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The Effect of Technological Improvement in Farming and Household Conditions on Agricultural Land Use in Ghana, 1984 – 2000

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Abstract

In the face of increase in technological capacity in farming systems, practices, implements and tools used, population growth as well as general improvement in household living conditions and affluence within the period 1984 and 2000, there has been a transformation in the utilisation of agricultural land in two agro-ecological zones (dry savannah and derived savannah farming communities) of the Volta river basin of Ghana. This study uses evidence of a longitudinal household survey carried out in 2000 in the two communities, to assess the role the issues mentioned above have played in influencing agricultural land use both spatially and temporally. A multiple regression model has been adopted to ascertain the significant shifts in the predictors of agricultural land use between 1984 and 2000. The dependent variable has been measured by total household cropped area, and the independent variables include, farming tools, practices and implements used (tractor, inorganic fertiliser, improved seed variety use, length of fallow and land tenure arrangements), improvement in general well-being of household members (educational attainment of household members, size of household), population and affluence (off-farm and on-farm income as well as ownership of certain household items such as car, motorcycle, bicycle, television and radio and livestock namely, cattle, sheep and goat). The results of the multiple regression analysis show that while the use of technologically advanced forms of farm inputs such as tractor, inorganic fertiliser and improved seed variety were not significant predictors of agricultural land use in both communities in 1984, the situation changed in 2000, due to the fact that improved seed variety became a significant variables. Furthermore, the length of fallow period allowed influenced agricultural land use in both communities in 1984 but not in 2000 an indication that fallow periods have shortened. Finally, variables like off-farm income and population growth, have played significant roles in agricultural land utilisation in 2000.

Keywords: Technological improvement, household conditions, agricultural land use, river basins, Ghana