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The Value of the Benefits of Mangrove Ecosystems in the Village of Pulau Cawan, Mandah, Indragiri Hilir District

Nilai Manfaat Keberadaan Ekosistem Mangrove di Desa Pulau Cawan Kecamatan Mandah Kabupaten Indragiri Hilir

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Abstract

The purpose of this study is to know the value of an economic benefit of the total mangrove forest located in the village of Pulau Cawan Indragiri Hilir regency, namely using the concept of valuation economic in calculating the benefits of mangrove existence that has the potential of existing natural resources. This research was conducted in August 2020, The observations made in the field use observations and direct interviews with the local government and the community around the village of Pulau Cawan. The results of the research obtained showed the ecosystem of the mangrove forest area of the village of Pulau Cawan which has an area of ±3,401.66 ha, and there is a value of existing benefits of IDR 21.200.000 ha/year. The factors that will affect the willingness to pay (WTP) of the community around mangrove forests in the form of the respondent's income level, the respondent's education level, the respondent's gender, the respondent's age and the respondent's family dependents. The benefit value of the existence of The Village of Pulau Cawan can be used as a basis for decision-making by the local government and the surrounding community in the management of policies and utilization of mangrove forests in maintaining and preserving mangrove forest ecosystems for the sustainability of the future. With the results obtained in knowing the existence of the value function of a mangrove ecosystem, it can result in the formulation of the mangrove forest conservation reserve area of Pulau Cawan village, namely the implementation and development of the "Ecu-Edu Wisata Mangrove" (EEWM) concept plan.

Keywords: Valuation Economy, Benefits of existence, Mangrove forest ecosystem

Abstrak

Tujuan dari penelitian ini mengetahui nilai besarnya suatu ekonomi manfaat dari total mangrove hutan yang berada Desa Pulau Cawan Kec. Mandah Kab. Indragiri Hilir dalam penggunaan ekonimi valuasi yang berkonsep dalam menghitung manfaat keberadaan mangrove yang memiliki sumber daya alam yang sangat berpotensi. Jadwal Penelitian telah dilakukan Bulan Agustus 2020, Adapun pengamatan yang dilakukan dilapangan menggunakan pengamatan serta wawancara langsung terhadap pemerintah setempat dan masyarakat sekitar Desa Pulau Cawan. Adapun hasil penelitian yang didapat menujukkan ekosistem Kawasan hutan mangrove desa pulau cawan yang mempunyai luas ±3,401.66 ha, serta terdapat manfaat akan nilai suatu keberadaan sebesar Rp. 21.200.000 ha/tahun Adapun factor yang akan mempengaruhi kesediaan membayar (WTP) masyarakat sekitar hutan mangrove berupa tingkat pendapatan responden, tingkat Pendidikan responden, jenis kelamin responde, usia responden serta tanggungan keluarga responden. Dengan adanya manfaat nilai keberadaan Desa Pulau Cawan

dapat dijadikan suatu dasar pengambilan keputusan oleh pemerintah setempat maupun masyarakat sekitar dalam pengelolaan kebijakan serta pemanfaatan hutan mangrove dalam menjaga dan melestarikan ekosistem hutan mangrove untuk keberlanjutan masa yang akan dating. Dengan hasil yang didapatkan dalam mengetahui keberadaan fungsi nilai sesuatu ekosistem mangrove ini maka dapat menghasilkan perumusan Kawasan pencadangan konservasi hutan mangrove desa pulau Cawan yaitu penerapan serta pengembangan rencana konsep Ecu Edu Wisata Mangrove (EEWM).

Kata kunci : Valuasi Ekonomi, Nilai keberadaan, Ekosistem hutan mangrove

1. Introduction

Mangrove timberland can be a natural characteristic asset that includes a wide range of possibilities that can straightforwardly benefit human life with implications that can be felt, whether it is individuals or individuals who are around the mangrove forest range and individuals living far from the mangrove zone (Kustanti, 2011). Mangroves are an interesting and vivid form of environment, found in areas that have tides in muddy/coastal areas as well as very small islands and can be a potential characteristic asset. n mangroves have valuable financial and biological assets that are of high value but very powerless to harm if they are not smart in maintaining, protecting, and supervising them.

The presence of mangroves incorporates a fairly vital part of life, usually because in the mangrove environment various kinds of organic assets will be very useful and prosperous for humans in its management (Tuwo, 2011). Concurring to Karlina (2016) mangrove biological systems have two fundamental capacities, to be specific environmental and socio-economic capacities. The biological capacity is as a coastal defender (disintegration, tidal wave, storm, dregs catcher, penetration rate reducer), maintaining biodiversity, and supporting other coastal biological systems (environment, nourishing place, bringing out, and caring and expanding other living things) (Widiyanto, 2013). While social and economic work in the mangrove environment suppliers of medicines, building materials and tourism, wood, agricultural food and refreshment materials, and fisheries (Anwar & Gunawan, 2007).

Pulau Cawan Village is included as one of the coastal and small islands conservation reserve areas in Indragiri Hilir Regency. As referred to, the Solop Beach Small Island Park with a total area of ±205,595.64 Ha. The reserve area for coastal and small island conservation is operationally managed by the Riau Province Maritime and Fisheries Service and UPT (Anonim, 2017).

The immense benefits that exist in the mangrove forest environment make it extremely defenceless to top abuse and extreme natural debasement, appearing in mangrove forest areas that are declining each year. Mangrove forest improvement is necessary to extend the financial rewards in following the social conditions of the community. But all are indistinguishable from environmental analysis assessments, though, which are good for society 1 antagonistically affecting existing mangrove woodlands. The calculation is based on the ability of mangrove ecosystems to absorb and store carbon (Rahmawati, 2018). This is one of the global mitigation efforts in overcoming the increase in CO_2 content in the atmosphere which is a factor in world climate change (Muharam, 2014).

The existence of mangrove forests realises the significance of this area, an investigation is required to provide info on how much the environmental price of mangrove forests within the city of Pulau Cawan. Anticipated things to be utilised as data for the government and community in choosing policy making, which can make appropriate utilisation of the mangrove forest within the city of Pulau Cawan, in managing to supply environmental and financial benefits.

2. Material and Method

2.1. Time and Place of Research

This research was conducted in August 2020, in Pulau Cawan village, Mandah, Indragiri Hilir district, Riau province. This area of investigation was chosen with some contemplation, to be specific: Pulau Cawan town is one of the areas that includes a large mangrove forest area of 3,401.66 ha, where the presence of this mangrove forest zone has existed since recent times this town was formed by the awareness of the community around the mangrove forested area.

2.2. Methods

The strategy of testing information or respondents in this case is to utilise the Inadvertent Inspecting strategy. In this method, testing data or respondents are not engineered. Analysts directly collect information

from experienced testing units. The unexpected valuation strategy can be a strategy that can increase self-esteem and the price is not used well. The unexpected valuation strategy (CVM) points to the willingness to pay and the willingness to recognise.

2.3. Data Analysis

The factors that will be measured in this contemplation are: The price of the benefit of presence is the price obtained from the willingness to pay the community for the presence of mangrove biological systems: (willingness to pay = IDR/year) (Harahab, 2010).

3. Result and Discussion

Pulau Cawan may be a coastal zone of North Indragiri that has tremendous potential in the field of fisheries, Pulau Cawan Town has 5 neighbourhoods, 3 RW, and 2 villas with an addition to the town around 36.30 km^2. Geologically, Pulau Cawan Town is bordered to the north by Belaras City, South: Kuindra, West: Aceh Mangrove City, East: Strait of Berhala. The emergence of the results of the examination of the description get mangrove woodland coverage in the District of Mandah 33,576 ha at the time the mangrove forest zone on asking the location of the town of Pulau Cawan measured to be 3,401.66 ha or 10.13% of the mangrove forest zone Mandah District.

Based on perceptions in the field of mangrove vegetation such as differentiated in the container island city 8 types of vegetation, specifically; *Rhizophora mucronata, R.apiculata, Xylocarpus granatum, Sonneratia alba, S.ovata, Lumnitzera racemosa, Bruguiera gymnorrhiza*, and *Nypa fruticans* (Noor et al., 2006).

3.1. Existence Value Benefits

The valuation of the benefits of the presence of mangrove woodland for Pulau Cawan City was obtained by utilising the CVM (Contingent Valuation Strategy) strategy to be able to determine the price of WTP (Willingness to Pay) or readiness to pay from the community for the presence of mangrove woodland (Nugroho, 2011). Respondents were selected based on the Inadvertent Examining strategy in this testing strategy is not envisaged. Analysis quickly gathers information from experienced examination units. Based on the level of instruction, vocation, number of dependents and sexual orientation.

Based on the extension of the spirit to pay price between IDR 50,000-500,000, it appears about get the emergence of the instruction level has more impact on the respondents to decide the spirit to pay the price of mangrove woodland. Lower instruction level bunches generally give moo values compared to high instruction courses. Results can be obtained through the calculation of readiness to pay per year is IDR 2,000,000, while the normal price is IDR 40,000 after which it is increased by the population (530 tenants). Therefore, the price of the environmental benefits of mangroves within the town of Pulau Cawan from respondents is IDR 21,200,000 ha/year.

The price of WTP in each local changes depending on the accessibility of the salary spent by the people who surround it, the more important the accessibility of the salary spent can be used as a sign that the more important their attention and concern for the support of mangrove ecosystems. Another figure that is thought to recognise the price of the spirit of paying is the need for information related to the benefits of the presence of the mangrove environment, indifference to an item that is meritorious for life will make the lack of price of the absence of an item in the daily lives of people who are in forested mangrove areas and this affects the price of WTP given (Fauzi, 2014).

Indriyanti et al. (2015) findings related to the WTP price of mangrove biological systems in Blanakan Inlet, Subang was measured to be IDR 26,56400/ha/year which appeared to be obtained from 132 respondents with a mangrove coverage of 782.34 ha and from the price it was not in line from the WTP examination in the thinking location which stated that the level of instruction & salary was not associated with a little readiness to pay for respondents. This investigation was proven by statistical tests in the frame of Crosstabs Chi-Square and this emerged (Heriyanto, 2008).

3.2. Factors Influencing Respondents' Willingness to Pay for Mangrove Ecosystems in Pulau Cawan, Mandah, Indragiri Hilir District

The factors considered in this judgement are the variables of the respondent's age (X_1), the respondent's salary level (X_2), family (X_3), the respondent's instruction level (X_4), and sex (X_5). WTP (Y) = $30188.883+45.261(X_1)+0.004(X_2)-526.466(X_3)+3011.163(X_4)-2189.480(X_5)$. To determine the magnitude of the coefficient price of each independent variable, in this case, the age of the respondent (X_1), the salary level of the respondent (X_2), family (X_3), the level of instruction of the respondent (X_4) and sexual orientation (X_5) can be seen in the size of the recurrence coefficient (b1, b2, b3, b4, b5).

The test result of the negative coefficient value of the variable above is some dependents variable (X_3) The number of dependents variable includes a coefficient price of -526.466, which means that every 1 increase in the number of dependents at that time wants to pay will be reduced by 526.466 expecting that other factors are

consistent. Usually in understanding with Santoso (2000) that on the off chance that the number of dependents increases at that time the desire to pay will decrease. Sexual orientation variable (X_5) The sex variable incorporates a coefficient price of -2189.480 which means that for every 1 increase in individual sexual orientation at that point the desire to pay will decrease by 2189.480 accepting that other factors are stable. Usually in line with Plummer's (2009) investigation that if sex increases at that points the desire to pay will decrease.

The positive coefficient value of the variable test above, the variable age of the respondent contains a positive coefficient price of 45.261 which means that with every 1-year increase in the age of the respondent, the amount that wants to pay will increase by 45.261 accepting that other factors are stable. This can be following the emergence of Fauzi's (2014) that on the off chance that the age of the respondent increases at that time the desire to pay will increase. Variable salary level (X_2) Variable salary level includes a positive coefficient price of 0.004 which indicates that every IDR 1 income expansion will cause an expansion of want to pay by 0.004 accepting that other factors are stable. Usually in understanding Fauzi (2006) where the result of the coefficient of relapse of variable pay rate is positive. The instruction level variable (X_4) instruction level variable includes a positive coefficient price of 3011.163 which indicates that for every 1 increase in instruction level at that time the desire to pay will increase by 3011.163 expecting that other factors are consistent. It is usually in understanding with the investigation of Yunaz (2020) where it appears about the variable coefficient of recurrence of instruction level moreover gives a positive coefficient

3.3. Partial Test (T-test)

The t-test is known as a halfway test, which is to test how each free variable exclusively affects the dependent factors. Respondents' age variable theory test (X_1) Based on the direct test appeared for the respondents' age factor getting a t check of 0.799 at that point the direct price of 0.799 < t table (2.002), with an implication of 0.429 > 0.05. This implies that the respondent's age variable has no noteworthy impact on willingness and paying. The test of the theory of the variable pay level (X2) test that emerged, it is known that the variable pay level gets a t-count of 5.273 tables> t (2.002) .with an implication of 0.105 > 0.05. This implies the variable pay level has a noteworthy impact on the want to pay.

The speculation test of the variable number of dependents (X_3) test appears, it is known that the factor number of dependents gets a t amount of -1.280 at that time the highest price of 1.280 < t table (2.002) with an implication of 0.207 > 0.05. This implies the amount dependent variable has no critical impact on want to pay. Instruction level variable theory test (X_4) Based on the emerging test, it is known that the instruction level factor gets a tally of 5.453 tables> t (2.002), with an implication of 0.000 < 0.05. This proposes that the level of instruction variable has a critical impact on willingness to pay. Test of theory sexual orientation variable (X5) Based on the emerging test, it is known that for the sex factor getting a t amount of -1.654 at that point the direct self-esteem of 1.654<t-table (2.002) with an implication of 0.000<0.05. This implies the sex factor has no noteworthy impact on the willingness to pay.

4. Conclusions

Based on the emergence of questions in the field about the self-esteem assessment of the benefits of the mangrove environment in the city of Pulau Cawan, the following conclusions can be drawn: The WTP price in each local change depends on the accessibility of the payment incurred by the encircling community, the more important the accessibility of the salary incurred can be utilised as a sign that the more important their concern for mangrove ecosystem support.

Another description that is thought to recognise the price of the spirit of paying is the need for information related to the benefits of the presence of a mangrove environment so that respondents will tend not to care about more or less the price of the presence of a mangrove biological system will affect the price of WTP given. It is seen that the moo price of the benefits of its presence arises the need for community understanding in utilising and protecting the mangrove environment, so it is anticipated that efforts are made to extend the attention of the community and nearby government on the importance of protecting and maintaining the mangrove ecosystem for the long term.

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