The strategy of developing mindi agroforestry (*Melia azedarach*) in Selaawi Village, Talegong District, West Java Province, Indonesia

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**Abstract.** The strategy of developing mindi agroforestry (*Melia azedarach*) in Selaawi Village is based on the results of identification of internal elements (strengths and opportunities) and external elements (weaknesses and threats) that are described from the results of interviews in the field. The interview was conducted using the snowball sampling method for farmers who did agroforestry. Based on SWOT analysis and diagramming, the main priority strategy that can be carried out is the utilization of local community knowledge as an internal force to take advantage of opportunities for agroforestry development (strengths-Opportunity) by carrying out activities: (1) Maintaining local silvicultural knowledge in the development of mindi agroforestry, (2) Increase the sale value of logs into semi-finished goods (3) Encourage the community to network with other villages around Selaawi Village in the development of mindi agroforestry. To carry out this strategy requires the attention of the parties including the forestry service, the government and local NGOs.

1. **Introduction**

Agroforestry is a land management technique that combines agricultural and forestry crops in community forests and state forests. Agroforestry in Indonesia can be found in various regions that have their respective characteristics. Components of wood species that have been developed in agroforestry in community forests include mindi, sengon, pulai, gmelina, african wood, onion wood and other types of plants such as coffee, cardamom, and other seasonal crops.

Community forest management is one of the efforts that can help to meet the needs of national timber. Sustainable forest management requires smart efforts as a solution to the existing problems. The forest development trilogy considers economic, social and ecological sustainability. The Selaawi Village community has local knowledge in natural resource management through agroforestry patterns. The local knowledge of the mindi agroforestry system in Selaawi Village needs to be a force for sustainable agroforestry development.

SWOT analysis is the systematic identification of various factors to formulate a company's strategy. This analysis is based on logic that can maximize strengths and opportunities, but
simultaneously minimize weaknesses and threats [1]. Mindi agroforestry in Selaawi village is a long-term pattern of land management carried out by farmers. Local knowledge of agroforestry mindi is a strength that can be developed in sustainable land management.

This study aims to develop a mindi agroforestry development strategy in Selaawi Village based on the identification of internal elements (strengths and opportunities) and external elements (weaknesses and threats).

2. Material and methods

Research methods the stages of SWOT analysis carried out are Internal factors:
1. Internal factors
   a. Determine Strengths (S), determine 5 to 10 internal strength factors
   b. Determine Weakness (W), determine 5 to 10 factors of internal weakness
2. External Factors
   a. Determine Opportunities (O), determine 5 to 10 external opportunity factors
   b. Determine Treatments (T), determine 5 to 10 external opportunity factors
3. Determine the strategy
   a. Define SO Strategies, create strategies that use power to overcome threats
   b. Determine ST Strategy, create a strategy that uses power to overcome threats
   c. Determine the WO Strategy, create strategies that minimize weaknesses to take advantage of opportunities
   d. WT Strategy, create a strategy that minimizes weaknesses to take advantage of opportunities.

SO strategy; This strategy is made based on the company's way of thinking, namely by utilizing all the power to seize and use all the power to seize and take advantage of the maximum opportunities. ST Strategy; This is a strategy in using the strength of the company to overcome threats. WO Strategy; This strategy is implemented based on the utilization of existing opportunities by minimizing existing weaknesses. WT Strategy; This strategy is based on activities that are defensive and try to minimize existing weaknesses and avoid threats [1].

3. Results and discussions

The strategy of developing mindi agroforestry in Selaawi Village is based on the results of identification of internal elements (strengths and opportunities) and external elements (weaknesses and threats) which are described from the results of interviews in the field. Mindi agroforestry management in the future still requires the attention of the parties including the Forestry Service, the local government and local NGOs. Based on SWOT analysis and diagramming, the main priority strategy that can be carried out is the utilization of local community knowledge as an internal force to take advantage of agroforestry development opportunities (Strengths-Opportunity) by carrying out activities: (1) maintaining local silvicultural knowledge in the development of mindi agroforestry (2) increasing the sale value of logs into semi-finished goods (3) encourages the community to network with other villages around Selaawi Village in the development of mindi agroforestry. To carry out this strategy requires the attention of the parties including the forestry service, the government and local NGOs. Research using SWOT was conducted by various researchers including [2] in the strategy of developing mindi seed sources in West Java. According to [3] uses a SWOT analysis in the formulation of the Kemenyan forest development strategy in Humbang Hasundutan Regency, North Sumatra. According to [4]. uses the SWOT analysis as an analysis technique used to determine the dominant factor in the community forest management system in Repong Damar, Pesisir Krui, Lampung. Research [5] used a SWOT analysis approach in developing a strategy for developing community candlenut forests in the Bulusarung area, South Sulawesi. Research conducted by [3] using SWOT analysis on communities that manage incense agroforestry in North Sumatra emphasizes strategy (Weakness-Opportunity), which is by trying to reduce internal weaknesses to seize and exploit and take advantage of existing opportunities.
Table 1. SWOT matrix strategy for developing mindi agroforestry in Selaawi Village

| Internal | Elements of Strength (S) | Elements of Weakness (W) |
|----------|--------------------------|--------------------------|
|          | • Farmers have local knowledge of mindi agroforestry | • Farmer groups are not active |
|          | • Selaawi Village has 2 types of mindi, they are big and small and bear fruit throughout the year | • The wood transportation aspect is not very supportive |
|          | • Agroforestry is able to produce various types of products | • The parent tree is difficult to maintain and breaking dormancy is difficult |
|          | • Plants are fast growing and resistant to pests and diseases | • The level of education of farmers is still low |
|          | • Own land status and low capital input | • Dependence on middlemen |
|          | • Guarantees savings for farmers | • There is no village cooperative that guarantees the market price of the mindi tree |

| External | Elements of Opportunity (O) | SO Strategy: | WO Strategy: |
|----------|-----------------------------|---------------|---------------|
|          | • Demand for mindi seeds from outside the village is getting higher | • Utilization of local community knowledge as an internal force to take advantage of agroforestry development opportunities | • Utilization of mindi wood marketing opportunities by empowering farmers by the government, non-governmental organizations, the Forest Service and related parties |
|          | • Tree species are preferred because they have anti-termite substances (as building material) | • Maintaining local silvicultural knowledge in the development of mindi agroforestry (S1, S2, S3, S5, O2, O3) | • Empowerment of KT assistance (W1, W4) |
|          | • Increasing demand for wood | • Increase the sale value of round trees to semi-finished goods (S3, S6, O1, O4, O5) | • Construction of asphalt road infrastructure facilities (W2) |
|          | • The development of mindi agroforestry is an effort to rehabilitate land | • Encouraging the community to network with other villages around Selaawi Village in the development of mindi agroforestry (O6) | • Improved plant breeding technology (W3, W5, O3) |

| Elements of Threat (T) | ST Strategy | WT Strategy |
|-------------------------|-------------|-------------|
| • Mindi wood marketing is controlled by middlemen | • Encourage the government or related agencies in controlling the development of local tree market prices | • Strengthen farmer institutions by the government or related agencies |
| • Information related to mindi wood marketing is still low | • Development of market information systems from related agencies (T1, T2, T3) | • Formation of village cooperatives (W5, W6, T1, T2) |
| • There is no extension from the forestry service regarding mindi agroforestry | • Building good relations between government and communities in developing mindi agroforestry (T4, T5, T6) | • Reactivation of farmer groups (W1) |
| • There is no inter-village farmer group | | |

Research [6] in developing strategies for developing mindi seed sources in community forests, especially for Padasari (Sumedang) and Legokhuni villages (Purwakarta), emphasized on the
utilization of genetic potential, namely by utilizing existing genetic potentials, institutional strengthening that had been formed through farmer groups, improving the network between farmers, farmer groups and forestry institutions and taking advantage of mindi timber market opportunities that have begun to develop. The role of both parties between the community and the parties in terms of implementing this mindi agroforestry development strategy is needed to support the welfare of the community.

The role of farmers, among others: (1) Maintaining local silvicultural knowledge in the development of mindi agroforestry. Where this knowledge becomes an input for people outside the Selaawi Village who want to develop mindi agroforestry. In addition, local knowledge is also very useful for researchers and academics as input in the development of community forests, (2) Strengthening local institutions through activating farmer groups as a medium for information exchange. Information at the local level is needed both regarding information on local silvicultural techniques and information on wood market prices. The role of the government includes: 1. Construction of asphalt road infrastructure facilities. One obstacle in terms of selling mindi wood value is caused by transportation facilities that are not conducive for farmers. So that farmers are still controlled by middlemen. The selling value of wood is low due to the high transportation costs of timber transportation. The role of the forestry service includes: 1. Encouraging communities to network with other villages around Selaawi Village in the development of mindi agroforestry. This can be integrated with the forestry service program in land rehabilitation. 2. Development of mindi wood market information systems and other types of wood from the forestry service. This information system aims to prevent the price of wood from being mocked at the village level. 3. Building good relations between the government and the community in developing mindi agroforestry.

Research related to the mindi agroforestry development strategy was also conducted by [1] in six mindi agroforestry locations in West Java. The results showed that the mindi agroforestry location which had a fairly active farmer group in the village of Padasari (Sumedang) was proven to have the highest mindi agroforestry income compared to the five other locations. Therefore, the empowerment of farmer groups also needs to be done on mindi agroforestry in Selaawi Village to further improve the welfare of local communities. The role of government and related institutions is needed in the empowerment of these farmer groups.

4. Conclusions
Based on the SWOT analysis, the main priority strategy that can be carried out in the development of agroforestry in Selaawi Village is the use of local community knowledge as an internal force to take advantage of agroforestry development opportunities (Strength-Opportunity).

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