

EMA HARVEST REPORT

Introduction

During the month of May, 2015, Agroforestry Research Team undertook the activity of harvest in all the districts in Eastern Province where EMA demonstration plots are. The total number of demos from where maize was harvested from was 10. Among the ten demos, four of them are based in Chipata district. Of which two are at Msekera Research Station, one at Kalunga Farmers Training Centre and the other one at Kalichero Farmers Training Centre. The other six are based at FTCs of Lundazi, Chadiza, Katete, Sinda, Petauke and Nyimba districts. In general, the harvest was a success since the team managed to harvest maize from all the ten demos though the team managed to harvest maize only from replication 2 and 3 from Nyimba FTC due to termites attack and prolonged dry spell that hit the district. Though the data analysis is not yet done, it was noted that Nyimba FTC would have the least yield, followed by Lundazi FTC. Kalunga FTC or Petauke FTC is expected to produce the highest yield after the analysis.

Msekera Demo 1

EMA Msekera demo 1 was harvested on 7th may 2015. At the time of harvest, the Agroforestry trees had established very well especially *Sesbania sesban*. The only tree species which did not do very well was *Tephrosia candida* due to the fact that this tree was constantly attacked by the snails immediately after germination though the replanting was done two times. Maize plants were also attacked by termites due to long dry spell and it was noted that a large number of maize plants that fell or were on the ground during the harvest were those which were under the treatment “No Trees”. During the harvest, the following parameters were recorded;

- (i) Treatment of the plot.
- (ii) Total number of plants in each net plot.
- (iii) Total number of cobs in each net plot.
- (iv) Total mass of cobs in each net plot.
- (v) Total mass of maize stover in each net plot.
- (vi) Fresh weight of sub samples of cobs.
- (vii) Fresh weight of sub samples of maize stover.

The sub samples of cobs and maize stover were taken for air drying for approximate 3 weeks and thereafter the dry weights of cobs and maize stover would be measured. In addition to that cobs would be shelled in order to weigh the cores and the grains of each cob sub sample.

The grains' moisture content would then be measured. Figure 1 shows a plot which had no trees after doing stover management immediately after harvest at Msekera Research Station.



Figure 1: The appearance of a “No Trees” plot after stover management at Msekera



Figure 2: A plot of Sesbania sesban after harvest and stover management at Msekera

Katete Farmers Training Centre

At Katete FTC, the harvest was done on 12th May 2015. The crop was not very good because the soil type is sandy and the rainfall pattern was not good. Agroforestry tree establishment was an average. Trees had established but they were not as healthy as those at Msekera Research Station. The maize harvest procedure which was followed in Katete was similar to the one followed at Msekera Research Station and it is outlined above. Figures 3, 4 and 5 show the pictures captured before and after harvest at Katete Farmers Training Centre.



Figure 3: the appearance of most cobs under G. Sepium at Katete FTC



Figure 4: A plot without trees before harvest at Katete FTC



Figure 5: The same plot without trees after harvest at Katete FTC.

Sinda Farmers Training Centre

In Sinda, the harvest was done on 12th May 2015. The crop was better than what was harvested in Katete. Nevertheless, there were so many gaps where trees were supposed to be replanted. Figures 6, 7 and 8 were the pictures captured before, during and after harvest.



Figure 6: The appearance of most cobs under Tephrosia candida at Sinda



Figure 7: A plot without trees just before harvest at Sinda FTC



Figure 8: The same plot after harvest and stover management at Sinda FTC

Petauke Farmers Training Centre

The harvest at Petauke FTC was done on 13th May, 2015. At the time of harvest, it was noted that at Petauke the crop was better than Sinda and Katete. Nevertheless, at some point the drought hit the district and that caused most of the crops to fall and some cobs rot on the ground. On the other hand, just like what happened in Sinda, Petauke too had so many gaps where trees were supposed to be ‘gap filled’. Figures 9 and 10 show some pictures captured during the harvest.



Figure 9: A rotten cob after it had fallen for sometime at Petauke FTC



Figure 10: Sesbania sesban plot in Replication 1 before harvest at Petauke FTC

Nyimba Farmers Training Centre

Out of all the ten EMA demonstration plots, Nyimba FTC had the extreme negative effect of droughts. Nyimba FTC demo had nothing to harvest in the whole replication 1. The only things which were found in rep 1 were the rotten cobs plus stover and the grass as shown in figure 11. However, the team managed to harvest something in rep 2 and 3. Figures 12 and 13 show some pictures captured during the harvest.



Figure 11: The appearance of Rep 1 at Nyimba FTC just before harvest



Figure 12: Appearance of some cobs at Nyimba FTC



Figure 13: A worker measuring maize stover at Nyimba FTC during harvest.

Chadiza Farmers Training Centre

Harvest at Chadiza FTC was carried out on 19th May 2015. The crop was ok though in some plots though some plants had fallen due to drought and there were so many gaps in some of the rows of trees where trees were supposed to be ‘gap filled’ at some point. Figures shows the picture captured after the harvest and stover management.



Figure 14: G. Sepium plot after harvest and stover management at Chadiza FTC

Lundazi Farmers Training Centre

At Lundazi FTC, both the crop and the trees were not good at the time of harvest. The team harvested on 19th May, 2015. For the season 2014/ 15 season, Lundazi district was among the districts in Eastern province which were greatly hit by the drought. It was because of the same reason that the crop was so miserable that the district failed to have the farmers field day. Despite the crop being very poor, the team harvested though the yield is expected to be very low after data analysis. Figure 15 shows a picture which was captured just before harvest.



Figure 15: The Appearance Maize Plants At Lundazi FTC just Before Harvest.

The other demos in Chipata district

Msekera Demo 2 and Kalunga FTC were harvested on 18th May 2015 while Kalichelo FTC on 22nd May 2015. Agroforestry trees have established very well at Kalunga FTC and Msekera Research Station while at Kalichelo FTC the establishment was an average since there were some gaps in the rows of trees and the trees were not as healthy as those at Msekera or Kalunga. Some plots at Kalunga FTC had also some very big cobs.

Conclusion

The EMA harvest which was carried out during the month of May 2015 was a success. The team managed to harvest crops from all the 10 demos which were planted. The season, 2014/15, was characterized with a very strange rainfall pattern. It all started with rains that came very late and it proceeded to having some prolonged dry spells in almost all districts of Eastern province and finally rains went at an earlier time than it was expected. This rainfall pattern negatively affected the crop and the establishment of Agroforestry trees.