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Does Technology Adoption Reduce Risks for Smallholder Farmers in Cameroon?

BALGAH ROLAND AZIBO, GERTRUD BUCHENRIEDER

Leibniz Institute of Agricultural Development in Central and Eastern Europe (IAMO), Agricultural Development Theory and Policy, Germany

Abstract

Increasing food production is a major aspect of sustaining livelihoods for a majority of rural African households especially for subsistence, smallholder farmers. In Central and West Africa in particular where population growth has been faster than economic growth, the adoption of new and improved agricultural technologies offers the potential to reduce consumption and income risks for smallholder farmers. Although this position is generally accepted within the literature on agricultural technology adoption, empirical evidence is diverse.

This paper presents the results of a comparative analysis for a random sample of 152 smallholder farmers (60 adopters and 92 non adopters of integrated fish farming technologies) from Cameroon villages. The technology was promoted by a non-governmental organisation, known as the Presbyterian Rural Training Center (PRTC). Primary data collection took place between September 1st 2003, and February 15th 2004.

Based on an analysis of selected socioeconomic characteristics (such as income and consumption), the results reveal that technology adopters were better-off and less risk averse, compared to the matching sample. This however could not be attributed to the adopted technology, as returns from the new technology made insignificant contributions to household well being. The results indicate a deficiency in targeting the most risk-exposed smallholder farmers. Nevertheless, the enhancement of sustainable natural resource management is clearly significant amongst adopters and could be attributed to the innovation. The paper concludes with the need to identify and involve most risk-exposed households in technology adoption, and to adapt innovative technologies to the specific needs of such households for optimising risk reduction

Keywords: Fish farming, risk reduction, smallholder farmers Cameroon, technology adoption