

**Farmers' Strategies for Maintaining Traditional Unproductive Systems of Unprofitable Rice Farming (Case Study in Lembang Sarapeang, Rembon District, Tana Toraja Regency)**

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**ABSTRACT**

This study aims to investigate the strategies of farmers who maintain traditional systems in cultivating unproductive or unprofitable paddy fields because the land is hilly. The data collection technique used in this study was a field research method using in-depth interviews with 15 informants. The analytical method used in this study is a qualitative descriptive analysis using the SWOT analysis method. The results showed that the farmer's strategy was to maintain the traditional system of paddy rice farming, because conventional equipment is suitable for cultivating relatively small paddy fields because the land is hilly, and these tools are cheap and easy to find in the market. And there are still farmers who believe there are spirits who can protect the environment by not cutting trees carelessly and burning them. Can arouse mutual respect and cooperation, arouse a sense of concern for each other, and uphold brotherly relations. Farmers are very proud if there is always rice stored in the barn, if the rice or unhusked rice stored in the barn is sufficient if there is a ceremony for signs of 'tuka' and signs for 'solo'. Weaknesses faced by farmers such as cooperation that has begun to diminish, advances in modern technology, and changing times can change the mindset of farmers. Opportunities that farmers can take advantage of are conserving the environment by not cutting trees carelessly and burning them, besides being cheap, traditional equipment is easily available in the market compared to modern technology, because the existence of the 'tuka' and 'solo signs' ceremonies can attract both local and foreign tourists. The government must support local wisdom as an asset to the nation and state. Threats that may arise include poverty, the conversion of paddy fields, the success of modern technology, and changing times that can change the mindset of farmers.

**Keywords: hilly land, rice, traditional system, unproductive paddy fields**

**1. INTRODUCTION**

Rice plants are a food ingredient that produces rice or grain which is then processed into rice. Rice is a staple food for Indonesians at all times. In general, the Indonesian population consumes rice so that demand will continue to reach its limit so that all residents' needs for rice are met for the continuation of their lives. Rice plants in Indonesia were initially cultivated in dry land areas using a field system, until now they still exist without irrigation. If farmers want to increase the yield of their rice fields, farmers must make water channels or irrigation to irrigate rice fields that lack rainfall, whereas if farmers want to use land that is hilly, the land must be leveled by making embankments or embankments so that water can be used. remains flooded in rice fields. With the development of technology, it is easy to make channels or irrigation to irrigate land planted with

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rice plants, which are called lowland rice plants (AAK, 1990). According to Prasetyo (2002) that: every Ha of rice land can produce 3 - 5 tons of rice per harvest if conditions are normal.

Cahyanto (2017) said that; Hilly land is not good for use as rice fields. Rani said that one hectare of rice fields can produce around 5.6 tonnes of dry grain under normal conditions. One hectare of rice fields can produce around 8 tonnes of dry grain under normal conditions (Riyanto, 2019). One hectare of rice fields can produce around 5 - 8 tons of dry grain under normal conditions (Sumiyo, 2017).

To increase production and farming income, farmers must try to utilize land and adapt crops that can produce productive or profitable products and eliminate habits of activities that are less profitable. Like farmers who still maintain the habits of their parents from generation to generation by planting rice on hilly agricultural land and the results are not productive or profitable, because these rice fields are hilly so that the space or area of land planted with rice is relatively small compared to space or area of land that is not planted with rice and ultimately only produces around 80 kg of dry rice per harvest/ha under normal conditions.

Local wisdom is part of local culture passed down from generation to generation and shown in the form of myths and traditions in society. Some people still believe it is an instrument that familiarizes them with various areas of life. The agricultural sector, especially rice, is an area of life that contains a lot of local wisdom. From the beginning of the rice production process, pre-harvest and post-harvest, traditional techniques are used which contain local values, norms, rules and wisdom. However, after the introduction of modern technology after the rice harvest, traditional tools were slowly replaced by local wisdom and people almost forgot about them. The reason is because modern technology makes all work easier, in a short time and rice production increases. Of course, this should not be allowed, because local wisdom is an instrument that makes the Indonesian nation known as a nation that is harmonious and respects its national culture.

Most of the people of Lembang Sarapeang live from agricultural products, especially rice. This rice farming process has been developed from generation to generation, which then forms its own knowledge system and farming traditions, such as maintaining a diversity of seed types, planting, care, harvesting, and even consumption patterns. Rice farming is a knowledge system that lives and supports its owner. Almost all rice production in Lembang Sarapeang is local and the results are consumed by the farmers themselves, the selling culture is often carried out in situations of necessity and urgency.

The rice seeds produced by farmers in Lembang Sarapeang are local seeds that they produce themselves, which are taken and selected by rice that is dense and has large grains at the beginning of the rice harvest and is dried in the sun separately and must not be mixed with other rice. Farmers usually separate and mark the rice that will be used as seed first, between the rice that will be stored as food in the barn and the seeds that will be used in the next planting season. Rice that contains and has large and fine grains, is ripe and does not mix with other rice, and requires a room that is not damp and is stored in a barn and may not be mixed with other rice. Local rice varieties are rice varieties that have long adapted to the area. So that this variety has specific characteristics of the location in the area. Each variety has advantages and disadvantages as well as local rice varieties. The types of local rice are oil varieties, bawu' putih and black skin, barri' - barri', makmur, bandangan, kasalle, black sticky rice, puti, kombong sticky rice and so on.

The Tongkonan house is a legacy from generation to generation and has a yard that is large enough to dry rice or plantation products, a family meeting place, and a place for ceremonies, both for the Tuka Sign ceremony (including family marriages) and Solo signs, so this Tongkonan house must have rice fields and gardens. If a tongkonan house does not have rice fields or gardens, then this tongkonan house is no longer valued in terms of its social value in society, and even the next generation no longer wants to live in the house.

Planting patterns and cultivation technology by the people of Lembang Sarapeang are still very simple and rely on human labour. Activities in farming usually require help from fellow

farmers, whether given in a helping system, a wage system, or after a new harvester is given a reward in the form of rice. In the past, the people of Lembang Sarapeang used a mutual cooperation system in their rice field activities, now the Lembang Sarapeang people mostly use a wage system. For farmers who cannot afford to pay workers, they help each other because farming activities are hard to do by the farmers themselves or just their families.

The influence of the green revolution remains real in Lembang Sarapeang, which is shown by the strong dependence on chemical fertilizers, even though organic fertilizers are still used by the community, local knowledge by farmers in Lembang Sarapeang is still maintained and applied, for example to eradicate pests. The people of Lembang Sarapeang eradicate various pests using used oil, leaves, sticks, bamboo by letting water flow in to make noise, plastic that surrounds the rice plots and protects the rice plants until harvesting, to get maximum rice.

Farmers in Lembang Sarapeang have their own local wisdom in this research, they have their own knowledge regarding local wisdom in managing lowland rice farming. Local wisdom used by farmers has many benefits for farmers' lives, especially in the field of rice farming. In the past, rice fields could not be said to be a job because the purpose of growing rice was not a commodity. It is said that rice was believed to be one of the plants that fell from the sky by their ancestors. There is something unique about their rice field pattern, namely an integrated farming system (rice, fish, gardens and livestock), based on local knowledge. Currently it is known more trendily as integrated farming. Long before the concept was popular, many of our indigenous communities were already familiar with it. Likewise with the Toraja people, the farming process cannot be separated from cultural aspects. Each stage must begin with a traditional ceremony which has a holistic meaning related to "Ancestral God", the Inhabitant or Ruler of the place of spirits/fairies, nature and humans. From the results of previous research carried out by Lembang Sarapeang farmers, they can manage hilly rice fields using their local knowledge, so that farmers can manage lowland rice fields well. Such as knowing when to plant rice and when to harvest it, when pest attacks appear so they can deal with them to avoid crop failure and the process of peeling the rice into rice. Apart from planting rice, farmers also plant various types of additional crops or intercropping crops. On average, after the rice harvest, these farmers can continue other crops such as corn, peanuts, legumes, tubers, Lombok, tomatoes. In this way, local wisdom is clearly visible in using rice fields as a place to grow crops that can meet the needs of farmers.

The agricultural sector of paddy rice farming is used as a source of acceleration as well as solving the fundamental problems in the Rembon Lembang Saparapeang District that are currently being faced, namely the problems of unemployment and poverty. In terms of demand, this place often holds ceremonies or parties that require quite large amounts of food. As for lowland rice farmers in Rembon district, they encourage productivity and take advantage of the potential of available land, even though the land is hilly and there is no irrigation to cultivate lowland rice farming.

Traditions and rules and customs of the people of Lembang Sarapeang in cultivating rice in hilly paddy fields are local wisdom that is still used today even though it is experiencing weakness with the development of science and technology. However, farmers' habits in cultivating rice, such as determining when to plant rice, is a local wisdom that is still being implemented today. Traditional coping systems that can predict seasonality for various rice farming activities, such as determining planting time, controlling pests and diseases as well as other matters related to rice cultivation are examples of local wisdom.

Based on the above, the research problem can be formulated as follows: What is the farmer's strategy to maintain the traditional rice field farming system that is unproductive or unprofitable and environmentally friendly.

## **2. THEORETICAL BASIS**

### **2.1. Strategy**

Strategy is the placement of the company's mission, setting organizational goals by binding external and internal forces, formulating certain policies and strategies to achieve goals and ensuring their implementation quickly, so that the main goals and objectives of the organization will be achieved (Antonio, 2001). Strategy is an overall approach related to the idea, planning and execution of an activity within a certain period of time. In a good strategy there is coordination of work teams, which have the theme of identifying supporting factors in accordance with the principles of implementing ideas rationally, efficiency in funding and having tactics to achieve goals effectively (Tjiptono, 2000).

Strategy shows the general direction that an organization or company wants to take to achieve its goals. This strategy is a big plan and an important plan. Every company to achieve its goals. Every well-managed business certainly has a good strategy, even if it is not stated explicitly. Strategy is the setting of goals and direction of action as well as the allocation of resources needed to achieve goals. Strategy is needed not only for social and managerial processes by which individuals and groups obtain what they need and want by creating and exchanging products and value with others.

### **2.2. Rice Plants**

The rice plant is a food ingredient that produces rice or grain which is then processed into rice. Rice is a staple food for Indonesians at all times. In general, the Indonesian population consumes rice so that their demand will still reach the limit so that all residents are met with the need for rice for their survival. Rice plants in Indonesia were initially cultivated in dry land areas using a field system until now they still exist without irrigation. So the farmers are trying to increase the results of their farming by irrigating paddy fields where there is less rainfall, while in hilly areas if farmers want to make paddy fields, the land is leveled by making embankments or bunds so that water remains stagnant in the paddy fields. With the existence of modern technology that is developing to make it easier to make irrigation so that water is channeled to paddy fields that will be planted with rice, it is called paddy rice plants (AAK, 1990).

Cahyono (2017) said that; hilly land - hills are not good for planting rice because the results are not optimal if calculated economically it is not profitable. One hectare of rice fields can produce around 5.6 tonnes of dry grain under normal conditions (Rani 2017). Riyanto (2019) says that; One hectare of rice fields can produce around 8 tons of dry grain under normal conditions.

### **2.3. Minimarket**

According to ethnicity and regional culture, it shows the characteristics of each of the diversity of the Indonesian nation. On the other hand, these characteristics contain noble values of having a source of wisdom, which in the past was a source of value and inspiration in strategies to meet life's needs, defend oneself, and knit together the welfare of life together. This means that each ethnic group has its own local wisdom, such as the Toraja ethnic family and very high togetherness. The Bugis and Makassarese have high self-esteem, the Lampung ethnicity is known to be open and accepts other ethnicities as brothers (Mauri custom, angkon), the Javanese ethnicity is known for its gentle manners and behavior, and the Chinese are known for their tenacity in business, there are still many Other ethnic groups have different local wisdoms, also have their own distinctive culture and way of life according to their beliefs and demands of life in an effort to achieve common prosperity.

Farming is a very important thing in the development of a community group. The relatively high intensity of farming in certain community members will lead to the creation of successful business units and in turn will improve people's living standards. There have been a number of studies showing that certain cultural values can stimulate the emergence of an entrepreneurial

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spirit (Lee da Peterson, 2000; Gordon and Redding, 1992) or the desire to achieve (Black, 1999) and create something meaningful for the family and surrounding community ( Johnson and Lenartowicz, 1998 ).

Franke, Hofstede, and Bond (1991) have found that certain cultural values can explain the variables of economic success or failure of certain groups. Likewise, the research results of Prof. Dr. Gordon and Redding (1992) found that Chinese cultural values such as collective loyalty and the desire to maintain the good name of the family remained the main motivators for the success of overseas Chinese in producing successful entrepreneurs whose work in the business world was recognized internationally.

The local wisdom of paddy rice plants carried out by farmers in Kandeapi Hamlet, Lembang Sarapeang is a hereditary custom from their ancestors or parents. The purpose of the local wisdom that farmers practice is an interaction with the environment to manage natural resources wisely and wisely.

### **3. RESEARCH METHODS**

This research was conducted in Kandeapi Village, Lembang Sarapeang, Rembon District, Tana Toraja Regency. Because this village has hilly land, so if it is used as rice paddy land the results will be unproductive or unprofitable. This area is a coffee and cocoa commodity area because the land is suitable for planting coffee and cocoa and the results are good.

The data collection method used in this study was a survey method using in-depth interviews. The data collection method using interviews can be defined as a conversation between the researcher and the informant that focuses on the informant's self-perception, personal experiences expressed through the informant's language. himself (Menichiello, 1995), with this method researchers can explore information from subjects or samples in depth, in determining key information on farmers' strategies to maintain rice paddy fields that are unproductive or unprofitable for farmers.

#### **Data Analysis Methods**

The analytical method used in this study is a qualitative descriptive analysis method, the data obtained through interviews (interviews) and observation. This method is carried out by classifying the collected data, structured, and explained using sentences separated by category to get conclusions. The purpose of this method is to describe in a systematic, factual, and accurate manner the factors, characteristics, and relationships between the phenomena being investigated. According to Sayamar (2014), when searching for primary data, there may be 3 types of situations in searching for information/data about local wisdom, namely explicit, implied, and implied.

Each stage must be clear about the local wisdom by referring to the 5 W 1 H, namely; What, Why, Who, When, Where, and How. In other words :

1. What is the wisdom to do?
2. Why was this done?
3. Who did it?
4. When is it done?
5. Where is it done?
6. How to do it?

Meanwhile, to answer the second goal, namely the strategy of maintaining unproductive or unprofitable paddy fields from the perspective of local wisdom, it was analyzed using SWOT analysis. SWOT analysis is an instrument for formulating

strategies based on logic that can take advantage of strengths, opportunities, and together also reduce weaknesses and threats. Strengths and weaknesses factors are aspects that are found within the environment, while opportunities and threats are aspects that are outside the environment.

## **4. RESULT AND DISCUSSION**

### **4.1. Farming Condition**

The Lowland rice farming is a source of livelihood for the people of the Sarapeang hamlet, Kandeapi hamlet. Apart from that, the people in Rembon sub-district previously used traditional tools to clear land, such as machetes, axes, hoes, crowbars and so on. Until now, in clearing land, the people of Kandeapi hamlet still use traditional tools or are called local culture. One of the local cultures that is still carried out is that before land clearing, offerings are made to the creator which are carried out by traditional stakeholders, with the aim of ensuring that the land clearing does not cause interference from other creatures around the land and that safety is also provided during the land clearing. Apart from holding offerings or praying together, there are still some local cultures that were and are still being maintained.

In Rembon District there is one local culture that is still maintained, one of which is that when the farmers are in the nursery they make offerings or pray to the creator and pay attention to good days. The purpose of the offering or prayer during seeding is so that the seeds sown in the nursery can grow well when planted and also when planted in the rice fields so that the harvest gets maximum rice yields. Nursery activities, there are several local cultures that are still maintained.

One of the local culture in processing paddy fields is hoeing or digging if the soil is hard. The hoe is a traditional tool used to cultivate paddy fields since the ancestors of the Toraja people. The use of the hoe is believed that the paddy fields will be fertile and weeds or grass in the fields will become organic fertilizer. The land has been hoed, then each plot of rice field is made into a bund and the land is leveled so that the water in the body of the rice field is flooded evenly so that all the rice plants are flooded with water. This will be done after the rice seeds that have been sown are ready to be planted and the farmer before carrying out land processing will definitely prioritize prayer. for the smooth process of tillage, planting to rice harvest.

In Rembon District, there is a local culture in the process of planting rice, which was previously carried out until now, some farmers still do it and there are also farmers who don't do it anymore, one of which is determining a good day. Determining good days are days that are suitable for planting rice, usually these suitable days are believed to mean that the rice will grow well and not be attacked by pests so that it can produce large amounts of rice. When determining a good day, it is usually determined by people trusted by society or the government who are usually known as people who have talent or are experts in seeing the moon in the sky.

Activities in the maintenance of rice in the District of Rembon there is a local culture that was carried out by farmers in the past until now it is still maintained, one of which is by using rice field people, cassette tapes that are stretched along the rice fields, rice field people and tape tapes function to scare away birds that perch on rice plants and usually the rice field people will be placed around the rice plants. The installation of rice field people and cassette tapes will be installed when the rice plants have grown large and with the presence of rice field people and tapes, it is very helpful for farmers to drive away birds.

Harvesting is an activity of cutting rice fruit that is considered ripe on the tree. Harvesting is usually done traditionally using ani - ani or using a sickle. One of the local cultures in Rembon Subdistrict is farming rice fields, namely when harvesting, it is forbidden to talk dirty. Dirty talk is impolite behavior in speaking because if someone talks dirty during the rice harvest, they are worried that dirty words can offend the existence of creatures around the rice fields so that in the following days they can interfere with the opening of new land.

In Rembon District, the tradition of marketing paddy or unhulled or rice today is no different from the ancient rice marketing, namely by directly selling paddy or unhulled or rice to buyers. With this tradition, the relationship between sellers and buyers will strengthen well and also between buyers and sellers will be mutually beneficial.

Farmers' habits in planting paddy rice seedlings by farmers in Rembon District, Lembang Sarapeang. The farmers of Dusun Kandeapi have a habit that has been passed down from generation to generation since their ancestors and their parents. The goal of farmers' habits to maintain local culture is an interaction with the surrounding area to manage natural resources wisely and in a bestari way.

Soil processing is the first step that forms the basis of any activity of cultivating a plant. The success factor in cultivating land is influenced by the ability to understand environmental conditions with the types of plants you want to cultivate. The cultivated land must be in accordance with the needs and types of plants that will be planted on the land to be cultivated because each plant has the ability and need for nutrients and other minerals with different doses according to the topography and living habits.

Cultivation of paddy fields on Indonesian land is also adjusted to the customary and cultural systems in each region. Traditional farmers in Indonesia have knowledge of cultivating land that has been passed down from generation to generation. But now there have been many efforts from the government with counseling and volunteers who share knowledge of land management properly and freely through scientific research.

Errors in soil processing will have a total impact on the ability to increase and produce cultivated plants. There are many obstacles currently faced by farmers, such as land shortages and extreme climate change. This change in circumstances has led to changes and development of land processing systems and methods in order to maintain and increase the production capacity of a commodity amidst various environmental constraints that are currently occurring.

The role of the food crop sub-sector in the economy is still very important and strategic. This important and strategic role is especially in terms of increasing production to meet food needs such as rice, the program to increase food security is directed at being able to meet the food needs of domestic communities from national food production.

The government has taken various efforts through land security activities, quality improvement, intensification and optimization and expansion of agricultural areas. One of the national foodstuffs that we strive to have sufficient availability throughout the year is rice, which is the staple food for the majority of the Indonesian population.

Rice is one of the important commodities in the world, because around 90% of it is produced and consumed as a staple food for people in Asian countries with a global rice trade value reaching US \$ 6.88 billion. Meanwhile, in Indonesia, rice is a staple food for around 95% of the population with rice consumption of 108 - 147 kg per capita. Therefore, increasing rice production in Indonesia must continue to be higher than the population growth rate which reaches an average of 1.3% per year. Rice is one of the most important cultivated plants in civilization, although it mainly refers to the types of cultivated plants rice is also used.

Traditional agricultural systems are knowledge unique to a particular society or culture that has developed for a long time as a result of a process of reciprocal relations between society and the environment. So the concept of implementing a traditional rice system is rooted in traditional local knowledge and processing systems, because of the close relationship with the environment and natural resources, local, traditional or indigenous communities through trials have been considered to maintain natural resources, and abandon activities that are considered to damage the environment. . traditional agricultural systems that are familiar and in harmony with nature, which are adapted to local ecological situations such as land typology and seasonal conditions which are closely related to topographic conditions, depth of puddles and water availability. The traditional agricultural systems carried out by the residents of Lembang Sarapeang, Rembon

District, Tana Toraja Regency are still managed traditionally starting from the use of seeds, processing paddy fields, rain-fed irrigation and harvesting once a year.

Rice fields are potential physical resources for agricultural development, such as rice, secondary crops and colticultural crops. In general, rainfed rice fields are only planted with rice once a year, namely in the rainy season, while in the dry season some of them experience fallow or drought until the next planting season. In fact, there are several areas or locations where land is lying idle due to limited water and improper processing. The rice seeds planted are local types of seeds with tall plant characteristics and can be aged up to approximately 6 to 7 months and are ready to be harvested. The community persists in developing local rice seeds because they can survive being stored for years (13 to 15 years).

The people of Lembang Sarapeang Dusun Kandeapi historically have traditions, culture and religious commitment in the form of a traditional irrigation system. Traditional irrigation is a traditional organization in the field of water use and crop management at the farming level in the Toraja indigenous community which is sociographic, religious and economic in nature which historically continues to grow and growing.

The beliefs of the people of Lembang Sarapeang Dusun Kandeapi conceptualize land as mother earth, water as a symbol of the god Vishnu and rice as the goddess. Sri strengthens the existence of cultural wisdom, which breathes Hinduism as stated by (Windia, 2010). The ritual cycle for rice plants in line with human life cycle ceremonies is a reflection of farmers' humanization and respect for plants, animals and various natural resources.

Traditional wisdom says that usually this local wisdom takes place from the process of cultivating the land, planting rice to harvesting the harvest. The process of cultivating rice fields has become a habit passed down from ancient times, this wisdom is believed to be able to produce abundant rice production.

## **4.2. SWOT Analysis**

SWOT analysis is used to identify various strategic factors for farmers to maintain the traditional system of unproductive lowland rice farming. The result of SWOT Analysis is presented as:

### **4.2.1. Strengths**

There are eight strengths of the traditional rice planting:

1. The use of traditional equipment is suitable for processing rice fields where the size of the rice fields is relatively small because the land is hilly or the land is sloping.
2. Besides being cheap, traditional tools are also easy to find in the market compared to modern technology.
3. Strengthening brotherly relations and mutual respect for one another with an attitude of mutual cooperation or mutual cooperation.
4. Farmers are very proud during the rice harvest season and then the rice is piled up and dried in the rice field bunds.
5. Farmers are very proud, whose value cannot be measured when rice is always stored in the barn for all time.
6. When there is a ceremony, both Rambu Tuka' and Rambu Solo', an incalculable amount of food is needed and this activity can be fulfilled by the rice stored in the barn without buying rice.
7. Believing in creatures that are considered to live in a supernatural world that is outside the physical realm, farmers will pay attention to environmental sustainability by not cutting down trees carelessly that grow either around agricultural land or in forests.

Farmers maintain local seeds or their own seeds which are used for the continuation of lowland rice farming.



#### **4.2.2. Weakness**

Five weaknesses were identified:

1. The land used for paddy fields is hilly so the results are unproductive or unprofitable.
2. The costs incurred in processing rice fields every year are greater than the income earned by farmers because processing rice fields every year is the same as using human labor and using traditional tools so it takes a long time.
3. The activity of piling rice in the rice field bunds and drying it takes a long time.
4. Believing that creatures that are thought to live in the supernatural realm outside the physical realm are starting to decrease, this can be beneficial for preserving the environment by not cutting down trees haphazardly that grow either around agricultural land or in forests.
5. Advances in modern technology can influence the way of thinking of farmers to use modern technology.

The success of modern technology can cause community cooperative activities to disappear, it can reduce the enthusiasm and contribution of the community or the younger generation who continue and maintain cooperative activities carried out from generation to generation from their ancestors.

#### **4.2.3. Opportunities**

Five opportunities also identified namely:

1. The younger generation must understand and live up to the customs and traditions carried out by their ancestors so far.
2. Traditional equipment is cheaper and easier to obtain at a lower cost compared to modern equipment which is more expensive.
3. With the existence of the signs of tuka' and solo signs, it can attract both local and foreign tourists.
4. The environment can be preserved by not cutting trees carelessly and burning them.

Maintain existing trees or if necessary, plant new trees so that during the rainy season the water can be retained in the tree roots, during the dry season the water can be used to irrigate the fields.

#### **4.2.4. Threats**

Five threats are also identified namely:

1. The mindset of farmers can switch from traditional systems to modern farmers.
2. Advances in modern technology can make farmers switch from traditional tools to more modern tools in managing their farming business.
3. The development of the times can affect the behavior of farmers in farming.
4. Farmers who have difficulty meeting their daily needs may commit acts that violate the rules or norms that apply in the local community.

The local government lacks concern about the benefits of local cultural values.

The internal factors and external factors that are owned for the strategy to maintain the traditional system are then transferred into the SWOT matrix for an assessment of the components of each SWOT element by adjusting some of the influences of these factors on the current condition of local wisdom:

**Table 1**  
**SWOT Analysis**

Strength (S)	Value	Weakness (W)	Value	Opportunity (O)	Value	Threat (T)	Value
S1	3	W1	2	O1	3	T1	2
S2	3	W2	3	O2	2	T2	2
S3	3	W3	2	O3	3	T3	3
S4	2	W4	3	O4	3	T4	3
S5	3	W5	2	O5	3	T5	3
S6	3	W6	2				
S7	3						
S8	2						

Source: Analysis data

Based on table 1 above, the internal and external factors are used to identify strengths, weaknesses, and opportunities and threats to determine farmers' strategies for maintaining rice fields where the land is hilly. To simplify these factors, a SWOT matrix was prepared. Then an assessment of the components of each SWOT element was carried out using the technique of focusing on the role of these factors in terms of local wisdom which is still valid today.

The components of internal and external factors to determine farmers' strategies for continuing to cultivate rice fields with hilly soil and then analyzed using the SWOT matrix for the assessment process with the components of each SWOT element with the method of adjusting several functions of the components to local wisdom terms that currently apply in society. After each SWOT element is given a weight, it is then developed to determine the options, therefore it is arranged based on the ranking of each strategy option as presented in table 2 below:

**Table 2**  
**Components of Local Wisdom**

Strategy	SWOT Components	Weight	Rank
S1	O1	S1, S2, O2, T1	10
S2	O2	S3, O1, O4	9
S4	O4	S4, S6, O3	8
S3	T1	S7, O5	6
S6	O3	S8, T3,	5
W4	O4	W1, T1, T3	7
W5	O2	W2, O2	5
W6	O1	W3, T4	5
W1	T1	W5, T2	4
W2	T2	W6, T5	5

Source: Data Analysis

Based on table 2 above regarding the weighting values that have been calculated, alternative strategies can be determined for farmers who still maintain low-lying rice farming land that is less productive or unprofitable, in Kandeapi Hamlet, Lembang Sarapeang, Rembon District, Tana Toraja Regency, which can be explained as follows:

1. Traditional tools are suitable for processing rice fields where the land area is relatively small because the land is hilly or sloping.

2. The use of conventional equipment in processing lowland rice farming can reduce costs because the price is relatively cheap and easy to obtain.
3. Farmers are so proud that the value cannot be measured if there is rice or grain that is always stored in the barn all the time.
4. When there is a ceremony, both Rambu Tuka' and Rambu Solo', this ceremony requires food of an incalculable amount, then this ceremony can fulfill the rice or grain stored in the barn without buying rice, which is a matter of pride whose value cannot be measured.
5. Technological advances can cause mutual cooperation activities to be abandoned, resulting in reduced cooperation between local residents.
6. Advances in modern technology can change the way farmers think about using modern equipment.
7. Strengthen relations of brotherhood and respect for one another and mutual cooperation.
8. Modern developments can make farmers change their minds from conventional to modern.

Based on the SWOT elements above, traditional lowland rice farming systems that are unproductive and environmentally friendly can include:

1. The use of traditional equipment is suitable for processing hilly rice fields and is cheap and easy to obtain. Because the use of traditional equipment does not damage the environment of rice fields, because this equipment does not use fuel unlike tractors.
2. Protect the environment by not cutting trees carelessly and burning them, because trees are protective and can be a source of water.
3. Strengthening fraternal relations and respecting each other with an attitude of cooperation. This kind of situation has high social value so it needs to be maintained by society.

## **5. CONCLUSION**

### **5.1. Conclusion**

Based on the results of the analysis and discussion, several conclusions can be presented, namely as follows:

1. Traditional system for cultivating lowland rice in Kandeapi Hamlet, Lembang Sarapeang, Rembon District, Tana Toraja Regency. The traditional system of cultivating rice fields from generation to generation is still maintained by farmers. However, now it has begun to decline, even though there are farmers who no longer care about the existence of local culture in rice cultivation. This is due to the advancement of modern technology, which has made farmers start not to believe in the existence of spirits (mystics).
2. The farmer's strategy to maintain the traditional system in farming rice fields because they use traditional tools that are cheap and easy to obtain and are suitable for processing rice fields because the land area is relatively small due to the hilly land. And there are still farmers who believe in magical creatures that can protect the environment by not cutting trees carelessly and burning them, can result in mutual respect and cooperation to awaken a sense of concern for fellow human beings and uphold brotherly relations.
3. Weaknesses that farmers have do not calculate the total costs incurred starting from the processing of paddy fields until the rice yields are stored with the income earned by farmers. The land used for paddy fields is hilly, causing the area of paddy fields to be relatively small so that rice yields are not productive or profitable.
4. Opportunities that farmers have, the younger generation must understand and live up to the customs (local culture) regarding rice farming as a follow-up generation to maintain

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local culture which is the hallmark of an area and even become an asset of the nation and state, such as maintaining the rambut ceremony 'and Rambut Solo' as local culture that attracts both local and international tourists. The environment can be preserved by not cutting down trees carelessly, if necessary planting new trees so that when it rains water can stay in the tree roots, during the dry season the water comes out from inside and can be used to irrigate rice fields.

5. Threats: Technological advances can influence farmers' mindsets to switch from traditional tools to modern tools and change land use.

## 5.2. Recommendation

Based on the results of the analysis and discussion, several recommendations can be presented, namely as follows:

1. The attention of both the local government and the district government is needed to protect local culture as an asset of the nation and state and at the same time as the identity of a region and even the personality of a nation and state.
2. There needs to be counseling or guidance to the younger generation about the importance of the local culture practiced by the predecessors in farming so that it is maintained.
3. It is suggested to the community to be responsible for environmental sustainability by not cutting trees carelessly either in the forest or around rice fields if it is necessary to plant trees on vacant land.

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