ASERS

Journal of Environmental Management and Tourism

Quarterly
Volume XI
Issue 8(48)
Winter 2020
ISSN 2068 – 7729
Journal DOI
https://doi.org/10.14505/jemt

ASERS Publishing

Winter 2020
Volume XI
Issue 8(48)

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DOI: https://doi.org/10.14505/jemt.11.8(48).21

Analysis of Perceptions of Farmers toward the Efforts to Develop the Dual Role of *Subak* in an Upcoming Tourism Destination in Jatiluwih, Bali

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Suggested Citation:

Ustriyana, I N.G., Budiasa, I W., Lies Anggreni, I G.A. (2020). Analysis of Perceptions of Farmers toward the Efforts to Develop the Dual Role of *Subak* in an Upcoming Tourism Destination in Jatiluwih, Bali. *Journal of Environmental Management and Tourism*, (Volume XI, Winter), 8(48): 2103 - 2110. DOI:10.14505/jemt.v11.8(48).21

Article's History:

Received 6th of October 2020; Received in revised form 20th of November 2020; Accepted 3rd of December 2020; Published 30th of December 2020. Copyright © 2020 by ASERS® Publishing. All rights reserved.

Abstract:

The establishment of an agricultural cooperative (*koperasi tani*) is an effort to empower *subak*, a traditional organization for water utilization and/or crop management for famers in Bali. The outcome expected is that for this institution to be able to play a double role: a traditional irrigation management institution as well as an integrated agribusiness-tourism management agency. The purpose of this study is to examine the perception of farmers toward the possibility to develop agricultural cooperatives through *subak* in an upcoming tourism destination. This study was carried out in Subak Jatiluwih in Bali, Indonesia, which has been designated by the UNESCO as one of the sites that became the World Cultural Heritage. Data were collected through interviews with 70 farmers using a structured questionnaire that was tested previously and through focus group discussion (FGD) during the period of June to August 2018. Perceptions of farmers were reviewed from indicators of knowledge and attitudes and measured using each of the 20 statements using a Likert scale. Data were then analyzed using descriptive statistics. The results show that perceptions of farmers toward the possibility of developing agricultural cooperatives through *subak* are within good category. When farmers have good perception, it is expected that the process of developing agricultural cooperatives through *subak* can be realized quickly and synergized with tourism businesses.

Keywords: knowledge; attitude; farmer; agricultural cooperative; tourism destination.

JEL Classification: Q10; Q13; Q15; R11.

Introduction

Each *subak* system is unique and has the potential to play a dual role, both as a traditional irrigation management institution and also as an integrated agribusiness management institution (Budiasa 2011). The establishment of Subak Jatiluwih with an area of 303 ha as one of the *subak* located in the World Cultural Heritage region has an effect on increasing tourist visits, both domestic and foreign tourists, to Subak Jatiluwih. However, the development of Subak Jatiluwih as a tourist destination must also be aligned with the interests of *subak* conservation as a world heritage based on *Tri Hita Karana* values, the balance of relationships between humans and other components of life (higher deity, other humans, and environment), so that the inclusion of tourism does not negatively impact the sustainability of *subak* and agriculture in Jatiluwih.

Behind the challenge to balance Subak Jatiluwih as agricultural land and a tourism destination, there is a potential for Subak Jatiluwih to be developed, by synergizing the tourism business and the agricultural sector in one institution. One effort to empower farmers can be done through the formation of agricultural cooperatives. In line with this, an agricultural cooperative in Subak Jatiluwih had been formed in mid 2019. This study, thus, aims to analyze the perceptions of farmers who are members of Subak Jatiluwih in the efforts to develop a *subak*-based economic institution, in this case in the form of agricultural cooperatives, which has the states of a legal entity so that their management can be legally accounted for.

1. Research Background

Rice farming and Bali have become an inseparable part, making rice a staple food in Bali and a symbol of Balinese life and culture. Like in other developing countries, the agricultural sector plays an important role in the economy in Indonesia, particularly in Bali, as one solution to alleviate poverty and a source of food security and income (Lee 2005). However, the proximity of rice farming in Bali to urban areas, especially tourist centers, provides many employment opportunities outside agriculture. One serious threat to the economic sustainability of the main food production in Bali is the conversion of land from paddy fields to non-agriculture lands. Although rice farming continues, for many farmers, this has become only a side business (Lorenzen and Lorenzen 2011).

The process of land conversion is unavoidable in every developing region, in line with population and economic growth, including in Bali. The utilization of land for agricultural activities that can actually guarantee the lives of farmers and support the food production of surrounding communities can in fact only provide a small financial advantage over the industrial sector, residential sector and other services, so that the conversion of agricultural land to other uses cannot be prevented (Arsyad *et al*. 2008).

Agricultural culture in Bali is supported by the existence of a *subak*, which is defined as a traditional organization in the field of water utilization and/or crop management at the level of farming in indigenous people in Bali that are socio-agrarian and religious, that economically and historically continued to grow and develop (Perda (Regional Regulation) No. 9 of 2012). *Subak* institution as part of Balinese culture is a social organization that has the potential to improve the welfare of the community through its main duty in regulating the use of water for irrigating rice fields. However, research shows that Bali Province's 1997 paddy field was 87,849 ha (www.litbang.pertanian.go.id) and in 2013 it had been reduced to 78,425 ha (www.pertanian.go.id). Based on these empirical data, the average conversion of paddy land to non-agriculture use was 589 ha per year during such period. During the period of 1993-2016, at least ten *subak* systems have died as a result of the conversion of paddy land to other uses, including nine *subak* in Denpasar City (www.litbang.pertanian.go.id) and one *subak* in Buleleng Regency (Budiasa et al., 2015). While in other *subak*, especially in urban areas, land conversion functions are still ongoing.

The tendency of land conversion and change of paddy field function does not only threaten regional and national food security, thus causing a country to be very dependent on import activities. Especially in Bali, this also threatens the sustainability of rice culture and the preservation of *subak*, which has been recorded as World Cultural Heritage by the UNESCO in 2012. In fact, Bali Province Regional Regulation (Perda) No. 9 of 2012 concerning *Subak* has stipulated that *subak* that are able to maintain the utilization of its fields are entitled to be given a reduction, relief, or exemption from land and building tax by the regency/city as well as given certain additional programs, in addition to financial assistance or grants given by the Governor (http://simkum.baliprov.go.id).

There is a potential for Subak Jatiluwih to be developed by synergizing the tourism business and the agricultural sector in one institution. This can be an effort to empower *subak* institutions and support for the sustainability of rice culture in Bali. In addition, this institution can support agricultural business by linking farmers with potential markets in increasing agricultural productivity. Moreover, the Provincial Government of Bali has issued a regulation requiring the tourism sector such as hotels and restaurants in Bali to purchase products of Balinese farmers through Bali Governor's Regulation No. 99 of 2018 concerning Marketing and Utilization of Bali's Agricultural, Fishery, and Local Industry Products. The institutional empowerment of farmers is in accordance with Minister of Agriculture Regulation No. 273 of 2007 concerning Guidance for Farmer Institutional Development, which is aimed at increasing the ability and strengthening the institutionalizing of farmers to become a strong and independent organization in the form of farmer economic institutionalization. This empowerment effort can be realized through the formation of agricultural cooperatives. In mid 2019, an agricultural cooperative in Subak Jatiluwih had been formed, under the name of Koperasi Tani Kertha Agroekowisata Jatiluwih.

2. Methodology

2.1. Location and Timing of Study

The study was conducted in Subak Jatiluwih, Penebel District, Tabanan Regency, Bali, Indonesia. The location of the respondents (farmers) consisted of all Subak Jatiluwih membership areas with a total of seven *subak*. The study was conducted from June to August 2018.

2.2. Methodology

Tools and materials used in this study included questionnaires, stationery, cameras, and cell phones used as voice recorders, as well as computer to analyze and draft the results of the study.

2.3. Determining Respondents

Respondents were selected from seven *subak*, which are part of the Subak Jatiluwih. The determination of *subak* where the sampling was conducted was done (*purposive sampling*) based on the development of rapid tourism since this area was designated as one of the world cultural heritage by UNESCO in 2012. A total of 70 respondents were included in this study, who were from 7 *subak* areas, with a distribution of 10 respondents per *subak*. The survey of respondents was carried out by direct visits to the cultivated land or to the respondent house. To complete data, a focus group discussion (FGD), which is a process of gathering specific information about a specific problem (Irwanto 2007), was also carried out at the *subak* core management office.

2.4. Types and Sources of Data

The data used in this study were primary data and secondary data. Primary data were obtained from direct interviews with respondents in the study area using a structured questionnaire guide. The questionnaire was designed in such a way as to find out the knowledge and attitudes of farmers towards the efforts to establish agricultural cooperatives. Secondary data were obtained from related agencies and institutions, such as the Bali Provincial Agriculture Service. Secondary data was also obtained through literature studies as well as other data sources.

2.5. Data Analysis

Data were analyzed using *Microsoft Excel* program, which then were presented in the form of graphs and tabulations. Data were analyzed descriptively to describe knowledge and attitudes of farmers towards the possibility of developing cooperatives as rural economic institutions (*lembaga ekonomi pedesaaan*).

Descriptive analysis of perceptions of the community of the possibility of developing agricultural cooperatives was based on a Likert scale. Descriptive method is a method of presenting the interpretation of existing data analysis with the aim of describing a social, economic, and environmental phenomenon accompanied by an interpretation of the factors that exist in the field (Singarimbun and Effendi 1989). To examine the perceptions of farmers, the indicators were measured using a scoring method.

The scoring technique used is in accordance with a scale of five, which consists of five positive integers, namely 1, 2, 3, 4, and 5. Measurements were made by giving answers/responses. Each score describes the degree of perception of the respondent. The higher the score obtained from the respondent in answering each statement is, the better the perception of the respondent on the possibility of developing agricultural cooperatives is. There are five answer choices in each statement, where a score of 5 is given for the most expected answer and a score of 1 for the least expected answer. From the score data obtained then the interval class is calculated using the following formula (Dayan 1978):

$$\mathrm{i} = \frac{\text{distance}}{\text{class}}$$

where *i* is the interval class, distance is the percentage of maximum scores minus the percentage of minimum scores, and class is the number of classes desired. By using class interval values, the category of perceptions of farmers toward the possibility of developing agricultural cooperatives can be concluded (Table 1). Furthermore, the value of the class interval in the category of knowledge and attitudes which are perceptions forming factors set out in Table 2.

Table 1. Categories of perceptions of farmers based on the maximum score toward the possibility of developing agricultural cooperatives

No.	Achievement percentage against the maximum score	Perception
1.	>84–100	Very good
2.	>68–84	Good
3.	>52–68	Fair
4.	>36–52	Poor
5.	20–36	Very poor

Source: Dayan 1978

Table 2. Categories of knowledge and attitudes of farmers based on achieving a maximum score toward the possibility of developing agricultural cooperatives

No.	Achievement percentage against the maximum score	Knowledge	Attitude
1.	>84–100	Very high	Strongly agree
2.	>68–84	High	Agree
3.	>52–68	Average	Abstain
4.	>36–52	Low	Disagree
5.	20–36	Very low	Strongly disagree

Source: Dayan 1978

3. Results and Discussions

3.1. General Overview of the Location

Jatiluwih Village is located in the Penebel District, Tabanan Regency. The location of this village is about 14 km from the district capital, 26 km from the regency capital, and 41 km from the city of Denpasar toward the northwest.

The total area of Jatiluwih Village is around 33.22 km^2, with regional boundaries covering:
North: State-owned forests
South: Babahan Village
East: Senganan Village
West: Wongaya Gede Village

In terms of governmental structure, Jatiluwih Village is divided into 8 *Banjar Dinas* (i.e., Balinese neighbourhood community or "Br."), namely: Br. Dinas Kesambi, Br. Dinas Kesambahan Kaja, Br. Dinas Kesambahan Kelod, Br. Dinas Jatiluwih Kangin, Br. Dinas Jatiluwih Kawan, Br. Dinas Gunungsari Desa, Br. Dinas Gunungsari Umakayu, and Br. Dinas Gunungsari Kelod.

With the unspoiled natural panorama, tourists are very impressed with what Jatiluwih Village has to offer, because it is far from air and noise pollution. Additionally, the weather in Jatiluwih is always cool and less humid relative to other areas in Bali. Green and cool natural atmosphere and clean mountain water are very suitable for the development of nature tourism. The existing mountain water is used for drinking water and as a source of agricultural water organized by an irrigation system called *subak*. *Subak* Jatiluwih is led by a *Pekaseh* and for *Subak* in each *banjar* is led by a *Kelian Subak*. *Subak* Jatiluwih is divided into seven *subak*, which are *Subak* Umajero, *Subak* Tegahan, *Subak* Makanja, *Subak* Jawa, *Subak* Tanana, *Subak* Umakah, and *Subak* Kaja. In addition to the wetlands *subak*, Jatiluwih Village also has *subak abian* that manages dry land, consisting of two *subak*: Subak Abian Jatiluwih and Subak Abian Gunungsari.

Considering the geographical location of Jatiluwih Village and the agrarian natural conditions in the area, the majority of the people work as rice and garden farmers to support their lives. The existing farming system for agricultural areas (paddy fields) is two-time planting each year, while still preserving the tradition of planting local rice (Balinese rice), which is a special attraction for tourists visiting Bali and Jatiluwih Village in particular. The cultivating method in agricultural land in Jatiluwih remains traditional, using cattle or buffalo to plow the fields and traditional plow tools. Harvesting is also conducted in the traditional way, by using *ani-ani* as the main tool. In addition, land management, planting, and harvesting activities are still conducted in mutual cooperation (*gotong royong*).

From the top of Jatiluwih Village, a vast expanse of green rice fields and mountains with dense forests are visible. This situation attracts tourists to come to Jatiluwih Village, as well as being very impressed with the

hospitality of the residents, so that tourists feel very comfortable when they are walking around the village and rice fields.

3.2. Characteristics of Respondents

The characteristics of farmers analyzed were age, level of education, occupation, and number of family members (Table 3). There are more male farmers respondents compared to female farmers respondents. The percentage of male respondents is 74%, while female respondents made up 26% of the total respondents. This situation may be based on the view that the agricultural sector is a masculine job that requires physical strength. While in fact, women also become inseparable parts of agriculture. Putri (2010) reports that men's scope of work is more in the productive sector which includes agricultural management from production to marketing, while women's scope of work is more spent in the domestic sector which includes washing, cooking, caring for children, preparing husband's needs, and serving husband. Especially in Bali, there are still expectations that Balinese women take part in religious ceremonial activities.

The survey results show that more than 97% of respondents were 20–65 years old, while the percentage of farmers over 65 years was 3% (Table 3). This shows that most farmers are in their productive age. The results of the BPS study (2016) conclude that the productive age is between 15–65 years of age. According to Hasyim (2006), farmers who are in their productive age can work well and optimally. However, it should be noted that very few farmers under the age of 30 are involved in farming. The low number of farmers under the age of 30 years indicates the low regeneration of farmers, which is partly due to the fact that most of this age group work as collectors (*pengepul*), tourism employees, or hospitality employees. This phenomenon of the declining numbers of younger generation working in the agricultural sector also occurs in other countries, including those in the European region (European Commission, 2012).

With regards to the ownership of the land, the study shows that most (54%) farmers control the land as cultivators (*penggarap*). Farmers who own their land and work on it are as many as 26% of the total respondents, and the remaining 20% are owners/cultivating farmers. These results indicate that the majority of farmers who work in the Jatiluwih area are not farming on their own land. Kusnadi *et al*. (2011) stated that land is an important and most responsive factor in the efforts of increasing production. With an increased production, income and welfare of farmers will consequently increase. If the cultivated land is not privately owned, there is a possibility that farmers will lack the sense of possessiveness to the land (*i.e*., sense of belonging), and ultimately the results of the production of the land will be affected. The results of this survey illustrate that the lack of ownership of paddy fields in tourism development area is very risky to land-use conversion. Landowners have full rights to their land and its functions, and if agricultural production is not optimal, we hypothesize that landowners will have a tendency to give up their lands for other purposes that bring more revenues. The possibility of land-use conversion by the landowners, especially for tourism purposes, is even higher with the fact that Jatiluwih is one of the upcoming tourism destinations.

The highest percentage of education level among farmers in Subak Jatiluwih is primary education, *i.e*., 40% (Table 3). The rest and mostly, however, 60% of respondents have an education above elementary school, comprising of 27% having completed middle school and high school; and 3% are shorter-than-4-year college (diploma) and bachelor's degree graduates. The main occupation of the respondents is private sector employees (82%) (Table 3). This indicates that the level of education of farmers in Subak Jatiluwih is quite high, and of course this will help in the efforts of implementing agricultural innovation. However, from the point of view of time spent on the rice fields, it can be seen that the farming work is only done by most of the farmers after they complete their main job/profession (*e.g*., private employees). This circumstance will affect the results of farm production in the region.

The number of family members will affect the level of expenditure of farmers. From the survey, it is noted that most of the farmer families consist of 4 people (44%), and followed by a family of 3 people, and the rest with family members of 5 and 6 people (Table 3). This result correlates with other results in Table 3, which shows that being a farmer is not the main source of income among the respondents. According to the farmers, often times the income earned from farming activities cannot cover the capital and expenses for the needs of family members. In addition, as most farmers are not landowners, this may also farmers/cultivators affect in making decisions related to production results.

Table 3. Characteristics of respondents

No.	Description		Frequency	Percentage (%)
1	Sex	Male	52	74
		Female	18	26
		Total	70	100
2	Age	15 – 65 years old	68	97
		> 65 years old	2	3
3	Relationship / status of Respondents with the Ownership of Rice Fields	Owner	18	26
		Owner-cultivator	14	20
		Tenant	-	-
		Tenant-cultivator	-	-
		Cultivator	38	54
		Lender	-	-
		Others	-	-
		Total	70	100
4	Position of Respondents in Village Community Structure	Head of Village (*Kepala Desa*)	-	-
		Kepala Dusun	-	-
		Pekaseh	1	1
		Bendesa Adat	-	-
		Member of Subak	67	96
		Religious Figure/Other Village Figure	2	3
		Total	70	100
5	Last Education of Respondents	Not attending school / not graduating from elementary school (SD)	-	-
		SD or equivalent	28	40
		Middle school or equivalent	19	27
		High school or equivalent	19	27
		Diploma	2	3
		Bachelor	2	3
		Total	70	100
6	Main Job of the Respondents	PNS / TNI / POLRI (Government officer/ army / police officer)	1	1
		Private employee	57	82
		Trader / Entrepreneur	-	-
		Professional / Consultant	-	-
		Village official	-	-
		Farmer	-	-
		Farmer / Breeder / Carpenter	7	10
		Others	5	7
		Total	70	100
7	Number of persons in the Respondent's household (including the head of the household)	1 person	1	1
		2 persons	8	11
		3 persons	12	17
		4 persons	31	44
		5 persons	8	11
		6 persons	8	11
		Others	2	3
		Total	70	100

3.3. Perceptions of Farmer toward the Possibility of Developing Agricultural Cooperatives

The perceptions of farmers which were studied include knowledge and attitude towards the possibility of developing agricultural cooperatives. The aspects of agricultural cooperatives examined cover the definition, form of business, institutional system, and benefits of agricultural cooperatives for farmers as outlined in the questionnaire, including accessing farm credit, agro-input, entrusting or selling agricultural products, and accessing basic household essentials when needed with an affordable price. Each respondent has a personal perception measured by the level of knowledge and attitude about various aspects related to the agricultural cooperatives.

Based on the results of this study, the perceptions of farmers toward the possibility of developing agricultural cooperatives in the Subak Jatiluwih area are in "good" category with an averaged percentage achievement score of 80.48 (Table 4). These results indicate that farmers in Jatiluwih support the development of agricultural cooperatives. The level of knowledge of farmers is also in the "good" category with a percentage of achievement score of 74.86. While the attitude of farmers towards the possibility of developing agricultural cooperatives falls into the category of "strongly agree" with the achievement of a score of 86.09.

Table 4. Percentage of perception score achievement against the maximum score achieved by each operational variable by the respondents in Subak Jatiluwih

Variable	Operational Variable	Number of Respondents					Total	Average	
		SB	B	C	TB	STB		Score	Category
Perception	Knowledge	289	667	258	167	19	1,400	74.86	Good
	Attitude	503	820	74	3	0	1,400	86.09	Strongly agree
							Average	80.48	

SB = very good; B = good; C = fair; TB = poor; STB = very poor.

Conclusion

From this study, it can be concluded that the majority of farmers who are members of Subak Jatiluwih have a good perception toward the possibility of developing agricultural cooperatives. Most farmers support the development of agricultural cooperatives in the Jatiluwih region. This perception may be supported by the high level of knowledge of farmers about the benefits and importance of agricultural cooperatives. The farmers are aware that agricultural cooperatives will bring benefits to the production and distribution of agricultural products that are directly related to the level of income of farmers.

Furthermore, the results of this study indicate that *subak* institutions can be developed into agribusiness management institutions (cooperatives) and synergized with tourism businesses that are growing in Jatiluwih region. Therefore, the establishment of agricultural cooperatives in Subak Jatiluwih is indeed very necessary and responded positively by farmers. The existence of *subak* as an economic business institution is expected to serve as a stimulus for rural economic growth and increase the role of young people in sustainable agricultural development.

Acknowledgements

The authors acknowledge funding provided by the Research Group Program under Grant No. 383-7/UN14.4.A/LT/2018, by DIPA PNBP Universitas Udayana TA. 2018: March 28, 2018.

References

[1] Arsyad, Sitanala and Ernan Rustiadi. 2008. *Penyelamatan Tanah, Air dan Lingkungan*. Crespent Press dan Yayasan Obor Indonesia. (In Indonesian)

[2] Budiasa, I W., *et al.* 2015. The role of the subak system and tourism on land use changes within the Saba Watershed, Northern Bali, Indonesia. *Journal of International Society for Southeast Asian Agricultural Sciences,* 21(2): 31–47.

[3] Budiasa, I Wayan. 2011. *Pertanian Berkelanjutan: Teori dan Pemodelan*. Udayana University Press. (In Indonesian)

[4] Dayan, A. 1978. *Pengantar Metode Statistik Jilid 1*. Lembaga Penelitian, Pendidikan dan Penerapan Ekonomi dan Sosial (LP3ES). (In Indonesian)

[5] European Commission. 2012. Rural development in the European Union: Statistical and economic information report 2012. Brussel (BG): The European Directorate-General for Agriculture and Development. Available at: https://ec.europa.eu/agriculture/sites/agriculture/files/statistics/rural-development/2012/full-text_en.pdf

[6] Hasyim, H. 2006. Analisis hubungan karakteristik petani kopi terhadap pendapatan (Studi kasus: Desa Dolok Seribu Kecamatan Paguran Kabupaten Tapanuli Utara). *Jurnal Komunikasi Penelitian* 18(1): 22–27. (In Indonesian)

[7] Irwanto. 2007. *Focus Group Discussion: Sebuah Pengantar Praktis*. Yayasan Obor Indonesia. (In Indonesian)

[8] Kementerian Pertanian Badan Litbang Pertaninan. Dampak Alih Fungsi Lahan terhadap Sosial-Ekonomi dan Ekologi di Bali. Available at: https://www.litbang.pertanian.go.id (In Indonesian)

[9] Kusnadi, N., Tinaprilla, N., Susilowati, S. H. and Purwoto, A. 2011. Analisis efisiensi usaha tani padi di beberapa sentra produksi padi di Indonesia. *Jurnal Agro Ekonomi,* 29(1): 25–48. DOI: http://dx.doi.org/10.21082/jae.v29n1.2011.25-48 (In Indonesian)

[10] Lee, D. R. 2005. Agricultural sustainability and technology adoption: issues and policies for developing countries. *American Journal of Agricultural Economics,* 87: 1325–1333. DOI: https://doi.org/10.1111/j.1467-8276.2005.00826.x

[11] Lorenzen, R. P. and Lorenzen, S. 2011. Changing realities—Perspectives on Balinese rice cultivation. *Human Ecology,* 39(1): 29–42. DOI: https://doi.org/10.1007/s10745-011-9383-1

[12] *Peraturan Daerah Provinsi Bali Nomor 9 Tahun 2012 tentang Subak.* Available at: http://simkum.baliprov.go.id/uploads/PERDA_9_2012.doc/ (In Indonesian)

[13] Peraturan Gubernur Bali No. 99 Tahun 2018 tentang Pemasaran dan Pemanfaatan Produk Pertanian, Perikanan dan Industri Lokal Bali. Available at: https://jdih.baliprov.go.id/uploads/produk-hukum/peraturan/2018/PERGUB/PERGUB_NOMOR_99_TAHUN_2018.pdf (In Indonesian)

[14] Peraturan Menteri Pertanian No. 273 Tahun 2007 tentang Pedoman Pembinaan *Kelembagaan* Petani. Available at: http://perundangan.pertanian.go.id/admin/k_mentan/SK-273-07.pdf (In Indonesian)

[15] Putri, S. R. 2010. Relasi gender pada rumah tangga petani sayuran dataran rendah (kasus rumah tangga petani Rawa Banteng, Desa Gempol Sari, Kecamatan Sepatan Timur, Kabupaten Tanggerang, Provinsi Banten). Undergrad. Thesis, Institut Pertanian Bogor. (In Indonesian)

[16] Singarimbun, Masri dan Sofian Efendi. 1989. *Metode Penelitian Survei*. LP3ES. (In Indonesian)

[17] Statistik Lahan Pertanian Tahun 2009-2013. Available at: http://www.pertanian.go.id (In Indonesian)

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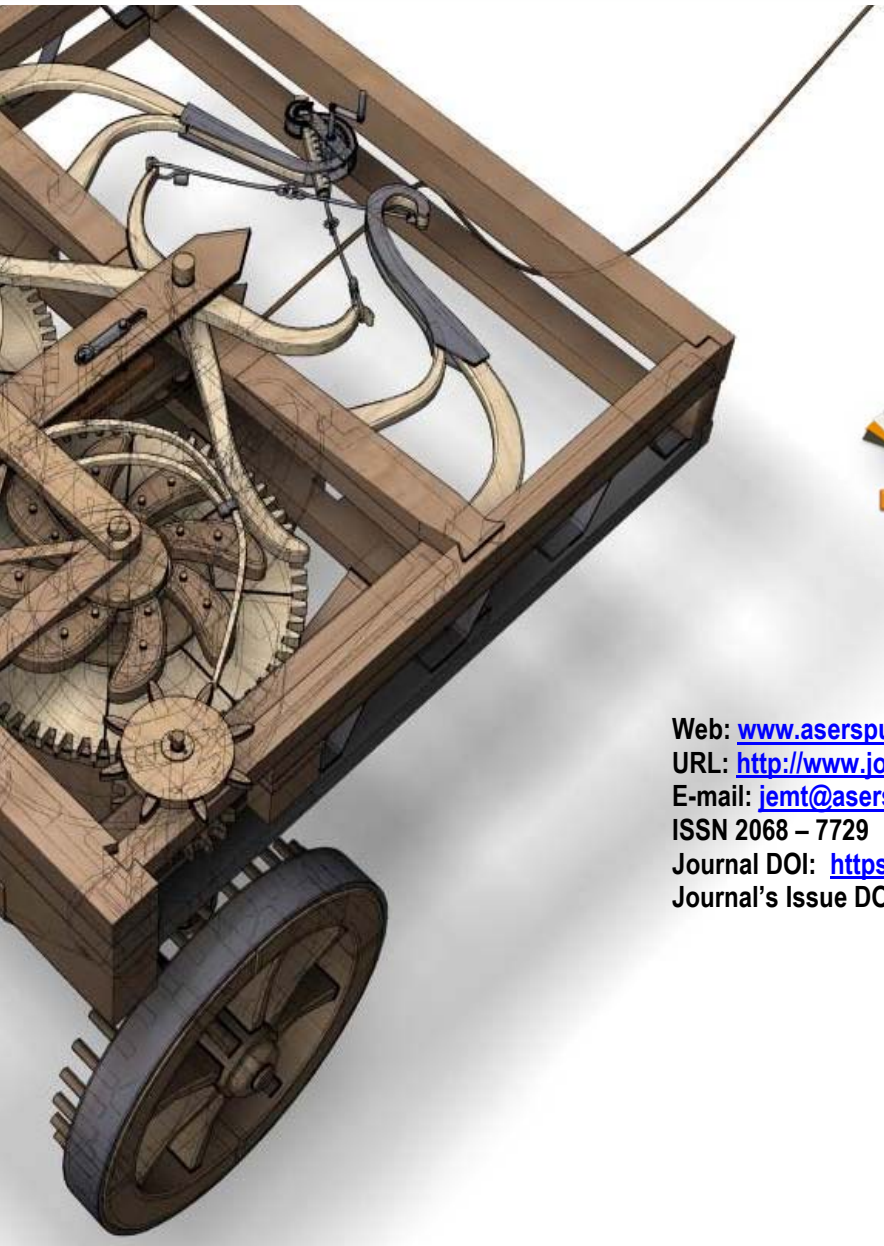

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