

Recovery of Rice Production in Sierra Leone from the 2014 – 2015 Ebola Pandemic

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The ebola pandemic in Sierra Leone Started at the end of the rice planting season and rapidly spread throughout the country up to the maintenance and main harvest season largely affecting households in Port Loko, Kailahun, Bombali, Tonkolili, Kenema and Bo districts which are also major rice production districts. The pandemic lasted for a period of eighteen months from May 25, 2014 to November 7, 2015. This study makes use of secondary household level data from the Sierra Leone Integrated Household Surveys 2011 and 2018, and the Sierra Leone 2015 National Population and Housing Census (NPHC) obtained from Statistics Sierra Leone to estimate the impact of the 2014 – 2015 Ebola pandemic on rice production in Sierra Leone. The dependent variable is rice production measured in kilogram and the main independent variables are ebola death rate (EDR) and ebola infection rate (exposure). EDR and exposure are measures of district-level ebola virus disease (EVD) occurrence based on the total number of ebola-related cases and deaths reported by households during the periods of the pandemic. Two methods were employed for the estimation of the analysis: first, an OLS regression estimation was conducted using the 2015 NPHC data to establish the actual impact of the EVD pandemic on rice production and the result shows that a one percentage point increase in exposure resulted to a decline of rice production by 720-kilogram accounting for 7.2¹ percent and the coefficient is statistically significant at the 0.1 percent level of significance. Secondly, the standard difference-in-difference (DID) estimation model was applied using the 2011 and 2018 Integrated Household Survey data and the results indicates that an increase in percentage term at district-level of household ebola-infection resulted to a decline of 17.9-kilogram of rice production after the Ebola pandemic accounting for 2.6² percent and is statistically significant at the 1 percent level. Therefore, from the performance of these analysis, it is suggested that rice production in Sierra Leone has recovered by 4.6³ percentage point as of 2018.

¹ The coefficient of exposure on rice production (720.0) reported in Table 2 was divided by the mean of rice production (10045.3) recorded in Table 1 and multiplied by 100.

² The coefficient of exposure on rice production (17.9) reported in Table 5 was divided by the mean of rice production (692.9) recorded in Table 3 and multiplied by 100.

³ 7.2% - 2.6% = 4.6 percentage point