ASSESSING THE SUSTAINABILITY OF RICE FARMING SYSTEMS UNDER CLIMATE CHANGE PRESSURES IN BUDURAN DISTRICT, SIDOARJO

THESIS

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AGRIBUSINESS STUDY PROGRAM
FACULTY OF AGRICULTURE
UNIVERSITAS PEMBANGUNAN NASIONAL "VETERAN" JAWA TIMUR
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FOREWORD

Praise be to the presence of God Almighty for all His graces, gifts, and guidance so that the author can compile and complete a thesis entitled "Assessing the Sustainability of Rice Farming Systems Under Climate Change Pressures in Buduran District, Sidoarjo" properly and smoothly. The preparation of this thesis is intended to meet the requirements to complete lectures in the Agribusiness Study Program at the Faculty of Agriculture, Universitas Pembangunan Nasional Veteran Jawa Timur. The author realizes that this thesis will not be completed without the support of various parties, especially Mirza Andrian Syah, S.P., M.P., as the main supervisor and Dr. Ir. Mubarokah, M.T, as the accompanying supervisor who has provided a lot of direction, motivation, input, and spent his time and energy with patience and sincerity to guide the author. The author also expresses a lot of gratitude to:

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The author realizes that this thesis still has shortcomings and is far from perfect. Therefore, the author really hopes for constructive criticism and suggestions for the improvement of this thesis in the future. Finally, the author hopes that this thesis can provide benefits for various parties, especially in the field of scientific development in the agricultural and agribusiness sectors.

Surabaya, May 2026

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ASSESSING THE SUSTAINABILITY OF RICE FARMING SYSTEMS UNDER CLIMATE CHANGE PRESSURES IN BUDURAN DISTRICT, SIDOARJO

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ABSTRACT

Climate change is one of the main challenges for the sustainability of rice farming Climate change has become a major challenge to the sustainability of rice farming as it causes rainfall uncertainty, increased frequency of disasters, and disruptions to agricultural productivity. This condition also occurs in Buduran Subdistrict, Sidoarjo Regency, which has experienced a decline in rice production and increased vulnerability to floods and droughts. This study aims to analyze the effect of climate change on rice production, measure the sustainability level of rice farming, and formulate mitigation strategies implemented by farmers. The research employs a quantitative approach using simple linear regression analysis, Multidimensional Scaling (MDS) Rapfish, and qualitative descriptive analysis through interviews, observation, and focus group discussions (FGD). The results show that climate change has a significant negative effect on rice production. The multidimensional sustainability level of rice farming is 48.31, categorized as less sustainable, with economic (47.70), social (47.42), and environmental (46.78) dimensions, where the environmental dimension is the weakest. Mitigation strategies implemented by farmers include adjusting cropping patterns based on climate conditions, improving water management efficiency, optimizing input use, applying integrated pest management, diversifying farming through intercropping systems, and strengthening income through crop marketing and institutional support. These findings highlight the importance of adaptive and integrated approaches in maintaining the sustainability of rice farming.

Key words: sustainability, rice farming, climate change, MDS-Rapfish, Buduran

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