

**Integrated assessment of the determinants of the maize yield gap in Sub-Saharan Africa: towards farm innovation and enabling policies (IMAGINE)**

**Bringing CSA practices to scale: assessing their contributions to narrow nutrient and yield gaps (Crop Nutrient Gap)**

**Field Demonstration Day of Nutrient Management Packages –  
On Farm Demonstration Trials in Ethiopia (D2150)**

**Report on Farmers' Field Days at Adami Tulu Jido Kombolcha and Bako Tibe  
Districts in 2017**

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## **Introduction**

On-farm Demonstration Field Days for the 2017 growing season were conducted on 29 September and 11 October 2017 at Adami Tulu and Bako Tibe districts respectively. The objective was to allow farmers visit the IMAGINE and Crop Nutrient Gap on farm demonstration trials and compare and contrast the different treatments to understand how differently maize would perform under different management practices.

The field day activities involved visiting plots of different treatments on each hosting farmer's field followed by discussions, questions and answers. A few guiding questions were raised to farmers in order to obtain their understanding and feedback regarding the different treatments. The questions included the following

1. What did you observe from the demonstration sites/what's new?
2. Which variety did you like most? Why?
3. Which treatment did you like most? Why?
4. What did you learn from the demonstration sites?
5. Are you interested to try any of treatments on your field next year?

## **Feedbacks**

From the discussions, the following key points are summarized separately for both locations regarding farmers' observations, treatment and variety choices, and opinion.

### **Adami Tulu**

- In the moisture conservation plots, soil is wet compared to others
- Clear differences visible between varieties
- Plots treated with recommended management and tied ridge are preferable because maize in this plots appear to be in good stand compared to the other plots
- Limu variety is good in grain filling and size of cob
- Farmers have ranked Limu, MH 140 and BH 540 as their 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> choices if fertilizer is used
- Farmers have ranked MH 140, Limu and BH 540 as their 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> choices if fertilizer is not used
- BH 540 provides good yield if there is no disease
- Tied ridge keeps soil wet

- Maize can perform well without “shilshalo”
- Good management with proper spacing gives better yield
- Implementing tied ridge on extended field would be difficult.
- We cannot expect good return without fertilizer



Fig.1. A woman farmers visiting the on-farm demonstration experiments during the field days in Adami Tulu in 2017.

Apart from that, farmers have asked whether CIMMYT is engaged only in research or might also continue to support them in the future, for example in providing seed and other inputs. They have also extended their gratitude to CIMMYT for the current work.



Fig.2. Farmers discussing after observation of farm demonstration experiments during the field day in Adami Tulu in 2017.

In the end, the Adami Tulu district bureau of agriculture department of extension head, Bune Malkato, expressed that the district office is thankful to CIMMYT for the work. Regarding their question, he explained to the farmers that CIMMYT does research and demonstrates research outputs to farmers using on farm experiments such as this. He then advised farmers to try to adopt the good practices they have observed from the experiments.

In addition, easier ways to implement tied ridge were explained to the farmers by other extension workers.

### **Bako Tibe**

Bachara Oda Gibe kebele

- We have got opportunity to see different varieties side by side
- BH 546 performs well without fertilizer on a relatively fertile soil (Taresa's field) compared to other varieties
- All varieties are unproductive on infertile soil (Desalegn's field)
- Variation in soil fertility visible across locations (farmers' plots)
- Limu and BH 546 are better varieties compared to BH 661
- BH 546 is good because of better grain filling and closed sheath
- We use 40 by 50 cm spacing. Wider spacing (like the recommended plots) helps to avoid damage by wind and good if we can adopt that.
- Production without fertilizer is unthinkable

- Researchers apply measured amount of fertilizer on spot. We apply by guess (Taressa) and not sure of the uniformity and amount we apply.



Fig. 3. Farmers observing demonstration experiments in Bako Tibe district during a field day in 2017.

#### Oda Gibe Kebele

- Recommended management is superior to farmers practice
- Some soils can give yield without fertilizer (Higi's)
- There is difference between farmers in plant spacing (Olika- densely populated, Higi – less dense)
- BH 546 and limu would give better yield compared to BH 661 even when fertilizer is not applied
- Though not the same, farmers' practices are getting almost closer to the recommended practices because of extension services
- The recommended spacing is better but our land is small to adopt it
- Can you help us with teff and Nug as well?



Fig. 4. Farmers discussing their observation of the on-farm demonstration experiments in Bako Tibe, west Ethiopia in 2017.

While concluding the discussions, Taye Mosisa, deputy head of the district bureau of agriculture and natural resource, raised importance of proper spacing/plant population and the necessity of fertilizer application. He also pointed out that the 100/200 kg/ha NPS/Urea recommendation is old and that there is a need to come up with another rate to suit the current soil condition.

A total of 95 farmers have participated on the field day conducted at Adami Tulu where 10 of them were female farmers while 81 male farmers have participated at Bako Tibe.