

Factors Influencing the Adoption of Local Organic Resources for Soil Fertility Improvement in Crop Production: a Case study of Ada West District of Ghana

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Abstract

The Organic Resource Management for the improvement of Soil Fertility (ORM4SOIL) Project at the University of Ghana aims at improving soil fertility with concentration on adoption of local organic resources and cost effective ways of improving soil fertility in its study area. This involves a multidisciplinary approach which engages farmers, researchers, Universities, Government and Non-Governmental organizations. This study sought to determine the factors that influence the intensity of adoption of local organic resources for soil fertility improvement in one of the study areas (Ada West District of Ghana). Primary data was collected by the ORM4SOIL Project in the Ada West district of Ghana from crop farmers. The primary data was analyzed using descriptive statistics, Tobit model, partial budget and break-even analysis. Even though all crop farmers use one form or the other of a local organic resource for soil fertility improvement, in total, about 88.7% of the crop farmers use organic material: other animal manure (animal dropping other than cow dung) (49.5%) and matured cow dung (39.2%) as their local organic resource. Focusing on the two main local organic resources used for soil fertility improvement in the area, the intensity of use of other animal manure is 0.43. This implies that crop farmers using other animal manure for soil fertility improvement on the average apply other animal manure to about 43% of their farming land while the intensity of use of matured cow dung is 0.65. This implies that crop farmers who use matured cow dung for soil fertility improvement on the average apply matured cow dung to about 65% of their farm land. The factors that influence the intensity of adoption of matured cow dung or animal manure are their cost, access to credit by farmers, educational level of farmers, farmers membership of FBOs and farmers ownership of their lands. The partial budget shows that, pepper farmers record a net loss when they replace inorganic fertilizer with matured cow dung. The break-even point for pepper farmers using matured cow dung in soil fertility improvement is approximately 3 bags of pepper at a selling price of GHS 400. The most pressing constraint of crop farmers in the use of matured cow dung and other animal manure for soil fertility improvement is its labor intensiveness. It is recommended that extension agents concentrate on training farmers on how to blend matured cow dung and other animal manure with inorganic fertilizer in the right quantity to maximize production. The opinion leaders must lobby relevant stakeholders in the government and private sectors to invest in cattle farming in the area as this will directly influence availability of cow dung. Both cattle farmers and crop farmers should be given technical training in compost preparation to reduce the bulkiness and labor intensiveness of dealing with cow dung and other animal manure. The use of Organic manure is encouraged because holistically, scientific research has it that organic manure has a better impact on soil organic matter, soil structure and the biological life of the soil as compared to the inorganic fertilizer.

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