

STRENGTHENING LOCAL SECURE FOOD THROUGH REVITALIZATION OF RULES (*AWIG-AWIG*) OF SUBAK AND AGRIBUSINESS BEHAVIOR

Cening Kardi^{1*}, Ni Luh Pastini¹ and I Nyoman Labek Suyasdipura²

¹ Staf Pengajar Program Studi Agribisnis Fakultas Pertanian Universitas Mahasaraswati Denpasar

² Staf Pengajar Program Studi Agroteknologi Fakultas Pertanian

Universitas Mahasaraswati Denpasar

* E-mail : ceningkrd@gmail.com, HP : 081338598493

ABSTRACT

The aims of study: (1) to analyze the contents of *Awig-Awig* Subak in Buleleng Regency and to recreate with including regulations for preventing alterations of rice field function and pests and diseases spreading; (2) to analyze the agribusiness behavior of farmers; (3) to map the agricultural potentials; and (4) to analyze the cost-return on the plots of organic-based rice cultivation. The results indicated that socializations of *Awig-Awig* were lacking, no *Awig-Awig* Subak included rules and sanctions against habits to pollute irrigation and rice fields. *Awig-Awigs* were not delineating the rules for preventing alterations of rice field function and pests and diseases spreading. The level of productivity and profit of rice farming in Subaks were just met the basic consumption needs for a farmer family. The prospect for agro-industries development was quite good. The average of productivity on rice cultivation plots was 4.16 tons of rice/ha with profit Rp 13.165.000,- / ha. Nevertheless the agribusiness behavior of farmers was still at middling level. To strengthen the local secure food in this manner was then necessary to revitalize *Awig-Awig* of Subaks with written rules explicitly to prevention of altering rice field function and pests and diseases spreading as well as to upgrade the agribusiness behavior of the farmers to be high industrial culture.

Keywords : *Awig-Awig* of Subak, Agribusiness behavior, Local secure food, Revitalization and Alterations of rice field function.

INTRODUCTION

Subak is social, economic, cultural and religious pillar for the farmers in Bali. No farmer in Bali which is not bound in Subak organization. Even now the cultural landscape of Subak is one of the World Heritages. Tourism sector in Bali obviously directly utilizes assets of aspiration-tradition-religion-culture (TRAC) are rooted in Subak as a tourist attraction. Subak is very strategic role in maintaining the sustainability of agriculture and environment. But behind the "sparkling" it turned out that Subaks in Bali are increasingly miserable. The high currents of

globalization and the rapid activities of capital-based tourism in Bali have many impacts that cause various changes in form and social motives of Subak, which also provide different functions and roles of Subak at first. Many rice fields in Subak have changed into tourist accommodation buildings, hotels, restaurants, residential development and craft industry and manufacturing. If the alterations of rice field function are not unstoppable, Subak will remain possess only a temple (a place for worshipping), while the land will remain a distant memory. If this phenomenon continues, the local farm operations will be

decreasing due to the seriously rice fields reduction and how the farmers in Subaks can contribute positively to the initiatives to strengthen local secure food?

These phenomenons had been a lot happening in the area of Buleleng regency. Practice of industrialization and commercialization of agricultural land each year more rampant done by big investors with a pretext and instsrumen of investment. The changed land ownership to big investors generated a lot of cases of rice field conversion to non-agricultural, resulting in the closure of many irrigation channels and roads of Subak. This triggered a severe conflict between farmers against outsiders of Subak (Kardi, 2012).

In the past before the era of 1980 Subaks were very absolute autonomy. All decisions made by consensus with the testimony of the Lord *Ida Sang Hyang Widi Wasa*. Therefore *Sangkepan* (customary members gathering) always done in Subak's temple. *Sangkepan* always preceded by prayers together using *banten*/offerings and incense, so *Sangkepan* was always magical. It was important to make the best decisions and avoid internal conflicts (Sutjipta, 2006). Every decision of *Sangkepan* was absolutely binding on all farmers. Including the sale and purchase of land through *Sangkepan* decision in Subak. It was very hard the rice field of farmers could be transferable to outsiders of Subak. Subak autonomy in land sales to extinction since land certificates issued by National Land Agency served as the legal status for the most powerful land ownership, which further compounded by booming land demand for various building development. Finally rice fields in Subak changed hands to the investors who were far away, so that the productivity of rice into a slump, the emergence of bare lands and sleepy lands. Agricultural lands eventually become a trade commodity of speculators (owners of money) to earn a profit.

Due to the business activities with competitive paradigms, the farmers and officials of Subak, are more likely to cede agricultural land on the demand-supply mechanism that makes the price of land to be very high compared to the returns given land in their function as agricultural land. The local wisdoms of *Tri Hita Karana* (which requires the utilization and management of agriculture should be prudent and preserved for the benefit of all the people in the community) are many neglected. Returns of the lands in their function as agricultural land are still quite low due to the agrarian culture of the farmers are still communal, emotional bonding, primordial, collective, highly bound to natural and simple technology. Therefore the farmers in Subaks are imperative to be empowered until they have agribusiness behavior with high industrial culture.

The threats of neglecting to agriculture and Subaks in Bali through unstoppable conversion of agricultural land, water and labor in Subak is a possibility Bali to suffer Local Food Insecurity, which as illustrated in Figure 1.

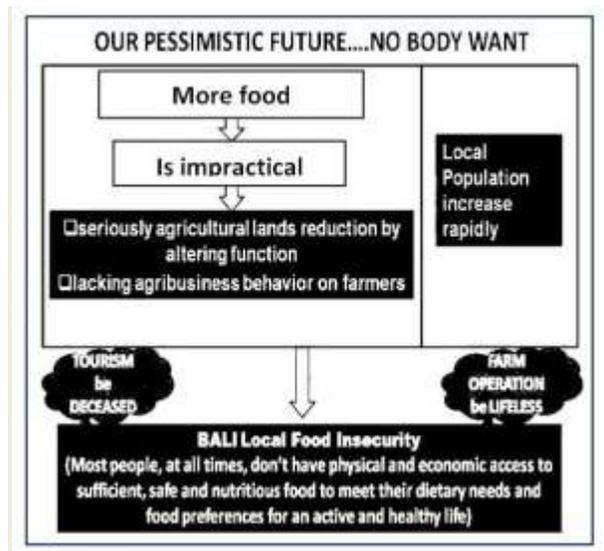


Figure 1. The illustration for the threat of "Bali Local Food Insecurity" owing to unstoppable conversion of agricultural land

Every Subak has *Awig-Awig*. *Awig-Awig* is a legal product of a traditional organization (customary law) in Bali, which is generally made by consensus and serves as a guideline to behave for members of the organization (Surpha, 2003). *Awig-Awig* is made based on fairness and propriety, so that all members avoid deviations in carrying out their duties and responsibilities as well as in the use of their rights. *Awig-Awig* has advantages given as the product of customary law in Bali, *Awig-Awig* has domain knowledge, namely: ethics, physical and metaphysical of life (magic qualities), so it is more powerful to bind and believed and obeyed (Geriya, 2004). Subak as one of the traditional organizations has *Awig-Awig* Subak. Any irregularities or violations to agreements or decisions which have been set in *Awig-Awig* Subak can be subjected harsh sanctions. With the *Awig-Awig* Subak, it is expected to create peace and order in around Subak (Sutawan, 2008).

Most *Awig-Awig* Subaks are not written and well documented, so there is a tendency farmers disregard *Awig-Awig*, especially disregarding in the context of conservation of land and water resources, when they are faced to the swift currents of modern technology development and commercialization of lands and water due to the side effects of globalization (Kardi et al., 2012).

On the account of the above phenomenons, this study was aimed: (1) to analyze the contents of *Awig-Awig* Subak and to recreate with including regulations for preventing alterations of rice field function and pests and diseases spreading; (2) to analyze the agribusiness behavior of farmers; (3) to map the production, marketing and agro-industry potential; and (4) to analyze the cost-return on the demonstration plots of organic-based rice cultivation.

In the future expected the attitudes and patterns of farmers in action can re-adhere to the noble cultural value system which are implemented in the form of application of

revitalized *Awig-Awig* Subak; and the achievement of agribusiness with globally managing and locally caring toward a better local secure food.

MATERIALS AND METHODS

This study conducted on some Subaks in coastal areas of Buleleng regency. This research used survey method to collect information and data about functioning of Subak's *Awig-Awig* and agribusiness behavior of farmers. The sampels were 31 Subaks with highest area of agricultural land conversion. Demonstration plots in Subak Dandin Yeh, Sangsit Village was for introducing organic-based rice cultivation using rice variety of *Ciherang-Petrocid*.

In the event to analyze the contents of *Awig-Awig* and to strengthen it with written rules which were contextual to prevention of agricultural land conversion and pests and diseases spreading, the variable measurements were qualitatively by examining and interpreting the vision, mission and objectives of each articles in *Awig-Awig* of Subak. The analysis and synthesis of *Awig-Awig* were descriptively-qualitatively-interpretatively based on tradition-religion-aspiration-culture (TRAC) that were developing in Subak.

Adapted from Suparta (2005), regarded the agribusiness behavior with industrial culture on farmers at the following elements: (1) knowledge-based decision making; (2) engineering technology in production activities; (3) production orientation to market demand; (4) augmentation in efficiency and productivity; (5) improving the quality and value added; (6) innovative; (7) business risks; (8) vertical and horizontal coordination; and (9) and professional independence in the decision. Each of these elements agribusiness behavior was measured on aspects of cognitive, affective, psychomotoric (Mardikanto, 1993).

The demonstration plots of organic-based rice cultivation using variety of *Ciherang-*

Petrocid were tested on 4 rice field plots, each with an area of 25 acre and used moving rice seeds technique with the planting model of *Legowo* 2:1 which was 40 cm and 20 cm row spacing and the distance between rows of plants in lane was 10 cm. The full implementation of this demonstration plots applied the pack of Organic-Based Rice Farming Technology/P3BO Unmas (Widnyana, 2009) (see Table 1). Subak community involvement through participatory rural appraisal (PRA).

Table 1. Aspects of Technology and Treatments on Demonstration Plots of Organic-Based Rice Farming

Technology Aspects	Treatments
Variety	<ul style="list-style-type: none"> • Variety of <i>Ciherang-Petrosid</i> • Tolerant varieties of brown planthopper, tungro disease, and bacterial leaf blight
Seedbed	Wet seedbed, grain seed treatment soaked in water 3 days. Laying the seeds in east-west rows.
Dosage of grains/ha	40 kg/ha
Days of Seedling	<ul style="list-style-type: none"> • 18-21 days
Number of seeds per hole	<ul style="list-style-type: none"> • 1-2 pieces of seed
Planting and watering methods	<ul style="list-style-type: none"> • <i>Legowo</i> model with type 2: 1 which was 40 cm and 20 cm row spacing with the distance between plants in rows 10-15 cm. • The interrupted water supply (intermittent irrigation) through the making of a trench around each of a maximum of 250 m²
Fertilizer efficiency	Using the Leaf Color Chart (LCC). The use of spraying organic fertilizer (ABG) and urea starter
Organic fertilizer	8 tons /ha of manure compost and Biourine
Pest and Disease control	<ul style="list-style-type: none"> • Monitoring pest populations per week • Botanical and biological pesticides, when needed

RESULTS AND DISCUSSION

Existence and Performance of *Awig-Awig* Subak

Actually, *Subak* denotes a technology developing and synergizing with community culture. On that account, *Subak* is known as an institution having socio-cultural characteristic. It is reflected by the activities of *Subak* predominated by mutual assistance and ritual ceremonies (Windia et al., 2010). The results indicated that the future of agricultural lands and Subaks along the coast of Buleleng regency were very unwelcoming. Agricultural land conversion on Subaks were rather extensive (with average 21.5 ha or 1.26% per year), because of the location of the lands was very strategic area for development of tourism accommodation along the coast of Buleleng regency. The condition of Subaks increasingly apathetic to protect land and infrastructure resource brought about high Agricultural land conversion and rather not unstoppable. The whole Subaks also did not have authoritative *Awig Awig* for initiatives to prevent agricultural lands conversion.

Awig-Awig of Subaks were very perturbing as the socialization of *Awig-Awig* was lacking. No *Awig-Awig* Subak listed the rules and sanctions against pollution to irrigation canals and rice fields of plastic waste, trash cans and other chemicals. Concern and awareness towards environmental hygiene for irrigations and rice fields were very low. No *Awig-Awig* Subak included rules to accommodate efforts to prevent changes in the function of agricultural land to non-agricultural as well as to prevent spread of pests and diseases of plants and animals. Authority of Subaks to determine their own life to protect land and infrastructure resources was getting weak and threatened, so *Awig-Awig* (either written or unwritten) should be reinforced with written rules which contextual to the prevention of land degradation and conversion as well as pests and diseases spreading.

Agricultural Potential in Subak and Agribusiness Behavior

The geographical map of the population of Subaks in Buleleng regency with along the upper reaches of the region can be seen in Figure 2. Actually the main source of water flow for rice fields irrigation in Subaks is Buyan and Tamblingan lake. Quantity and quality degradation in conservation area of Buyan and Tamblingan will make fatal to the irrigation water supply for the lands of Subak. The present increased soil erosion due to the building development for hotels, villas, restaurants, housing and agricultural cultivation on the slopes of the mountains and the downstream area of Buyan and Tamblingan should be controlled as soon as possible.



Figure 2. Geographical Map Location of Subaks, Buyan and Tamblingan Lake

The average farmer's land area was 64.2 acres, with an average number of farmers 95 people per Subak. Approximately 70% of farmers were tilling the land and not the owners. The average rice productivity of land was 56.45 quintal/ha/season (harvest dry grain). The average revenue of rice production was Rp 23.71 million/ha/season with farm income of Rp 12.24 million/ha/season. The productivity and farm income was at middle level. With an average of 64.2 acre land size, then every farmer had the income from rice farming around Rp 1.96 million/month, which was an income figure that just met the basic consumption needs for a farmer family. Farmers who cultivated onions and other

horticultural crops planting throughout the year had a higher income than rice farming, it reached by Rp 2.45 million/month.

The demonstration plots of organic-based rice cultivation using variety of Ciherang-Petrosid gave productivity 4.16 tons of rice/ha with profit Rp 13.165 million /ha. The excess of organic-based rice cultivation was that an increase in organic matter and biodiversity that were potentially to increase productivity and income of the rice farming in the next planting season. Through participatory rural appraisal to these demonstration plots afterward the farmers could plan, implement, utilize and assess organic-based farming method.

In the aspect of *cognitive* with the sequence level: Simply knowing (score 1); Understanding (score 2); Using (score 3); Analyze (score 4); Synthesise/integrate (score 5); and Evaluate (a score of 6). The *cognitive* of the farmers was at a level sufficient to analyze. In the aspect of *psychomotoric* with the sequence level: Receive (score 1); Preparing (score 2); Try (score 3); Accustomed (score 4); Skilled (score 5); and Adaptation (score of 6). The *psychomotoric* of the farmers was at a level rather Accustomed. In the aspect of *affective* with the sequence level: Receive (score 1); Responding (score 2); Assess (score 3); Organizing (score 4); and Living (score 5). The *affective* of the farmers was at a level rather Assess. Therefore the agribusiness behavior of farmers was at middling level. The improving elements of *cognitive*, *psychomotoric* and *affective* should be expanded in the forum of Subaks, so that the farmers can have agribusiness behavior with high industrial culture which then can increase the return of lands in their function as agricultural lands.

SUMMARY

Awig-Awig of Subak was very perturbing as the socialization of *Awig-Awig* was lacking. No *Awig-Awig* listed the rules and sanctions

against pollution to irrigation canals and rice fields. No *Awig-Awig* Subak included rules to accommodate efforts to prevent changes in the function of agricultural land to non-agricultural as well as to prevent spread of pests and diseases of plants and animals. The level of productivity and profit of rice farming in Subaks just met the basic consumption needs for a farmer family. The prospect for agro-industries development was quite good. The average of productivity on rice cultivation plots was 4.16 tons of rice/ha with profit Rp 13.165 million/ha. Nevertheless the agribusiness behavior of farmers was still at middling level.

Participatory all parties appraisal should be continued to make people aware of the importance of local agriculture and food security for Buleleng regency area by revitalizing *Awig-Awig* of Subaks with written rules explicitly to prevention of altering agricultural lands function and pests and diseases spreading (including the imposition of strict sanctions against *Awig-Awig* violators). Afterward *Awig-Awig* can be high-powered and high-authorized. The improving elements of *cognitive, psychomotoric* and *affective* should be expanded in the forum of Subaks with much presenting counseling and demonstrating plots of organic-based farming, so that the farmers can have agribusiness behavior with high industrial culture to increase the return of agricultural lands.

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