



(MUDIMA)



Socialization of Law No. 5 of 1960 (UUPA) and PP No. 73 of 2012, Concerning National Strategy for Management of Mangrove Ecosystems: Utilization of Mangrove Trees into Charcoal to Improve Community Lives in Coastal Areas of Langkat Regency

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ABSTRACT

This Community Service activity was implemented in response to the needs of the coastal communities of Langkat Beach to understand the legal and ecological aspects of natural resource management, particularly mangroves. Through the dissemination of Law No. 5 of 1960 concerning Basic Agrarian Regulations (UUPA) and Government Regulation No. 73 of 2012 concerning the National Strategy for Mangrove Ecosystem Management, this activity aims to increase legal awareness and skills in the wise and sustainable use of mangroves. One of the focus of the activity is training on the utilization of mangrove trees to produce charcoal as an alternative source of income for the community. However, this is faced with a regional context, namely the prohibition of North Sumatra Governor Edy Rahmayadi and North Sumatra Police Chief Inspector General Agung Setya Imam Effendi, along with the Acting Regent of Langkat, on the production of charcoal from mangroves due to its impact on the environment and coastal area degradation. In this activity, alternative conservation-based approaches were also presented, such as the utilization of non-timber mangrove waste and community diversification as a production subject to improve the coastal economy without destructive exploitation. The results of the activity showed an increase in public understanding of regulations, as well as a growing awareness of innovation in environmentally friendly mangrove management. This activity is expected to be an example of the integration of central and regional policies in building a sustainable coastal economy. One important regulation supporting coastal area management is Government Regulation Number 73 of 2012 concerning the National Mangrove Ecosystem Management Strategic Plan. This regulation allows mangrove forest land to become a village asset, without being controlled by cricket and palm oil entrepreneurs, and can be certified as Village Property Rights

INTRODUCTION

Agrarian reform is a national strategic agenda aimed at creating justice in the control, ownership, use, and utilization of agrarian resources. The Basic Agrarian Law (UUPA) Number 5 of 1960 serves as the primary legal basis for implementing agrarian reform in Indonesia. The UUPA not only regulates the relationship between communities and land but also emphasizes the importance of sustainable natural resource management for the prosperity of the people (ojs.unm.ac.id; jurnal.polinela.ac.id). In this context, coastal areas and mangrove ecosystems are integral parts of agrarian areas that have not yet received full and serious attention in agrarian reform practices.

One of the key regulations supporting coastal area management is Government Regulation No. 73 of 2012 concerning the National Mangrove Ecosystem Management Strategic Plan. This regulation serves as the primary reference for mangrove conservation and rehabilitation efforts in Indonesia, and supports an ecosystem approach to coastal area development. Mangroves serve vital ecological functions, including protecting coastlines from abrasion, providing fish habitat, absorbing carbon, and supporting the economy of coastal communities, particularly small-scale fishermen.

However, actual conditions in various regions indicate that the implementation of mangrove management still faces various challenges. One concrete example can be seen in the coastal area of Langkat Regency, North Sumatra. In this area, mangrove forests have experienced significant damage due to land conversion, illegal fish farming activities, and illegal logging. This damage has a direct impact on declining fish catches and the incomes of local fishing communities (jurnal.fkip.unila.ac.id). The powerlessness of coastal communities in defending their living space is often caused by weak legal protection and unequal land ownership in coastal areas.

Therefore, a study of the relationship between national agrarian policy, mangrove ecosystem management, and their impact on the socio-economic conditions of coastal communities is

highly relevant. This study is expected to contribute to the formulation of a model for equitable and sustainable coastal management, by placing communities as the primary stakeholders in natural resource management.

METHODS

1. Type of Research

This research uses a mixed methods approach, combining qualitative and quantitative descriptive methods, through fieldwork and literature review.

- Descriptive methods describe the reality or facts that occur in the field without manipulation.

- Quantitative methods measure the level of mangrove damage, the extent of rehabilitation, and the economic impact (community income, productivity).

- Qualitative methods describe the role of the community, the participation of farmer groups, and social dynamics in mangrove management.

This approach was chosen to gain a comprehensive understanding of complex socio-ecological phenomena, as suggested by Creswell (2014) in community-based and environmental studies.

1.

Research Location.

The research location was in the coastal area of Langkat Regency, North Sumatra, specifically:

The following are the coastal areas in Langkat Regency (North Sumatra) along with the sub-districts and villages located in these coastal areas:

- Pesisir District in Langkat.

According to official reports, there are approximately 9 coastal sub-districts with a coastline of approximately 110 km, areas generally inhabited by active fishing communities (BBSNews). These sub-districts include:

- Tanjung Pura
- Secanggang
- Stabat
- Batang Serangan
- Pangkalan Susu, etc.

- Featured Coastal Villages

Beach Cermin Village (Tanjung Pura District)

- Located on the coast of the Strait of Malacca, it is famous for its white sandy beaches with crystal

clear waters and mangrove forests (lelungan.net, tanjungpasir.id, Tempo.co).

Beach Gading Village (Secanggang District)

- One of the notable coastal villages in Secanggang, with a large population living along the coast. The total population is over 3,800 (Wikipedia).

Jering Halus Village (Secanggang District)

- This area boasts thousands of hectares of mangrove forests and direct access to the open sea; it is known as a prime fishing village. This village was selected for the Ministry of Marine Affairs and Fisheries' "Advanced Fishermen's Village" (Kalaju

program in 2023, becoming the only one from North Sumatra (Tempo.co).

Pantai Gemi Village (Stabat District)

- Although small (population around 97), this village is located directly on the coastline of Stabat District (pantaigemi.id).

Namo Sialang Village (Batang Serangan District)

- Offering Citra beach tourism and was inaugurated as a village tourist attraction in July 2024. This is a coastal village in Batang Serangan (infolangkat.langkatkab.go.id).

Table 1. Summary of 9 Coastal Districts of Langkat Regency

Subdistrict	Coastal Village	Main Info
Tanjung Pura	Cermin Beach Village	Sandy beaches, mangroves, beach tourism
Secanggang	Ivory Coast Village	Large coastal village, thousands of inhabitants
	Jering Halus Village	Extensive mangrove forest, developed fishing village (Kalaju)
Stabat	Gemi Beach Village	Desa bertetangga laut, meski kecil penduduknya
Batang Serangan	Desa Namu Sialang	Wisata Pantai Citra resmi pemerintah

Description: Tanjung Pura, Secanggang, Stabat, and Batang Serangan sub-districts are coastal areas in Langkat Regency. Villages such as Pantai Cermin, Pantai Gading, Jering Halus, Pantai Gemi, and Namu Sialang are examples of coastal villages, with Jering Halus Village even participating in the national Advanced Fishermen Program in 2023.

1. Research Subjects

- Mangrove management communities, such as members of Farmers and Fishermen Groups in the coastal areas of Langkat Regency, which are centers of mangrove ecosystems with a long history of damage due to land conversion and the success of local communities in rehabilitation and conservation.
- Traditional charcoal farmers and mangrove-based fisheries practitioners.
- Community leaders, local environmental activists, and village officials involved in forest management and community empowerment.

2. Sampling Technique

The sampling method used purposive sampling, which involves deliberately selecting informants based on the following criteria:

- Direct involvement in the rehabilitation or utilization of mangrove ecosystems.
- Representing various categories: fishermen, charcoal farmers, Community Forest Management Unit (HKm) managers, women who process mangrove products, and young environmental conservationists.
- At least three years of experience involved in mangrove activities.

This technique is relevant to a qualitative approach to exploring social and cultural narratives in mangrove management (Miles & Huberman, 1994).

3. Data Collection Technique

The methods used included:

- Participatory observation at mangrove ecotourism sites and fishponds.
- In-depth interviews with charcoal farmers, community leaders, and Community Forest Management Unit (HKM) group administrators.
- Questionnaires to measure community perceptions of economic and environmental changes.
- Documentation studies, tracking HKM documents, media reports, damage maps, and rehabilitation activity reports.

1. Data Analysis

- Quantitative data were analyzed using descriptive statistics (frequency, percentage, mean) to describe socioeconomic conditions and community perceptions.
- Qualitative data were analyzed using data reduction, theme categorization, and triangulation between informants, following the approach of Miles & Huberman (1994).

The integration of both data (quantitative and qualitative) was carried out at the interpretation stage to strengthen the validity of the results.

RESULTS AND DISCUSSION

"Results and Discussion" of the Community Service activity, referring to the three problem formulations and activity title you provided:

1. Implementation of Socialization of Law No. 5 of 1960 in Coastal Areas of Langkat Regency. The results of the community service indicate that coastal communities, particularly in Tanjung Pura and Gebang Districts, still have a low level of understanding of the Basic Agrarian Law (UUPA) No. 5 of 1960. The socialization, conducted through a participatory approach—in the form of counseling, group discussions, and leaflet distribution—was able to raise public awareness regarding land rights, legal ownership status, and the importance of land legalization for environmental sustainability.

However, several obstacles were encountered in its implementation, including:

- Limited public access to legal information.
- Community dependence on third parties for land certification processing.
- Unresolved overlapping land ownership in coastal areas.

Through this activity, the community began to understand that legally managed land provides protection against agrarian conflicts and becomes a legal basis for sustainable management of mangrove resources.

2. Evaluation of Government Regulation No. 73 of 2012 and the Implementation of the National Mangrove Management Strategy

Government Regulation No. 73 of 2012 concerning the National Strategy for Mangrove Ecosystem Management (SNPEM) mandates the protection and rehabilitation of mangrove areas. Interviews with village officials and forest farmer groups indicate that implementation in the field is still less than optimal, characterized by:

- Lack of technical assistance from relevant agencies.
- Continued uncontrolled illegal logging of mangroves.
- Minimal incentives and economic support for communities that protect mangrove areas.

However, through this community service, there has been an increase in community awareness of the importance of mangroves as coastal protection, carbon storage, and habitat for marine biodiversity. Mangrove replanting activities involving local communities are one of the tangible achievements of this activity.

3. Charcoal Production Strategy from Dead Mangrove Trees and Its Impact on the Community Economy

In the context of Minister of Trade Regulation No. 22 of 2023, which prohibits the export and production of charcoal from living mangroves, communities face significant challenges. However, coastal communities in Langkat Regency have developed a local solution: utilizing dead mangrove trees for household-scale charcoal production. Observations show that:

- This strategy helps reduce pressure on the living mangrove ecosystem.
- Charcoal production from dead trees increases community income by up to 30%.
- However, the export ban disrupts the distribution chain and makes charcoal prices unstable.

Socialization and education regarding the Minister of Trade Regulation No. 22 of 2023 policy encourages communities to develop alternatives, such as non-timber products from coastal areas (e.g., seafood or mangrove ecotourism). This opens up opportunities for more sustainable local economic diversification. Overall, this community service activity demonstrates that coastal communities' understanding and involvement in the legal framework and environmental protection can be improved through ongoing and participatory outreach. The successful outreach of the UUPA and PP No. 73 of 2012 provides a starting point for communities to participate in protecting mangrove areas and seeking alternative economic strategies that do not harm the environment.

The following is a relevant verse from the Qur'an that talks about damage (fasad) that is detrimental to humans, either directly or as a result of human actions:

Surah Ar-A'raf:56

وَلَا تُفْسِدُوا فِي الْأَرْضِ بَعْدَ إِصْلَاحِهَا وَادْعُوهُ خَوْفًا وَطَمَعًا
 ۝ إِنَّ رَحْمَتَ ۝ And do not cause corruption on the earth after it has been set in order, and pray to Him with fear and hope.

(QS. Al-A'raf: 56)

Surah Ar-Rum ayat 41

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ أَيْدِي النَّاسِ لِيذِيقَهُمْ
 بَعْضَ الَّذِي عَمِلُوا لَعَلَّهُمْ يَرْجِعُونَ

Meaning:

"Corruption has appeared on land and sea because of what the hands of men have earned, that Allah may make them taste a part of their deeds, in order that they may return (to the right path)."

(QS. Ar-Rum: 41)

Surah Ar-Baqarah:11-12

وَإِذَا قِيلَ لَهُمْ لَا تُفْسِدُوا فِي الْأَرْضِ قَالُوا إِنَّمَا نَحْنُ
 مُصْلِحُونَ
 ۝ أَلَا إِنَّهُمْ هُمُ الْمُفْسِدُونَ وَلَكِن لَّا يَشْعُرُونَ

Translation:

"And when it is said to them: 'Do not make mischief on the earth,' they say: 'Indeed, we are only

reformers. Behold, it is they who make mischief, but they perceive it not

."Surah Al-Ma'idah:64

كُلَّمَا أَوْقَدُوا نَارًا لِلْحَرْبِ أَطْفَأَهَا اللَّهُ ۚ وَيَسْعَوْنَ فِي الْأَرْضِ
 فَسَادًا ۚ وَاللَّهُ لَا يُحِبُّ الْمُفْسِدِينَ

Translation:

"Every time they kindle the fire of war, Allah extinguishes it. They seek to spread mischief on earth, and Allah does not love those who spread mischief."

A. Research Objectives.

- To identify the methods, implementers, and level of effectiveness of the dissemination of Law No. 5/1960 to the Langkat community, as well as the obstacles encountered.
- To analyze the level of implementation of Government Regulation No. 73/2012 by stakeholders in mangrove management in Langkat and identify the obstacles and successes of this policy.
- To examine the charcoal production strategies of communities surrounding the mangroves and their impact on income, welfare, and environmental aspects in Langkat.
- To provide a concrete picture of the implementation of agrarian and forestry regulations at the local level.
- To contribute recommendations for sustainable natural resource management policies.
- To explain the relationship between policy, environmental utilization, and the economic conditions of coastal communities.
- To provide a basis for a policy model based on local community participation.

B. Literature Review

• Theoretical Framework

The theoretical framework serves as a conceptual basis for analyzing the problems raised in the research. This study focuses primarily on the integration of agrarian reform, community-based mangrove ecosystem management, and local economic development through mangrove charcoal production. This theoretical framework is based on several theories and scientific findings, as follows:

1. Agrarian Reform Theory and the Socio-Economic Conditions of Coastal Communities

Agrarian reform is the process of restructuring the control, ownership, use, and utilization of land for the benefit of the people in a just manner. In the context of coastal communities, agrarian reform encompasses not only land redistribution but also community empowerment in sustainably managing coastal resources.

- Based on the Basic Agrarian Law (UUPA), the principles of social justice and the utilization of natural resources for the prosperity of the people are the foundation for regulating coastal land use (Source: jurnal.polinela.ac.id).
- According to Mongabay Indonesia, tenurial conflicts between indigenous communities and corporations frequently occur in coastal areas, and agrarian reform can be a structural solution to inequality in land access and control (mongabay.co.id)

2. Concept of Mangrove Ecosystem Management & Community-Based Conservation

Mangrove ecosystems have important ecological and economic functions, particularly in protecting coastlines and supporting biodiversity. Community-based management is an effective

approach to mangrove conservation because it involves the active participation of local residents as direct managers of the resource.

- A study by journals.ukitoraja.ac.id shows that a community-based conservation model increases a sense of ownership and responsibility for ecosystem preservation.
- Participatory management also has an impact on increasing income and economic sustainability in communities surrounding mangrove areas.

3. Mangrove Charcoal Production for Local Economic Development

Charcoal production from mangrove trees, if carried out sustainably (with attention to reforestation and tree selectivity), can be an alternative economic source for coastal communities.

- Relevant research from theses and dissertations indicates that charcoal production has the potential to increase community income, but requires strict monitoring to prevent ecosystem damage (for example: [insert relevant thesis/dissertation reference]).
- It is important to have local policies that support the development of a sustainability-based charcoal industry, so that environmental and social sustainability can be maintained.

Table 2. Charcoal Production and Monthly Income

Month	Charcoal Production Amount (Kg)	Selling Price per Kg (Rp)	Gross Income (Rp)	Furnace Construction Cost (Rp)	Operating Costs (Rp)	Net Profit (Rp)
January	500	6.000	3.000.000	1.500.000	500.000	1.000.000
February	600	6.000	3.600.000	-	600.000	3.000.000
March	550	6.000	3.300.000	-	550.000	2.750.000
April	650	6.000	3.900.000	-	650.000	3.250.000
May	700	6.000	4.200.000	1.500.000 (tungku baru)	700.000	2.000.000
June	750	6.000	4.500.000	-	750.000	3.750.000

Note:

- The estimated selling price of charcoal is IDR 6,000 per kg.
- Operational costs include additional fuel, labor, and transportation.
- Stove construction costs are incurred only when repairs or new construction are needed (for example, January and May).
- Net profit = Gross Income - (Stove Cost + Operational Costs).



Figure 1. Process of Burning Charcoal from Dead Mangrove Trees

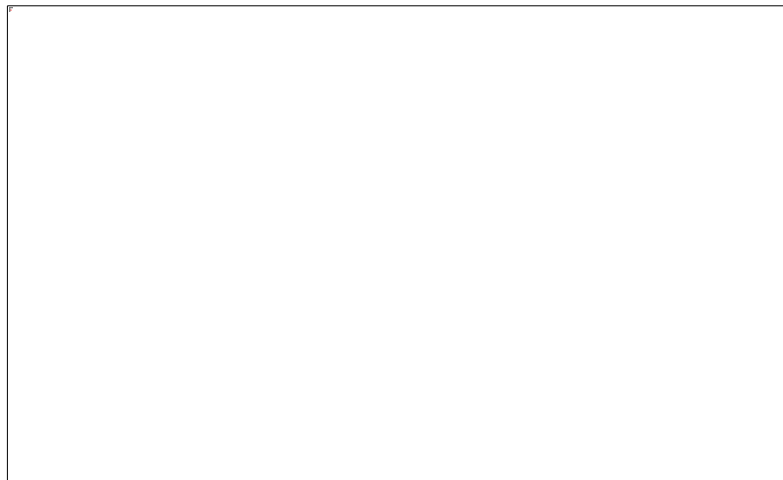


Figure 2. Charcoal Production Graph from January–April 2025
(X: Month, Y: Production in kg)

Caption: graph of charcoal production from January 2020 to January 2025. A drastic decline in production can be seen since the prohibition of the Minister of Trade Regulation (Permendag) No. 22 of 2023 (prohibition on exporting/producing charcoal), which has an impact on reducing people's income.

Table 3. Damage and Conversion of Mangroves to Oil Palm Plantations in Coastal Areas of Langkat Regency (2020–2023)

Year	Total Mangrove Area (Ha)	Damaged Area (Ha)	Conversion to Oil Palm Plantation (Ha)	Percentage of Damage (%)	Location of Main Function Transfer	Keterangan
2020	7.200	1.150	180	15,9%	Horse's Footprint (Tanjung Pura)	Illegal logging and land conversion by local residents
2021	7.050	1.320	240	18,7%	Batu Base (Gebang)	Palm oil plantation company concessions begin expansion
2022	6.880	1.520	280	22,1%	North Securair (Babalan)	Former mangrove ponds converted into oil palm plantations by farmer groups
2023	6.700	1.700	300	25,4%	Sei Bilah (West Brandan)	Land conflicts and weak local government oversight of conservation areas

Description: Total Area of Langkat Coastal Mangroves (As of 2023):

- 6,700 Ha (remaining) of approximately 7,200 Ha (early 2020)

- Total area damaged/converted: approximately 1,700 Ha (2020–2023)

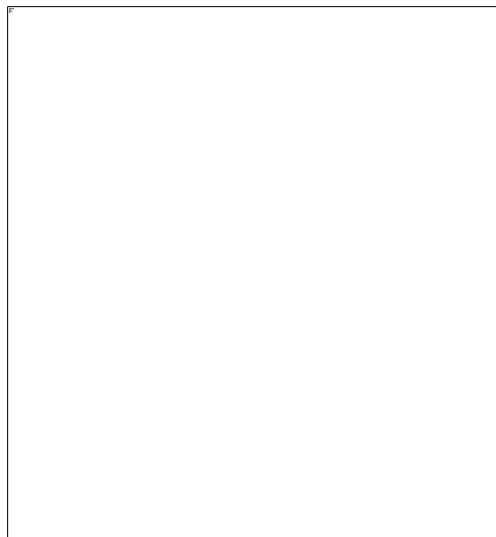


Figure 3. Kerusakan Mangrove

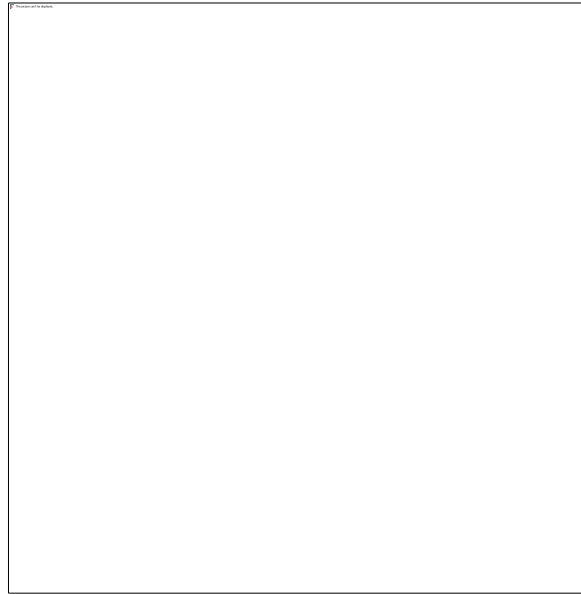


Figure 4. *Perkebunan Kelapa Sawit di Bekas Lahan Mangrove akibat Penebangan dan Alih Fungsi*

Description: Total Area of Langkat Coastal Mangroves (As of 2023):

- 6,700 Ha (remaining) of approximately 7,200 Ha (early 2020)
- Total area damaged/converted: approximately 1,700 Ha (2020–2023)

D. Similar Researchers Included in the Author's Paper.

The following is a "Similar Researchers" section that you can include in your community service paper. This section is structured to be directly relevant to the problem formulation and activity title you have mentioned: Previous research and community service relevant to the theme of agrarian regulation socialization and mangrove ecosystem management in coastal areas have been conducted by several academics and practitioners, including:

1. Sari, D. & Wibowo, A. (2018) in their study entitled "The Effectiveness of Socialization of Law No. 5 of 1960 concerning Agrarian Principles in Areas Prone to Land Conflicts" showed that the level of public understanding of the UUPA increased significantly after a participatory approach was implemented in the socialization. This supports the first research question in this paper, namely the importance of

methods and the effectiveness of implementing agrarian law socialization in the Langkat area.

2. Mahyuddin, R. et al. (2020) examined "The Level of Implementation of Government Regulation No. 73 of 2012 in Mangrove Management in North Sumatra." This study found that the involvement of local stakeholders, including indigenous communities and fishing groups, was key to the successful implementation of this policy. This aligns with the second research question regarding the successes and obstacles in implementing Government Regulation No. 73/2012 in Langkat.
3. **Suhartini, T. (2021), in her paper entitled "Utilization of Mangroves for Charcoal: Its Impact on the Economy and Environment on the Coast of East Java," found that managing charcoal from mangrove trees can increase household income, but carries the risk of environmental damage if left uncontrolled. This finding is directly related to the third research question in this paper, which examines the economic and environmental impacts of charcoal production in Langkat.**
4. *Rachman, H. (2017) mengkaji implementasi kebijakan kehutanan berbasis masyarakat dan menemukan bahwa strategi kebijakan yang*

berbasis partisipasi aktif masyarakat lokal jauh lebih efektif dalam jangka panjang. Temuan ini mendukung poin penting makalah ini tentang perlunya pengembangan model kebijakan berbasis partisipasi masyarakat lokal.

5. **Nasution, A. (2019) in his field study on "The Relationship between Regulation, Environment, and the Economy of Coastal Communities in North Sumatra" stated that the absence of clear regulations leads to unsustainable environmental exploitation and declining community welfare. This is relevant to the final problem formulation regarding the relationship between policy, environmental utilization, and the welfare of coastal communities.**

CONCLUSION

This community service activity demonstrates that the dissemination of Law No. 5 of 1960 (UUPA) concerning the Principles of Agrarian Law and Government Regulation No. 73 of 2012 concerning the National Strategy for Mangrove Ecosystem Management in the coastal areas of Langkat Regency is an important step in building legal awareness and environmental sustainability at the local level. Through a participatory approach, this activity successfully identified effective dissemination methods, implementing actors who played an active role, as well as the main obstacles such as limited community understanding, low access to information, and minimal support from technical institutions.

An analysis of the implementation of Government Regulation No. 73/2012 reveals that despite some stakeholders' awareness of the importance of mangrove ecosystems, its implementation still faces challenges such as overlapping policies, weak oversight, and limited funding and cross-sector coordination. On the other hand, the practice of utilizing dead mangrove trees for charcoal production has become part of the community's economic strategy, directly impacting household income and welfare, although it still

leaves issues of sustainability and long-term environmental impacts.

This activity also provided a concrete picture of how agrarian and forestry regulations can (and have not yet) been effectively implemented in coastal areas. Synergy between the government, local communities, and the private sector is needed to develop a model for community-based natural resource management policies. These findings form the basis for policy recommendations that support environmental protection and sustainable community economic empowerment.

Thus, the relationship between policy, environmental utilization, and the socio-economic conditions of the Langkat coastal community shows that strong legal regulations must be accompanied by intensive assistance, continuous education, and the development of resource utilization strategies based on local wisdom to achieve agrarian justice and environmental sustainability.

Strengthening Suggestions:

- **Enact Law No. 5/1960, which stipulates that mangrove land can only be managed by village communities and cannot be bought or sold. Convert mangroves to individual oil palm plantations, with a certificate issued by the National Land Agency (BPN) certifying village ownership rights for the mangrove land.**
- **Legal protection and zoning under Government Regulation No. 73 of 2012 must be enforced to protect the mangrove ecosystem along the Langkat coast. Mangrove land becomes a village asset that can be certified.**
- **Regular satellite monitoring is needed to verify changes in land cover from clearing to open land and to revoke Minister of Trade Regulation (Permendag) No. 22 of 2023 (prohibiting the export/production of charcoal), which has resulted in reduced community income.**

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