

## The Role of Institutional Factors in the Sustainable Development of Farming Businesses in Subak, Denpasar City



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**ABSTRACT:** Due to subak's socio-agrarian, religious, economic, dynamic, and independent qualities, agriculture and subak are intimately intertwined in Bali. The existence of subak and the viability of Bali's agriculture may be threatened by both internal agricultural issues and global changes. This study intends to investigate the institutional aspects of subak agricultural sustainability in Denpasar City. The majority of the land is farmed by sharecroppers or smallholders, making the use of restricted land in urban farming a problem for sustainable urban agriculture. The research technique employed is the literature review method, which uses a variety of pertinent scientific journals, particularly those on sustainable urban agriculture, to gather the information needed for the study. The findings of this study suggest that institutional factors are crucial for preserving subak's viability and fostering subak farming in urban settings. Social capital is the factor that contributes most to the sustainability of urban farming in Denpasar City. In conjunction with Tri Hita Karana, who continues to play the function of the Subak in agriculture in the City of Denpasar, the support of social capital in institutions fosters a high level of community involvement.

**KEYWORDS:** Institutional factor; Subak; Sustainable Development

### I. INTRODUCTION

Local wisdom specific to Bali is known as subak. Due to land conversion, subak's existence is currently declining and is not working correctly. Only 2,634 subaks have survived in 1,493 Pekraman villages during the past five years, according to data from the Office of Food Crops, Horticulture, and Plantation of the Province of Bali. In order to ensure the presence of subak in the Province of Bali, government assistance will be increased through grants in 2022. Up to 471 subaks will get management funds to help them grow and survive. The agricultural order will be impacted by the shrinking land mass and subak population, particularly in metropolitan regions (BPS Province of Bali, 2022). Nevertheless, Subak is one of the

In order to ensure and perpetuate the existence of subak, efforts are being made to combine these two things into one as a tourist attraction by fusing the notions of agriculture and tourism with the concept of tourism. Bali's subak cultural system emphasizes a distinct agricultural system that includes linked areas in addition to already-existing terracing sites. One of the things that will ensure the subak's sustainability is the connection with the neighboring places. The goal of the international community, to make Bali more appealing to tourists, will be frustrated by the changing Subak area (Sutawan, 2005). The transformation of the subak territory into a residential area is one of many hurdles and obstacles now preventing the development of subak. Ecosystems in the area will be affected by land conversion in one of two ways: favorably or unfavorably. The state of subak in the area will suffer if human engagement with the environment is not accompanied by responsibility for safeguarding and sustaining the food environment. The area around Subak has seen the emergence of a number of activities, one of which is the use of river streams and river water for domestic and commercial purposes, such as the use of water for subak irrigation in the upstream area to be used as raw material for bottled drinking water companies, as occurred in the Subak Jatiluwih landscape in Kabupaten Tabanan (Prastyadewi, 2021).

In Denpasar, there are 43 villages/wards, 4 sub-districts, and 42 subaks. There are 10 subaks in North Denpasar, 14 in East Denpasar, 10 in South Denpasar, and 8 in West Denpasar. In Denpasar City, the issue of land conversion has also been fairly prevalent. Subak, a densely populated capital city, is in danger of going extinct in Denpasar City. Due to land conversion, the number of subak continues to decrease in Denpasar City. The East Subak Marinaaupan in the Sumerta Village Area, East Denpasar, and one of the subaks, Oongan 2, have undergone alterations, according to statistics from the Bali Province Food Crops and Horticulture Office (2022). The majority of the subak lands claim that they serve as dwellings, drainage sites, or both. The Subak Temple, which is still run by active subak members, is all that's left after the subak irrigation system dried up. Being a subak

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member in Denpasar, which is still active but also serves a dual purpose, one of which is Subak Kesiman Kertalangu Denpasar, which also serves as a subak tourist attraction, namely subak education or learning and knowing what is being done in the world of agriculture and irrigation systems

The existence of agricultural land and farmer organizations and institutions, particularly in urban areas, is threatened by the high rate of conversion of paddy fields in Bali as a result of the quick and dynamic movement of development wheels. The existence of more constrained agricultural land in urban areas is related to the emergence of subak as local wisdom in the agricultural sector. The viability of subak is being threatened more and more by the tourism industry, which is more promising than the agricultural sector. One of them is the younger generation's declining interest in careers in agriculture. One of the crucial issues that must be realized is the sustainability of urban agriculture in order to maintain the existence of subak in urban settings. Additionally, the agriculture industry has values that must be upheld related to local wisdom; these values have even gained global recognition. (2006); Lanya et al. (2005) (2015)

Literature study, which cannot be isolated from research, is one of the many approaches utilized to be able to debate and solve issues in research. In practically all studies, a thorough and in-depth explanation of the literature review in relation to the research subject is necessary. A literature review is a study that has been done on a particular subject to show readers what is already known about the subject and what is unknown, to determine why the study was done, and to generate recommendations for additional study (Denney & Tewksbury, 2013). Before entering the field to gather the required data, the author does a literature review after choosing the writing topic and formulating the problem (Darmadi, 2011).

Several inscriptions, including the Sukawana Inscription, the Trunyan Inscription, the Raja Purana Inscription, and the Bebetin Inscription, depict the history of Subak. According to recorded history, the title "Pekaseh," or "water administrator," first appeared in 881 AD. Additionally, the Sukawana Inscription from 882 AD contains the words "huma" (rice fields) and "perlak" (moor fields). These many inscriptions offer proof that subak existed at that period and that it is one of the irrigation systems with a very clever way of distributing water fairly in the rice fields. According to Windia (2013), the subak system was established around 1072 AD and went on to become an organization with subak members and activities. As a standalone organization, Subak is not under the direct direction and control of any other organizations.

According to what has been discussed thus far, the issues that require investigation include: What function does the institutional aspect of Subak play in ensuring the sustainability of urban farming?

## II. METHOD

This work was written using the method of a literature review. This article will illustrate the institutional factor in Urban Subak using a systematic, explicit, and repeatable method for identifying, evaluating, and synthesising research results and ideas that have been produced by researchers and practitioners in the form of explanations or discussions of theory of a finding or research topic. According to Okoli & Schabram (2010), a literature review is conducted to provide a theoretical framework for research that will be carried out in an effort to examine the depth or breadth of existing research on a topic to be studied. This approach also understands the outcomes of past study while responding to essential questions.

## III. RESULT AND DISCUSSION

### A. Urban Subak Institutional Engaging in Sustainable Agriculture

Sustainable agriculture is a method for an agricultural system that is seen holistically, is economically successful, is ecologically benign, is in agreement with local culture, and can be applied by the community in a sustainable way to improve the quality of life (SEARCA, 1995). According to Linda et al. (2018), a number of factors, including environment, economy, socioculture, institutions, technology, and infrastructure, can affect whether sustainable agriculture continues. Food security is maintained in large part by agriculture, particularly in the food industry. Food is crucial in ensuring the community's basic needs are met as well as, indirectly, the survival of farmers. Through the use of farmer cards, Chakim (2019) conducted research on sustainable agriculture and discovered that socio-cultural context, economic context, and dimensions of understanding and compliance with regulations are all crucial factors in sustaining the distribution of farm inputs like fertilizer, seeds, and agricultural tools.

Development that meets the demands of the human race today while also producing resources for future generations is known as sustainable development. Sustainable development, according to Budimanta (2005), is a normative approach to carrying out activities in a methodical and planned manner in order to improve humankind's quality of life and environment without limiting access or possibilities for future generations. A different approach to enhancing human welfare without sacrificing the protection of the environment and natural resources is the paradigm of sustainable agricultural development. If sustainable development is combined with a commitment to forge alliances between agribusiness actors, it will be more successful. Business collaborations

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that promote sustainable development can ensure the emergence of justice, equity, and environmental consciousness. Strong institutional consolidation is required to support this effort on the levels of farmers, the business sector, and the government (Septana and Ashari, 2007).

Smallholder agriculture, according to Notohaprawiro (2006), should be the primary focus since it can serve as a connecting mechanism for economic democratization and globalization. Strong community agriculture can withstand the economic downturn as well. By employing farming as a monitoring unit, it is required to completely identify the factors that affect or influence the performance of smallholder agriculture in order to establish a trustworthy new strategy leading to sustainable intensification. Environmental elements that are biophysical, social, economic, cultural, and political are among these aspects.

The Subak irrigation system is well-known in the Bali province and is one of the significant cultural legacies recognized by UNESCO. The existence of the agricultural sector and the presence of subak in Denpasar City have a significant impact on the growth of the tourism market, which quickens the development process in urban areas, particularly Denpasar City. According to Linda et al. (2018), an important factor in the sustainability of farming operations in urban locations, particularly in Denpasar City, is the role of cooperatives and the inactivity of farmers. Additionally, by maintaining the viability of urban agriculture, this will guarantee the well-being of urban farmers (Budhi, 2015).

According to Windia (2013), subak plays a crucial role in ensuring the viability of agriculture in urban areas. Its ecological role can help to preserve the agricultural environment, which will help to preserve the availability of farmland and have a long-term effect on the well-being of farmers in Denpasar. The farming community's behavior is based on religious activity, and subak is a culturally significant emblem of such activity. Subak tells us that agriculture is still necessary to maintain an adequate supply of food in the city of Denpasar despite rising land conversion.

### **B. Institutional Responsibility for Subak Farming in Denpasar City's Sustainability**

Numerous studies have extensively examined the importance of institutional functions in economic development. Sustainable development will adopt a new paradigm that is driven by the current economic system. A significant positive link between institutional quality and performance and development outcomes was discovered in the majority of qualitative and quantitative studies on the function of institutions in the development process. Studies demonstrate that the three core tenets of economic analysis, such as transaction costs, property rights, and collective action, can successfully handle problems that are not resolved by conventional methods of analysis (Khan and Saghir, 2008).

On the basis of the distribution of economic, political, and social power among the players, institutions focus on fostering economic efficiency.

#### **1. Cultural and Economic Phenomena**

It is crucial to remember that culture is a function of cognitive tools while discussing organizations. This demonstrates that there are ideal cultural components, where these different components exhibit values, attitudes, beliefs, or occasionally form a norm (Brooks, 2008). Ismail (2003) asserts that while culture has significance, it may also be expressed more briefly as a perspective on social life or as a representation of the dominant social norms and processes.

Action, reaction, practice, and conversion when a behavior is practiced are significant physical components of culture (Yuliarmi, 2019). The importance of culture in institutions cannot be overstated in ensuring the community's character in daily conduct and in developing a dominant way of life that serves as a model for implementing this way of life. In the age of globalization and technology, culture makes people more conscious of the importance of maintaining subak as one of the key institutions in the agricultural sector.

#### **2. Community Social Organization**

Local geographic community is often used to describe a community social organization. The "capacity of the structure of society to actualize the common values of its members and sustain effective social control" is referred to as society's social organization. The community needs to use pooled resources to interlock the operations of a variety of formal and informal networks, institutions, and organizations in order to achieve collective advantage. Community macroeconomic status, population size and density, amount of population migration, ethnic heterogeneity, urbanization, and family disruption are contextual sociocultural determinants. The community's capacity to monitor and regulate youth organizations, unofficial local friendship networks, and local participation in formal and voluntary organizations are the main topics of the intervening dimension of social organization (Voydanoff, 2001).

### 3. social media

The idea of social networks and how society is structured socially are closely intertwined. While created within the context of community social organization, Freudenberg's (1986) notion of friendship density at the societal level in Voydanoff (2001) is comparable to network diversity as put out in social network theory. While community social organizations place more of an emphasis on collective processes such as fulfilling community values and relational standards while employing a territorial frame of reference, the concept of social networks places more of an emphasis on structural aspects.

Family and coworkers are significant social network members, which has a significant impact on how social networks are conceptualized and analyzed. Social networks are made up of linkages that tie members of the network together through established institutional ties as well as unique interactions between select individuals who are network members. In order to create connections between member organizations, social structure is seen as a network pattern.

### 4. Capital social

According to Adhikari (2009) and Bourdieu (1986), social capital is a combination of resources that people or groups need in order to establish more lasting institutional ties that will allow them to recognize and appreciate one another. According to Bourdieu (1986), the capacity of social capital that agents possess depends on the size of the relationship network that can be efficiently mobilized. Power and conflict are significant components of social relations. Another well-known definition of social capital links it to success in education (Coleman 1990 in Adhikari, 2009).

The qualities of social organizations, such as networks, norms, and attitudes that promote coordination and performance for mutual benefit, are referred to as "social capital" by Putnam (1995) in Adhikari (2009). He views social capital as a different kind of public good that affects collective economic and political performance. He underlines that people's involvement in associational life leads to better services and more effective governmental institutions (Putnam, 1993; Adhikari, 2009).

The present value of an actor's connections to other actors is what is referred to as social capital in an economic sense. A sunk investment in social relations is necessary to develop relationships with other players. First, social capital is a relational connection that the parties involved in the connection jointly own. Social capital is shared by all actors. Second, the rate of return of the actor's production function is correlated with social capital. One has the chance to convert financial and human capital into earnings through connections with coworkers, friends, and clients (Burt 1992; Furubotn and Rudolf, 2005). According to Brinton and Nee (1998), norms express conformance to social group norms when generating capital. Norms develop social capital based on how well they can resolve social problems (Brinton and Nee, 1998; Furubotn and Rudolf, 2005).

These institutional components are seen to be crucial in upholding and fostering a sustainable economy that protects regional culture, particularly subak in urban settings. The mechanism in Bali can endure over the long run because to the cultural rigidity of Balinese practices, according to Vesteg and Narhetali's (2010) research. This demonstrates that Bali's distinctive cultural traits are a crucial capital in preserving the viability of subak farming, particularly in urban areas. The irrigation system in Bali is made special by the function of the subak, which upholds justice and abides by Tri Hita Karana's precepts. Because only the Province of Bali owns this special irrigation system, this condition cannot be found elsewhere. To date, in order to sustain its survival, the subak law—which is not written but binds farmers who labor on their land—has required the participation of the community, institutions, and government. Although it is not rigorous and burdensome for farmers, it should be able to empower them and bring benefits to them in the Subak area of Denpasar City. This is consistent with research findings from Arnawa (2011), Lanya et al. (2015), and Prastyadewii (2020).

## IV. CONCLUSION

In maintaining the existence and viability of subak farming in urban areas, the institutional factor plays four key roles: the role of cultural and economic phenomena, organization and society, social networks, and social capital. The four taken together form a solid foundation for preserving the viability of subak institutions in metropolitan areas, particularly Denpasar City. The value of social capital and agricultural products as a means of upholding and preserving traditions and culture, particularly through urban agriculture. In order to support the sustainability of farming in urban areas through Subak institutions, this can maintain a harmonious environment with fellow farmers in the local Subak environment, maintain a harmonious environment with fellow farmers in the Subak environment in other urban areas, and maintain harmonious relations between farmers and the community. Urban farmers' quality of life can be raised by practicing sustainable farming. The Balinese have a distinctive culture that governs their people's life, making social capital the most important asset they own.

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