

THE IAP2 PUBLIC PARTICIPATION SPECTRUM IN BALI'S SUBAK SYSTEM

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Abstract— Traditionally, the Balinese community highly honors water as the center of life, making the preservation of water in Bali very important. In addition, water is an important source in irrigating rice fields in Bali. Irrigation activities in rice fields involve various stakeholders and require a system to manage irrigation management. Therefore, the Subak System is a solution to address this issue. Subak is a traditional Balinese organization that deals with water and plant management at the farmer level with socio-religious agrarian subsystems (Provincial Regulation No. 9 of 2012 on Subak). Subak applies the spirit of mutual cooperation, trust, and democratic decision-making. Activities in Subak represent the Public Participation Spectrum of IAP2 (Inform, Consult, Involve, Collaborate, Empower). Therefore, the Subak System can be a framework that can be replicated in environmental issue management activities. The research aims to analyze the appropriate public participation framework with the values of the Bali Subak System in dealing with complex issues. The research method used a descriptive qualitative approach with data collection methods of interviews and literature studies. The result of the research is an appropriate public participation framework in dealing with complex issues that applies the values of the Bali Subak System.

Keywords— Subak, Culture, Multi-Stakeholder Partnership, Public Participation, Environmental Issues.

I. INTRODUCTION

Traditionally, the Balinese people highly respect water as the center of life, making water conservation in Bali extremely important. In addition, water is an important source for irrigation in Balinese rice fields. The activity of rice field irrigation involves various stakeholders, and a system is needed to manage it. Therefore, the Subak system became a solution to address this issue. Subak is a traditional organization in Bali that focuses on water and plant management at the farmer level, with a socio-religious agrarian subsystem (Bali Provincial Regulation No. 9 of 2012 regarding Subak). This subsystem must be interconnected in order to establish harmony and togetherness in managing irrigation. Subak has been applied since the 11th century and has a rich history, which led to UNESCO designating it as a World Heritage site in 2012. The Subak system implements the Tri Hita Karana value, which is a Hindu philosophy in the aspect of traditional Balinese life that maintains balance between parhayangan (God), pawongan (humans), and palemahan (environment). Subak implements activities of mutual cooperation, trust, and democratic decision-making. The activities in Subak represent the Public Participation Spectrum of IAP2 (Inform, Consult, Involve, Collaborate, Empower). Therefore, the Subak system can serve as a framework that can be replicated in handling environmental issues. One of the complex environmental issues is climate change, which requires public participation and multi-stakeholder partnerships. Thus, IAP2 Indonesia will analyze the appropriate public participation framework with the values of the Bali Subak System in handling complex issues.

II. RESEARCH METHODS

Data collection in this study was carried out in several ways, to collect primary data FGDs, in-depth interviews and observations were carried out. While the secondary data is explored through the desk study.

FGDs were used to collect data related to the subak system by inviting representatives of subak management who then extracted information based on the questions given. The FGD system was carried out by dividing the FGD participants per district.

The summary of the FGD activities conducted in Tabanan Regency is as follows:

No	FDG Location	Date	Participant
1	Selemadeg Barat District Head Office, Tabanan Regency, Bali - Indonesia	11 November 2022	Session 1: Subak – Lalang linggah, Tiyeng Gading, Selabih, Mundeh Kangin, Mundeh Kauh. Session 2: Subak – Antosari, Lumbung, Lumbuh Kauh, Bengkel Sari, Angkah. Total participant: 36 representatives of Subak management
2	Selemadeg District Head Office, Tabanan Regency, Bali - Indonesia	12 November 2022	Session 1: Subak – Manikyang, Wanagiri Selemadeg, Wanagiri Kauh, Cangkap, Antap. Session 2: Subak – Dauh Riri, Berembeng, Pupuan Sawah, Selemadeg, Bajera Utara. Total participant: 28 representatives of Subak management

In-depth interviews are a data collection mechanism that is carried out by interviewing stakeholders. In-depth interviews were conducted with village officials and local government agencies who had important information for research.

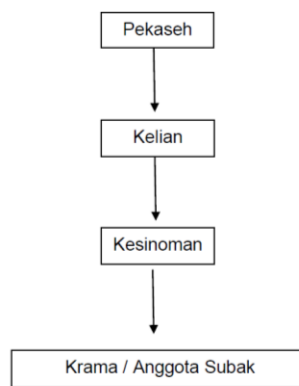
As a source of in-depth interviews in this research are:

No	Category	Number of resource persons
1	Pekaseh	20
2	Village government	7
3	Bendesa	10
4	Tabanan District Agriculture Office	2
5	Village community empowerment service	1
6	Academic, subak system expert from Udayana University, Bali	2

III. ANALYSIS AND DISCUSSION

A. Subak Institution

The Subak institution is quite complex and is divided based on the rivers that flow through it up to the scale of the Subak. Subak members (karma subak) are farmers who cultivate rice fields, whether they cultivate their own land or cultivate rice fields that do not belong to them. The highest authority of Subak is the Subak Members' Meeting (Paruman Krama), while the leader or chairman of the Subak at the small level is Kelihan Subak or Pekaseh, and at the large-scale Subak management consists of Pekaseh (chairman), Petajuh (vice chairman), Penyarikan or Juru tulis (secretary), Patengen or Juru Raksa (treasurer), Kasinoman or Juru Arah (information distributor), and Saya/Bhaga/Penyade are work groups that specialize in aspects of parhyangan, pawongan, and palemahan, or adjusted to the needs of Subak. The election of leaders is through deliberation or consensus, and candidates must have criteria for honesty, selfless dedication, dedication and loyalty to Subak. The term of office of the leader is 5 years and can be re-elected. Subak members are divided into 3 groups, namely, a) Krama Pengayah who choose and work as farmers; b) Krama pangoot/pengampel who represent landowners as farmers; and c) Krama leluputan are members who are allowed to not perform their obligations because they have special duties. The organizational structure can be seen in the picture below.



B. Values and Regulations of Subak

Tri Hita Karana is a set of values applied by the Balinese community as a concept of life. With 'Tri' meaning three, 'Hita' meaning happiness and/or prosperity, and 'Karana' meaning cause, the meaning of Tri Hita Karana can be concluded as 'three causes of happiness and


prosperity'. These three things consist of Parahyangan (harmonious relationship between humans and God), Pawongan (harmonious relationship between humans and fellow humans), and Palemahan (harmonious relationship between humans and nature and the environment). The values are embodied in traditional regulations called Awig-Awig. These regulations aim to preserve the cultural heritage of the Subak area and regulate the rights and obligations of Subak members.


IV. IAP2 PUBLIC PARTICIPATION SPECTRUM

IAP2 (International Association of Public Participation) is an association that promotes and enhances public participation practices, involving individuals, governments, institutions, and other entities that influence public interests around the world. IAP2 Indonesia has 5 public participation spectrum indicators to assist stakeholders in choosing the level of public participation. The level of public participation depends on the objectives, timeframe, resources, and level of concern in the decisions to be made. There are 5 levels of IAP2 public participation spectrum, namely:

IAP2'S PUBLIC PARTICIPATION SPECTRUM

The IAP2 Federation has developed the Spectrum to help groups define the public's role in any public participation process. The IAP2 Spectrum is quickly becoming an international standard.



INCREASING IMPACT ON THE DECISION 

	INFORM	CONSULT	INVOLVE	COLLABORATE	EMPOWER
PUBLIC PARTICIPATION GOAL	To provide the public with balanced and objective information to assist them in understanding the problem, alternatives, opportunities and/or solutions.	To obtain public feedback on analysis, alternatives and/or decisions.	To work directly with the public throughout the process to ensure that public concerns and aspirations are consistently understood and considered.	To partner with the public in each aspect of the decision including the development of alternatives and the identification of the preferred solution.	To place final decision making in the hands of the public.
PROMISE TO THE PUBLIC	We will keep you informed.	We will keep you informed, listen to and acknowledge concerns and aspirations, and provide feedback on how public input influenced the decision.	We will work with you to ensure that your concerns and aspirations are directly reflected in the alternatives developed and provide feedback on how public input influenced the decision.	We will look to you for advice and innovation in formulating solutions and incorporate your advice and recommendations into the decisions to the maximum extent possible.	We will implement what you decide.

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A. Public Participation Spectrum IAP2 in Bali Subak System

The IAP2 public participation spectrum indicators can be used to analyze the level of public participation in the Bali Subak system. Below are the results of the analysis of the level of public participation in the Bali Subak system.

IAP2 Spectrum	Subak System
Inform	Musyawah (consultation) and internal and external discussions in Subak.
Consult	Consultation forums with villages, government agencies, and other key stakeholders as needed.
Involve	Implementation of Subak working programs involving the key roles of Subak members.
Collaborate	Joint program implementation with key actors, including government and private sector.
Empower	Subak with their programs that not only empower Subak members, but also empower other actors in the surrounding area, such as youth for managing Subak Ecotourism.

In order to support meaningful participation and governance, subak has organizational tools, one of which is governance and operational regulations. Governance and management in subak are regulated in special documents that are agreed upon and institutionalized in subak. The rules in subak consist of awig-awig and perarem. Awig-awig is the statutes in subak, while perarem is the household budget in subak. Substance in awig-awig concerns only the main things, on the contrary substance in perarem concerns matters that are more detailed.

B. Public Participation and Bali's Subak System in Environmental Issue Management

Public participation in Bali's subak system plays an important role in environmental issue management. Subak is an example of a locally managed natural resource system that has been sustainably successful for centuries. Active participation from all members of the community involved in subak, such as kelian and farmers, is crucial in maintaining the sustainability of the irrigation system and the environment around it.

In the context of environmental issues, Bali's subak also plays an important role in water management and flood control. Subak regulates and utilizes water effectively, thus reducing the risk of floods and droughts that often occur in this region. In addition, subak also

promotes the use of organic fertilizers and sustainable farming techniques, thereby reducing the negative impacts of pesticide and chemical fertilizer use on the environment.

Public participation is also evident in efforts to conserve biodiversity around subak. Balinese farmers have special knowledge and skills in managing agroforestry and various plants. They also practice traditional farming techniques that have been proven to maintain biodiversity. The biodiversity maintained through these farming practices plays a role in maintaining the sustainability of the subak system, making it sustainable from generation to generation.

Overall, public participation in Bali's subak system is crucial in maintaining environmental sustainability. Through active participation, communities can maintain a sustainable subak system and promote environmentally friendly sustainable farming practices. This is in line with global efforts to achieve sustainable development and preserve the environment for future generations.

Subak in Bali manages several environmental issues that have impacts not only locally but also internationally, including:

1. **Water management:** Subak regulates and utilizes water effectively and efficiently, thus reducing the risk of floods and droughts. This subak system also maintains the sustainability and quality of water in the Bali region, which has a global impact on environmental health.
2. **Biodiversity conservation:** Subak in Bali promotes environmentally friendly sustainable farming practices, including the use of organic fertilizers and natural pest control. This can help maintain biodiversity around subak, which has important impacts on the ecosystem and global environmental balance.
3. **Pollution control:** Subak in Bali can control pollution from agricultural waste, including fertilizers and pesticides. Sustainable farming practices used by subak can reduce the amount of pollutants entering the environment and have an impact on human and global environmental health.
4. **Land management:** Subak manages agricultural land in a sustainable and environmentally friendly manner, thus maintaining the quality and productivity of the soil. Farming practices carried out by subak can serve as an example for sustainable land management and improve the welfare of farmers worldwide.

5. The impact of environmental issue management carried out by subak in Bali is not only limited to the Bali region but also has international impacts. Water management, biodiversity conservation, pollution control, and sustainable land management carried out by subak in Bali can be adopted by farming communities worldwide to achieve sustainable development and maintain a healthy environment.

Subak in Tabanan, Bali has a discussion forum to identify problems and formulate solutions from several available alternatives. The frequency and schedule of the discussion forum in subak can vary depending on the needs and conditions of each subak. However, generally, the discussion forum in subak is held periodically or when there are important issues that need to be discussed together. The common subak discussion forums include:

1. Monthly discussion forum: This forum is held every month and serves as a platform to discuss various problems and solutions related to the subak system.
2. Tri-annual discussion forum: This forum is held every three months and aims to discuss the latest developments related to subak management, problems that occur, and the steps to be taken.
3. Annual discussion forum: This forum is held once a year and provides an opportunity to evaluate and reflect on subak management activities and results over the past year, as well as discuss plans for future activities and strategies.

In addition, the subak discussion forum can also be held when there are problems that need to be immediately addressed, such as floods or conflicts between farmers. In this case, the discussion forum can be held as soon as possible to discuss the steps that need to be taken to address the problem.

V. CONCLUSION

This research has identified the Public Participation Framework applied by the subak system in handling complex issues that apply the values of the Bali Subak System, which involves several stages, namely:

1. **Problem identification:** This stage includes identifying the problems faced, including environmental issues and climate change that impact the subak system. Problem identification can be done through dialogue and consultation with all community members involved in subak, including kelian and farmers.
2. **Socialization and education:** This stage includes socialization and education to community members about the importance of preserving the environment and climate change, as well as the values of the Bali Subak System. This can be done through seminars, workshops, and direct socialization to the targeted audience.
3. **Solution development:** This stage involves developing solutions based on the values of the Bali Subak System that involve public participation from all community members involved in subak. The solution development process can be done through intensive dialogue and consultation.
4. **Solution implementation:** This stage includes implementing the developed solutions involving all community members involved in subak. Solution implementation can also be done with the support of the government and related organizations to ensure the continuity and effectiveness of the resulting solutions.
5. **Evaluation and monitoring:** This stage includes evaluating and monitoring the implemented solutions. Evaluation and monitoring are continuously carried out to ensure that the resulting solutions are capable of providing positive and sustainable impacts on the environment and subak system.

In the appropriate public participation framework, all community members involved in subak are expected to be involved and collaborate to achieve good and sustainable solutions. Active public participation and synergy between the community and government are key in handling complex issues that apply the values of the Bali Subak System.