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SUBAK SYSTEM SOCIAL SERVICES IN BALI

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ABSTRACT

The purpose of this study was to determine the services provided by the Subak system to the social life of the community/farmers in Bali. The research was carried out in three different subak locations, namely the subak in the Jembrana district (western Bali), the subak in the Badung regency (central Bali), and the subak in the Karangasem regency (eastern Bali). Primary data collection for social services was carried out through interviews using a list of questions. The population in this study were all member farmers from one of the subak in the Jembrana Regency, Badung Regency, and Karangasem Regency. Furthermore, the sample was selected randomly, each subak as many as 30 farmers, so that the total sample amounted to 90 farmers. The number of samples for each subak as many as 30 people is considered quite effective in the statistical analysis process. Meanwhile, secondary data will be obtained from agencies related to the study in this research. Analysis of social services data was carried out using qualitative descriptive methods. The results showed that the social services of the subak system in Bali had a very positive role. Subak management in the implementation of religious ceremonies, distribution of irrigation water, mobilizing resources, arranging cropping patterns, and handling conflicts, results in positive social interactions and creates harmonious relationships among subak members. This harmonious relationship occurs at the level between farmers, between tempek/munduk in one subak, as well as between subak in an irrigation system area. Social services also occur for members of the subak of different religions. In one subak there are Hindus and Christians and in one subak there are Hindu and Muslim. In the implementation of religious ceremonies, members of the subak who are Hindu, the type of ceremony, and the

implementation of the ceremony are carried out following the Hindu religion. Subak members who are Christian, carry out religious ceremonies in the Christian way that is carried out in the Church.

INTRODUCTION

The implementation of the *Tri Hita Karana (THK)* concept in the subak irrigation system in Bali has been recognized by Unesco as a world cultural heritage since 2012. THK implementation is related to the activities of Parhyangan (Godhead), Pawongan (human), and Weakening (environment). The three activities in THK aim to achieve harmony between humans and God, between humans and each other, and between humans and their natural surroundings (Cagri, 1995; Duizenberg, 2020; Geertz, 1959).

THK implementation of *parhyangan* and *pawongan* elements creates social services due to positive social interactions between communities/farmers. This positive social service is because in subak activities it always tries to avoid conflicts. The role of subak in irrigation systems in general (Coward, 1980) is (i) distribution of irrigation water; (ii) maintenance of irrigation channels; (iii) mobilizing resources (money and manpower) for various activities in the irrigation system; and (iv) conflict resolution. All of these roles have been well organized in the management of the subak irrigation system. The basis for this is proportional rights and obligations so that a sense of fairness is created in subak activities. Finally, social interaction creates an atmosphere of harmony and togetherness (Widana et al., 2020; Windia, 2005; 2018; Windia & Dewi, 2007). The number of services from the Subak system to the social aspects must be known, addressed positively, and implemented. Thus, it needs to be studied in-depth, so that it can be believed the positive impact that the subak system could have on the social aspects of social life. The purpose of this study was to determine the social services of the subak irrigation system in Bali.

RESEARCH METHODS

The research was carried out on the community/farmer members of the Subak in Bali. The research location was chosen purposively, namely three subak in Bali which includes: (i) subak in the Jembrana Regency (West Bali); (ii) subak in the district of Tabanan (Central Bali); and (iii) subak in Karangasem Regency (East Bali). This research will look for quantitative and qualitative data types. While the form of data is in the form of primary and secondary data. Primary data will be collected through interviews with samples/respondents with a list of questions that have been prepared in advance. Meanwhile, secondary data will be searched for in the subak, and related agencies, for example, the Culture Service, the Agriculture Service, and the Public Works Office. The research instrument was a list of statements prepared in advance. Also, there will be observations, literature studies, implementation of participation in social activities carried out in the subak.

Analysis of social services, measured from social interactions that occur in members of the subak. In carrying out organizational activities, the subak functions are broad as follows: (i) ritual activity; (ii) distribution of irrigation water; (iii) mobilization of resources; (iv) cropping patterns; and (v) conflict resolution. In all of these subak functions, the following social interactions occur.

- Ritual activity, in carrying out religious ceremonies both at the inter-subak level, within the subak itself, and at the farmer level individually, preparations are needed to carry out religious ceremonies. In preparation and implementation, it involves subak members, including the wives of the subak members themselves. This involvement and interaction can be measured including whether in the interaction there is harmony or does not occur harmony.
- Distribution of irrigation water requires coordination between subak, between *munduk (tempek)* within one subak, among farmer groups within *munduk*, as well as among farmers in one group. Here there is an interaction in terms of water distribution and maintenance of irrigation channels (). In this interaction, it wants justice in the water distribution system as well as a balance between the right to get water and the obligation to maintain irrigation channels. If justice occurs, there will be harmonization of good relations between subak, between *tempek* within subak, among farmer groups within *tempek*, and between farmers in one irrigation group.
- Mobilization of resources, whether in the form of material (money) and labor, also requires coordination between subak, between *munduk (tempek)* in one subak, among farmer groups within *munduk*, and between farmers in one group. Coordination is necessary for the implementation of religious ceremonies, cooperation, and justice in charging fees for all subak activities. Here also occurs social interaction which in the end also wants harmony in that interaction.
- Arrangement of cropping patterns can occur between subak and between *munduk (tempek)* within the subak. It needs coordination and social interaction that does not want a conflict of interest between one subak and another or between one *munduk* and another.
- Conflict handling is more directed at preventing conflict in all subak activities by making written regulations or unwritten agreements (*perarem*). Coordination and social interaction in handling this conflict also occur between subak, between *munduk (tempek)* within the subak and for all subak member farmers. This treatment aims to maintain harmony in social interactions in all subak activities. The analysis of social services is carried out using a qualitative descriptive method following the variables and activities of the subak as described above.

RESULTS AND DISCUSSION

Social services, measured by the social involvement and interaction that occurs between subak members in carrying out organizational activities. Broadly speaking, the activities of the subak organization in carrying out their functions are as follows: (i) ritual activity (religious ceremony); (ii) distribution of irrigation water; (iii) mobilization of resources; (iv) cropping patterns; and (v) conflict

resolution. In all subak functions, there is the social interaction among the members of the subak as follows.

Social services at religious ceremonies

Religious ceremonies at the subak are carried out at the individual farmer level, at the subak level and/or at the *munduk* level, and the inter-subak level. In preparation and implementation, it involves subak members, including the wives of the subak members themselves. This involvement and interaction can be measured including whether in the interaction there is harmony or does not occur harmony (Windia et al., 2006; Woods, 2018).

In general, religious ceremonies at the level of individual farmers in farming generally in paddy fields for rice plants include *mawinih*, *ngawiwit*, *biyu kukung*, *ngusaba*, *mantenin*, *mapinunas/mapakeling* to temple, and *nyepi in sawah* (*carik/rice field*). Religious ceremonies that are carried out together in one subak and/or in one *tempek/munduk* include *magpag toya*, *ngusaba*, and *piodalan* ceremonies at Ulun Carik Temple. While the ceremonies carried out involving several subak in subak gede are the *piodalan* ceremony at the temple which is supported by the *subak gede*, the *merana nangluk* ceremony, and *mulang pekelem* ceremony. Especially for the *mulang pekelem* ceremony, it is usually coordinated in one district/city. This ceremony is carried out in a lake which is a source of water to irrigate all rice fields in the subak in the regency/city concerned.

For religious ceremonies that are carried out individually at the farmer level, in preparation and implementation, social interaction occurs in one family between husband, wife, and even their children. Religious ceremonies must be carried out based on sincere sincerity, the serenity of feeling, and the prostration of devotional service before the Almighty (Sutawan, 2005; Sutawan et al., 1989; Vowel et al., 2017). On that basis, there is a harmonious relationship in the family. Likewise with the preparation and implementation of ceremonies at the *tempek* and/or subak levels, as well as at the inter-subak or *subak gede* levels. As a result of social interactions that are based on a sense of prostration and devotion, sincerity, a feeling of silence will create a positive aura and create harmony among subak members. Finally, with religious ceremonial activities, realizing social services in the form of harmony in social interactions at the farm family level, in the community in the subak area, as well as in the community in a wider area (between subak within one district/city).

It is more profound if we examine it in subak whose members are of different religions. Subak Mertasari and Subak Pasuar Palasari, the members are Hindu and Christian. Pekaseh Subak Pasuar Palasari, his *pekaseh* is Christian and other administrators (secretary and treasurer) are Hindu. These two subak are in the Palasari Dam area, Melaya District, Jembrana Regency. In the implementation of religious ceremonies, members of the subak who are Hindu, the type of ceremony, and the implementation of the ceremony are carried out following the

Hindu religion. Christian subak members carry out religious ceremonies in the Christian way which is carried out in the Church. The implementation time is carried out simultaneously according to the type of religious ceremony, both individual ceremonies, ceremonies at the subak level, as well as at the inter-subak level, but it is carried out in different ways and different places. Among members of different religions and ways, mutual respect and positive social interaction continue. They believe, even though the method is different, they still have one goal, namely asking that their farming work well and feeling grateful for the blessings given from their farming in the rice fields (subak) concerned (Purwita, 1993; Suryasa, 2019; Sutawan, 2001).

Furthermore, in Subak Jagaraga Penyarangan Village and Subak Medewi in Medewi Village, Pekutatan District, Jembrana Regency, the members are Hindu and Muslim. In Subak Medewi, even the Mosque and the Subak Temple are side by side in one location (Figure 1). In front of the Subak Mosque and Temple, there is a meeting hall that can be used for meetings of subak members. Besides the meeting hall, there is also a building for cooperatives that serves the needs of subak members for production facilities and savings and loans. The implementation of religious ceremonies at the subak, both at the individual level, at the subak/*tempek* level, and at the inter subak level, is also carried out at the same time but with *upakara* facilities and in different places. The religious ceremony at the subak level, for those who are Hindus, carries it out at the temple, and those who are Muslim carry it out at the mosque in an adjacent location. In terms of social interaction, the conditions are the same as the Hindu and Christian subak members as described above. Subak, whose members are Hindu and Muslim, also have a harmonious relationship and they respect each other's ways. They also believe, even though the method is different, they still have one goal, namely asking that their farming work well and feeling grateful for the blessings given from their farming in the rice fields (subak) concerned.



Figure 1. Subak Hall, Farmers Cooperative, Mosque, and Subak Temple in one location in Subak Medewi

Social services in irrigation water distribution

The function of the subak in regulating the distribution of irrigation water requires coordination between subak, between *munduk* (*tempek*) within one subak, among farmer groups within *munduk*, as well as among farmers in one group. Here, there is an interaction in terms of water distribution and maintenance of irrigation channels. In this interaction, it wants justice in the water distribution system as

well as a balance between the right to get water and the obligation to maintain irrigation channels (Liu & Alley, 2019; Martini, 2020; Pratama & Mandaasari, 2020).

Coordination in regulating irrigation water distribution among subak, within subak between *tempek/munduk*, between farmer groups in one irrigation channel, as well as among individual farmers has been going well. Coordination for borrowing irrigation water occurs mainly during the dry season. Coordination between subak, is regulated by one of the *subak leader (pekaseh)* as the head of the *subak gede*, who is selected from the *pekaseh* who get water from the same source. *Pekaseh Subak Gede*, in regulating the distribution of irrigation water, divides its subak members who are in the upstream, middle, and downstream areas (Koentjaraningrat, 2004; Laka & Suprasto, 2020; Lieftrinck, 1927). In conditions of water shortage, if the distribution is carried out in a continuous flow, the solution is to divide the water in turns. At the time of land cultivation carried out by Subak in the upstream area, the water flowing to the middle and downstream parts is partially or completely closed, depending on the condition of the water at that time. One month later, land processing was carried out in the subak in the central region. The water that enters (intake) in the upstream part will be partially closed, and to the downstream part, it will be partially or completely closed. Furthermore, one month later, land processing was carried out by subak in the downstream area. The upstream and middle intakes will be partially closed. Arrangement of water distribution like this creates a harmonious relationship between subak water users in one irrigation source. Arrangement of water distribution among *tempek/munduk* in one subak, among farmer groups in one *tempek/munduk*, as well as among individual farmers in one irrigation channel, is done in the same way. Everything is done by borrowing water and always coordinating between the two parties concerned.

In connection with the obligation to maintain irrigation channels, primary and secondary channels, it is usually the responsibility of the government, so that coordination between subak rarely occurs in the maintenance of irrigation channels. Meanwhile, for the tertiary channel, its maintenance is the responsibility of the subak. Coordination of tertiary channel maintenance is carried out between *pekaseh* and *kelihan tempek/munduk* to mobilize subak cooperation members in repair and maintenance of tertiary channels. *Gotong royong* by subak members is carried out starting from the intake to the tertiary building which divides water between *tempek/munduk*. The next channel in each *tempek/munduk*, maintenance is carried out by each *tempek/munduk* until the buildings are shared between groups. And so on, between groups carried out by each group and between farmers carried out by individual farmers. The manpower that is deployed is following the share of water obtained by individual subak members. If you get one part of water (one piece of water), then the labor obligation is one worker (one part of the *ayahan*). If you get half water (*half tektek*), then the labor obligation is one person, but one cropping season is currently subject to an exertion, while in the next planting season it is not subject to *ayahan*.

Regulations in water distribution and maintenance of irrigation channels as described above are felt to be very fair and balanced between the right to obtain water and the obligation to maintain irrigation channels. Thus there is the harmonization of good relations between subak, among *tempek* within subak, among farmer groups within *tempek*, and farmers in one irrigation group (Grader, 1960; Huppert & Clemens, 1989; Koentjaraningrat, 1971).

Social services at mobilizing resources

Mobilization of resources, whether in the form of material (money) and labor, also requires coordination between subak, between *munduk (tempek)* in one subak, between farmer groups within *munduk*, and between farmers in one group. Coordination is necessary for the implementation of religious ceremonies, cooperation, and justice in charging fees for all subak activities. Mobilization of material resources (money) is based on the distribution of water that is obtained by individual subak member farmers, either for ritual activities, maintenance of irrigation channels, or for other physical development. If you get one part of water (one *tektek*), the contribution obligation is one part. If you get half water (half *tektek*), the contribution obligation is half part. Likewise, the mobilization of resources in the form of labor is also proportional to the right to a share of water. With a proportional concept like this, in social interaction, there is a harmonization of the relationship between subak members at the *tempek/munduk* level, at the subak level, as well as the interactions between the subak.

Social services in setting cropping patterns

The planting pattern arrangement in this study means the arrangement of the cropping pattern in one season that occurs between subak and between *tempek/munduk* in one subak. This arrangement is necessary if there is limited water, especially during the dry season. This arrangement, as described in the water distribution system above. Namely, by rotating (borrowing) irrigation water between subak or *tempek/munduk* in the upstream, middle, and downstream areas. Arrangement of cropping patterns can occur between subak and between *munduk (tempek)* within the subak. It needs coordination and social interaction that does not want a conflict of interest between one subak and another or between one *munduk* with another.

In addition to setting the cropping pattern in one planting season between subaks or between *tempek/munduk*, planting patterns are also arranged in several planting seasons in one subak or *munduk/tempek*. For example, in one year, the planting pattern is rice - rice - secondary crops. Even rice varieties that are planted in one season are also arranged into one type of variables which must be planted by all farmers in one subak or *tempek/munduk*. These arrangements are based on an agreement decided by deliberation in a subak or *tempek/munduk* meeting. Subak members obey this decision very much, resulting in very good social interaction

and harmonious relationships between farmers at the *tempek/munduk* level, at the subak level, and between the subak.

Social services in conflict resolution

So far, there has never been a conflict that must be handled by the authorities/government (court). Even if small conflicts occur between farmers, between *tempek/munduk* within one subak, and between subak, the subak itself can usually be resolved through *pekaseh* or between *pekaseh* within *subak gede*. Coordination and social interaction in handling this conflict occur between subak, between *munduk* (*tempek*) within the subak and for all subak member farmers. Conflict handling is more directed at preventing conflict in all subak activities. You do this by making written regulations or unwritten agreements (*perarem*) which are decided by deliberation and consensus in a subak or *subak gede* meeting. In this way, social interactions and harmonious relationships are created in all subak activities.

CONCLUSIONS AND SUGGESTIONS

Based on the description in the discussion, it can be concluded that the social services of the subak system in Bali show a very positive role. Subak management in the implementation of religious ceremonies, distribution of irrigation water, mobilizing resources, arranging cropping patterns, and handling conflicts, results in positive social interactions and creates harmonious relationships among subak members. This harmonious relationship occurs at the level between farmers, between *tempek/munduk* in one subak, as well as between subak in an irrigation system area. Social services also occur for members of the subak of different religions. In one subak there are Hindus and Christians and in one subak there are Hindu and Muslim. We suggest to the social services of the subak system need to be maintained, especially the ability of the subak system to harmonize relations between people of different religions.

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