

The Driving for the Rapid Adoption of new Sweetpotato Varieties: Evidence from Baseline Survey and Rapid Appraisal Conducted in Mozambique in 2012/13



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Summary

Fifteen new varieties orange fleshed sweetpotato (OFSP) were released in February 2011 in Mozambique, and several activities on the seed systems have been carried out to deliver the vines to sweetpotato farmers throughout the country.

This poster discusses the most important features that have been linked to the rapid adoption of these new OFSP varieties in Mozambique. Data from a baseline survey and information from different rapid appraisals conducted during the first two years of multiplication and distribution is used to support the discussions.

Accordingly, the rate of adoption of sweetpotato is significantly dependent on other specific factors rather than solely the robustness of the varieties. The local uses and customs have been playing a considerable role in the adoption of OFSP. Furthermore, evidence from recent panel survey (2008-2011) indicated higher market participation of farmers who produce OFSP compared to other traditional cash crops such as beans and rice.

Source of Data and Methods

Primary Sources

Baseline survey: Most of the data in the present work were from the recent baseline survey conducted in 2011/12 in 6 out of 10 provinces of Mozambique (Maputo, Gaza, Inhambane, Manica, Sofala, and Zambezia. In each province, 3 districts were selected considering the location (North, Center, and South) of the district. Within each district, two villages, namely with beneficiaries receiving vines via Decentralized Vine Multiplier (DVM) and other via local agriculture services (SDAE) or massive distribution were randomly chosen. In each district, 24 beneficiaries were randomly chosen and interviewed. Overall, 431 households were interviewed in 18 districts (Fig. 1)

Rapid appraisals and progress reports: Three rapid appraisals were conducted to evaluate the degree of establishment and development of the 15 new varieties distributed over the last 14 months (2011-2013). Overall, 21 districts (Fig.1) were visited in all 6 provinces.

Secondary Sources

Independent publications such as the *Flash* and *SIMA* from the Mozambique Ministry of Agriculture were used to support and complement some of the findings from the primary sources



Figure 2. Sweetpotato farmers being interviewed in Namaacha district, Maputo province, during the rapid appraisal conducted in March 2013

Results of the baseline survey

Prevailing conditions and local practices to grow sweetpotatoes

Number of fields cultivated: On average, two (2) plots were cultivated by each household in the lowlands (N=431, mean=1.7, std. dev =1.3, min=0, max=11.0). Although the average number of fields cultivated in the uplands (N= 431, mean=1.6, std. dev =1.3, min=0, max=8.0) is approximately equal to the lowlands, there is a slightly tendency to produce in the lowlands compared to the uplands. This result shows that some farmers are shifting from the traditional habits of growing in the uplands while depending on the rains, to a less drought risk cultivation in the lowlands, favoring the production of sweetpotatoes and vegetables. Results from the panel survey conducted by Cunguara et al. (2012) showed that the average number of fields cultivated by each household in Mozambique is 1.8.

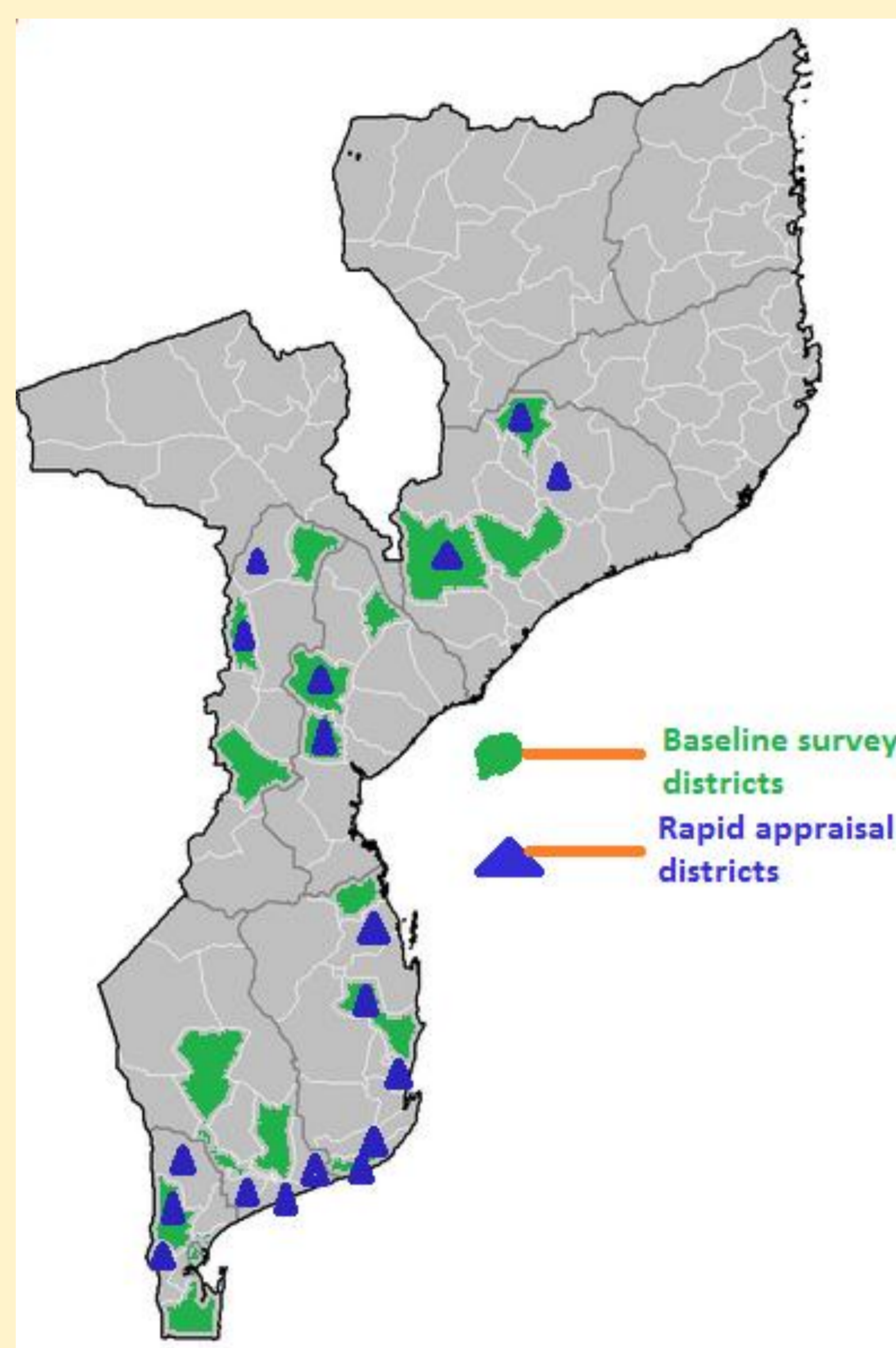


Figure 1. Map of Mozambique with 18 districts visited during the baseline and 21 the rapid appraisal

The proportion of farmers who grow sweetpotato is presented in Table 1. In general, most of the farmers interviewed grow both white and orange sweetpotato (1:1.30). This proportion is very similar to maize (1:1.04), which is the most important food crop in Mozambique. The proportion of farmers who only grow OFSP is 1:4.00, which means that one out of four small farmers established OFSP in 2011/12. The results of National Agriculture survey (MINAG-TIA, 2008), and the panel survey conducted by Benfica and Tschirley (2012) indicated that nearly 25% of the small farmers established OFSP in Sofala province, and this result is in line with the 29% households (Table 1) found in the baseline survey.

Table 1. Percentage distribution of households who produced sweetpotato and OFSP, baseline survey conducted in Maputo, Gaza, Inhambane, Manica, Sofala, and Zambezia, December 2011-April 2012

Number of households who produced MAIZE				Number of households who produced CASSAVA					
	Freq	Percent	Valid Percent	Cumulative Percent		Freq	Percent	Valid Percent	Cumulative Percent
No	14	3.2	3.9	3.9	No	138	32.0	38.7	38.7
Yes	343	79.6	96.1	100.0	Yes	219	50.8	61.3	100.0
Total	357	82.8	100.0	-	Total	357	82.8	100.0	-
Missing	74	17.2	-	-	Missing	74	17.2	-	-
Total	431	100.0	-	-	Total	431	100.0	-	-

Number of households who produced SWEET POTATO				Number of households who produced OFSP					
	Freq	Percent	Valid Percent	Cumulative Percent		Freq	Percent	Valid Percent	Cumulative Percent
No	42	9.7	11.8	11.8	No	254	58.9	71.3	71.3
Yes	315	73.1	88.2	100.0	Yes	102	23.7	28.7	100.0
Total	357	82.8	100.0	-	Total	356	82.6	100.0	-
Missing	74	17.2	-	-	Missing	75	17.4	-	-
Total	431	100.0	-	-	Total	431	100.0	-	-

Findings from the rapid appraisals

In terms of dissemination, Delvia (Fig. 3), Irene (Fig. 4), Sumaia (Fig. 5), Namanga, and Bela were the most important. About 53% of the 252 visited farmers planted Delvia, and most of farmers planted and re-planted Delvia due to a good adaptation of the variety in both lowland and uplands, on one hand, and also because of the relative good yield and taste. The same situation is valid for the variety Irene, which is very similar to Delvia, but in this case with red stems.



Figure 3. Variety Delvia found in Ile district (North-Central Mozambique), and Moamba district (South of Mozambique) rapid appraisal, December 2012

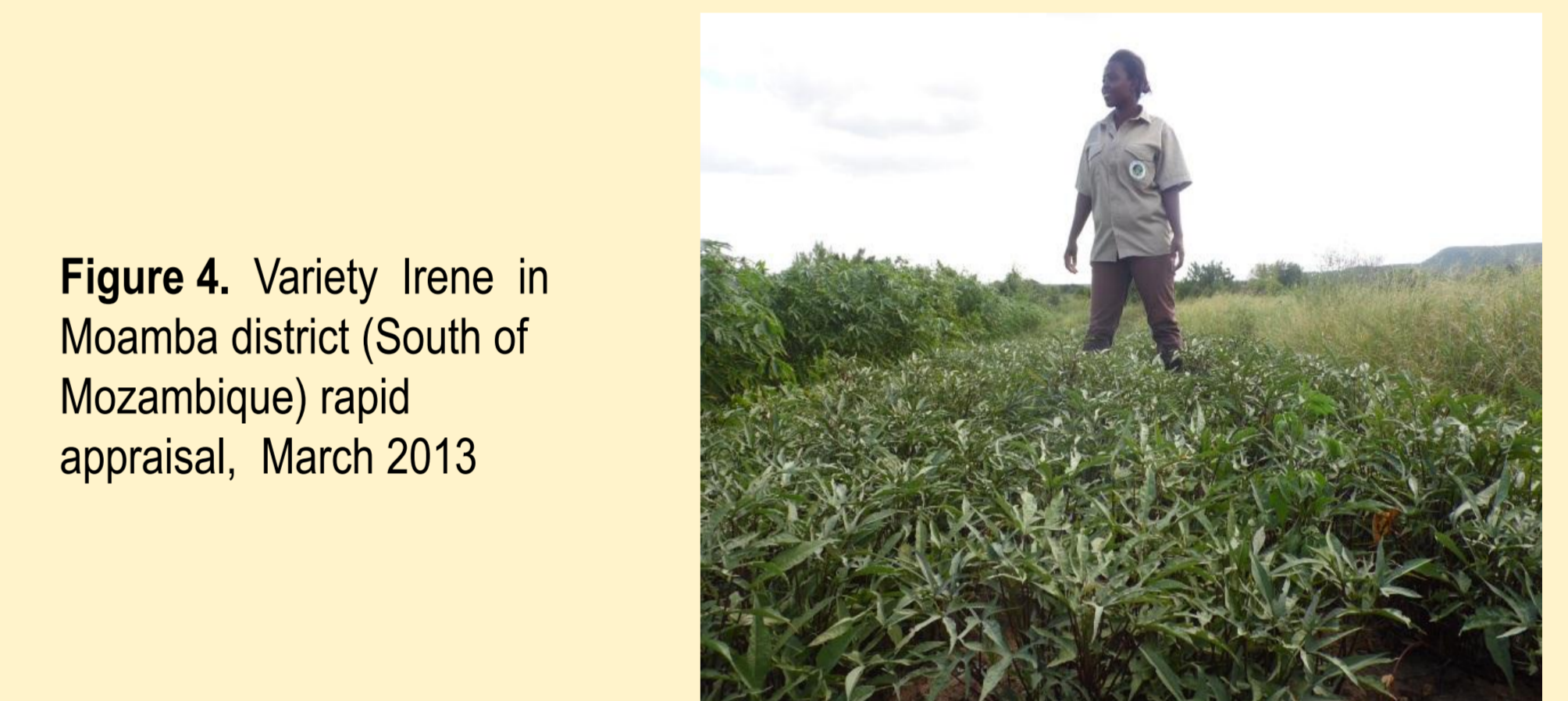


Figure 4. Variety Irene in Moamba district (South of Mozambique) rapid appraisal, March 2013



Figure 5. Variety Sumaia in Inharrime district (South of Mozambique) rapid appraisal, March 2013

- One important observation during the rapid appraisal was the tendency to prefer varieties such as Delvia and Irene with morphological distinctive characteristics compared to local varieties (Fig. 6). Farmers can easily distinguish Delvia and Irene due to their long and tiny leaves. However, some varieties with good yields, such as Namanga, Bela, and Ininda, but with upper side very similar to majority of local varieties tend to be discarded, unless the leaves are good for consumption.

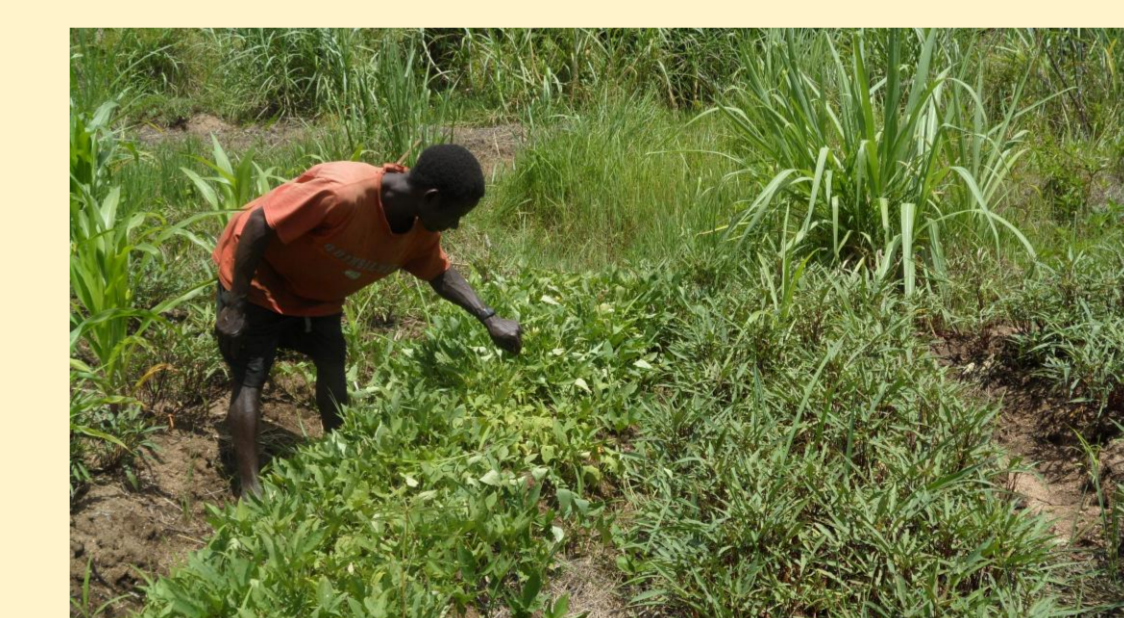


Figure 6. Plot with Irene and local variety in Mocuba, December 2012

- Although the high yields, acceptable dry matter content, and leaves consumption, most of new sweetpotato varieties are more likely to be adopted if they are morphological different from the local or traditional varieties. Now, the research question is: *Up to what point the morphological differences or similarities of newly released varieties versus traditional local varieties are important for the rapid adoption?*

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