

## Appendix 1:

## Ethics and Informed Consent

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<b>Funding</b>	National Natural Science Foundation of China (grant number: 72163014)				
<b>Reasons for application</b>	Academic communication, Paper presentation				
<b>Paper title</b>	Economic and environmental effects evaluation of farmer's green production behaviors: Evidence from major rice-producing areas in Jiangxi Province				
<b>Research purpose</b>	Fertilizer inputs have surpassed the optimal level for balancing economic returns and ecological efficiency. According to the law of diminishing marginal returns, exceeding this optimal level reduces marginal output. Overreliance on chemical fertilizers has hindered agricultural economic growth. Additionally, irrational use of these fertilizers has caused significant ecological crises, including soil fertility decline, water pollution, and increased greenhouse gas emissions. These issues threaten agricultural product quality and safety and constrain sustainable agricultural development. Therefore, the scientific application of chemical fertilizers is crucial for sustainable agricultural development.				
<b>Research approach</b>	This paper utilizes survey data from 1,345 farm households in the main rice production areas of Jiangxi Province, China, using the example of reduced fertilizer application behavior among rice farmers. By constructing a DEA-SBM model with undesirable outputs to measure environmental effects, and applying an endogenous switching model to test the economic and environmental effects of farmers' adoption of green production technologies.				
<b>Review comments:</b> 1. This study does not fall within the scope of ethical research. 2. The authors use survey data from National Natural Science Foundation of China (grant number: 71573111) for analysis. The survey was conducted anonymously, and all participants were fully informed of the reasons for conducting the survey and the use of relevant data. No personal identity information was collected during the survey, and there were no conflicts of interest or potential risks for the rights holders.  Welfare Ethics Committee of Jiangxi Agricultural University (seal) Date: Oct. 20, 2022					