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ON FARM TRIALS

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RESEARCH COLLABORATION

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Progress report 1996/97

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EXECUTIVE SUMMARY

This report covers On Farm Trials conducted in 5 villages in each of Mazombe and Kilolo divisions during the 1996/97 growing season. The strategy adopted in implementing the trials included careful considerations for village, farmer and site selections (Ch. 2). A total of 69 participants took part in the trials. Included were 16 primary schools 39 male and 14 female farmers. The separate training carried out in soya utilisation at four centres involved 101 participants with almost a 50:50 ratio between male and female farmers (Appendix 6).

The field tests included several varieties of two food crops maize and beans. These crops together with ranking of bottlenecks associated with their production were agreed upon by farmers in two separate exercises of crop prioritisation. The third crop soyabean was considered an introduction of potential advantage in the farming systems in Iringa. The cultivar Bossier was tested across all locations.

The overall objectives of the trials were:

- (a) The comparison of local and improved varieties of the selected crops.
- (b) Evaluation of available techniques of improving soil fertility including organic farming.
- (c) To simultaneously train farmers in appropriate crop husbandry methods.
- (d) To incorporate a programme of capacity building for HIMA-Iringa extension staff in the conduct of simple field trials with the farmers through on the job training.

The general trend of results was as follows:

(a) Maize

Although there were some specific limitations associated with the maize trials it is still possible to conclude that the performance of the improved varieties was better than the local types. A yield difference of 40% between them was common in Mazombe. Farmers in the lower altitude Mazombe e.g. Ikuka preferred Kito and TMV 1 while those in upper altitude Mazombe like Itungi ranked TMV 2 and Staha very highly. All the farmers in Mazombe stressed cultivar characteristics of their choice as being modest yield, earliness to maturity, grain type, size and number of cobs, tolerance to stalkborer attack and general prolificacy in the field.

In Kilolo area an additional characteristic of importance was tolerance to ear rot due to excessive rainfall in normal years. For these reasons farmers unanimously selected TMV 2, Kilima and UCA, in that order. Kilima registered the highest yield of over 5.0 t/ha in Idete area.

(b) Beans

- (i) Beans/maize intercropping: The differences in the yields of either beans or maize were generally non-significant in Kilolo division where these trials were conducted. The bean crop was considered a desirable bonus in the association with maize. The times of planting were considered the most critical factors which determined the success of an inter-crop. Using TMV 2 maize in Kilolo the combinations with beans Uyole 84, Kabanima and 91/22 gave the best results with a combined yield of over 1.5 t/ha in each case.

Farmers selection criteria on beans in these combinations included yield, earliness to maturity, seed palatability, leaf palatability, leaf volume, duration of leaf picking and market potential.

- (ii) Bean monocultures: Although very prolonged dry weather was certainly detrimental to most trials in both divisions yet all the improved varieties significantly outyielded the locals in Mazombe. At Ikuka, for example, yields of over 2 t/ha were obtained for Uyole 96 (DRK), Uyole 94, Uyole 90 and Ilomba varieties while the local Nyamhanga gave less than a ton. Farmers preferences for food and market in Mazombe were Uyole 96 (DRK), Uyole 94 and EGERM 74. Varieties considered ideal for food security were Kabanima and Ilomba (the detailed criteria for selection appear in ch.4).

In Kilolo the extremely prolonged dry weather depressed yields very badly. Only 1/3 of expected potential yields were recorded for all the varieties. Still the improved cultivars maintained superiority in yield and several other characteristics compared to the local Rungemba. Farmers preferences in Idete were established as Uyole 96 (DRK), Uyole 94 and Kabanima, in that order. Reasonable quantities of seeds of varieties mentioned in this section were sold to farmers in Idete. It is hoped that an initial seed nucleus will be established (See ch.4 for quantities).