VALIDATION OF THE ZAMBIA SEMI- QUANTIFIED LAND EVALUATION SYSTEM IN MAGOBBO SETTLEMENT SCHEME IN MAZABUKA DISTRICT OF SOUTHERN PROVINCE OF ZAMBIA

BY

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ABSTRACT

A study was conducted in Magobbo area of Mazabuka District to validate the yield predicting capacity of the Zambia Semi-quantified Land Evaluation System for rain fed maize production under small-holder farming conditions. An area where soils had been surveyed and mapped was used as a test site. Areas with three soil types or land mapping units were demarcated and farmers growing maize under rain fed conditions following recommendations by the Farmer Input Support Programme (FISP) were selected on each unit. Using data on the soils and climatic conditions of the area, the expected yields of maize for each land mapping unit were calculated following the methods outlined in the Zambia Semi-Quantified Land Evaluation System. The predicted yields were compared with the average yields obtained by farmers in each land mapping unit using a t-test at 0.05 level of significance. When t-test results indicated a non significant difference between the predicted and actual yields, this was considered to be a correct prediction by the system. Results of this study showed that when yields were predicted using a reference potential yield of 5000 kg/ha, the system made the 33 % correct predictions. Upon correcting the potential yield from the assumed 5000 kg/ha given in the system to the actual potential yield of the maize variety grown of 7000 kg/ha, the yield predicting capacity of the system increased from 33.3 to 66.7 %. A further refinement of the input into the system by taking into account the actual management levels by farmers in land mapping unit 1, which had the largest number of farmers, the predicting capacity of the system decreased to 0% at 5000 kg/ha while that of 7000 kg/ha increased to 75 % which is good. Results of this study have demonstrated that the Zambia Semi -Quantified Land Evaluation System is able to make good predictions of maize yields for small scale farmers, provided correct input parameters such as the potential yield of the crop and accurate assessments of the management levels are used in the system when

making yield predictions. There is need to update the potential crop yields of crops used as input in the system for predicting actual yields since the potential yields of a number of crops have significantly changed from what they were in 1987 when the system was developed

DECLARATION

I, MULAUZI INNOCENT BROWN, do hereby declare to the Senate of the University of Zambia that this dissertation is my original work and that it has not been submitted for a higher degree in any other University.

Signature……. Date…….

APPROVAL

The dissertation of Innocent Brown Mulauzi is approved as fulfilling part of the requirements for the award of Master of Science in Agronomy (Soil Science) by the University of Zambia

Examiner	Signature	Date
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DEDICATION

To my late father Brown Jonas Mulauzi, my mother Felistus, children and wife Chilombo**.**

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