COMMITTEE
THE 2022 ISAE (PERHEPI)
INTERNATIONAL CONFERENCE
MAY 27-29, 2022

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Malang, 12th Mei 2022

Dear Yuyun Puji Rahayu,

Letter of Acceptance for Oral Presentation

We are pleased to inform you that your abstract entitled ‘**Is Sago the Best Substitution for Rice in Papua? – An analysis of Demand for Rice in Papua’** has been **ACCEPTED** for oral presentation at the International Conference on Transforming Global Food System : Strengthening Agricultural Sector, which will be held in Malang, 27th – 29th Mei 2022.
Congratulations

Please prepare your full paper by using the template (see attachment file) in MS Word Document (.docx) for necessary editing, to be included in the proceeding that have an ISBN (International Standard Book Number) and Journals affiliated with PERHEPI.

Please submit the full paper and power point (PPT) at ic.isaeperhepi@gmail.com before 20th May 2022. We kindly remind you to make payment no longer than 23rd May 2022.

Due to the Covid-19 pandemic issue all over the world, ISAEIC 2022 will be held as a hybrid conference (remote presentation) through video meetings. Please prepare your PowerPoint slide presentation (.pptx) or video presentation.

We are looking forward to meeting you at the conference

Best Regards,
Chief Executive Officer

THE 2022 ISAE (PERHEPI) INTERNATIONAL CONFERENCE

Dr. Fahriyah, SP., M.Si.

IS SAGO THE BEST SUBSTITUTION FOR RICE IN PAPUA? – AN ANALYSIS OF DEMAND FOR RICE IN PAPUA

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Sub-Theme: 1
Food System Approach Security for Food And Nutritions Security

BACKGROUNDS

- Indonesia is known as low food resilient nation➔
    1. issue about social unrest vulnerability
    2. the increase of global food prices (Harahap, 2020).
- On the other side, one of SDGs targets is to gain zero hunger = strong sustainability of food security.
- As a strategic sector, agriculture reinforces the provision of food needs.
- The existence of diversification of food material from the agricultural sector will also strengthen the food security of a country/region.
- With a variety of alternative foodstuffs, food crises in an area can be prevented or avoided.

BACKGROUNDS

- Facts of Sago
- High carbohydrate resource
- The total land area (forest) of sago is 5.5 million ha spread over Sumatera, Kalimantan, Sulawesi, Maluku, and Papua.
- Most of them (95%) are in Papua and West Papua
- Potency: the epicenter of the development of a modern and large-scale sago-based industry, in Indonesia and at the same time in the world (Bantacut et al., 2020)

BACKGROUNDS

- Facts from Papua & West Papua
- Mass media: has informed that food security has become one of the strategic issues
- BBC news (2018) has reported that measles and malnutrition epidemic in Papua did not only occur in Asmat Regency, but also in the Bintang Mountains area, which is 286 km from Agats, the capital of Asmat.
- Other areas that have ever been reported as experiencing vulnerability:

1. Yahukimo (Akbar, 2019)
2. Maybrat Regencies (Ola et al., 2021; Larastiti, 2020; Wambrauw, 2015).

RESEARCH MOTIVATION

- Food security program implementation has been done by supplying 10kg sago/month (Haryanto et al., 2015), yet it is insufficient.
- In terms of industry: the commercialization of sago products is still inadequate and sago industry is still at its earliest stage.
- Many studies have been conducted for the use of sago as a food ingredient with various forms of products, but not many sago products have been commercialized and cannot substitute the position of rice.
- Past studies about demand and its elasticity for staple food done by Kuntjoro (1982). Results of this study stated that income elasticity is directly proportional to the quantity and quality of rice.

RESEARCH MOTIVATION

- In addition, it was also found that the demand for rice outside Java is higher than the average level of production.
- Thus, a more intensive distribution system is needed from rice surplus areas to non-surplus areas.
- The question that then arises from the results is what about the consumption of staple food other than rice and how is the elasticity of it? Study from Papua island.
- Aim: this paper answers the question of whether Sago acts as a complementary or substitution product for rice.

RESEARCH METHODS

- Data: SUSENAS data in 2014 and 2018,
- This research has used Susenas data on March which had a larger sample size than on September.
- This study uses data on households living in Papua and West Papua Provinces. As sample of this study is 133,104 number of households taken from SUSENAS data.
- Demand for rice is affected by its price, sago price, and income. Therefore, this study considers the current issue that sago has a negative position in the demand equation for rice. This research is a quantitative which is used to show the effect of the independent variable on the dependent variable, namely the demand for sago.

RESEARCH METHODS

- The method used to answer the purpose of this research is ordinary least square (OLS), with the following equation specifications.

$$\ln Qd_i = \alpha + \beta \ln P_i + \gamma I_i + e_i \qquad (1)$$

- equation (1) is modified to see whether sago is a substitute or complementary good, as follows:

$$\ln Qd_i = \alpha + \beta \ln P_i + \delta Psago_i + \gamma I_i + e_i \qquad (2)$$

RESULTS

Table 1. Results for Price, Cross Price & Income Elasticities

Variables	Demand for Rice (Susenas, 2014)		Demand for Rice (Susenas, 2018)	
	Ln Demand (kg)	Ln Demand (kg)	Ln Demand (kg)	Ln Demand (kg)
(1)	(2)	(3)	(4)	(5)
Ln price of rice	-0.828***	-0.831***	1.323***	1.581***
	(0.014)	(0.014)	(0.085)	(0.086)
Ln price of sago		0.186***		0.190***
		(0.014)		(0.017)
Ln income	0.501***	0.505***	0.634***	0.628***
	(0.003)	(0.003)	(0.002)	(0.002)
Constant	1.733***	0.204	-20.764***	-24.703***
	(0.126)	(0.174)	(0.801)	(0.845)
Observations	133,104	133,104	162,285	162,285
R-squared	0.262	0.264	0.384	0.385

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

DISCUSSIONS

- In 2014, the value of the own price elasticity for rice commodities showed a negative value, meaning that an increase in rice prices would have an impact on a decrease in rice demand.
- Rice commodity is classified as inelastic because it has its own price elasticity which is less than 1 but greater than zero (0<e<1).
- This means that households are less sensitive to changes in the price of rice commodities because rice is the staple food of most people in the provinces of Papua and West Papua.

DISCUSSIONS

- Meanwhile, in 2018, the own price elasticity value of the rice commodity was positive, meaning that an increase in rice prices would have an impact on increasing rice demand.
- Rice commodity in this period has its own price elasticity value greater than 1 or elastic.
- Households are very responsive to price changes where a 1% price increase will be responded to the households by increasing their consumption by 1.321 – 1.581 percent.
- The two conditions at this point in time further emphasize that rice is the staple food for households in the provinces of Papua and West Papua.

DISCUSSIONS

- Cross price elasticity can be used to see whether an item can be categorized as complementary or substitute goods.
- The results of observations in two time periods (2014 and 2018) on rice and sago commodities show the same pattern.
- The two observation points indicate that **sago** is a **substitute for rice**.
- This can be seen from the positive cross price elasticity value (e>0).
- This means that an increase in the price of sago will lead to an increase in demand for rice.
- The estimation results show that an increase in the price of sago 1%, will increase the demand for rice by 0.186 percent in 2014 and 0.190 percent in 2018.

DISCUSSIONS

- The threat of food shortages which is very real in the future, both due to epidemics and climate change, should be overcome by utilizing the very high potential of sago as food.
- Changes in weather conditions have a significant impact on agricultural production, affect water availability, disrupt water systems and watersheds, and cause social problems (Wario et al., 2012).
- This will have an impact on future food supplies that are not safe (Immerzeel et al., 2010). Thus, it is necessary to look for alternative food ingredients, one of which is sago.
- Sago is one of the food crops inherited from the nation's ancestors which is relatively undisturbed by climate change due to its specific nature and growing conditions.

DISCUSSIONS

- Stakeholders are still not free because sago has not yet entered into the staple food politics regulated by the government.
- Local governments have mobilized the use of sago sporadically due to budget constraints to build infrastructure and logistics to encourage the growth of sago-based industries.
- Several local governments in the provinces of Papua and West Papua have issued regulations related to the use of sago as the main commodity in every event organized by the government.
- This condition needs to be continued, because to increase public consumption, an institutional system is needed that is strengthened by various regulations (Bantacut, 2008).

DISCUSSIONS

- Food self-sufficiency is the main government program through the Ministry of Agriculture, which relies on rice and corn for the following reasons: the basic food needs of the majority of the community, its availability is fast (seasonal plants) and the production/stock of many upstream-downstream technologies is adequate.
- The Food Self-Sufficiency Program until 2045 does not rely on re-diversification (back to local food diversity) as a way to fulfil the number and strengthen food security.

DISCUSSIONS

- Re-diversification is only a minor program in overall development. Massive use of local food such as sorghum, cassava, corn, and sago are not reflected in the volume of activities and financing.
- Until 2020, the average availability of sago flour is 1.34 kg/capita/year. This shows that sago is not sufficient as a staple food in Indonesia.
- Therefore, the government has an important role in developing sago as a staple food commodity through budgetary politics in the upstream to downstream sectors.

CONCLUSION

- The results show that sago is a substitution product for rice. Thus, food security in Papua will be better if it is supported by policies that support sago as a substitution besides its function as local food.
- Recommendation:

1. In the form of planning and budgeting politics related to sago as a local food.
2. Local governments should establish special food security institutions for sago.
3. Infrastructure development that supports sago as a local staple food.

If not now, when..
If not us, who else..

THANK YOU

Kalau bukan sekarang kapan lagi..
Kalau bukan kitorang siapa lagi..

CERTIFICATE

Presented to:

Yuyun P. Rahayu

as the presenter in

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hosted by collaboration between Indonesian Society of Agricultural Economics (PERHEPI) and Brawijaya University

Malang, May 27-29, 2022

Chief Executive Officer of
The 2022 ISAE-IC

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