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## Rice Farmers Perception on Soil Quality Indicators and Fertility Management in the Volta Region of Ghana: Reconciliation with Scientific Evidence

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### Abstract

It is increasingly understood that for development purposes, local soil knowledge often forms a much better starting point for communication than scientific soil classifications. The Volta region of Ghana is the country's third largest producer of rice, producing about 83,936 MT per annum which is about 17% of total national production. The government of Ghana has also identified rice as a priority crop in the region for poverty reduction and ensuring food security, thus has formulated policies to boost production. However, rice production which is relatively high in the region and its threat to soil quality, as well as farmers' perception on soil fertility and its management is still not fully exploited. This study will attempt to explore and identify the most important attributes/indicators known and used by farmers in the classification of their soils and how they perceive their soils in relation to these indicators. It will also try to investigate how farmers' perceptions match with scientific measurements and identify common linkages between farmers and stakeholders (i.e. Government, Scientist, development partners) on the management of their soils. The study will employ participatory rural appraisal (PRA) tools such as net mapping, transect walks, and focused group discussion to collect data from rice farmers in the Volta region of Ghana. The study will employ pair wise ranking method to identify the most important soil indicators used by farmers in their field management, Kendall's Concordance test of agreement in the ranks, descriptive statistics to explain farmers level of understanding of the nature of their soils, and finally laboratory soil analyses to examine in how scientific measurements meets with farmers view. Expected results at the end of study would be the production of a mapping matrix on flow of information on soil fertility management between farmers and stakeholders, and concrete suggestions for the development of training manual merging local knowledge of soil quality indicators and fertility management with scientific evidence.

**Keywords:** Ghana, local knowledge, scientific knowledge, soil fertility, soil indicators, Volta region