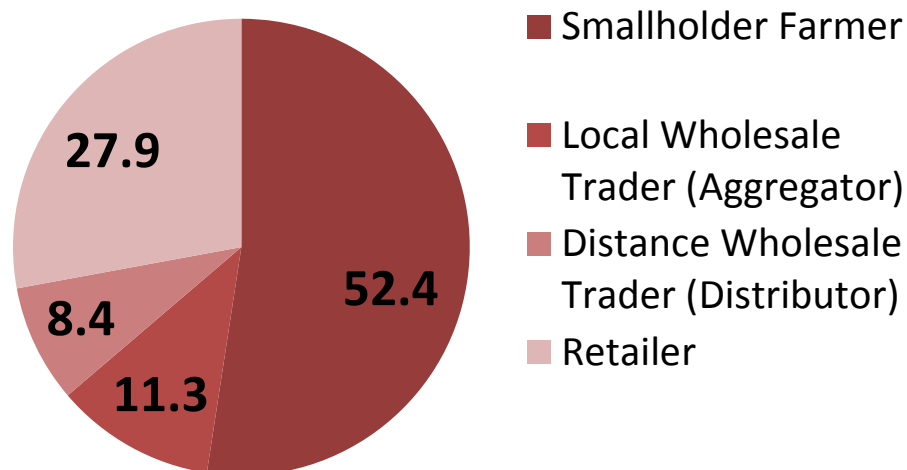
Selling of cooked sweet potato is usually done by women who sell in markets, by the road side and in schools. Selling of roasted sweet potato is usually done by men especially in markets.



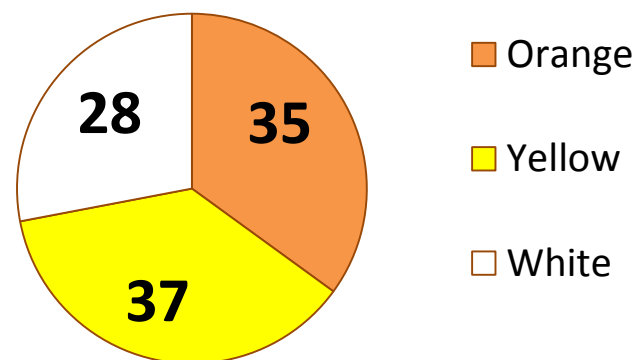
## Root prices received by different actors

Primary producers	USD 0.23 kg <sup>-1</sup>
Collecting traders or aggregators	USD 0.28 kg <sup>-1</sup>
Wholesalers	USD 0.32 kg <sup>-1</sup>
Retailers	USD 0.45 kg <sup>-1</sup>

### Value added share by Actor (%)



### Sweet potato flesh colors in the markets (%)





# Consumers consumption preferences

1. boiled with skin
2. roasted in sand, soil or ash
3. Futali (Peeled, boiled with groundnut flour)
4. Fried chips
5. Raw roots
6. *Makaka* (Peeled and dried)
7. Thobwa (sweet beer) from sweet potato flour
8. Pulp from sweet potato flour blended with maize flour



Locally Processed and Sun dried sweet potato (*Makaka*) in Sharp Valley, Ntcheu district. (photo credit TCP Ltd)

<b>Consumers at the markets (n=278)</b>	<b>%</b>
Are aware of OFSP existence	93.2
Buy SP as fresh roots (unprocessed)	76.1
Prefer OFSP over other varieties	72.8
-> because of better taste	75.6
Are aware of the nutrition value of OFSP	44.6

# An approach to strengthen the value chain should combine...

- 1) dissemination of OFSP information and extension services to men and women farmers
- 2) investments in vine multiplication and dissemination of OFSP
- 3) enhancing nutrition knowledge on the benefits of OFSP
- 4) providing business development support for scalable processed products (flour, juice, body cleaner, dried chips, biscuits, crisps and sweet-beer)
- 5) train traders, wholesalers and retailers on the segregation of orange-fleshed roots in the markets
- 6) Promotion of OFSP irrigated winter production in 'hotspot' areas (Balaka, Machinga, Mangochi) to ensure year-round supply to processors