



PROCEEDING

THE FUTURE MOUNTAIN AND VOLCANOSCAPE

Creativity to Prosperity

Mataram, Lombok, Indonesia
September 7-9 th, 2015

ORGANIZED BY :



ISLA
INDONESIAN SOCIETY OF
LANDSCAPE ARCHITECTS



IFLA ASIA-PACIFIC
INTERNATIONAL FEDERATION
OF LANDSCAPE ARCHITECTS



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Mataram, Lombok, Indonesia, 7-9th September 2015

Editors:

Dr. Ir. Nizar Nasrullah, M.Agr, IALI

Dr. Ir. Siti Nurisjah, MSLA, IALI

Ray March Syahadat, SP, M.Si

Nuraini, S.Sarl

Cover Design:

Hanni Adriani, SP, IALI

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WELCOMING ADDRESS

On behalf of the Indonesia Society of Landscape Architects (ISLA), I am pleased to welcome all of you to 2015 IFLA APR Congress at the city of Mataram, Lombok island, The Province of West Nusa Tenggara, Indonesia.

Indonesia is a meeting point of several tectonic plates, making it one of the most seismically active areas on the planet with a long history within the Asia Pacific region, Indonesia lies on what is commonly known as "Ring of Fire" making it very prone to volcanic disasters.

The 2015 IFLA APR Congress will be held in conjunction with the celebrate of 200 years of the largest volcanic eruption recorded in the history of modern civilization. This occurred at Mount Tambora (4.300 m) which located at the Province of West Nusa Tenggara in 1815. This volcano totally created new landscapes, buried three kingdoms, killed approximately 17.000 people and produced global anomalous climate and political impacts.

The goals of the Congress are: to review the existing mountain and volcano areas from Landscape architecture perspective, to share ideas and experiences about these type of landscapes from different countries, and to find better future solutions for landscape planning, design and conservation. In keeping with the goals, the theme of the 2015 congress is "Future Mountain and Volcanoscape: Creativity to Prosperity".

Your participation on the planned enjoyable educational and social cultural program is critical to the success of the Lombok IFLA APR Congress in this year. I certainly believe that the Congress will bear fruitful results and lay firm groundwork for the future development of the IFLA APR.

Thank you very much.

September 06, 2015

Dr. Ir. Siti Nurisjah, MSLA, IALI
President of Indonesian Society of Landscape Architects

CONTENTS

Contents	Pages
Cover	i
Welcoming Address	iii
Table of Contents	iv
Paper Presentation	1

CONTENTS

Title	Author	Pages
(Waste) Watershed: A Study on the Upland Community Lifestyle Hygiene of The Aetas in the Morong River Watershed	Jose Antonio P. Bimbao, Nappy L. Navarra	1
Study on the Development Patterns of Volcanoscape Based on The Energy-Ecology Cycle	Wei Liu, Xiong Li	10
Deformation Analysis of Talaga Bodas Crater Using Terrestrial Laser Scanner	Muhammad N. A. B, Irwan G, Nia Haerani, Hasanuddin Z. Abidin	16
Landscape Ecology as the Framework of Sustainable Mountain Planning and Development in Indonesia	Doni Fireza	23
Community-Based Agritourism in Alamendah Village, Rancabali Subdistrict, Bandung Regency	Tati Budiarti, Yuni Asnidar	33
Cibolang Hot Spring Tourism Area's Planning to Increasing Community Prosperity and Ecosystem	Rido Monthazeri, K. Fenny Aprillia	40
Lava Diversion: An Investigation on the Use of Dike Network in Diverting Lava Flow From Probable Eruption of Taal Volcano	Nathalee Faith M. Maliwat, Nappy L. Navarra	50
International Tourist Preference to Increased Visitor of Bromo Mountain as Main Destination in Indonesia	Balqis Nailufar, Nuraini, Ray March Syahadat	59
Planning Of Kampoeng Djawa Tourism Landscape at Gunung Geulis Village, Bogor – Indonesia	Daisy Radnawati, Yusi Febriani, Jubaedah	64
Significant Value of Senujuh Mountain In Sambas – West Kalimantan	Nuraini, Ray March Syahadat, Balqis Nailufar	69
The Management Concept of Mountain Based Destination Through Carrying Capacity Analysis In Situ Patengan Nature Park, Bandung Region	Fitri Rahmafitria, Ghoitsa Rohmah Nurazizah	73
Meaning of Aesthetic Value of Mountain and Hills of the Baubau City	Ray M. Syahadat, Priambudi Trie Putra, M.S Refi Hasibuan	81

IFLA Asia Pacific Congress 2015, Mataram, Lombok, Indonesia

Sustainable Tourism on Mountainous Region: A Case Study of Kullu Manali in Himalayan Ranges in India	Sonal Tiwari, Kshama Puntambekar	86
Development Strategy for Bromo Mountain Cultural Tourism, A Famous Tourism in East Java	Rizki Alfian, Nur Azmi, Ray March Syahadat	94
Geothermal and Potentials Geo-Tourism in Volcanic Lanscapes: A Case Study Ofie-Sue'um Hot Spring, Mount Seulawah, Aceh, Indonesia	Mirza Irwansyah, Marwan	101
Under The Mountain – How a Volcanic Peak Has Influenced The Culture, Ecology and Landscape History of Taranaki, New Zealand	Renee Davies, Ron Lambert	107
Study Of Utilization Potential Of Local Vegetation for Volcano Disaster Mitigation in Java Island, Indonesia	M. Amin Shodiq, DesiAnjana Dwiputri, Fariz Harindra Syam	118
The Potency of Gymnosperms Plant for Landscape Design in High Altitude Land and Low Altitude Land	Nizar Nasrullah,	128
Improving Insolation Standard of Residential Sites by Optical Facility in North China	Zhang Yifei	136
Friendly Design House Development Model of Earthquake in the Village of Jayapura, Cigalontang District, Tasikmalaya Region West Java Province, Based on Inspiration Of Sundanese Traditional Of Architecture Settlement In Resettlement: A Sustainable Community Masterplan For The Nomadic Aetas of Mt. Natib, bataan	Nuryanto, Rr. Tjahyani Busono, Suhandy Siswoyo	142
The Archipelascope Hazard Mitigation System Through <i>Sasi Adat</i> of Banda Api Volcano, Moluccas, Indonesia	Jose Antonio P. Bimbao, Cathe Desiree S. Nadal	152
The Archipelascope Hazard Mitigation System Through <i>Sasi Adat</i> of Banda Api Volcano, Moluccas, Indonesia	M. Fadhillah Asya'ri, Saraswati Sisriany, Shendi Dian Saputra, M. Syaif Habi, R. Abdul Hakim, Mukhlis Pribadi, R. Khrisrachmansyah	161
Sustaining the Vision	Elizabeth Dudley	170
Sukaratu Village, Cibolang Village and Cisanti Lake In Landscape Prosperity Of Wayang-Windu Mountains West Java	K. Fenny Aprillia, Rido Monthazeri	179
Study The Potential for Agricultural Landscape	Benny Satria Achmad,	187

IFLA Asia Pacific Congress 2015, Mataram, Lombok, Indonesia

Conservation Agrotourism Singgalang Mountain in Nagari Pandai Sikek West Sumatera	Jonni	
Landscape Design of Tamansari Agrotourism Based on Sundanese Cultural Local Wisdom in Salak Mountainside, Bogor	Dewi Rezalini Anwar, Mariana Agustin Putri	193
Green Spaces Intervention Potential for Educational, Research and Recreational Uses of Mt. Arayat, Pampanga, Philippines	Joshua s. Cunanan, Nappy Navarra	201
Joglo and Rumah Gadang, as a Solution Earthquake Resistant Houses in Indonesia	Fitriyah Nurul H Utami, Alinda FM Zain	207
Sustainable Ecotourism Certification : Be Locally and Simply	Lola Madjid, S. Rahardjo	217
Integrated Ecotourism Concept Development on Protected Areas, Case: Merapi Mountain Areas, Central Java, Indonesia	Arri Gunarsa, Quintarina Uniaty	228
The Future Mountain and Volcanoscape in China - Taking The Example of Volcanoes National Geopark in Haikou	Lixia Qiao	240
Study on the Local Wisdom Of Sumberawan Society on Arjuno Mountain in Landscape Management	Sitawati, Debora Budiyono, Euis Elih Nurlaelih	246
Landscape Design of Natural Tourism at Mount Bawang, West Borneo	Indung S. Fatimah, Ricky Sulia Farma	255
Study on the Development Patterns of Volcanoscape Based on The Energy-Ecology Cycle	Wei Liu, Xiong Li, Fangzheng Li	262
Discussion on Planning Pattern of Volcanic Landscape Resources	Ge Yunyu, Lin Chensong, Li Fangzheng	268
A Coastal Greenway Connecting Two Cities-A Case Study of Huludao-Xingcheng Coastal Trail	Jie Hu	274
Mt. Pinatubo Lahar Erosion Prevention and Flood Control in The Pasig-Potrero River Basin Watershed Through Schematic Master Planning	Angelo P.A. Mogul, Nappy L. Navarra	282

The Park of the Mt. Etna Volcano In Sicily, Italy: A Possible Synergy Between Top-Down Concervation Policies and Emerging Bottom-Up Approaches to Landscape Management	Elisa Palazzo	289
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STUDY ON THE LOCAL WISDOM OF SUMBERAWAN SOCIETY ON ARJUNO MOUNTAIN IN LANDSCAPE MANAGEMENT

Sitawati¹, Debora Budiyo², Euis Elih Nurlaelih¹

¹Lecturer of Agriculture, Brawijaya University,

² Lecturer of Landscape Architecture, Tribhuwana Tungadewi University

E-mail: sitawati_fpub@yahoo.com

Abstract

Malang has cultural history diversity which is quite long because it is located in the lush mountains so there are a lot of cultural historical relics related to the natural preservation. Sumberawan Village is one of the regions having local knowledge in managing the landscape Arjuno Mountain. Sumberawan society generally work as farmers and maintain belief in terms of site and myths related with the natural resource preservation, especially water management. The existence of springs at the foot of Arjuno Mountain as the livelihood of Sumberawan people such as agricultural irrigation, daily necessities, village fertility, and religiousness. In the middle of the spring there is a Buddhist temple in the form of stupa and since ancient times it has been called Sumberawan Temple which functioned as a place of meditation by Buddhist. The study aimed to study the local wisdom of Sumberawan's society in managing the landscape on Arjuno Mountain. The method used was survey method with purposive sampling interview techniques. The results show that the concept of local wisdom of Sumberawan in managing the landscape on Arjuno Mountain relates to sites and myths. The concept of local wisdom is *patirtan* concept related to ritual or religious interest and activities *panguripan* concept related to the function of water for the surrounding communities.

Keywords: Arjuno Mountain, landscape management, local wisdom, Sumberawan

1. Introduction

Interaction between of human and nature results in local wisdom which is a form of environmental wisdom existing in social life in a place or region. Local wisdom refers to a certain locality and community so that local wisdom in each area is different. This is caused by differences in natural challenges and different needs so that experience in meeting the needs of life forms a good knowledge system relating to environment and social. [1] Local wisdom is all forms of knowledge, belief, understanding or insight as well as customs or ethics guiding human behavior in life in an ecological community. All forms of local wisdom is lived, practiced, taught and passed down from generation to generation as well as forms pattern of human behavior towards fellow human beings, nature, and supernatural. [2] Local wisdom is a universal knowledge and management strategy in maintaining the ecological balance tested by various disasters and constraints as well as human negligence. Local wisdom does not just stop on ethics, but to the norms and actions and behavior, so that local wisdom can be like a religious man dominating in attitude and action, both in the context of everyday life and determining further human civilization. Indonesia is an agricultural country so that people of Indonesia are very dependent on nature and the dependence raises local wisdom in preserving nature. One of Indonesia's region having local wisdom in managing nature is the region of Malang. Malang has a diversity of cultural history which is quite long because it is located on the lush mountain so there are many relics of cultural history associated with the natural preservation. Sumberwan Hamlet is an area which is located on the South Street of Arjuno Mountain having local wisdom in managing landscape. Arjuno Mountain is one of the third highest active volcanos on Java island with height of 3339 m above sea level [3]. The existence of Arjuno Mountain has given life for Sumberawan Hamlet's people so that there is a close relationship between people and nature. Sumberawan's society generally works as farmers and maintains belief in terms of sites and myths relating to the preservation of natural resources, especially water management. The existence of springs at the foot of Arjuno Mountain as a source of livelihood for Sumberawan's people such as agricultural irrigation, daily necessity, village fertility, and religion. In the middle of spring there is a stupa-shaped Buddhist temple and since a long time ago it has called Sumberawan which functioned as a place of meditation by Buddhist. The study aimed to study the local wisdom of Sumberawan society on Arjuno Mountain in managing landscape.

2. Method

The study was conducted in Sumberawan Hamlet, Toyomorto Village, Singosari, Malang, East Java (Figure 1).

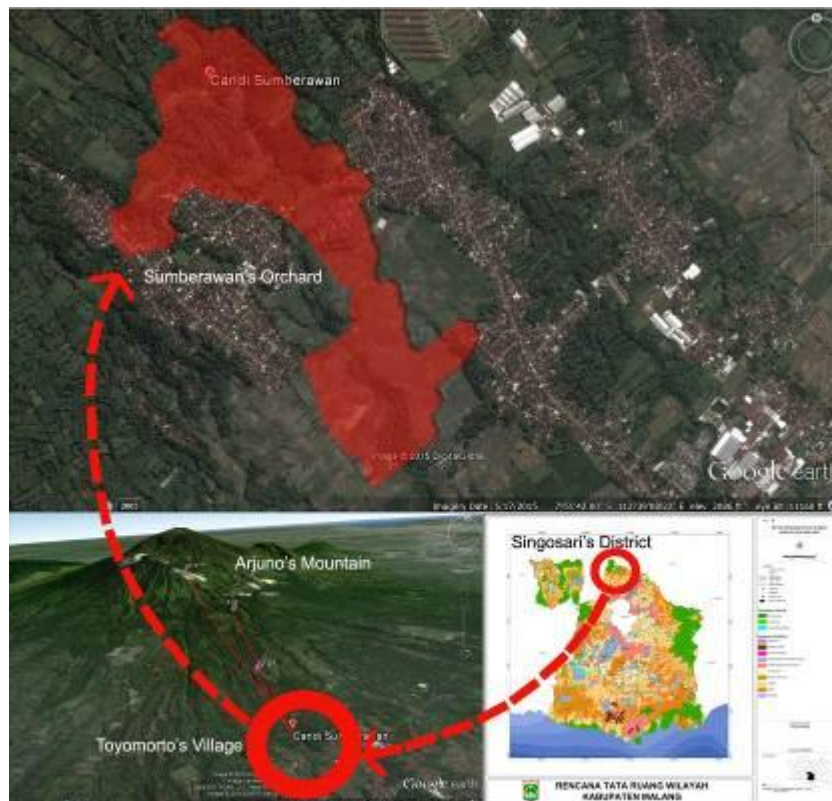


Figure 1. The location of the study
(Source: Bappeda and www.google-earth.com, 2015)

A common method used is descriptive qualitative by Snowball technique method. Snowball method was a form of judgment sampling with sampling techniques performed in a sequence to obtain the data by respondents who know and understand more about Sumberawan region. The main respondents consisted of the guards of Sumberawan Temple area, the RT and RW chiefs, and surrounding communities who utilize Sumberawan area as an agricultural land and water source. The analyzes performed in the study: 1) identification of Sumberawan's social and cultural character, 2) identification of Sumberawan's area landscape character, and 3) analysis of local wisdom concept in managing Sumberawan landscape.

3. Result and Discussion

Identification of Social Culture Character of Sumberawan Society

Sumberawan region is geographically located just below the foot of Arjuno Mountain with abundant water and soil fertility so that generally Sumberawan people have main livelihood as farmers and education level of primary school graduates, they are in productive age, Javanese, and their religion is Islam [4]. Because the Sumberawan people's livelihood is as farmer and it is supported by the low level of education and age levels of society, the dependence on the continuity of natural resources including water is very high. This showed that the life dependence of Sumberawan people on the availability of nature and water is not only as a basic necessity of life, but related to the level of Sumberawan's social welfare that was related to the common welfare of the Sumberawan's people using "participatory or togetherness or mutual help" in solving the problems of the rural development, village security, and the preservation of nature and spring. The together applications could be realized that in the highest decision-making which is based on deliberation agreement made by the village government, agencies, community leaders, and religious leaders (Figure 2).



Figure 2. Village deliberation
(Source: Office of Toyomorto Village, 2015)

Food security is one of the main pillars in supporting economic security and community resilience of Sumberawan so that it needs a steady development of food security by focusing on increasing the production capacity of commodities including rice and pulses through farmer groups (Figure 3). In addition, there was the intensification of the utilization of living fence, rural roads, and other public facilities such as green open land and developed the processing and marketing of products through a group of women farmers.



Figure 3. Farmers group
(Source: Office of Toyomorto Village, 2015)

A sense of family in Sumberawan's society is very upheld and maintained until today. It could be seen from mutual help in building the village with mutual help among people who built houses, roads, and cleaned up the village (Figure 4)



Figure 4. Mutual cooperation in building village
(Source: Office of Toyomorto Village, 2015)

To maintain the security of Toyomorto Village, the government and villagers held training for the *Linmas* members with instructors from local authorities. The infrastructure supporting the activities of the *Linmas* is *poskamling* spread in the Toyomorto village including Sumberawan village to hold *Pam Swakarsa* with the

community. Where as to keep the publics health and improve skills of village mothers, it was through the an institution called PKK (Figure 5).



Figure 5. *Linmas* and *PKK*
(Source: Office of Toyomorto Village, 2015)

Sumberawan society tribe in general is Javanese, Islam, and has open in thinking. Sumberawan society has institutions of Javanese culture that the universe is a a large institution (macrocosm) in synergy with the livelihood of small institutions of society (microcosm). Java community provide cultural symbols with a number of meanings to various things in everyday life. It can be seen from public acceptance of the existence of temple area Sumberawan as a source of life and a symbol of a meditating Buddhist, Hindu, and Javanese (Figure 6).



Figure 6. Sumberawan temple and religious rituals

Landscape Character Identification of Sumberawan Area

Sumberawan area has the potential of natural and cultural landscape so high that it becomes one of cultural heritage area and become a tourist destination in Malang. Landscape is a natural perspective with particular characteristics that can be enjoyed by all human senses, in which the characters blend harmoniously and naturally to strengthen the character of the landscape. These characteristics can be classified as a beauty when it has a unity of harmony in the relationship between the components of the landscape [5]. Landscape of Sumberawan area is one of the cultural landscape shaped by a cultural historical value of humaninteraction and surrounding environment consisting of natural elements and human-made elements so that it forms a landscape character which needs to preserve.

Land Use Pattern Aspect

Sumberawan area administratively is located in Sumberawan Hamlet, Toyomorto Village, Singosari, Malang, East Java (Figure 7). Sumberawan area boundary to the north is on Toyomorto village, in the south is on Losari Village and Pagetan Village, in the east is on Bedali village, and the West is on Gunung Rejo Village. While the total of Sumberawan area is amountto 13,58 ha with the land-use pattern of Sumberawan area in general, i.e. rice field with extensive of 4.23 ha (31,15%) of the total area (Table 1). This shows that the landscape element of Sumberawan area in general is agriculture. The existence of farm fields because there is abundant water that comes from springs Sumberawan. The land use pattern in Sumberawan area can be seen in Figure 8.

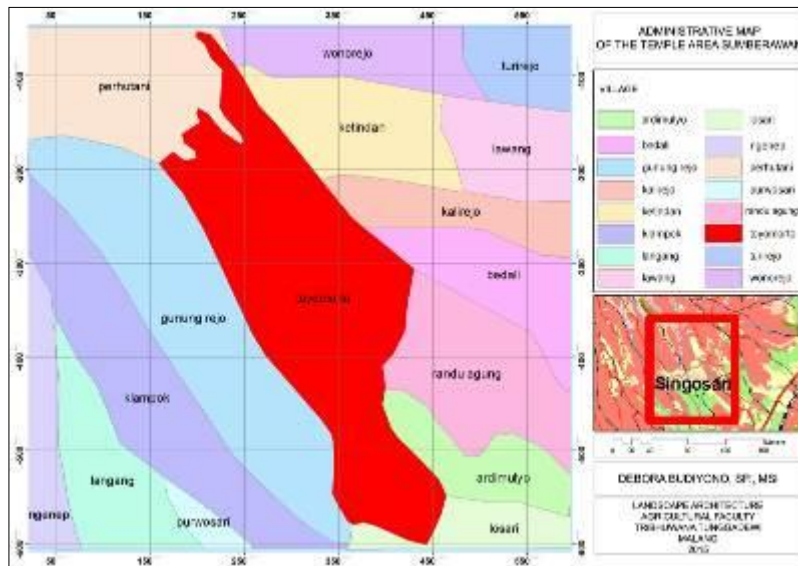


Figure 7. Administration Map of Toyomorto Village
(Source: Bappeda, 2015)

Table 1. Land use Pattern of Sumberawan Area

No.	Type of use	Extensive	
		ha	%
1	Mixed forest	3,84	28,30
2	Pine forest	2,00	14,70
3	Paddy	4,23	31,15
4	Dryland farming season	1,03	7,58
5	Water dam	0,21	1,54
6	Temple site area	0,25	1,84
7	Settlement	2,02	14,89
Total		13,58	100

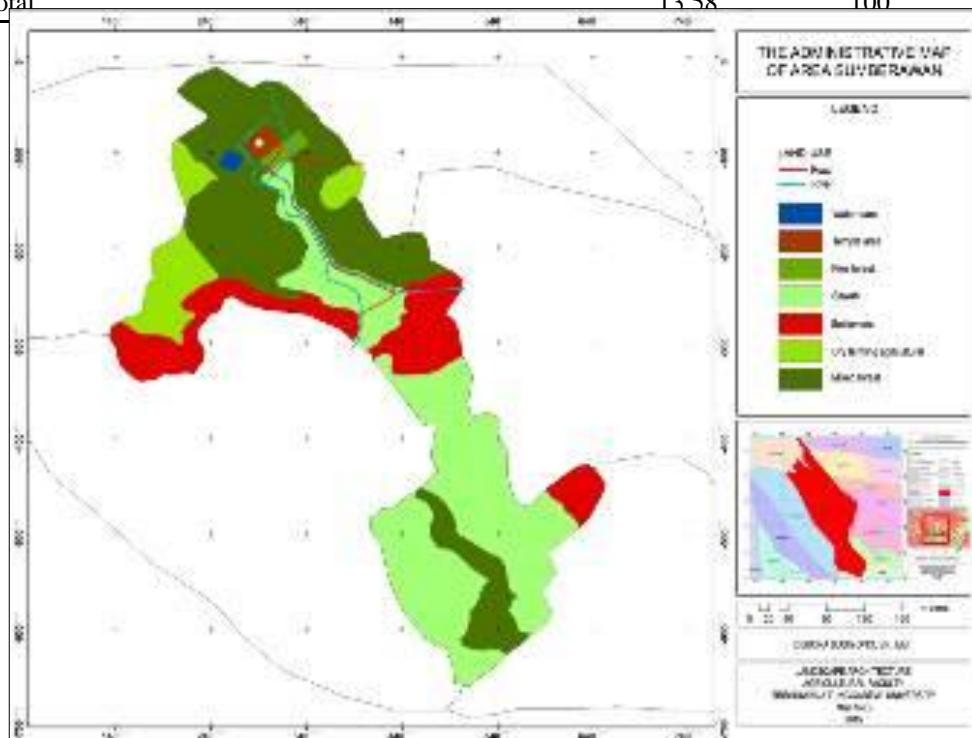


Figure 8. Land use pattern map of Sumberawan area

Historical Aspect

Sumberawan area has historical value because there is historic site, namely Sumberawan Temple. Sumberawan temple comes from the word "*sumber* (source)" and "*rawan* (cartilage or lake)", meaning that there is a source area which is united to the greatest source and forms a cartilage or lake and the locals call it *Rawan* temple or cartilage temple. *Sumberawan* temple is a Buddhist temple of the Singosari kingdom and as the *Kasurangganan* or Nymphs heaven garden and had been visited by King Hayam Wuruk of Majapahit in 1359. Sumberawan temple was found by natives in 1904 and subsequently by the Dutch government it was done restoration completed in 1937 [3]. The Sumberawan temple form originated from India by Buddhists as a "souvenir" by the Buddha to be remembered and worshiped in the form of pieces of nails and hair. Based on the site classification the architect has a classic type and architecture, the age of the building is quite old (classic middle) i.e. the 14th century, and the condition of the landscape has not changed. Based on the historical aspect Sumberawan area consists of sacred space (high historicity), middle space (medium historicity), and profane space (low historicity) (Figure 9).

Religious Aspect

In Java belief, the function of the Hindu and Buddhist building, including Sumberawan temple, is adapted to the local needs. One of the elements which is considered magical powers is water symbolizing purity so that the sanctity increases [3]. Sumberawan temple is considered as a transformer or an introduction to the *Amrita* water. In Hindu mythology *Amrita* water is the drink of Gods and able to avoid death. Sumberawan Temple as an object or a sacred symbol of Buddhism is likened to a holy mountain (Mandara or Meru Mountain) which is a sacred mountain in Java. Sumberawan temple was established adjacent to water so that the water of the Sumberawan lake is considered sacred and characterized *Amerta*. Sumberawan temple function is as a memorial sign of key event site associated with the Buddha and as a sacred symbol of Buddhism which is considered auspicious and has a supernatural or magical power. Buddhism have four main celebration namely *Maghpuja*, *Asadha*, *Khatnia*, and *Vesak*. At the time of the celebration of Buddhist normally perform ritual or religious ceremonies in temple and monastery. While the temple area where the ritual Sumberawan is used by Buddhists, Hindus, and Javanese. Based on the religious rites groove and ritual location in the area, Sumberawan temple consists of religious ritual space and space which is not related to religious ritual (Figure 10).

Tourism Aspect

Sumberawan Temple area has a high natural and culture potential, it can be seen from the last five years that the number of foreign tourists and domestic visitors at the average of 18.256 people/month (business, 2015). The reasons to visit Sumberawan Temple area are to have natural tourism, ritual tourism, observation, and research. Sumberawan Temple area has a beautiful landscape visual quality and high historic temple site objects and high religious activities (Figure 11).

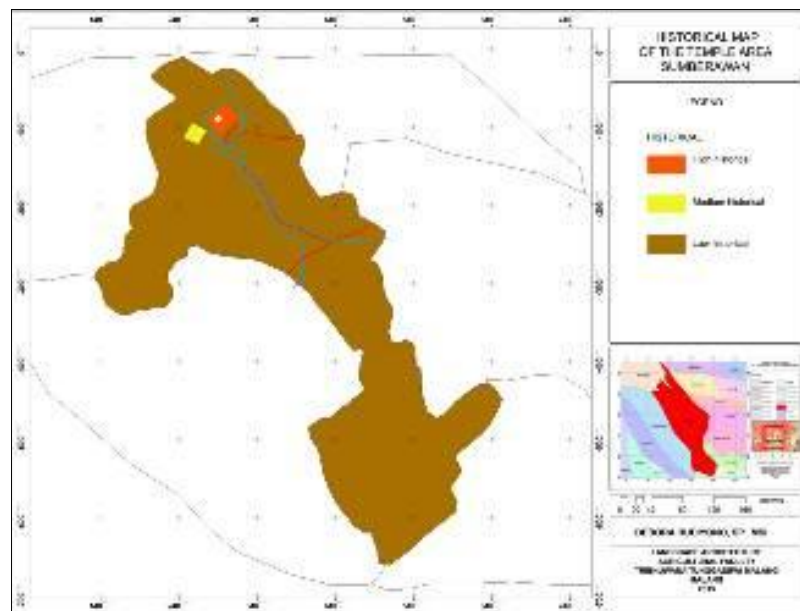


Figure 9. Map of Sumberawan area based on historical aspect

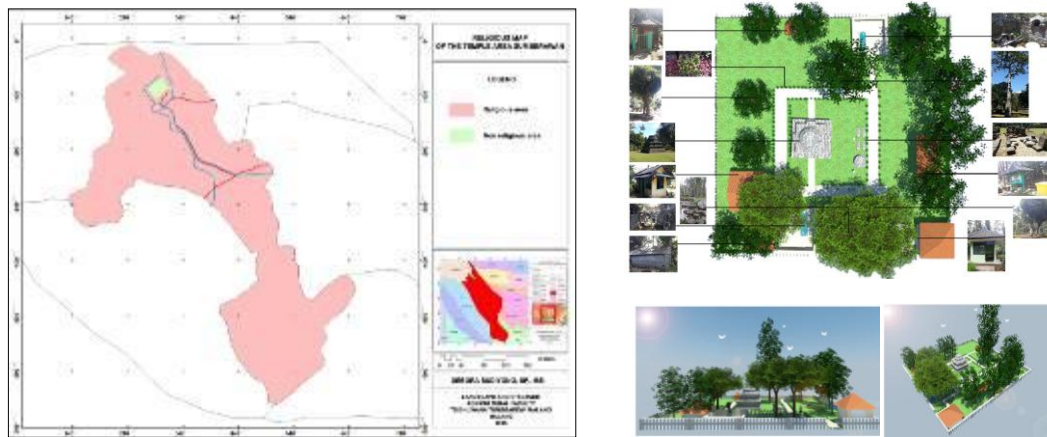


Figure 10. Map of Sumberawan area based on religious aspect and Sumberawan Temple site

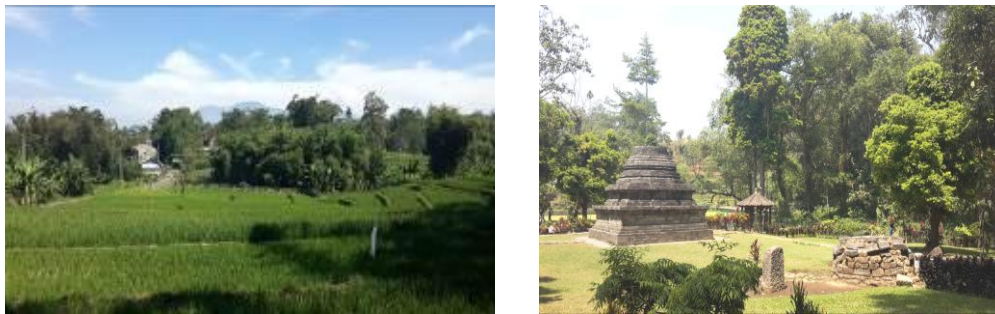


Figure 11. Potentials of Sumberawan Temple area

Vegetation Aspect

Sumberawan Temple area has natural landscape so that the vegetation of Sumberawan temple is quite varied. Sumberawan vegetation consists of cultivation vegetation and religious vegetation. Cultivation vegetation is used by the community as needs for food, furniture materials, housing materials and firewood materials. While religious vegetation is used in the ritual procurement in the Sumberawan Temple area (Figure 11).

Table 2. Types of vegetation in the Sumberawan area

No	Local Name	Latin Name	Function
1	Padi (Paddy)	<i>Oryza sativa</i> L	Cultivation
2	Pinus (Pine)	<i>Pine mercurii</i>	Conservation
2	Bambu (Bamboo)	<i>Gigantochloa lear</i>	Cultivation
3	Sengon	<i>Albizia chinensis</i>	Cultivation
4	Jati (Teak)	<i>Tectona grandis</i>	Cultivation
5	Pisang (Banana)	<i>Musa paradisiaca</i>	Cultivation
6	Cabe kecil (Small chilli)	<i>Capsicum frutescens</i>	Cultivation
7	Jagung (Maize)	<i>Zea mays</i>	Cultivation
8	Maja	<i>Aegle Marmelos</i>	Religious
9	Bendo	<i>Artocarpus elastikus</i>	Religious
10	Teratai (Lotus)	<i>Nymphaea nouchali</i>	Religious
11	Mawar (Rose)	<i>Rosa</i> sp.	Religious
12	Puring (Croton)	<i>Codiaeum variegatum</i>	Religious
13	Melati (Jasmine)	<i>Jasminum sambac</i>	Religious
14	Rumput gajah mini	<i>Axonopus compressus</i>	Religious

Hydrological Aspect

Sumberawan spring is a life source for the community of Sumberawan and Singosari area, in the form of texts, artifacts, human behavior, and cultural environment. With local people be having Sumberawan water becoming sacred in the religion system, social and cultural system, and cultural value system, this will makes the water Sumberawan always be maintained by its existence in life. Therefore, the traditional conservation efforts to create myths, stories, and means of religious rituals. Sumberawanarea is spring heaven because the area has spring forming lake. The function of the spring in Sumberawan is irrigating agriculture, daily necessities, village fertility, and religiousness (Figure 12). There is a significant relationship between Sumberawan temple and the spring around the lake, in which its function as the "patirtan" in Buddhism and a symbol of fertility of the soil so that the edge of the lake was built *pesanggarahan* of Sumberawantemple as a mean of transformation of the lake water which is considered sacred. Furthermore Sumberawan Temple as Mandara Mountainand the surrounding lake are as the *Amerta*. While the function of "penguripan" in Javanese is that spring as a life function, which connotes a water function for the surrounding communities so that the *sumber urip* water or source of everything to stay alive.



Figure 12. Water function in the Sumberawan Temple area

Local Wisdom Concept of Sumberawan's Society of Arjuno Mountain

Sumberawan's society of Arjuno Mountain is an open society, but the society is bound by Javanese culture. The cultural perspective is based on particular meanings in human life. the culture core is in a form of value system and a set of basic concepts integrated becoming an idea of integrated thinking, which became a guidance for human behavior in the society concerned. Based on the study, the people in the Sumberawan Temple area in the landscape management in the form of culture-perspectiveconservation motivated by folklore known by the public and the belief existence of not to violate them so that there is such a clean village culture, belief appreciation, and conservation through cultural heritage. Therefore, the landscape management of Sumberawan Temple based on sacred meaning and history, natural and cultural potential meaning, and social meaning. Sacred meaning is an act of making becomes sacred. This relates to the concept of culture in relation to the religious system in society (Figure 13).



Figure 13. Religious activities in the Sumberawan Temple area

Management having menaing of natural and cultural potential is the discovery of a spring potential for the wider advantages as tourism. The existence of a beautiful natural landscape element and local communityactivities in maintaining and preserving nature can be potentially as tourism objects and attractions (Figure 14). The Sumberawanarea's community in general as farmers so it is heavily dependent on natural potentials to meet daily needs. Based on these community activities, it is created landscape as the

scenery of rice fields, clear streams, and cultural attractions. Sumberawan Temple area can be maintained because it is supported by government agencies such as the Department of Forestry and the Department of Culture and Tourism. While the managements of social meaning are the presence of springs, people life using water, and formation of public attitudes towards conservation of springs.

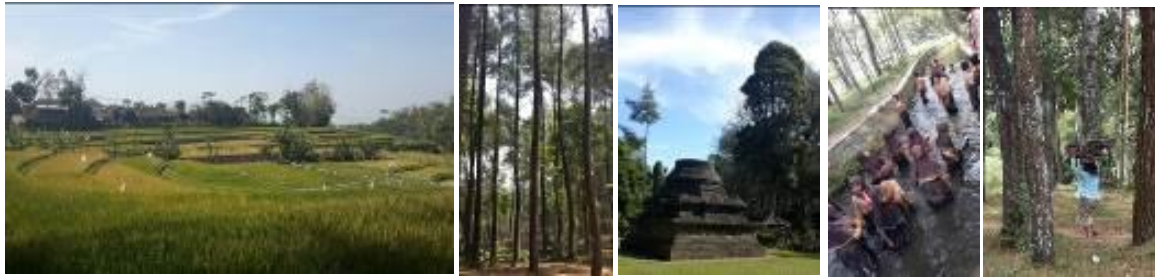


Figure 14 Tourism potential in the Sumberawan Temple area

The local wisdom concept of the springs preservation in the cultural perspectives in Sumberawan temple area is the meaning of community and its connection with the data reduction, next it needs to find a concept which is accordance with the existing cultural reality. Based on the results of the study it was found two local wisdom concepts of spring conservation in a cultural perspective, namely *Patirtan* concept and *Panguripan* concept. *Patirtan* in Javanese means "place of water or spring" which connotes religious activities of the communities. *Panguripan* in Javanese means "livelihood" which connotes the functions of water for the surrounding communities. *Patirtan* concept is the concept of the function of water in Hindu and Buddhist at first to the interests and religious rituals. *Patirtan* in the present means spring for people's lives in a wider range, for agricultural irrigation, everyday lifeneeds, and tourism having impacts on the economic governance of the surrounding people. Therefore, the concept of water as a *patirtan* is the source of life, and therefore must be preserved in various ways, including culture-based local way, such as the creation of folklore, legend, or myth. While *Panguripan* concept is the concept of water as a part of human life. Based on the finding of the stud, the wordwater as "*sumberurip*" or the source of everything in order to stay alive, so that it is understood that water is important for humans and environment. The representations of *sumber urip* are the growth of myth, legend, which tells the "efficacy" of water for all purposes, such as treatment, purification, and as a means to demand something. This can be seen as the reality cultural coming from generation to generation, and growing into a *habit*.

Conclusion

The *Sumberawan* Temple area's community character uses participatory or togetherness or mutual assistance in solving the problems of the rural development, village security, and preservation of nature and spring. Landscapecharacter of *Sumberawan* area is dominated by rice fields, has a high history and religious values, has potential of natural and cultural tourism, vegetation cultivation and religious function, and has a spring for agricultural irrigation, daily needs, village fertility, and religious. While, the local wisdom concept of Sumberawan Temple society of Arjuno Mountain in managing landscape consists of *patirtan* concept relates to ritual activities or religious and *panguripan* concept relates to the functions of water for the surrounding communities.

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