Analysis of Ecobrick Economic Potential in Improving Community Economic Welfare: Case Study of Bukit Lawang Plantation, Kab. Langkat

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Abstract

Economic potential shows the ability of economic resources produced by an area that needs to be developed to provide added value for economic development. The economic potential of the ecobrick community in the Bukit Lawang plantation village can be seen from the many economic resources generated from the utilization of ecobricks such as the construction of a recycling village and the manufacture of modular furniture crafts. With the use of ecobricks, they become goods that have economic value so that they can improve the economic welfare of the community. This study used a descriptive qualitative research method, with the data sources used in the form of primary and secondary data. Data collection techniques were used in the form of interviews, observation, and direct surveys. The research results obtained that the Bukit Lawang Plantation Village is one of the areas that utilize waste to become ecobrick as a manifestation of a creative business that can become a selling point of quality goods so that the use of ecobrick can improve the economic welfare of the community by fulfilling the needs for clothing, food, and shelter that is needed by society. The use of this ecobrick is the result of an agreement from the community to utilize plastic waste to become a quality selling point.

Keywords: Ecobrick Potential, Economic Improvement, Community Welfare

INTRODUCTION

Bukit Lawang Village is located on the edge of Gunung Lauser National Park, Langkat Regency, which is a UNESCO world heritage site. Bukit Lawang is a popular tourist spot as a home to many species of birds, plants, and various mammals. This is what makes Bukit Lawang Village a tourist village that is often visited by both local and foreign tourists.
Garbage is a negative weakness of this tourism potential. The increase in human activity without being matched by an increase in education on waste management for the community is an impact that results in increased waste generation. According to Law no. 18 of 2008, Waste is a solid by-product of daily human activities or natural processes. The goal of waste management is to reduce and manage waste in a systematic, comprehensive, and sustainable manner.

According to Jambeck et al., (2015), he stated that with a production of 187.2 million tons per year, Indonesia is the country that produces the most waste, ranking second. Indonesia is capable of reaching 64 million tons of plastic waste annually, according to data from the Central Statistics Agency (BPS) and the National Plastic Industry Association (INAPLAS). Every year as much as 3.3 million tons of plastic waste is dumped into the sea and as many as 10 billion pieces of plastic bags, or up to 85,000 tons of plastic waste in the environment. Plastic takes an estimated 400 years to decompose. Plastic is often used by humans for various purposes. Plastic is used to package food, drinks, cosmetics, and even car parts.

The most widely used material is plastic, which is also more often used to replace other materials that cost more to use. The biggest problem with plastic is its waste as it does not biodegrade naturally and must be removed from the earth and soil over a long period. However, the use of plastic is now almost under control. Plastics also contribute to warming air temperatures over time because of their non-porous polymer structure. The health of the environment and all living things is affected by the negative consequences of plastic. Soil and plant quality is affected by microplastics in the soil. (Suryani et al., 2021).

In general, the composition of waste in Indonesia, especially in settlements, is 75% organic waste and 25% inorganic waste. Efforts have been made to utilize organic waste for other useful products, such as compost production, briquette production, and biogas raw materials. However, the processing of inorganic waste is still below standard and even very little. Although some types of inorganic waste cannot be digested naturally by nature, inorganic waste has characteristics that are very difficult to decompose. Plastic waste is the most common type of inorganic waste found in society. To manage plastic waste efficiently and ensure that plastic supports people's lives, plastic waste can be used to create commercially viable goods and innovative services, not only during use but also after use. Using the 3R concept is one way to minimize the negative effects of waste on the environment. Through the 3R program (Reduce, Reuse, and Recycle), the government has promised to reduce waste by reaching a target of 30% by 2025. In particular, the government has prepared a strategic scheme to reduce waste by 70% by 2025. (Armata et al., 2020).

The concept to turn plastic waste into ecobricks was introduced in recent years due to concerns about the negative risks and issues posed by the accumulation of plastic waste. Utilization of plastic waste into ecobricks is a manufacturing procedure that adheres to the principles and concepts of reuse and recycling. The idea of turning plastic waste into ecobricks is more than just treating the waste and making as many ecobricks as possible. This can help in understanding the value of managing everyday objects.

The potential for using plastic waste to create something useful without causing new environmental problems has the advantage of being able to improve the community's economy so that it can prosper the people's lives themselves, as well as awareness that eliminates everything that is used and made in the potentially dangerous environment. (Harahap et al., 1991). Economic potential shows the ability of regional economic resources which must experience improvement and growth to create prosperity figures for economic development.
The economic potential of the Bukit Lawang Plantation Village community can be seen from the many economic resources generated from the use of ecobricks such as the construction of a recycling village and the manufacture of chairs and tables (Modural Furniture). So that it can increase people's income by utilizing ecobrick and the ability of the economic resources produced by the Bukit Lawang Plantation Village to develop and grow to provide added value to the community's economy. The use of plastic waste to become ecobrick in the Bukit Lawang area itself is an activity made by the community, such as local women and youth. They make this ecobrick from plastic waste generated from household waste or garbage circulating in the river.

The purpose of making ecobrick waste is as a countermeasure to minimize plastic waste. In making this ecobrick, the largest ecobrick is categorized as 1500 ml with a price of Rp. 7000.00. And for an ecobrick with a moderate bottle size, it costs Rp. 5000.00. And the small size cost Rp. Rp. 3,000.00. The distribution of these eco-bricks will be sold to project wings Sumatra as ecobrick collectors in Bukit Lawang Village, then these eco-bricks will be used by project wings Sumatra to create villages with recycling activities. This recycling village has building elements where every wall is made of ecobrick that was developed in the Bukit Lawang community, such as the Recycling Village building, halls, children’s learning schools, and the Projects Wings Sumatra office where every building is made using ecobrick. The results of the ecobrick obtained by the Sumatran Wings project from the community are 4,000 bottles of ecobrick every month which they buy from the community (Di & Dastri, 2022).

Based on the above problems, it attracted researchers to conduct research by formulating a research problem, namely, how does ecobrick improve the economic welfare of the people of the Bukit Lawang Plantation Village?, and how does an Islamic economic perspective view this? This study also aims to determine the process of utilizing plastic waste to become ecobrick, and the potential of ecobrick in improving the welfare of the people of Bukit Lawang Plantation Village with an Islamic economic perspective.

Ecobrick consists of the English words "ecology" and "brick". Meanwhile, ecobrick is intended as a science that connects living things with their environment, according to the Big Indonesian Dictionary (KBBI). Bricks can also signify a good person or a good wall other than bricks, stones, Redstone, or walls. Ecobrick, the result of these two terms, is an environmentally friendly brick.

Ecobrick is a plastic waste disposal technology that is made from used plastic bottles that have been filled with various kinds of dirty plastic and then compacted until it becomes hard. The bottles can be filled and hardened to make towers, benches, tables, and other structures. And as an alternative to traditional bricks for building buildings with ecobrick. When plastic is disposed of, stockpiled, or burned, it will cause air pollution and damage to nature, so ecobricks are a concrete answer in the use of plastic waste that is disposed of carelessly (Yusuf et al., 2020).

Community welfare is a barometer for measuring the level of prosperity. Welfare is a life equation at a higher level than the previous life. the sensation of satisfaction, having everything one needs at hand and being free from poverty and threats to one's safety. The concept of well-being includes human and spiritual goals in addition to material and hedonistic goals (Fuadi, 2015). Therefore, the concept of well-being must also pay attention to meeting spiritual needs, which are also called unknown, in addition to meeting material or worldly needs. Efforts to advance social welfare in terms of material, worldly and spiritual well-being can be carried out by emphasizing three main areas.

The first is the degree of basic needs, namely the distribution of personal basic needs
such as clothing, food, housing, health, and protection as well as enhancing individual abilities. A higher standard of living, an increase in the standard of living, higher salaries, and better and better educational opportunities. Second, growing economies of scale for the people and the nation. Thirdly increase economic welfare, there are better job opportunities for better people. (Rahman, 2022).

RESEARCH METHODOLOGY

This study used a descriptive qualitative method with the data sources used in the form of primary and secondary data. Data collection techniques were used in the form of interviews, observation, and direct surveys. The use of this method is expected to create a comprehensive picture of speech, and writing that can be traced to certain individuals, groups, communities, and organizations. And to obtain information the researcher uses instruments in the form of in-depth interviews and field observations and is analyzed in a non-statistical way, in which the researcher makes a systematic, objective, and precise description of facts. the research location in the Bukit Lawang Plantation Village, Kab. Langkat to know the potential of ecobrick in improving the economic welfare of society from the perspective of Islamic economics.

This research is qualitative and involves a literature review. The collection of primary and secondary sources is a step in the research process. The qualitative research formula is used to classify the data in this study. In the advanced stage, data processing and/or reference quotations are finalized to be exhibited as study findings. Complete information is then extracted, aggregated, and processed to produce knowledge for inference. When it comes to the interpretation stage, several methods or analyzes are used, such as exegetical, philosophical, theological, Sufistic, and other approaches.

RESULTS AND DISCUSSION

The river flow in the Bukit Lawang Plantation Village often floods which are caused by the habits of the community and tourist visitors who throw their trash around and the absence of trash cans makes people throw garbage arbitrarily. In addition, villagers tend to throw garbage into ditches, rivers, and rice fields, thus clogging waterways and causing flooding during the rainy season. The production of plastic waste increases every year. The Central Bureau of Statistics reports that every year, Indonesia produces around 6.4 million tons of plastic waste. Plastic waste is usually not processed and causes environmental damage. Therefore, it is necessary to find a solution to overcome this problem.
Plastic waste is a concern because it takes a very long time to decompose. A unique initiative to reduce plastic waste is called ecobrick. The goal is to make plastic more useful and durable so that it can be used for various purposes, not to eliminate plastic waste. Making ecobrick is still not very popular with the general public. Most people still view used plastic as household waste that pollutes the environment, rivers, and everyday life. For this reason, in its utilization, ecobrick is a concrete effort and step in overcoming the problem of plastic waste. Ecobrick is also able to improve the economic welfare of the community because ecobrick can generate rupiah coffers so that people can fulfill their daily needs (Resda et al., 2022).

The Economic Potential of Ecobricks in Improving the Community's Economy

One way to reduce plastic waste is ecobricking. Plastic bottles are filled with plastic waste to make ecobricks, which are building blocks that can be reused. Modular furniture, decorations, structural walls, and buildings including homes, workplaces, and schools can all be built with ecobricks. The use of ecobrick is expected to be able to move people to care about the environment. In addition, ecobrick can generate income for the people of the Bukit Lawang plantation village so that they can improve the welfare of the community through the activity of selling their ecobrick results to the Sumatran Wings Projects. within one week the community can sell 10 to 15 bottles of ecobrick to projects at wings sumatra, and the results of the ecobrick purchased by project wings from the community are used for the process of building a Recycling village (recycling village) in which there are houses, offices, halls, and a children's learning school in the recycling village. And in 2022 the wings project will increase access to development in recycling villages such as halls and libraries by using 40 thousand ecobrick bottles produced from 2021 to 2022.

Table 1. Ecobricks Data 2021-2022

<table>
<thead>
<tr>
<th>Monthly Period</th>
<th>Ecobricks</th>
</tr>
</thead>
<tbody>
<tr>
<td>January – February 2022</td>
<td>3721 tle.</td>
</tr>
<tr>
<td>February – March 2022</td>
<td>3013 tle.</td>
</tr>
<tr>
<td>March – April 2022</td>
<td>2954 tle.</td>
</tr>
<tr>
<td>April – March 2022</td>
<td>3651 tle.</td>
</tr>
<tr>
<td>May – June 2022</td>
<td>3420 tle.</td>
</tr>
<tr>
<td>June – July 2022</td>
<td>2213 tle.</td>
</tr>
<tr>
<td>July – August 2022</td>
<td>4063 tle.</td>
</tr>
<tr>
<td>August – September 2022</td>
<td>4229 tle.</td>
</tr>
<tr>
<td>September – October 2022</td>
<td>2853 tle.</td>
</tr>
<tr>
<td>October – November 2022</td>
<td>2840 tle.</td>
</tr>
<tr>
<td>November – December 2022</td>
<td>3161 tle.</td>
</tr>
<tr>
<td>Total Ecobricks</td>
<td>40,003 tle.</td>
</tr>
</tbody>
</table>

Data source: www.ecbrick

Based on the results of the data obtained from the project wings for one year starting from the beginning of December 2021 to the end of December 2022. The number of ecobricks that were obtained from the community was 40 thousand bottles of ecobricks. The unit price of an ecobrick bottle for a size of 1500 ml is valued at Rp. 7000.00. And for an ecobrick with a moderate bottle size, it costs Rp. 5000.00. And the small size costs IDR 3,000.00. Based on interviews conducted with one of the residents, namely Mrs. Rosmalina Harahap, stated that within a week she and her friends were able to sell 15-20 bottles of ecobrick to projects wings with a profit of Rp. 140,000.00. And based on an interview with Mrs. Ayu Wardani, she stated that the proceeds from the sale of these ecobrick bottles were sufficient to meet the needs of daily life, starting from fulfilling clothing, shelter, and food. And then the results of the ecobrick purchased by project wings from the community are used for the process of building a Recycling village (recycling village) in which there are houses, offices, halls, and a children's learning school in the recycling village. And in 2022 the wings project will increase access to development in recycling villages such as halls and libraries by using 40 thousand ecobrick bottles produced from 2021 to 2022.

The economic potential of ecobricks shows the capacity of economic resources produced in the region, which must be developed and expanded to create added value for economic development. The economic potential of the ecobrick community at Bukit...
Lawang plantation village can be seen from the many economic resources generated from the use of ecobrick such as modular furniture crafts. The economic potential of eco-brick can be seen using BEP (Break Even Point) analysis to see the potential of eco-brick in the business feasibility of using eco-brick to make chairs and tables (modular furniture).

**Bep Analysis (Break Even Point)**

Break Even Point (BEP) is a break even point that is used to analyze in finding and determining profits/profits, which can increase the number of goods or services that must be sold to consumers by setting them at certain prices so that they can cover all costs that have been used and required, in this BEP is intended to be able to determine profit/profit (Feni et al., 2020). According to Sunyoto, (2013), BEP analysis is an analytical technique that aims to generate information and focuses on identifying situations where the volume of activity (measured by sales results) does not generate profits but also does not generate losses.

There are two kinds of formulas (BEP) that can be used for Break Even Point Analysis, namely:

- \[
    \text{BEP units} = \frac{FC}{(P - VC)}
\]
- \[
    \text{Price BEP} = \frac{FC}{(1 - \frac{VC}{PS})}
\]

Where:
- BEP = Break Even Point
- FC= Fixed Cost
- P = Price Per Unit (price per unit)
- VC = Variable Cost

The profits or profits obtained are:

- \[
    \pi = TR - TC
\]

Where:
- \( TR \) = Total Revenue
- \( TC \) = Total Cost

The fixed costs used in this modular furniture craft business are Rp. 7,000,000.00. By using 113 bottles of ecobrick in producing a set/unit of furniture consisting of four chairs and one table, the variable cost per unit is Rp. 600,000.00 with a selling price of Rp. 1,300,000.00. The production BEP and price BEP are as follows:

**BEP units**

- \[
    \text{BEP units} = \frac{7,000,000}{(1,300,000 - 600,000)} = 7,000,000/700,000 = 10 \text{ units}
\]

**Price BEP**

- \[
    \text{Price BEP} = \frac{7,000,000}{(1 - (600,000/1,300,000))} = 7,000,000/(1 - 0.46) = 7,000,000/0.54 = \text{Rp. 12,962,962}
\]

BEP price = Rp. 13,000,000

The profits or profits obtained are:

- \[
    \pi = (1,300,000 - (7,000,000 + 600,000)) = 5,400,000
\]

- \[
    \pi = \frac{5,400,000}{10} = \text{Rp. 540,000}
\]

So to produce tables and chairs (modular furniture) it has a BEP of 10 units and a BEP in rupiah of Rp. 13,000,000.00. In this study, ecobrick table and chair crafts have experienced benefits. Where the profit earned from one unit of modular furniture is IDR 540,000.00. With the profits obtained, it can increase economic income and become the main source of income for the community. So that with the economic potential of ecobrick, it shows the ability of economic resources produced by the Bukit Lawang plantation village community from the use of ecobrick into recycling villages such as schools, offices, halls, libraries, and modular furniture through the use of ecobrick. The existence of ecobrick's economic potential not only increases the amount of people's economic income but is also able to improve people's welfare by being able to fulfill their daily needs in the form of clothing, food, and shelter in people's lives (Manuho et al., 2021).
Ecobrick Economics and Community Welfare From an Islamic Economic Perspective

When viewed from an Islamic economic perspective, ecobrick is a system that adheres to and connects religious aspects or variables (Islamic values), which are fundamental to achieving collective social welfare in various countries. Ecobrick is based on the welfare system in Islamic economic design. Several definitions of Islamic economics for certain well-known Muslim economists are given to provide a clearer picture. Welfare is the goal of Islamic teachings in economics. Welfare is part of rahmatan lil alamin taught by this Islamic religion. But the welfare referred to in the Qur’an is not unconditional to get it.

Well-being will be given by Allah SWT if humans carry out what he commands and stay away from what Verses of the Qur’an that provide explanations about welfare there are direct explicit and some are indirectly (impliedly) related to economic problems. Nevertheless, an explanation by using these two ways into one view about welfare. Welfare is a guarantee or promise of Allah SWT given to men or women who believe in Him. Allah SWT too will repay the various good deeds of those who are patient with a better reward than charity. The good life is a good life happy, relaxed, and satisfied with halal sustenance, includes all forms of peace of mind and whatever form it takes

Islamic economics functions as a scientific mediator to achieve human welfare by allocating limited resources without interfering with individual freedom or causing macroeconomic or ecological imbalances. Al-Ghazali defines Islamic economics as divine economics, meaning that it is not based on the characteristics of economic actors but rather reflects the nature of divinity. Because the perpetrators are people but in terms of law or other structures that regulate economic actors, such as shari’ah law. Based on some of the definitions above, it can be concluded that the goals of Islamic economics are the same as those of Islamic law, namely the ability to meet basic needs or daruriya (maqasid al-syariah) or protection of five things, including religion, soul, aql, generation, and wealth that fulfills happiness both in this world and in the hereafter (falih), and goodness (halalan tayyib) to achieve human goals. According to Islamic economics, welfare is sometimes referred to as Fallah. The Arabic expression aflaha-yuflihu, which denotes success, and honor, in life, is the root of the word Fallah (P3EI, 2009). Fallah is a noble and prosperous life both now and in the hereafter, if all the needs of human life are met adequately, then this welfare can be achieved. (Komariah, 2022). Meeting the needs of people's lives is known as maslahah. The concept of maslahah refers to various physical and spiritual conditions, especially those that can elevate humans to the most honorable degree. (Nasution et al., 2022).

Islamic economics or Sharia-based economics is an economic system whose main goal is human welfare. The Islamic economic system is fully guided by the Al-Qur'an and As-Sunnah (As et al., 2021). The law that underlies the transaction procedure is entirely for the benefit of society so that no one feels a loss. In Islamic Economics social welfare is not only measured from its material aspects but takes into account the social, mental, and spiritual effects of individuals as well as the effects on the environment. As stated by one member of the community, Ms. Latipah Hanum, said that in its utilization also offends Islamic principles, for example, the waste is disposed of but on the one hand, it can still be utilized, of course, there is an element of redundancy in it, so we use it to create ecobrick business opportunities that can be sold like making modular furniture and selling ecobrick to wing projects which have clear benefits for people's lives and the environment.

The Islamic economic doctrine prioritizes human welfare. Islam teaches rahmatan lil alamin, which contains the concept of welfare. However, the Qur'an's references to welfare do not come without preconditions for
achieving it. When people follow Allah's commands and refrain from doing what He has forbidden, they are in good health. (Syamsuddien, 1994). Many verses in the Qur'an explain welfare; some of these verses explicitly and others implicitly link welfare to economic matters. However, this explanation presents only one perspective on well-being. Allah SWT. said in surah Al-Thaha verses 117-119.

Meaning: Then we said, O Adam, in fact (this) is an enemy devil for you and your wife, so don't let him expel you both from heaven, later you will be damned, there is a guarantee for you there, you will not starve and you will not naked. And actually, there you will not feel thirsty and will not be overwritten by the sun's heat.

Islamic economic prosperity is based on all the proclamations of religion for this life. Due to different views on life, the concept of welfare in Islam and classical economics is very different. Islam argues that prosperity is something that must be realized in a balanced way between one's material and spiritual needs rather than always emphasizing wealth and consumption. Material needs include all products and services that prioritize comfort and welfare, as well as adequate clothing, food, shelter, education, transportation, life insurance, and valuables. Though fear of Allah, the serenity of the soul, contentment of heart, harmony of society, and absence of violent crime are examples of spiritual demands. Likewise, the welfare felt by the people of the Plantation Village of Langkat Regency can be said to be their welfare, this can be seen from the fulfillment of clothing, food, and shelter in the community itself.

Welfare according to the meaning of the Qur'an

reflected in Heaven which was inhabited by Prophet Adam and his wife shortly before they served as caliph on earth. The well-being described in this verse ensures adequate food, clothing, and shelter termed not starving, not feeling thirsty, not naked, and not overheating by the sun. While the opposite of it is like the narrow one, which is far from serene and calm, always dissatisfied, his chest was tight and restless even though he was born looks luxurious, and versatile, with enough clothes and space for his stay. Islamic economic teachings cannot be separated from the source. The main ones are the Qur'an, Sunnah, and Islamic treasures other. Islamic economic concepts in it address the well-being of individuals, families, society, and the state has been clearly illustrated in verses of the Koran. Well-being from an economic perspective. Islam does not only stop at the concept level but has embodied in the practice of the life of the Prophet and para his best friend. The implementation of these welfare values is not only felt by Muslims at that time but also the people non-Muslims, even mercy to all the world to the ages modern times i

CONCLUSION

Based on the research results, it can be concluded that the potential of ecobricks can improve the economic welfare of the community. For example, ecobricks can be innovated to make modular furniture and recycling villages, which in the village are recycled buildings made of ecobrick, such as halls, offices, and libraries. With the construction of the Recycling Village built by Project Wings, within a week the community can sell 15-20 ecobrick bottles to Project Wings for development with a profit of Rp. 140,000.00, as well as creative innovation in using ecobrick to make chairs and tables (modular furniture) that can increase people's economic income. Through BEP (breakeven point) analysis, it can be concluded that the economic potential of
ecobrick in the chair and table craft business (Modural Furniture) has been able to increase the community's economic income, namely Rp. 540,000.00 for each unit. It can be concluded that the economic potential of the ecobrick community in Bukit Lawang plantation village can be seen from the many economic resources generated from the utilization of ecobrick such as the construction of a recycling village and chair and table crafts (modular furniture). The existence of ecobrick's economic potential not only increases the amount of people's economic income but is also able to improve people's welfare.

Based on the results of the study it was found that ecobrick and community welfare can be seen from the perspective of Islamic economics. Ecobrick not only increases the economic income of the community but also improves the standard of living of the people of the Bukit Lawang Plantation Village. In Islamic economics, people's welfare is not judged only by material things but also considers the social and spiritual effects of individuals and the effects they get on the environment. In Islam, prosperity can not only be created through needs and wealth but also the satisfaction of the balanced material and spiritual sides. Material needs consist of adequate clothing, food, shelter, education, transportation, life and property insurance, and all goods and services that provide true comfort and well-being. Meanwhile, spiritual needs include piety to Allah, peace of mind, and good manners. inner happiness, harmony in family and society, and the absence of the crime of anomie. It can be concluded that the welfare felt by the people of the Plantation Village of Langkat Regency. This can be seen from the fulfillment of the basic needs of clothing, food, and shelter in the community itself. And ecobrick is a solution for utilizing waste into goods of economic value. The use of eco-bricks can be goods that have a sale value, so this can improve people's welfare from an economic point of view.

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