

INDIGENOUS-BASED GREEN ECONOMY: AN ECONOMIC VALUATION STUDY ON BUMMA (BADAN USAHA MILIK MASYARAKAT ADAT) NAMBLONG, PAPUA PROVINCE

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Abstract. This article aims to investigate the valuation of the indigenous territory of BUMMA Namblong in Jayapura Regency, with a focus on uncovering the cultural, economic, and environmental values inherent in the BUMMA Namblong Indigenous Community. The research employs a mixed-method approach, combining qualitative and quantitative methods. Field surveys were conducted to gather data on the social, cultural, and economic profiles of the indigenous community. In-depth interviews were conducted with traditional leaders and community members to gain a comprehensive understanding. Economic data was collected through surveys, market price approaches, and benefit transfer methods. The findings reveal that the BUMMA Namblong Indigenous Community possesses unique cultural traits and a way of life governed by customary values, rituals, and religious practices. Their social life is rooted in strong communal interactions, while a close relationship with the surrounding environment also plays a significant role. The significance of preserving nature and culture is evident in the high value placed on the indigenous forest. The forest holds cultural significance and profound knowledge about ecosystem balance and sustainable resource utilisation. The economy of the BUMMA Namblong indigenous region relies on fields, gardens, traditional craftsmanship, and the potential for ecotourism. To assess the economic value of the indigenous territory, market price approaches and benefit transfer methods are employed. Market prices are used to gauge the value of agricultural commodities and forest products. The benefit transfer method is utilised to estimate the value of environmental services such as oxygen production by the forest.

Keywords: *Valuation, Indigenous Territory, BUMM, Cultural Value, Environment.*

I. INTRODUCTION

Small and Medium Enterprises (SMEs) are the main Cultural and environmental diversity are invaluable assets for the survival of the planet. Indigenous peoples have an irreplaceable role in maintaining and preserving this diversity. One example of an indigenous community that deserves attention is the BUMMA (Badan Usaha Masyarakat Adat) Namblong indigenous community located in Jayapura Regency. This community lives with a unique system, coloured by noble cultural values, and has a strong dependence on the surrounding nature.

However, many parties, including some of the people living in BUMMA Namblong's customary territory, have not fully realised and understood the deep values contained in their customary territory. Therefore, in-depth and academic-based research on the valuation of this customary territory is essential. Understanding the intrinsic value of the customary territory will hopefully increase the community's awareness of the importance of protecting and caring for it. This deeper knowledge of valuation can act as an incentive so that

communities are not tempted to transfer ownership of customary territories for short-term interests.

Within this framework, the research on BUMMA Namblong's customary territory is highly relevant and important. With a comprehensive and in-depth approach, this research will provide a clearer and more measurable picture of how valuable this customary territory is for the lives of the community and the balance of the surrounding environment. It is hoped that the results of this research can make a positive contribution to maintaining the integrity of BUMMA Namblong's customary territory, as well as raising collective awareness to preserve it.

A deeper awareness of the economic, cultural and environmental values embodied in the customary territory will provide a strong basis for the sustainable preservation of this territory. By realising that the value of their customary territories is far greater than mere material value, communities will increasingly feel a sense of responsibility to protect and maintain their territories. As this understanding increases, it is expected that the diversion or utilisation of customary territories for harmful purposes will be significantly reduced.

Therefore, the main objective of this research is to academically uncover the true value of BUMMA Namblong's customary territory. With comprehensive results, it is hoped that the community will gain a deeper understanding of the importance of preserving their customary territory. In addition, this research is also expected to make a meaningful contribution to policy makers in order to support the protection and preservation of this priceless cultural and environmental heritage.

II. RESEARCH METHODS

The locus of this research is the BUMMA Namblong Customary Area located in Jayapura Regency, Papua Province. This area was chosen as the focal point of the research to dig deeper into several relevant aspects. By conducting field surveys, in-depth observations, and direct interviews with local residents, valuable data and information were collected. This data will later be carefully analysed to gain a more comprehensive insight into the situation and phenomena in the BUMMA Namblong Customary Area.

As a complement, this research also refers to a number of relevant literature studies, ensuring that the findings can be placed within a broader scientific framework. The entire research process up to the publication of the results of this research went through the following stages:

Locus (Field) Survey: Is the first step in this research method. The field survey involves the researcher in the process of direct observation of the place or location of the research topic. The researcher collects data from the location that is the focus of the research, by observing the situation at that location.

Observation: Observation is the process of collecting data through sight, hearing, smell, touch and taste. It is an important step to understand the phenomenon in the field in depth. The data obtained from observation provides valuable preliminary information.

Direct Interviews: After making initial observations, direct interviews with respondents are a way for researchers to obtain more detailed and contextualised information. The researcher asked questions to respondents who had knowledge or experience relevant to the research topic ranging from the *ondofolo* (Chief of the Tribe) to the Director of the Indigenous Community-Owned Enterprise. These interviews helped the researcher understand the respondents' point of view and gain a deeper perspective.

Data and Information: Data obtained from surveys and interviews were analysed and organised. Data is presented in the form of numbers, quotes from interviews, or in-depth descriptions of the situation in the field. This data forms the basis for drawing conclusions or formulating research findings.

Literature Review or Study: In addition to field data, this research method also involves reference to relevant literature. Literature review, which can be found in the "Bibliography", helps compare findings with previous research and enriches understanding of the topic (Purnama, et al., 2023).

III. RESULTS AND DISCUSSION

Indigenous peoples refer to groups of people who have a deep connection to the natural environment, cultural heritage and traditional ways of life that have been passed down from generation to generation over centuries. Indigenous peoples generally have distinctive characteristics, including unique value systems, social norms, governance, and local knowledge.

Indigenous peoples are identified by cultural heritage and traditions rooted in a long history. They live lifestyles based on traditional knowledge, such as farming, hunting, food gathering, natural medicine and art techniques. Indigenous cultures are often intertwined with nature, making them highly dependent on the ecosystems around them.

One of the most striking aspects of indigenous peoples is their deep connection with the natural environment. Their knowledge of plants, animals, weather patterns, and nature as a whole has significant value in maintaining environmental sustainability. Concepts such as natural resource management and ecosystem preservation are often embedded in the culture and practices of indigenous peoples.

The traditional knowledge held by indigenous peoples is often very rich and diverse. They have a deep understanding of certain aspects of their environment that has developed from centuries of experience. This knowledge includes everything from herbal remedies to religious ceremonies performed to invoke fertility or good weather.

Indigenous peoples have internal governance systems that differ from modern models of government. They often have a hierarchical structure based on age, knowledge and role in the community. Decisions are often made collectively through deliberation to ensure common interests and welfare.

Despite their high cultural and environmental values, indigenous peoples often face serious challenges. Climate change, urbanisation, deforestation and industrialisation can threaten their lifestyles and traditional knowledge. The preservation of indigenous peoples is important to protect environmental sustainability and cultural diversity.

In the modern era, the protection and recognition of indigenous peoples is increasingly recognised as an important part of preserving the global environment and cultural heritage. Many countries and international organisations are working to respect the rights of indigenous peoples, facilitate their participation in decision-making, and secure their territories for future generations.

Part of the Mamta Cultural Territory, located in Jayapura Regency, Papua Province. The Namblong Indigenous People have a customary territory of approximately 53,000 hectares across three districts and 27 villages. About a quarter of the tribe's customary territory is overlaid by the HGU of an oil palm 752 er plantation company.

In early 2022, after years of struggle and self-organisation, the tribe secured three victories of legal recognition and official registration of a portion of the customary villages, the tribe's customary territory, and the acquisition of approximately 56% of the total concession area 752 of the oil palm plantation.



Figure 1. BUMMA Customary Territory Map

The social and cultural life of the BUMMA Namblong indigenous community is highly structured. They live a life governed by customs and cultural norms. Customary rituals and ceremonies play an important role in their social life, strengthening the relationship between community members and with the surrounding nature. These forests are inherited from generation to generation and have high cultural value. The community understands the importance of maintaining ecosystem balance and the sustainability of natural resources. They utilise natural resources wisely and have in-depth knowledge of medicinal plants, food crops and local biodiversity.

BUMMA Namblong's customary territory has significant economic potential. Fields, gardens and fruit crops are the main sources of income. The community is also involved in traditional wickerwork and iron tools. Natural tourism potential such as waterfalls and clean water sources also provide economic opportunities.

The economic value of BUMMA Namblong's customary territory was calculated through the market price approach and the benefit transfer method. The analysis shows that the economic value of the customary territory includes various commodities from fields, gardens, forest products, as well as environmental services such as clean water provision and healthy ecosystems. This economic value provides a clearer picture of the importance of preserving the natural environment and cultural diversity.

As an indigenous community, BUMMA Namblong highly values and respects the land, forests, rivers and surrounding nature. For them the land, forests, rivers and surrounding nature are life itself. They have traditional ceremonies (religious) that are directly related to the land, forests and rivers (natural resources). The BUMMA Namblong indigenous community organises the governance of its customary territory by consensus, as is customary for indigenous communities. All agreements resulting from deliberations are unwritten. Although unwritten, they trust each other. Generally, land use arrangements are based on its function or use. For such lands, each person cannot own it but can use it.

With the recent onslaught of palm oil investment, the BUMMA Namblong people are trying to agree on sustainable land use. The recognition of MHA BUMMA Namblong has been obtained through Jayapura Regent Decree Number 189/169/DPMD-C/2021 dated 1 October 2021. This recognition will strengthen the existence of the BUMMA Namblong indigenous community and its rights. This is the first MHA community recognition in Jayapura Regency.

The valuation technique used to assess the wealth of BUMMA Namblong's customary territory is the market price approach. The market price in question is the price at which the product is sold to the local commodity market centre. This market price information was obtained from the actors selling the products during in-depth interviews.

At the same time, the interviewees provided information on the productivity of each product. All of this information became the main reference in developing assumptions and the basis for calculations. With regard to non-use value, the benefit transfer (BT) method was used. The BT method is one of the most commonly used methods in ecosystem economic valuation. This method has long been used in policy design and applied environmental studies. BT is the use of benefits from one place and time as data to estimate the benefits of an action or study carried out in another similar place or time. The growing popularity of using the BT method is inseparable from the need and demand of policy makers for estimation of environmental benefits, especially non-market benefits.

With the BT method, a cost- and time-effective monetary valuation of ecosystem goods and services is available because, by its nature, ecosystem valuation is expensive and time-consuming. A similar explanation was put forward by Boutwell and Westra (2013); Smith and friends (2002) in Anna (2018) who stated that BT is a method that adapts value estimates from previous studies for the value of the same natural resources and environmental services, but separately, and changes in different sources. In addition to its advantages, some of the disadvantages of the BT method include a high risk of research error, obsolete unit value estimates, and the latest research may be difficult to obtain. The advantages of the BT method according to Robhati & Kusumawardani (2016) are savings in terms of cost, time, energy, adjustments to affected people are easier and most techniques are retained for economic value transfer.

The calculation of timber cubication value in the BUMMA Namblong customary forest was conducted as

follows. Forest Resource Potential Data from the National Forest Inventory Plot of the Directorate General of Forestry Planning of the Ministry of Environment and Forestry in 2014, states the volume of Kalimantan primary forest for diameters up to 20, the average per hectare is 246.13 m³.

This data on timber potential is too general. So far, no data has been found on the timber potential of the Sunsang customary forest, so the benefit transfer method for calculating timber volume refers to the findings of Azham and Bakrie (2014), namely the Analysis of Stand Potential of Forest Inventory Results in KPHP. Their study sampled 45 hectares and found that the average timber volume was 177.40 m³/hectare. The average volume per hectare of meranti species was the largest at 55.93 m³/hectare (commercial timber grade 1), medang 13.23 m³/hectare and keruing 12.57 m³/hectare (commercial timber grade 2). The calculated timber volume was 20 up.

This study only calculated the volume of meranti and mixed commercial grade 2 timber as stipulated in the Minister of Environment and Forestry Regulation No.P.64/MENLHK/SETJEN/KUM.1/12/2017 on the Determination of Forest Product Benchmark Prices for the Calculation of Forest Resource Provisions and Stand Compensation. The value per cubic metre of meranti grade 1 timber refers to Minister of Environment and Forestry Regulation No. P.64/MENLHK/SETJEN/ KUM.1/12/2017 on the Determination of Forest Product Benchmark Prices for the Calculation of Forest Resource Provisions and Stand Compensation. The regulation stipulates that for commercial grade 1 meranti timber, the price of medium logs (KBS) is IDR 780,000/m³. The price of large logs (KBB) is IDR 810,000/m³, the average price is IDR 795,000/m³. Meanwhile, for class 2 commercial timber originating from the Kalimantan region, the price of Medium Logs (KBS) was IDR 480,000/m³; and the price of Large Logs was IDR 500,000/m³, so the average price was IDR 490,000/m³.

The calculation of the Indirect Use Value of the Namblong customary forest refers to the calculation of the benefit transfer Total Economic Value (TEV) of Indonesian Forests according to FAO 2002 (FAO, 2009). Meanwhile, the calculation of the Non-Use Value of the Sunsang customary forest refers to the calculation of the benefit transfer of the Total Economic Value (TEV) of Indonesian Forests according to FAO 2002 (FAO, 2009).

The calculation of the Sunsang customary forest as an oxygen (O₂) provider uses the benefit transfer value with the Gerakis (1974) production approach, in Afrizal, Fatimah & Sulistyantara (2010) and Darmawan (2015) which states that the Oxygen Production Value (NPO) per 1 square metre of forest vegetated land area, can produce around 50.625 grams of oxygen every day.

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Table 1. Estimated Economic Value of BUMMA Namblong Customary Area

NO	COMMODITY	VALUE/YEAR
1	Field	7.547.055.000
2	Farm	4.959.804.000
3	Seasonal Fruit	3.669.500.000
4	Wood	2.463.731.100
5	River and game products	15.106.225.000
6	Livestock	1.554.400.000
7	Wickerwork and Handicrafts	684,190,000
8	Noken and Sculpture	
9	Environmental Services	500.400.000
10	Non-Timber Forest Products	699.000.000
11	Carbon Reserves	334.130.082
12	Oxygen Production Services	1.116.078.750.000
13	Indirect Use Value	1.945.961.160
	Non-Use Value	207.076.870
	Total Wealth Value	1.155.750.223.212
	Divided by 311 households/year	3.716.238.659,85
	Divided by 1,192 people/year	969.589.113,43
	Per Month/life/month	80.799.092,78

Source: Processed by the author (2025)

The data above is a summary of the various commodities and economic values generated by various sectors within a region. The data presents the estimated value of various commodities and services that contribute to the region's economy. Below is a narrative of the data:

In the BUMMA Namblong Customary Area, various commodities and economic sectors play an important role in generating significant economic value each year. Some of the leading commodities include ladang, kebun, and tembawang, which generate a total value of 7,547,055,000. These agricultural products include various types of crops and agricultural products that are the main source of income for the community.

Seasonal fruits also contribute greatly to the region's economy with a value of approximately 3,669,500,000. These fruits not only provide nutritious food for the local population, but also have potential in the agro-industry and trade industry. The timber and forest products sector has a value of approximately 2,463,731,100. Wood from forests is used in a variety of industries, including construction and woodcraft, providing an important economic impact.

River and game products play a considerable role in the region's economy, with a total value of 15,106,225,000. These products include aquatic resources such as fish and game, providing food and income for communities. The livestock sector and traditional crafts such as weaving and handicrafts have a value of around 1,554,400,000 and 684,190,000

respectively. Livestock provide a source of animal protein and raw materials such as milk and meat, while traditional crafts reflect the richness of local culture and expertise.

In addition, environmental services such as ecosystem services, oxygen production, and carbon stocks also have economic value. Environmental services have a value of about 500,400,000, while oxygen production and carbon stock have values of about 1,116,078,750,000 and 334,130,082 respectively. These services reflect the importance of environmental conservation and nature's contribution to the economy.

The total value of these commodities and services totalled 1,155,750,223,212. This reflects the importance of a diversity of sectors in supporting the region's economy, including indirect use values and non-use values that make important contributions to the well-being and sustainability of the region.

At this time, indigenous peoples are beginning to realise that valuation of their territories is not just about the immediate and economic benefits. The traditional system of farming with a screwback system (Suriansyah and Masri, 2022) is increasingly being abandoned by the community, as evidenced by the shrinking land area for farming. However, the threat of industrialisation and the invasion of oil palm plantations from large international companies also threatens indigenous territories. Green economy with the concept of forest conservation is indeed an endeavour that should be supported (Susanto and Gunarso, 2022), but the existence of customary forests such as in BUMMA Namblong, which promise valuations that exceed the value of existing and visible natural resources, must be maintained.

IV. CONCLUSIONS

The Customary Territory of BUMMA Namblong has significant economic and ecological potential derived from various commodities and services. Through valuation techniques, the estimated economic value of the territory illustrates the importance of various sectors in supporting economic and environmental sustainability. Sectors such as fields, gardens, tembawang and seasonal fruits contribute significantly to the economic value of the territory. These commodities not only provide income for the community, but also reflect the importance of resource diversity and variety. The timber and forest products sector provides a significant economic impact. BUMMA Namblong's customary forests have high cultural value and are used in various industries, including construction and wood crafts. Environmental services such as oxygen production and carbon stocks have important economic value. This assessment illustrates the role of nature in providing benefits that are not directly measurable in economic terms, but have important impacts on lives and well-being. The data shows that the BUMMA Namblong indigenous community is beginning to realise the value of more than just the economic aspect. They seek to maintain traditional farming systems and protect their customary territories from the threat of industrialisation and oil palm plantations, recognising the importance of maintaining a harmonious relationship between humans and nature.

The estimation of the economic value of BUMMA Namblong's customary territory not only includes direct returns from the economic sector, but also provides an overview of the value of environmental services and ecological contributions. This promotes a deeper understanding of the importance of environmental and cultural preservation.

It is important to maintain and protect BUMMA Namblong's customary territory not only as a source of income and culture for indigenous peoples, but also as part of the global environmental heritage. With formal recognition and protection of this customary territory, it is hoped that cultural and environmental values can be preserved for the long-term well-being of the community and the environment.

This research is a pilot study on the Economic Valuation of the Customary Territory of BUMMA Namblong in Jayapura Regency. As a pilot study, of course there is still a lot of data and information that has not been reported. With this study, it is expected to arouse the interest of other reviewers or researchers to examine in more detail and in depth the economic valuation of indigenous peoples in BUMMA Namblong. Apart from economic valuation, there are still many other things that have not yet received attention from researchers about community life in Namblong.

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