Agri-environmental Policies in the Indonesian and Thailand: A Comparison

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Abstract

Environmental issues in the agricultural sector became an interesting topic after introducing the Green Revolution in Indonesia and the Sustainable Farming System in Thailand. This article discusses the efforts of the Governments of Indonesia and Thailand in implementing Agri-environmental policies (AEPs). The implementation of AEPs has become a discourse that in the last few decades has played an increasingly vital role for the government to encourage the Environmental Performance Index (EPI) and the Sustainable Nitrogen Management Index (SNMI). Indonesia and Thailand are two developing countries in the Asia Pacific that have great attention in implementing AEPs. Therefore, this research has two main objectives: 1) Analyzing the determinants of successful implementation of AEPs in the two countries, and 2) Analyzing the role of AEPs in each country for improving the Environmental Performance Index and Sustainable Nitrogen Management Index. The method used in this research is comparative descriptive with a qualitative approach. Meanwhile, the data collection technique was carried out by studying documentation from various sources related to AEPs. The results show that Indonesia's AEPs, in this case, the Green Revolution, are superior in improving the Sustainable Nitrogen Management Index indicators. Meanwhile, the determinant of the success of the AEPs, namely the Sustainable Farming System in Thailand, is in optimizing the Environmental Performance Index.

Introduction

Agriculture was seen as a source of contributions that helped induce industrial growth and a structural transformation of the economy. However, globalization, integrated value chains, rapid technological and institutional innovations, and environmental constraints have rapidly changed the context for agriculture's role. The same thing happened in ASEAN countries. Agriculture is seen as a source of the contribution that helps encourage industrial growth and structural transformation of the economy. Moreover, on average, ASEAN countries are agricultural countries, including Indonesia and Thailand. These two countries have many similarities. Apart from being both ASEAN members and experiencing a relatively high rate of population growth, Indonesia and Thailand are also countries with tropical climates that have superior natural resources in agriculture.
This research has two main objectives:

1) Analyzing the determinants of successful implementation of AEPs in the two countries

2) Analyzing the role of AEPs in each country for improving the Environmental Performance Index and Sustainable Nitrogen Management Index. Besides that, this study wants to compare Agri-environmental policies in Indonesia and Thailand

Methods

This study uses a comparative descriptive method with a qualitative approach. At the beginning of the results and discussion, the general description and urgency of Agri-environmental policies will be described. Furthermore, there is a discussion regarding the comparison of the efforts of the Governments of Indonesia and Thailand in the application of Agri-environmental policies, and then specify an analysis is carried out on 1) Determinants of the implementation of Agri-environmental policies in the two countries: 2) the role of each country's Agri-environmental policies in improving the Environmental Performance Index (EPI) and the Sustainable Nitrogen Management Index (SNMI). Meanwhile, the data used in this study are secondary. The data referred to are articles in Indonesian or English originating from scientific journal articles, parts of books, or web pages from trusted sources relevant to research topics related to the efforts of the Governments of Indonesia and Thailand in implementing Agri-environmental policies. The year of publication of the data used is not limited.

Results and discussion

- **Agri-environmental policies in Indonesia**

Indonesia's central agricultural policies are framed in the 2012 Food Law, which establishes food sovereignty and self-reliance objectives. One of the efforts of the Government of Indonesia in implementing agricultural, environmental policies is the Green Revolution. Four primary efforts can be made to increase agricultural production in Indonesia through the Green Revolution policy, namely: 1) Agricultural intensification; 2) Agricultural extensification; 3) Agricultural diversification; and 4) Agricultural rehabilitation.

- **Agri-environmental policies in Thailand**

The Thai government adopts Agri-environmental policies called the Sustainable agriculture system, which protects agricultural products by providing incentives and subsidies to farmers. This policy has encouraged people to use vacant and unproductive land to plant crops with export prospects. Thailand has developed five patterns of sustainable farming systems, namely integrated farming systems, organic farming, natural farming, agroforestry, and New Theory Farming. Of the five patterns of sustainable farming systems, organic farming is growing more rapidly. This is because of the full support of the Thai Government, and they even have an agenda to promote Thailand as a "Kitchen of the world" and "Organic producer".

- **Analyzing the determinants of successful implementation of AEPs in Indonesia and Thailand**

The determinants of the success of implementing Agri-environmental policies in Indonesia are: 1) Increased farmer welfare; 2) The strengthening of the rural economy; 3) Improving national food security; and 4) Opening awareness of rural communities on the importance of technological adaptation. Meanwhile, the determinants of the success of implementing Agri-environmental policies in Thailand are: 1) Integrated Agricultural System; 2) Organic Agriculture; 3) Natural Agriculture; 4) Agroforestry.

- **Analyzing the role of AEPs in Indonesia and Thailand for improving the EPI and SNMI**

The Environmental Performance Index (EPI) is a method of quantifying and numerically marking the environmental performance of a state's policies. On the other side, The Sustainable Nitrogen Management Index (SNMI) is a one-dimensional ranking score that combines two efficiency measures in crop production: Nitrogen use efficiency (NUE) and land-use efficiency (crop yield).

Table 1. Comparison of EPI rankings between Indonesia and Thailand

	EPI Rank (World)	Env. Performance Index	Env. Health	Ecosystem Vitality	2021 Population
Thailand	121	49.80	46.21	52.33	69,950,850
Indonesia	133	46.92	45.44	47.90	276,361,783

It can be seen in Table 1 that the implementation of Agri-environmental policies in Thailand is quite influential in increasing the Environmental Performance Index so that Thailand can excel from Indonesia when viewed from the index.

Table 2. Comparison of SNMI rankings between Indonesia and Thailand

	SNMI Rank (World)	SNMI Rank (Asia-Pacific)	2021 Population
Indonesia	45	7	69,950,850
Thailand	117	14	276,361,783

Meanwhile, in Table 2 can be seen that the implementation of Agri-environmental policies in Indonesia is superior in increasing the Sustainable Nitrogen Management Index compared to Thailand.

Conclusion

In conclusion, the results show that Indonesia's AEPs, in this case, the Green Revolution, are superior in improving the Sustainable Nitrogen Management Index indicators. Meanwhile, the determinant of the success of the AEPs, namely the Sustainable Farming System in Thailand, is in optimizing the Environmental Performance Index. These results can be a reference for the two countries or even other countries to learn from each other