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Economic Impact of Livestock Research on Farmers’ Knowledge and Productivity — The Case of Trypanosomosis in West Africa

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Abstract

African animal trypanosomosis (AAT) imposes a serious constraint on the livelihood of cattle-dependent farm households in sub-Saharan Africa. Trypanocidal drugs are predominantly used as a preventive and curative control strategy, but the inadequate application of trypanocides fosters the development of pathogens’ resistance. The research activities of the International Livestock Research Institute (ILRI) in the cotton zone of West Africa have tackled this problem by the provision of information material in local language as well as the demonstration and practice of correct treatment. In particular, the principles of rational drug use had been brought into focus.

In this study a methodology is presented to measure the impact of ILRI’s activities on farmers’ knowledge and its resulting productivity effects at farm level. The impact pathway from improvements in knowledge to a behavioural change of applying more effective practices, which in turn will reduce treatment failures and hence output loss, is investigated. Therefore, data were collected from 508 cattle farmer in the region of Kéné Dougou - common to south-eastern Mali and south-western Burkina Faso. Propensity Score Matching techniques are applied to establish an adequate counterfactual group in order to assess the effect of ILRI’s activities on farmers’ know-how. Knowledge on specific disease management techniques are measured by knowledge test scores.

Results show that participating farmers reach higher scores in all knowledge categories. Moreover, the acquisition of additional knowledge and the application of improved control strategies significantly increase farm performance. It is also shown that farmers benefit from reduced trypanocide expenditures and are able to substitute these drugs by less expensive inputs.

Keywords: Burkina Faso, Mali, propensity score matching, trypanosomosis