

**SUBAK: BETWEEN TRADITION, TOURISM AND REVITALIZATION EFFORT  
IN PRESERVATION WATER RESOURCES IN BALI**

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**Abstract**

*The role of local culture in supporting sustainable water resources is very much needed, one of which is through the Subak program. In fact, Subak, which should be able to preserve the environment, has not been able to be optimized, and even people tend to leave the Subak tradition. In addition, currently Subak has received international recognition as a world cultural heritage by UNESCO, even Subak is used as part of tourism in Bali which is a favorite tourist destination. Meanwhile, many people want the existence of subak to be maintained because it is very much needed as an alternative in efforts to manage water resources in Bali. To maximize the performance of Subak, it is necessary to conduct a reinterpretation (revitalization) of Subak. This study uses qualitative research methods by conducting literature studies and conducting interviews with several informants who know about the role of Subak in Bali. The result of this research is that the potential of Subak both from tradition and part of Balinese tourism needs to be maintained and in the preservation of water resources it can be proven that it is related to the Subak irrigation system. Along with the implementation of Subak activities that can be carried out in the context of conserving water resources, among others, conducting periodic reviews of the material and formulation of awig-awig, increasing farmer awareness through counseling by relevant agencies (Agriculture and Religion) accompanied by prohibitions and the application of strict sanctions to residents who violated. Subak as a tradition,*

**Keywords:** Subak, Tradition, Water Resources

**A. Introduction**

The existence of water for humans to support life and life is something that is absolutely needed and cannot be denied anymore. Water is a very vital resource for human survival and life. However, with the increasing number of people, water may one day not meet the needs of all mankind if ways are not sought to conserve it. So that all the world's population will face problems in managing their environment, especially in understanding the existence of existing water resources. Experts predict that by 2025 about two-thirds of the world's population will be deprived of water. It is believed that this will cause big problems, especially in Indonesia, which is a densely populated country. This means that there will be very tight competition between users in the utilization of water resources. In the context of today's

Indonesia, various problems related to water resources can be identified, including: symptoms of a water crisis; degradation of water resources; conflicts due to competition between water users; shrinking of irrigated land due to conversion; lack of clarity on the provisions of water tenure rights; weak coordination between agencies in dealing with water resources; and the weakness of water resources policy (Sutawan, 2002: 50).

These problems certainly require the right policy options so that the use of water resources can be sustainable. However, of the many problems that arise, the main problem is the decreasing quality of water resources which is thought to arise as a result of the development of human needs which is much faster than the development of human awareness about the limitations of nature. Human knowledge to use water is far ahead of its knowledge to protect and save it. This means that the tendency to use the natural environment, including water resources, is much more deeply rooted in human history than the tendency to protect, preserve and save his environment. So that the environment and water resources are decreasing. Since the last few decades, the existence of water as a resource has reached a critical point that worries many people because it will greatly affect life and subsequent human life. Vulnerability has occurred not only from the point of view of the imbalance between the amount of availability that is increasingly disproportionate to needs, but also in all dimensions of the existence of water itself. Increasing people's income and population as well as development in all fields, especially settlements and the tourism industry in Bali, demands the fulfillment of water needs that continue to increase both in terms of quantity and quality. This implies that water is becoming an increasingly scarce resource. Competition that leads to conflicts of interest in its utilization between various sectors, especially the agricultural and non-agricultural sectors, tends to increase in the future. The absence of water control rights owned by users is one of the causes of conflict over water use. This is understandable because water which has been used more for agriculture, now and in the future must also be allocated to the non-agricultural sector. Considering that water is becoming increasingly scarce, farmers are required to be able to manage water more efficiently and so are other water users to be able to develop a water-saving culture (Sutawan, 1999: 3-4). The absence of water control rights owned by users is one of the causes of conflict over water use. This is understandable because water which has been used more for agriculture, now and in the future must also be allocated to the non-agricultural sector. Considering that water is becoming increasingly scarce, farmers are required to be able to manage water more efficiently and so are other water users to be able to develop a water saving culture (Sutawan, 1999: 3-4). The absence of water

control rights owned by users is one of the causes of conflict over water use. This is understandable because water which has been used more for agriculture, now and in the future must also be allocated to the non-agricultural sector. Considering that water is becoming increasingly scarce, farmers are required to be able to manage water more efficiently and so are other water users to be able to develop a water-saving culture (Sutawan, 1999: 3-4).

In early human life, the relationship between water and food was carried out through the process of giving water to plants or better known as the irrigation process. The irrigation system was built by humans because they realized that in order to guarantee a successful harvest and higher production, the water needs of plants could no longer be completely dependent on rain or other forms of natural precipitation that were stochastic. The success of crop production requires a more deterministic guarantee of water acquisition. The process of developing and managing irrigation systems has been carried out by humans since the beginning of culture and adapted in harmony between nature and the environment. Apparently many countries ignore traditional ways or local wisdom in managing natural resources such as forest resources and water resources. Often traditional ways are considered old-fashioned and primitive.

In fact, forest management by governments in several Third World countries often fails to address forest destruction and exacerbates poverty for people living around forest areas (Peluso, 1992: 6). In India it is reported that there is very severe deforestation in forest areas managed by government organizations. However, since forest management was handed over to local communities, millions of hectares of deforested forest have been successfully reforested. The government's lack of success in overcoming the problem of forest destruction has prompted decision makers in several countries to pay more attention to local wisdom in managing forest resources (Jinlong, 1992: 18).

The role of local culture in supporting sustainable water resources is very much needed, one of which is through the subak program. Water resource management carried out by Subak is based on local wisdom and knowledge. The principles of fairness, transparency, accountability, efficiency, and management effectiveness are implemented as a manifestation of the principles of good governance adopted by the subak system. Therefore, it is believed that subak is an example of how important it is to manage water resources based on local culture.

Subak has local wisdom that can encourage the sustainability of water resources. Some of the traditions and local wisdom possessed by Subak are still relevant to be maintained. The traditional elements that need to be maintained are instead to be strengthened, while the elements that are considered no longer in accordance with the demands of the present and the future need to find a solution. In addition, subak has a role and function with positive externalities. Subak has various roles and functions both directly related to irrigation water management and other roles outside irrigation management. However, in some places there have been complaints from farming communities about environmental pollution, especially water resources in rivers and irrigation canals due to industrial waste and waste from hotels and settlements. This trend of decreasing water quality will increase along with the increasing number of industries that emit toxic waste that is channeled through rivers and irrigation canals. In this regard, subak is required to be able to play an active role in preserving the environment.

In fact, subak that should be able to preserve the environment, has not been able to be optimized, even people tend to leave the tradition subak. Meanwhile, many people want subak to maintain its existence. Apart from being able to be considered as the nation's cultural heritage and believed to be the backbone of Balinese culture, subak is also indispensable as an alternative in efforts to manage water resources in Bali. However, to maximize the performance of subak, it is necessary to reinterpret (revitalize) the subak.

## **B. Methods**

The method used in this research is a qualitative research method with a descriptive approach. The location of this research is in Timpag Village, Kerambitan District, Tabanan Regency. The subject of this research is Subak Celemanik in Timpag Village. The informants in this study amounted to 7 people, including from the Tabanan Regency Agriculture Office, namely the Head of the Irrigation Sub Section, Timpag Customary Village Head, Timpag Village Perbekel, Celemanik Subak Management and Farmers.

## **C. Results and Discussion**

### **Subak As A Tradition**

Some of the traditions and local wisdom that Subak has, as described above, are still relevant to be maintained. The traditional elements that need to be maintained are instead to

be strengthened, while the elements that are considered no longer in accordance with the demands of the present and the future need to find a solution. Subak ritual activities that characterize the lives of farmers in particular and rural communities in general are important for social stability. If Subak disappears, traditional rural values may be eroded. As emphasized by Eigatsu (1991: 119) "The agricultural sector provides invaluable benefits for social stability". He further added that in Japan the crime rate and drug abuse is much lower than in America and Europe.

### **Subak as a Tourist Attraction in Bali**

Rice fields with terraces coupled with the uniqueness of the Subak institution which has a socio-religious pattern with a variety of rituals have very potential as a tourist attraction. Moreover, in global tourism, the trend towards ecotourism and cultural tourism is growing. Subak together with the village community can play their role in participating in providing services in various forms in the future. Of course, in the development of tourism, both agro tourism and tourism, agrotourism, farmers and local village communities should not only become objects of spectacle but also as subjects. If necessary, community-based tourism can also develop or "community-based tourism", or perhaps "Subak-based tourism". In the future, it is possible that urban dwellers, when they are bored with life in the city, may someday be interested in living in a village to seek the experience of living in a village for some time and even maintain their own garden for recreation. This has happened in Germany and Japan. In Japan there are schools that provide opportunities for students to camp in agricultural areas while doing farming activities.

### **Subak in Maintaining Water Conservation**

Water is a very vital resource for human survival and life. However, with the increasing number of people, water may one day not meet the needs of all mankind if ways are not sought to conserve it. Experts predict that by 2025 around two-thirds of the world's population will be deprived of water (degradation of water resources). This means that there will be very tight competition between users in the utilization of water resources. These problems certainly require the right policy options so that the use of water resources can be sustainable. Subak is basically a community-based irrigation system and has indigenous knowledge in supporting sustainable water resources.

Although Subak is a typical Balinese irrigation system, mainly because its activities are always accompanied by religious rituals, Subak has noble values that are universal. These

noble values are Tri Hita Karana (THK). THK implicitly contains the message that we should manage natural resources wisely to preserve them; always feel grateful and grateful to the Creator; and always prioritize harmonious relations between human beings. It is not wrong if here Subak is defined as an irrigation institution with a socio-religious character and based on the principle of Tri Hita Karana with its main function being the management of irrigation water to produce food crops, especially rice and secondary crops. Starting from these universal values, Windia (2002) in her dissertation entitled: Transformation of the Subak Irrigation System Based on the Tri Hita Karana

Concept, boldly concludes that the Subak irrigation system can be transferred to other areas outside Bali. Windia suggested that in anticipating the possibility of conflicts over water use becoming more and more multi-purpose in the future (both between sectors and between regions), the concept of the Subak system based on Tri Hita Karana that puts forward harmony and togetherness in solving problems that arise, would be able to adopted so that social conflicts stemming from the problem of water, which is actually a gift from God Almighty, can be accommodated as far as possible. boldly concludes that the Subak irrigation system can be transferred to other areas outside Bali. Windia suggested that in anticipating the possibility of conflicts over water use becoming more and more multi-purpose in the future (both between sectors and between regions), the concept of the Subak system based on Tri Hita Karana that puts forward harmony and togetherness in solving problems that arise, would be able to adopted so that social conflicts stemming from the problem of water, which is actually a gift from God Almighty, can be accommodated as far as possible. boldly concludes that the Subak irrigation system can be transferred to other areas outside Bali. Windia suggested that in anticipating the possibility of conflicts over water use becoming more and more multi-purpose in the future (both between sectors and between regions), the concept of the Subak system based on Tri Hita Karana that puts forward harmony and togetherness in solving problems that arise, would be able to adopted so that social conflicts stemming from the problem of water, which is actually a gift from God Almighty, can be accommodated as far as possible.

Meanwhile, many people want Subak to maintain its existence because Subak can be considered as the nation's cultural heritage and is believed to be the backbone of Balinese culture. It is feared that if Subak is lost because the rice fields have changed functions, it is possible that Balinese culture will be degraded. Subak needs to be preserved and even strengthened or empowered, not only its organization or institutions but more importantly its



members so that they become more prosperous from an economic perspective. Thus, it is hoped that Subak will become stronger and more independent so that they can survive in facing the dynamics of changing times.

### **Subak as a Supporter of Environmental Sustainability**

Subak which is physically a stretch of irrigated rice fields for rice cultivation also has a very important role in environmental conservation. Rice fields collectively function as large dams that can control flooding and erosion, replenish groundwater, clean air through absorption of toxic substances by plants, and control the nitrogen cycle that is absorbed by rice plants. In addition, rice fields can also serve as habitats for various types of fauna and flora. So, lowland rice farming can also play a role as a keeper of biodiversity besides that it can be a powerful force in preserving the aquatic environment around Subak (Mizutani, 2002: 40).

### **Subak as a Supporter of Food Security**

Our staple food is rice. Without rice it feels like we haven't eaten. In this regard, Subak as a rice producer is very important to be preserved in order to be able to produce rice. What if Subak is lost because the rice fields have been used for purposes other than food production, especially rice? Food security both at the family level and at the regional level will certainly be threatened. Therefore, the existence of Subak must be maintained. In the previous description, it has been stated how big Subak is in conserving water resources. For example, Subak is a guardian of environmental conservation and Subak has local wisdom that would be able to sustain water resources in addition to other reasons.

### **Efforts to Revitalize Subak**

Weakened awareness of the importance of subak institutions, such as people often dumping household waste into irrigation canals. This awareness needs to be revitalized by returning it and providing counseling and guidance by the government on how important the support from the community is for the interests of subak. If necessary, the government provides stimulus in the form of financial assistance so that Subak will have the will and effort to build an irrigation system. Based on the description above, subak values that have weakened or have faded, which previously played a role in supporting the preservation of the function of the water environment and need to be revitalized are divided into three aspects, namely, concepts, activities and physical. This revitalization includes all values that are weakened because the original value of subak is very supportive of water sustainability.

1. The weakening of the perception of farmers and local residents towards the sacredness of rice fields so that they tend to violate by constructing permanent buildings or throwing garbage around the Subak Celemanik area, Timpag Village. To overcome these problems, as for the efforts that can be taken such as conducting counseling from the Ministry of Religion which controls the values of sub-culture contained in Lontar Darma Pamaculan and from the government which controls Spatial Planning, how important green open space is in preserving environmental functions because it can function as a water resource area.
2. The weakening of the role of subak in preserving environmental functions, especially water resources, is due to the activities of farmers who use chemical fertilizers and pesticides in eradicating pests that tend to damage the environment and damage the balance of the water ecosystem. Water pollution causes the extinction of aquatic animals such as frogs, eels, fish, worms and various other small organisms. This will obviously affect the infiltration of water into the soil, thereby changing the ecological balance. This needs to be revitalized by regulating fertilizers and pesticides, providing counseling, coaching or testing by the relevant agencies in this case the Tabanan Regency Agriculture Service. If necessary, the use of pesticides is completely stopped and replaced by traditional methods, as well as the use of natural fertilizers that are environmentally friendly.

From the weakened values mentioned above, I hope that all of them are still relevant and function to support the preservation of water resources. To overcome this and return to its original function as environmental conservation, it is necessary to revitalize it according to their respective conditions. Weakened subak values need to be improved or utilized so that they can play a strong role in supporting the preservation of the environmental function of water resources conservation. In this regard, in order to maintain the existence of subak as the backbone in conserving water resources and empowering subak so that it becomes a stronger and independent institution and its members also improve their welfare, it is necessary to strive for the following things:

1. Give recognition as a legal entity. So far, in order to be recognized as a legal entity, the condition is that the subak must register its Articles of Association at the local District Court. This is considered quite difficult for the subak management. If possible, should it not be determined by means of a regional regulation.



2. Carry out repairs to irrigation networks according to subak aspirations. Before handing over the management of irrigation networks to subak, it is necessary to make improvements or repairs first. The location and design of irrigation structures should be adapted to the aspirations of farmers. Some Irrigation Areas which are a physical amalgamation of previously independent subaks have not functioned as expected and often conflicts arise between upstream and downstream subaks in the use of irrigation water.
3. Developing a subak-based farmer economic organization. Until now Subak has not been used by its members as a joint forum for economic or agribusiness activities. The main function of subak emphasizes on the management of irrigation in mutual cooperation. In fact, in other countries there are already many farmer irrigation organizations that have performed economic functions. Even though Balinese farmers have joined together in a collective forum (subak), they still carry out their own farming activities. Starting from buying production facilities, carrying out production activities (on farm), processing results, to marketing the results. In a situation like this, of course, when dealing with middlemen, their bargaining position becomes very weak.
4. Reducing the conversion of irrigated paddy fields. The conversion of rice fields for non-agricultural purposes should be seriously pursued. For example, through a regional regulation on spatial planning which explicitly regulates which subak areas are prohibited from buying and selling rice fields for non-agricultural purposes. There must be strict law enforcement indiscriminately. For subak areas that are not included in the category, there is a prohibition on buying and selling rice fields, so that subaks are involved in the decision-making process regarding the conversion of rice fields for non-agricultural use. Subak can only exist if the rice fields are still used for farming rice and other food crops. If the use of rice fields is shifted to non agricultural use, then the subak will be in danger of disappearing. It is unimaginable what will happen regarding Balinese culture, the natural environment of the Island of the Gods and the social life of its people. Therefore, after all, subak with its rice fields in certain areas must be maintained through various policy options.

## **D. Conclusion**

The conclusions in this study include:

1. Subak's potential in conserving water resources can be proven by the many links between the Subak irrigation system and the preservation of water resources in the area as explained in the discussion. In addition, the implementation of Subak activities that can be carried out in the context of conserving water resources, among others, conduct periodic reviews of the material and formulation of awig-awig, raise awareness of farmers through counseling by relevant agencies (Agriculture and Religion) accompanied by prohibitions and the application of strict sanctions to residents. which violates and regulates the use of balanced fertilizers, selection of healthy seeds, through counseling and pilot projects of new varieties from the Tabanan Regency Agriculture Service.
2. Subak as a tradition and local wisdom is still very relevant to be maintained. Subak ritual activities that characterize the lives of farmers in particular and rural communities in general are important for social stability. If Subak disappears, traditional rural values may be eroded.
3. Subak as an opportunity in the tourism sector really needs to be developed and even collaborated with various sectors so that the surrounding community is able to benefit economically through tourism. This must be guided by the strengthening of existing institutions in the local indigenous community in collaboration with the Government through the Tourism Office in offering an agriculture-based tourist destination with the main focus on empowering indigenous peoples in maintaining the existence of subak in the future.

The suggestions in this research include:

1. The younger generation in Bali, especially those in Tabanan Regency, should have a greater sense of pride and understand their own local wisdom, and be familiar with the values of Hindu cultural traditions (Tri Hita Karana) and the dresta they have especially in their villages.
2. The government and the community are expected to try to use Subak as an alternative option in conserving water resources. So that the water crisis which is the main problem can be minimized. In addition, the government is expected to provide technical assistance to Subak, either in the form of irrigation canals, dams, or Subak facilities.
3. To the administrators of the Subak organization as objects and subjects in the implementation of Subak, in order to continue to preserve and improve the management of Subak as well as possible. In particular, opportunities in the tourism

sector to collaborate with various actors such as the government, the private sector, universities and other actors to create a new destination in the tourism sector, especially agricultural tourism with the characteristics of local wisdom of Subak and local indigenous people.

4. It is necessary to disseminate information to the wider community, especially among farmers, about the importance of revitalizing and preserving the existence of Subak in managing water resources.

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