

# SOURCES AND TYPES OF BANANA PLANTING MATERIALS USED BY FARMERS IN UGANDA AND TANZANIA

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**Background**

The information summarised in this report is from a section of data collected for an IITA led project: ‘Improvement of Banana for Smallholder Farmers in the Great Lakes Region of Africa - Breeding Better Bananas’. The baseline data collection was conducted in two regions in Uganda – Central and Western and 4 regions in Tanzania – Arusha, Kilimanjaro, Kagera and Mbeya. One district was selected in each region, namely Luwero and Mbarara in Uganda and Meru, Moshi, Bukoba and Rungwe in Tanzania respectively. A mixed method approach was used to get a more complete and comprehensive understanding of the target population environments from a gender perspective. This included a sex-disaggregated intrahousehold survey and focus group discussions. The survey elicited information about household characteristics, socio-economic characteristics, existing production systems, banana varieties grown and not grown, farmer’s varietal trait preferences, sources of planting material, land tenure, food security and extension. This rich dataset, disaggregated by sex, allows for characterisation of the target population environments and for sex-disaggregated analysis at the household, community, regional and country level.

This short report provides an overview of the **types and sources of planting material** used by farmers in the study sites. In total, data from 1315 respondents is presented.

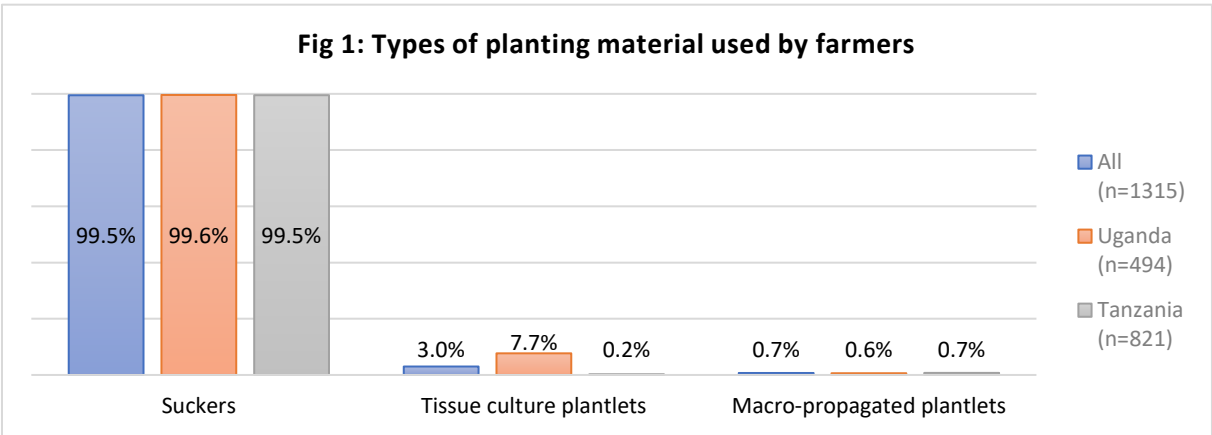
**Results**

**a) Types of planting material used**

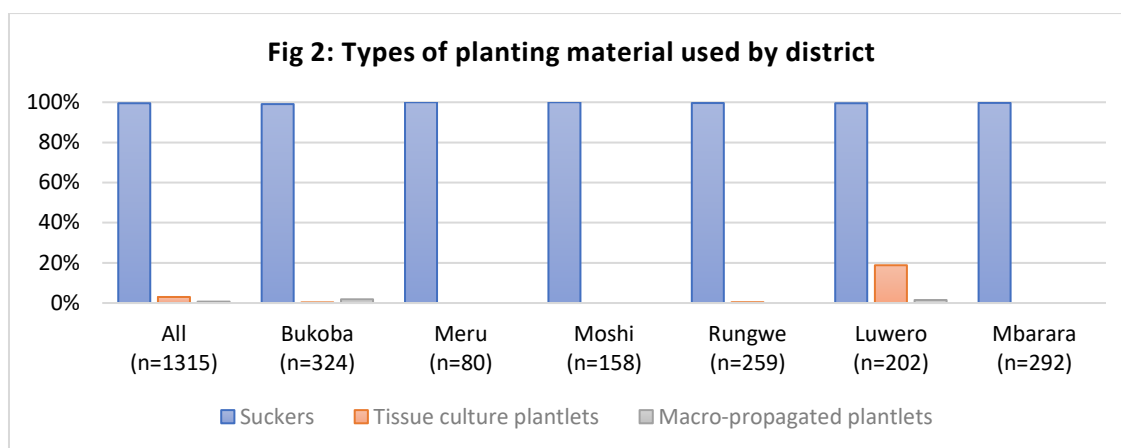
Nearly all (99.5%) of the respondents used banana suckers as planting materials (Table 1 and Fig 1). Tissue culture plantlets were also being used but by a small proportion (3%). Macro-propagated plantlets were the least used (0.7%) with slightly more men indicating use (difference is not significant).

**Table 1: Types of banana planting materials used by farmers (%)**

Types of planting materials used	All (n=1315)	Female (n=712)	Male (n=603)
Suckers	99.5	99.4	99.7
Tissue culture plantlets	3.0	3.0	3.2
Macro-propagated plantlets	0.7	0.4	1.0



When analysed by district, suckers were the mostly used planting materials in all the districts with all the respondents in Meru and Moshi using only suckers (Table 2 and Fig 2). Luwero district had the highest users of tissue culture plantlets (19%) and macro-propagated plantlets (1.5%) across the districts indicating some penetration of the technologies in the area.



**Table 2: Types of banana planting materials used per district (% of farmers)**

Types of planting materials used	All (n=1315)	Bukoba, TZ (n=324)	Meru, TZ (n=80)	Moshi, TZ (n=158)	Rungwe, TZ (n=259)	Luwero, UG (n=202)	Mbarara, UG (n=292)
Suckers	99.5	99.1	100.0	100.0	99.6	99.5	99.7
Tissue culture plantlets	3.0	0.3	0.0	0.0	0.4	18.8	0.0
Macro-propagated plantlets	0.7	1.9	0.0	0.0	0.0	1.5	0.0

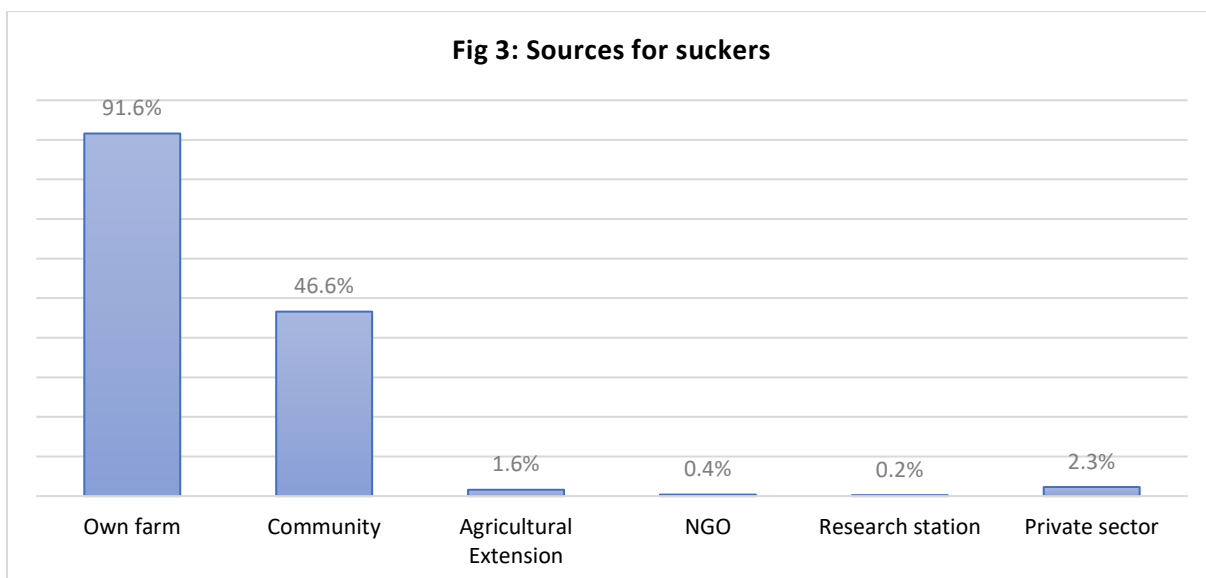
UG= Uganda, TZ = Tanzania

### b) Sources of planting material

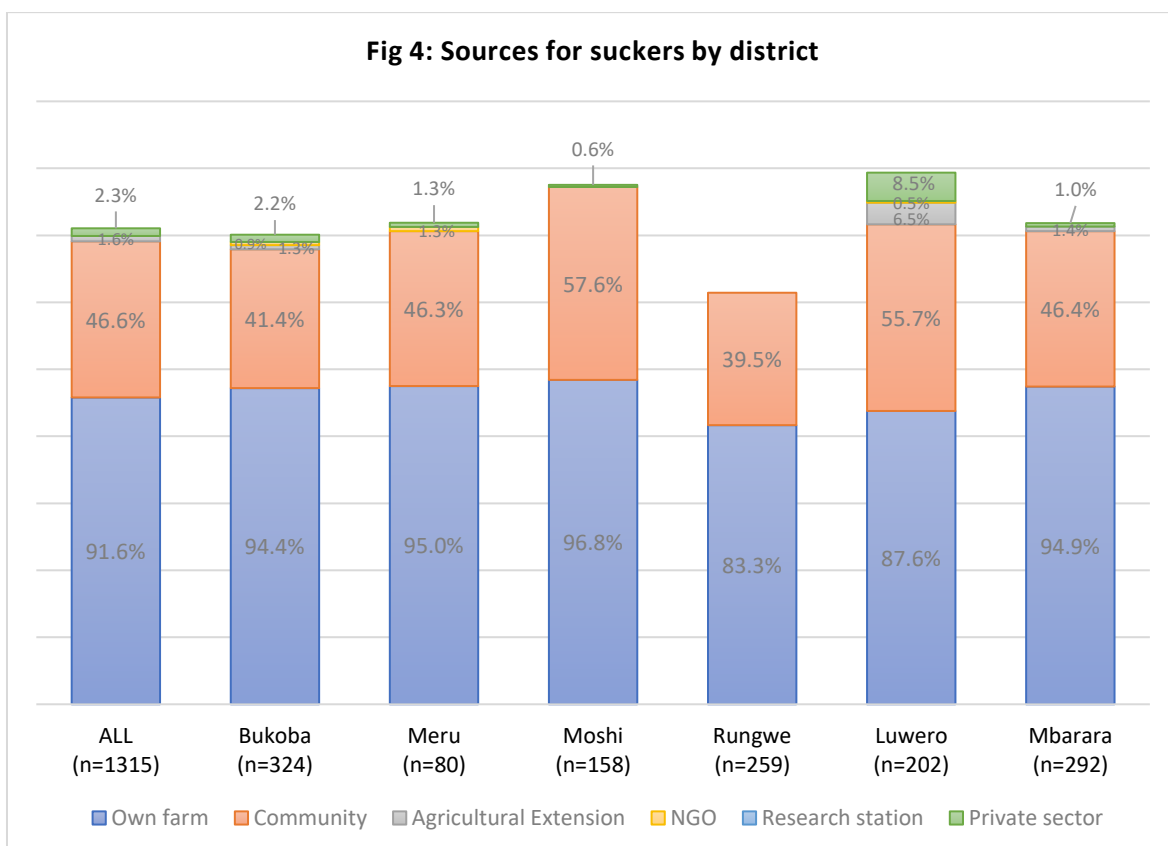
Respondents mostly obtained suckers from their own farms (91.6%) followed by community sources (46.6%) such as neighbours and friends (Table 3). Only 9 respondents used macro-propagated plantlets (5 indicated that they obtained them from non-governmental organisations (NGOs), 2 from research stations, 1 from the community). On the other hand, 40 respondents reported to have used tissue culture plantlets which were mostly supplied through agricultural extension channels (60%), research stations (50%), private sector (27.5%) and community nurseries (15%).

**Table 3: Sources of banana planting materials (%)**

Sources of banana planting materials	Suckers (n=1309)	Macro-propagated plantlets (n=9)	Tissue culture plantlets (n=40)
Own household/farm	91.6	0.0	0.0
Community	46.6	11.1	15.0
Agricultural extension	1.6	0.0	60.0
NGO	0.4	55.6	0.0
Research station	0.2	22.2	50.0
Private sector	2.3	0.0	27.5
Don't know	0.0	0.0	2.5



Over 80% of the respondents across all the districts sourced the most used planting materials (suckers) from their own farms (Table 4, Fig 4). Research stations were the least used sources for suckers with less than 1% of the respondents in Luwero and Rungwe using them. More farmers in Luwero got suckers through agricultural extension (6.5%) and private sector (8.5%) compared to the other districts. Macro-propagated plantlets were used by only 9 respondents; 6 from Bukoba and 3 from Luwero. In Bukoba, farmers obtained the macro-propagated plantlets from NGOs (4), research stations (2), and the community (1). In Luwero, one person obtained macro-propagated plantlets from an NGO whilst the others did not specify the source. Tissue culture plantlets were used by only 40 respondents in the three districts of Bukoba (1), Luwero (38) and Rungwe (1). The tissue culture plantlets in Bukoba district were got from the research station, while in Luwero district, around 63.2% of farmers got through agricultural extension services.



**Table 4: Sources of banana planting material by type per district**

	<b>Bukoba</b>	<b>Meru</b>	<b>Moshi</b>	<b>Rungwe</b>	<b>Luwero</b>	<b>Mbarara</b>
<b>Suckers (%)</b>	(n=321)	(n=80)	(n=158)	(n=258)	(n=201)	(n=291)
Own household/farm	94.4	95.0	96.8	83.3	87.6	94.9
Community	41.4	46.3	57.6	39.5	55.7	46.4
Agricultural extension	1.3	0.0	0.0	0.0	6.5	1.4
NGO	0.9	1.3	0.0	0.0	0.5	0.0
Research station	0.3	0.0	0.0	0.3	0.0	0.0
Private sector	2.2	1.3	0.6	0.4	8.5	1.0
<b>Macro propagated plantlets (%)</b>	(n=6)	(n=0)	(n=0)	(n=0)	(n=3)	(n=0)
Own household/farm	0.0	0.0	0.0	0.0	0.0	0.0
Community	16.7	0.0	0.0	0.0	0.0	0.0
Agricultural extension	0.0	0.0	0.0	0.0	0.0	0.0
NGO	66.7	0.0	0.0	0.0	33.3	0.0
Research station	33.3	0.0	0.0	0.0	0.0	0.0
Private sector	0.0	0.0	0.0	0.0	0.0	0.0
Don't know	-	-	-	-	66.7	-
<b>Tissue culture plantlets (%)</b>	(n=1)	(n=0)	(n=0)	(n=1)	(n=38)	(n=0)
Own household/farm	0.0	0.0	0.0	0.0	0.0	0.0
Community	0.0	0.0	0.0	100.0	13.2	0.0
Agricultural extension	0.0	0.0	0.0	0.0	63.2	0.0
NGO	0.0	0.0	0.0	0.0	0.0	0.0
Research station	100.0	0.0	0.0	0.0	0.0	0.0
Private sector	0.0	0.0	0.0	0.0	29.0	0.0

\*percentages can be more than 100% because a farmer can obtain planting material from more than one source

Nearly all respondents used suckers obtained from their own farms regardless of their gender (Table 5). However, significantly more female respondents obtained suckers from the community than their male counterparts. Both men and women obtained macro propagated plantlets from NGOs. Only male respondents indicated they obtained macro-propagated plantlets from own farm, research stations and private sector. In addition, male respondents had access to tissue culture plantlets from community and research stations whereas most of the female respondents got their tissue culture plantlets from agricultural extension and private sector.

**Table 5: Types and sources of banana planting materials by gender**

Sources of banana planting materials	Female		Male	
	n	(%)	n	(%)
<b>Suckers</b>				
Own household/farm	708	92.2	601	90.9
Community	708	49.6	601	43.1**
Agricultural extension	708	1.7	601	1.5
NGO	708	0.1	601	0.7
Research station	708	0.1	601	0.2
Private sector	708	2.1	601	2.5
<b>Macro-propagated plantlets</b>				
Own household/farm	2	0.0	6	0.0
Community	2	0.0	6	16.7
Agricultural extension	2	0.0	6	0.0
NGO	2	100.0	6	50.0
Research station	2	0.0	6	33.3
Private sector	2	0.0	6	0.0
<b>Tissue culture plantlets</b>				
Own household/farm	21	0.0	19	0.0
Community	21	14.3	19	15.8
Agricultural extension	21	66.7	19	52.6
NGO	21	0.0	19	0.0
Research station	21	0.0	19	5.3
Private sector	21	28.6	19	26.3

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## Conclusion

Nearly all farmers who participated in the study used suckers which they obtained them from their own farms or from friends and neighbours. Suckers are more readily available, exchanged for free or affordable and accessible to farmers. The results highlight the limited uptake of other planting material types that are mostly provided by formal institutions as evidenced by the low numbers of farmers who indicated that they used tissue culture and macropropagated plantlets. Possible sources of tissue culture and macropropagated planting materials include research stations, private sector and non-governmental organizations, which were the least used sources. Nevertheless, 38 farmers (which is still a relatively low number) from Luwero district in Uganda reported that they used tissue culture plantlets which they mostly obtained from agricultural extension services. Results show that social ties and cultural norms influence banana planting material types and sources. There is very little diffusion and use of alternative source and types that are considered formal.