**Inorganic Fertilizer Adoption, Productivity and Rural Smallholder Maize Farmers’ Welfare in Nigeria**

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**Contributed paper prepared for Oral presentation at Tropentag 2016**

**University of Natural Resources and Life Science**

 **(Boku Vienna), Austria**

**18-21 September, 2016**

**Abstract**

*An important share of total agricultural productivity growth has been attributed to increased use of fertilizers. This study uses household survey data of 2305 collected by International Institute of Tropical Agriculture (IITA) in Nigeria to investigate the impact of mineral fertilizer use on maize productivity and welfare of the smallholder farmers in rural Nigeria. We used PSM combined with endogenous treatment effect model to control for both observable and unobservable household heterogeneity. About 68% of the farmers use fertilizer. The percentage of farmers that use fertilizer (92%) was higher among the proportion of those that were aware of the fertilizer. The farmers that uses fertilizer have higher yield, income, per capita expenditure than those that did not use fertilizer.* Main occupation, gender of household head, access to credit, total household asset, farming experience, land ownership, training, irrigation and farm size were the variables that positively and significantly influence the farmers’ decision to use fertilizer *The Average Treatment Effect on the Treated (ATT) was estimated to be between 167.68-170.63 kg/ha. Fertilizer use generate between 15 %-19% increase in maize productivity and 14 % increase in welfare. The results also show heterogeneity in the impact of fertilizer adoption across gender, access to credit and training and irrigation. Our findings show that adoption of mineral fertilizers significantly increase maize productivity and improved rural farming households’ welfare. The policy implication is that the use of fertilizer should be promoted through creation of awareness of its potential benefits and ensuring availability and affordability of fertilizer.*

**Keywords: Fertilizer, Maize, Productivity, Farmers, Poverty, Welfare, Nigeria**

**JEL Classification: C26, I31, O12, Q12**

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