



2011

Farming God's Way ASSETS Plot



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8/26/2011

Farming Gods Way Report
Gede ASSETS plot
May – August 2011
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The goal of this project was to start up a Farming God's Way demonstration plot at the recently purchased ASSETS plot just west of Gede on the Mombasa-Malindi Highway. This site was originally chosen by A Rocha Kenya as a suitable location for the construction of new ASSETS facilities that would serve as a base for ASSETS extension into the communities surrounding the Arabuko-Sokoke Forest. As a part of this extension focus, it was also an ideal location to start up a Farming God's Way demonstration plot which would be visible to both ASSETS students and parent groups frequenting the location.

Preparations for the demonstration plot began in May with a 10m x 18m section of land being measured off for Farming God's Way activities on May 20. Inside this area, two 6m x 6m Well Watered Garden plots were laid out with a 2m wide border.

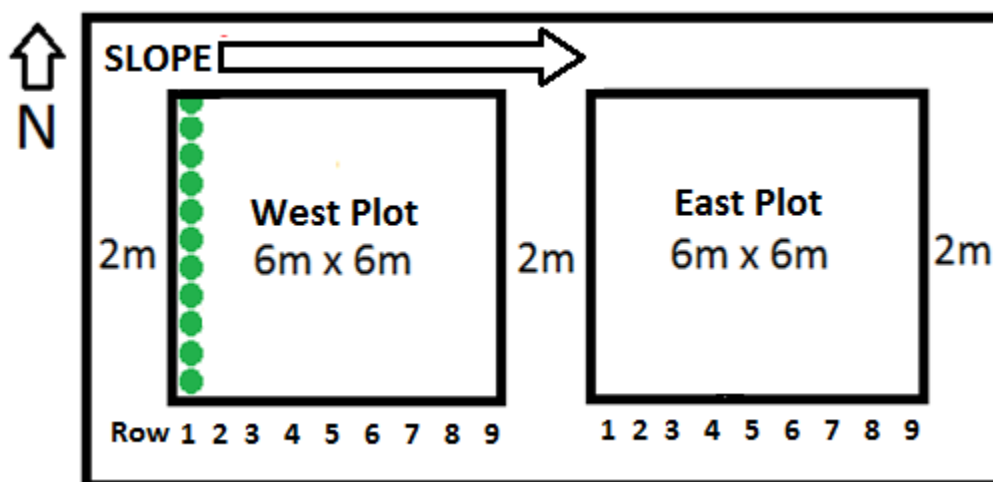


Figure 1: Well Watered Garden Plots

Maize planting occurred on May 24 which was a rainy day. As of May 24, the rains had already been coming for a number of weeks. This late planting date was less crucial since Well Watered Gardens are not normally put in during the rainy season and typically rely on regular watering.

99 holes were dug for each 6m x 6m plot. This was done with 9 rows each containing 11 holes (planting sites). Rows were laid out across the slope while rows and planting sites were spaced using a marked teren rope. Row spacing and planting specifics were done in accordance with the Farming God's Way training manual.

Weeding, mulching and watering of the plot were meant to happen on a weekly basis, but due to busy schedules and lack of transportation this was not always the case. It is likely that lack of transportation for regular watering (which needed a car to transport the 20 litre water jugs) hampered the growth of the maize at certain stages. On the other hand, erratic rainfall during 2011 meant that some rain continued to fall during the month of July and even into August.

Weeding included both the 6m x 6m plots as well as the 2m border area. Weeds were uprooted and left on the plots to be added to the mulch layer. Mulching was done using the long grasses that grew in other parts of the ASSETS plot. This seemed to work quite well as the soil within the 6m x 6m plots where the mulch had been laid was regularly softer and moister than that in the 2m border area.

As of June 7, the maize plants were approximately 15cm tall and additional replanting was done in holes where the plants had failed to come up. According to the FGW manual, this was later than the recommended 2 week interval; however we had been unable to get out to the plot until this time due to other duties at Mwamba Centre. As of June 23, the maize plants were knee high and looking very green and healthy. It was also on this date that the plots were thinned from three plants per hole down to two.



Figure 2: Maize growing in West Plot, June 23

By July 14, the plants had begun to tassel out and some plants were nearing six feet tall. However, by this time some of the plants had begun to show signs of pest problems and a number of the leaves were being eaten and some of the plants appeared stunted. The plot was weeded and mulched by a group of volunteers and guests from Mwamba. Some children living nearby even helped with collecting the grasses.

By August 1 the maize was noticeably quite tall in some areas while other areas remained shorter. Ears (cobs) had begun to form on many of the plants and some already looked quite mature. On August 9, a church group from England joined us in more weeding and mulching activities. By this time, the edges of the leaves were beginning to change colour as the plants seemed to be looking drier. Also, some of the maize cobs seemed to have been eaten by birds and insects.



Figure 4: Healthy Cob, August 1



Figure 3: Pest Eaten Cob, August 9

On August 23 we went forward and harvested the maize even though not all of the cobs were fully ripe. Earlier in the month, a sheet of metal roofing had been stolen from the structure on site. This delayed the installation of an onsite water collection system and encouraged us to harvest as soon as possible to ensure that the crop would not also be stolen. Furthermore, pests were becoming a big problem and we did not want any more of the cobs to be lost.

Before harvesting however, we did a quick inventory of the two plots to assess the health of the stalks as well as the number of cobs found on each stalk. This information was recorded spatially and can be found at the back of this report.

In order to assess the quality and progress of the maize, all of the cobs were harvested. This included those cobs that were immature as well as those which were partially eaten or infested with pests. Cobs were sorted into three categories and weighed with the following results:

Maize yield: (whole cobs/not husked, fresh weight/not dried)

Small green immature cobs	3 kg
Eaten or pest infested cobs	10 kg
Large/healthy cobs	40 kg
Total	53 kg

Lessons Learned/ Steps Forward

In many ways, the piloting of the Farming God's Way at the Gede ASSETS was a success. The crop grew quite well throughout the year and the mulching seemed to have good results with the soil being richer and moister in areas where the mulch layer was applied.

A personal highlight for me (David) was watching the Farming God's Way training videos with Bimbo Misafiri. It seemed that our enthusiasm for Farming God's Way grew as we gained more and more understanding of the principles and technologies that guided the process. It was encouraging to see how Bimbo was keen to try out what he had learned on his own shamba, which gives me confidence that he will continue this project in the years to come. Also in terms of sustainability, it is my hope that this report would provide helpful information and suggestions for improving and continuing this project in the years to come.

On the other hand, there were many challenges faced throughout project. Without a doubt, the biggest obstacle was our distance from the site a lack of good transportation to get there. Neither Bimbo nor I had licences to drive there and other staff had their own daily schedules to attend to. Not only did this hinder regular watering, but it also limited our ability to routinely monitor the site (daily) and have a good presence there.

Another challenge was the problem of hiring a watchman for the site. While the Farming God's Way manual strongly encouraged the hiring of a watchman or faithful steward, it was decided by A Rocha staff that this would not be necessary. This also hindered our ability to have a regular visible presence at the site which may have been a contributing factor in having some metal roofing stolen from the site. In the future, having someone on site would be very helpful.

Additionally, pests became a big problem nearer to the end of the season, as a number of cobs were damaged by insects and birds. This was likely due to the fact that our maize was still growing long after many of the crops in the area had already been harvested. Planting earlier in the year (well before the rains for a Well Watered Garden) should help to alleviate the problem in the future.

Pre-harvest Inventory

This inventory, conducted immediately before harvesting, was intended to map out the crop and show spatially how different areas of the crop did better or worse. Two factors were taken into consideration:

- 1) The number and condition of cobs growing in each planting site.
- 2) The average height of the plants in each planting site.

At the beginning of the season, three seeds were planted in each hole (planting site). After thinning, an average of two maize plants was left growing in each planting site. In the tables below, each box represents a planting site. Row numbers are shown in the far left column, with Row 1 being located on the west side, and Row 9 being located on the east side of each plot (see Figure 1).

In all of the tables below, digits represent individual cobs of maize. The digit “2” represents a large healthy cob, “1” represents a small or unhealthy cob, while “0” indicates that no cobs were found on a plant in the planting site.

For example, a

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 box would mean that this planting site contained two cobs that were small or unhealthy and one cob that was large and healthy. The “0” indicates that one of the plants in the planting site had no cobs.

Colour coding in the first and second tables is used to show the height of the plants in each planting site. Planting sites containing plants less than 5 ft. tall are shown as yellow, plants between 5 and 6 ft. as light green, and plants over 6 ft. as dark green. This information is overlaid on top of the cob data.

Colour coding in the third and fourth tables **does not** correlate with height. Instead it is used to show the density of large healthy cobs found in different parts of the two plots. Planting sites that yielded two large healthy cobs are shown in dark green, those that yielded one in light green, and those that did not yield any are left white.

This data clearly shows that some areas of the plots did better than others and that as a whole; the west plot did better than the east plot. This might be due to differing amounts of sunlight or better soil in different areas. Repeating this inventory in future years will help to clarify whether any of these trends are worth noting.

Row	West Plot: stalk height colour coded with digits representing cobs										N →
1	111	11	11	11	112	11	22	22	22	22	22
2	12	112	12	11	22	12	11	2	12	11	11
3	12	11	11	11	11	11	11	22	11	1111	22
4	22	11	11	111	11	11	11	12	12	12	22
5	22	111	11	11	21	22	21	20	11	11	22
6	22	12	22	111	22	11	11	22	12	22	22
7	12	12	11	011	22	02	11	20	111	12	112
8	211	22	11	22	11	11	12	12	12	22	22
9	211	22	22	120	12	12	221	22	2211	211	22

Row	East Plot: stalk height colour coded with digits representing cobs										N →
1	22	21	22	21	221	211	11	2111	1111	22	211
2	211	111	11	21	22	12	11	11	11	111	11
3	11	11	11	21	11	10	12	11	11	11	210
4	211	1111	11	11	11	11	11	11	21	11	11
5	22	11	11	21	11	11	11	11	111	211	221
6	111	11	21	21	11	11	11	12	1111111	21	11
7	21	22	21	11	11	11	11	211	11	11	221
8	11	11	11	11	211	21	11	21	11	12	11
9	22	11	21	21	111	21	11	11	11	11	11

Row	West Plot: colour coded by density of large healthy cobs										N →
1	111	11	11	11	112	11	22	22	22	22	22
2	12	112	12	11	22	12	11	2	12	11	11
3	12	11	11	11	11	11	11	22	11	1111	22
4	22	11	11	111	11	11	11	12	12	12	22
5	22	111	11	11	21	22	21	20	11	11	22
6	22	12	22	111	22	11	11	22	12	22	22
7	12	12	11	011	22	02	11	20	111	12	112
8	211	22	11	22	11	11	12	12	12	22	22
9	211	22	22	120	12	12	221	22	2211	211	22

Row	East Plot: colour coded by density of large healthy cobs										N →
1	22	21	22	21	221	211	11	2111	1111	22	211
2	211	111	11	21	22	12	11	11	11	111	11
3	11	11	11	21	11	10	12	11	11	11	210
4	211	1111	11	11	11	11	11	11	21	11	11
5	22	11	11	21	11	11	11	11	111	211	221
6	111	11	21	21	11	11	11	12	1111111	21	11
7	21	22	21	11	11	11	11	211	11	11	221
8	11	11	11	11	211	21	11	21	11	12	11
9	22	11	21	21	111	21	11	11	11	11	11