IMPACT OF INSECT PEST CONTROL PUSH-PULL TECHNOLOGY ON SMALLHOLDER MAIZE PRODUCTIVITY IN THE EASTERN PROVINCE OF RWANDA

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ABSTRACT

Maize is one of the food and commercial crop in Rwanda in terms of income generating activity to rural population. The production of the crop is however, severely constrained by both biotic and abiotic factors. Biotic factors specifically field pests namely fall armyworm (FAW) and Stemborer (SB) pests are ranked top in causing economic damages to maize production in Rwanda. Up to 23-50 percent of food supply in Rwanda is lost due to pest infestation. The control of FAW and SB pests is however primarily dependent on chemical pesticides application, ash, intercropping and soil whose technologies have shown ineffectiveness in combating the two pests. To respond to this challenge ICIPE introduced climate-smart push-pull technology (PPT) to reduce the yield losses and minimize incidences of pest resistance simultaneously.

Despite the revealed benefits of the technology, its impact of adoption in Rwanda has not been studied. There also exists a gap in knowledge on the factors influencing the intensity of adoption among maize farmers in Eastern province of Rwanda. Therefore, an endogenous switching regression model will be used to evaluate the impact of insect pest control PPT on maize productivity. The study will also assess the factors influencing intensity of adoption of insect pest control PPT using Tobit model. Multi-stage sampling technique was used to obtain a sample of 400 maize farmers. The expected empirical results on impact of PPT will be useful to various stakeholders and policy makers (National and districts of Rwanda) in formulating strategies intended to design and promote dissemination of PPT to farmers. Knowledge on determinants of intensity of adoption of PPT will also point out areas of policy intervention that need to be emphasized in order to ensure widespread dissemination and promotion of the technology. The data will then be analyzed using STAT version 14.

Key words: FAW, Stemborer, PPT, Productivity, ESR, Tobit, Intensity, Impact, Rwanda.