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## Organic Manure Use among Smallholders in the Rainforest of Southeast Nigeria

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### Abstract

The interest in organic manure in African agriculture is not necessarily the same as in the developed countries, where the overwhelming issue is about environmental and health consciousness. In Africa, it is the damage to soils and scarcity of inorganic fertilizer. The problem of declining soil fertility in the crop based farming systems of sub-saharan Africa is well known. This arises because traditional soil fertility management practices, which relied on shifting cultivation and fallow periods are no longer sustainable. Those were low external inputs systems where farmers allowed soils to rest long enough to regenerate adequate organic biomass to restore acceptable levels of fertility. But farmers can no longer do this due to land use pressure as population grows. Continuous cropping without appropriate soil management leads to deterioration in soil physical, chemical and biological properties. Consequently, declining yields and low resource productivity, worsen poverty in rural agricultural areas.

So far research efforts on this matter have been restricted to on-station trials. The present research on which this paper is based was carried out in form of trials with farmers, under their own conditions and management practices. The study was carried out among crop farmers in Abia state in southeast Nigeria. Here, population density is about 598 persons per km<sup>2</sup>, while rainfall reaches 2257 mm per annum. Fifty farmers growing a mixture of various food crops were engaged in the trials. Organic materials were sourced from farms, households and livestock producers. Plots were demarcated for organic and inorganic fertilizer application.

Results show that output from farms using organic manure was slightly less than that from inorganic farms, though only by 5% on the average. However, inorganic fertilizer added about 20% to costs of production. Returns per hectare were higher on organic farms, though farmers observed additional labor demand. This required 10% more labor in man-hours. Labour scarcity and costs are problems in the area. This can be a serious limitation to widespread recommendation of organic farming. Furthermore, farmers complained that organic materials are not easily storable, and that it was difficult to obtain organic materials in the quantity and time needed.

**Keywords:** Inorganic fertilizer, organic biomass, soil fertility