

**Strategy for Enhancing Community Economy Through  
Optimization of Tourism Areas (A Study on Rawa Pening  
Lakes in Central Java Province - Indonesia)**

**Purwanto<sup>1</sup>, Retnowati<sup>2</sup>, Hari Suryanto<sup>3</sup>**

Faculty of Business, President University, Bekasi, Indonesia<sup>1,2</sup>

Faculty of Humanities, President University, Bekasi, Indonesia<sup>3</sup>

Jl. Ki Hajar Dewantara, Kota Jababeka, Cikarang Baru, Bekasi 17550 - Indonesia

Correspondence Email: Purwanto@president.ac.id

**ABSTRACT**

This study aims to determine the contribution of economic value to the community and restore the natural function of the lake and maintain biodiversity. The qualitative description method is applied through journal reviews, documentation and field observations. The results of the study indicate that the joint commitment of all stakeholders and the community to be able to benefit optimally through scientific, social, political, ecological and economic approaches is necessary. Utilization of large *eceng gondok* helps reduce growth and bring benefits that can be used to meet maintenance needs. An environmentally sound development policy as a manifestation of sustainable tourism can be pursued through the implementation of a strategic plan, the Lake Ecosystem Rescue Movement, primary and tertiary activities.

Keywords: ecology, economy, politics, science, social, tourist area

**INTRODUCTION**

Central Java is a strategic supporter of the national economy. Bank Indonesia projects a growth of 5.4-5.8 percent with inflation maintained at around 3.0 ± 1 percent in 2020. Achievements for three quarters in 2019 continue to increase, starting from 5.15 percent to 5.66 percent in the fourth quarter.



**Figure 1.**

**National Macro Conditions, Central Java and Semarang Regency**

Source: RAD SDGs Prov. Jateng (2017 – 2018); RPJMD Kab. Semarang (2016 – 2021);

LKPJ Kab. Semarang (2018)

The data shows the consistency of high rates of economic growth above the national level and controlled inflation for at least the last 10 years. Over the past 18 years, economic performance as measured by Gross Regional Domestic Product (GRDP) tends to increase, contributing in 2018 to a share of 8.47 percent (**Figure 1**). Various supports in the form of abundant ownership of resources into one of the food barns, high-quality human resources, the mainstay products of industries, tourist destinations, and others. Positive impacts are also felt in reducing population poverty. According to Central Java Provincial Statistics Agency data (2019), the number of poor people in September 2018 amounted to 3,867.42 thousand people. When compared to March 2018, during the six months there was a decline of 29.8 thousand people. Semarang Regency as part of Central Java has been able to contribute significantly and is targeting at 5.77 - 6.33 percent with the same inflation in 2020 (**Table 1**). Synergy, transformation and innovation are needed as well as guarantees of comfort and land certainty for investors to achieve everything.

**Table 1. Goals and Objectives of 2020**

Indicator	Central Java (%)	Semarang Regency (%)
Economic Growth	5.4 – 5.8	5.77 – 6.33
Inflation	3.0±1	3.0±1
Poverty	9.81	7.29 – 6.80
Open Unemployment Rate	4.43	2.10 – 2.20
Human Development Index	72	73.40

Source: *RAD SDGs Prov. Jateng (2017 – 2018); RPJMD Kab. Semarang (2016 – 2021);*

*LKPJ Kab. Semarang (2018)*

Achievement of the Regional Action Plan for Sustainable Development Goals (*RAD TPB / SDGs*) in the area of Total Aquatic Conservation Areas in 2018 amounted to 66.74 percent which included Rawa Pening lake. Geographically, it is a lake located in the lowest basin of the slopes of Merbabu Mountain, Telomoyo, Kendali Sodo and Ungaran.

Lake is a form of freshwater ecosystem in the mainland waters which has an important function for development and human life. Ecosystem is a series or chain of life that influence each other in forming a community of life in a particular environment (Suharini and Palangan, 2010: 5). The typology of lakes in Indonesia varies greatly and is mostly natural (Haryani, 2013: 1). There are three main functions it has, namely ecology, culture and social economy. Ecological aspects as a place for the ecological cycle of the components of water and aquatic life in it. The existence of the lake and the surrounding ecosystem will complement each other and try to maintain balance. While viewed from the aspect of cultivation, the people around him often carry out floating fishing activities. Socio-economic aspects, there is a direct relationship with community life in the region (Wulandari, 2013: 1). Some other functions include Hydroelectric Power (*PLTA*), agricultural irrigation, fisheries, tourism, livelihood sources, and flood control. The lake ecosystem provides productive natural resources both as a source of raw water for drinking and daily needs, a source of protein, minerals and energy, transportation media, and as a tourist area.

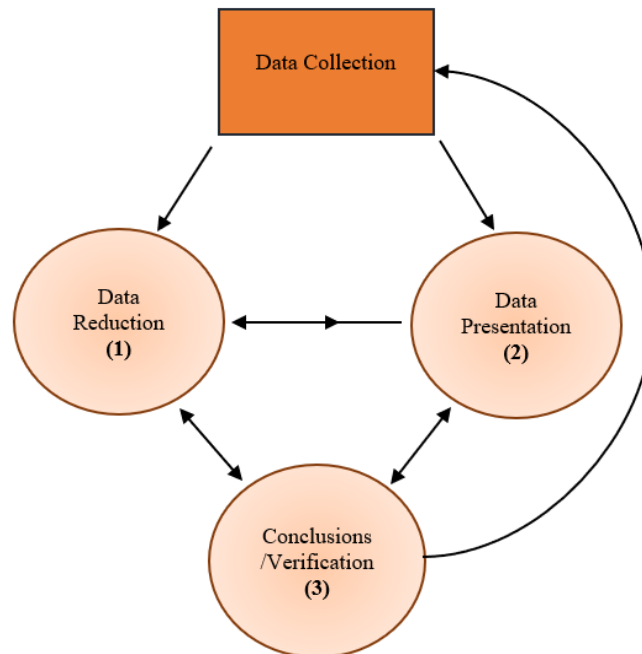
Concerns about the condition of lake ecosystems in Indonesia which are increasingly threatened due to environmental damage and pollution in watersheds (*DTA*) to the

waters of the lake led to the declaration of an agreement on Sustainable Lake Management at the National Lake Indonesia I Conference (*KNDI I*) in 2009 in Bali. The effort was carried out to save the lake by restoring, preserving and maintaining functions according to the principle of ecosystem balance and carrying capacity of the environment (Ministry of Environment of the Republic of Indonesia, 2011). The direction of the lake rescue policy in the period 2010 to 2014 is prioritized for 15 lakes in Indonesia, one of which is Rawa Pening lake. Environmental preservation and social responsibility are needed as a form of care that can provide economic benefits not only to residents but visitors to tourist attractions. The current balance of water resources is threatened by its sustainability because the lake is home to 9 rivers that carry organic material and cause pollution, sedimentation and shallowing. *Eceng gondok* (*eichhornia crassipes*) has a positive impact because of its biological properties, namely filters for water pollution, compost, gas sources, as well as raw material for plant fertilizers. The negative is that it bothers fishermen and fishermen because there is a lot of vegetation so that the fish become small, damaging fish finders when exposed to plants and the water becomes smelly. The economic activity of the population is disrupted by the increasing number of aquatic plants, namely fishermen, *eceng gondok* seekers, peat miners, farmers, traders, boat services, and parking services (Abhimanyu, 2016).

The development of a sustainable tourism industry through improvements in the field of facilities and infrastructure as well as promotion means integrating economic, socio-cultural, and environmental considerations into the management decision-making process. Tourism is a form of utilization of natural resources that relies on natural services for human satisfaction (Yulianda, 2007). According to Yoeti (2004), tourism is a trip that is carried out for a while which is organized from one place to another, with the intention not to make a living in the places visited, but merely to enjoy the trip for an excursion to fulfill diverse desires. The development of the Rawa Pening area needs to pay attention to the preferences of visitors so that changes in the condition or quality of tourism can provide multiple benefits for both visitors and managers or local government. Therefore, environmental preservation and social responsibility are needed as a form of care that can provide economic value not only to residents but tourists as well. Information on the quantity and quality of resources, problems that are occurring inside and outside the water body and the forms of management that are being carried out at this time are the data needed to find alternative management that will be done to maintain the preservation of its functions. Utilization and processing by considering environmental conditions and quality will provide added value to improve the welfare of the surrounding community, and vice versa. Based on various existing problems, the objectives of this study include identifying potential, management problems, suitability and carrying capacity as well as alternative strategies for improving the community's economy.

#### **RESEARCH METHOD**

The research approach used is descriptive qualitative, which compares theories with the practice being applied. Interactive analysis models (**Figure 2**) describe the process of data collection, reduction, presentation and conclusion (Rohidi, 2011; Sutopo, 2002 or Sutopo, 1996).



**Figure 2. Interactive Analysis Model**  
Source: Rohidi, 2011

The initial stage is gathering information about the area through literature studies, documentation and field observations. A literature study is done by finding information from journals, reports from the Central Statistics Agency, Bank Indonesia, Central Java Province, Ministry of Environment, Indonesian Institute of Sciences (*LIPI*) and other sources. Documentation is obtaining written data such as activity documents, state of facilities and infrastructure, community workflow and condition of the area. Field observations in the context of exploration of information are more accurate and look at behaviors that previously could not have been predicted, such as fishing by fishermen, taking and selling *eceng gondok*, socio-economic life of surrounding communities and other activities. The next step is data processing according to the predetermined analysis method. Presentation of results in the form of tables or graphs is then interpreted and concluded..

## **RESULTS AND DISCUSSIONS**

Analysis and assessment of the environment of Rawa Pening lake is more complicated because it must be seen simultaneously. Some external factors, the industrial environment, the driving forces, and key success factors influence the choice of direction and actions. Several external factors interact with each other so that it influences the decision making process or strategy. This gives the strategist time to anticipate opportunities, threats, obstacles, responses and reactions. Several studies of the multidisciplinary sciences and strategies are presented below:

### **1. Type of Studies**

#### **1.1. Science**

##### 1.1. Science

Rawa Pening natural lake is very important for the ecological system of Central Java, especially in Semarang Regency. Water storage capacity of 65,000,000 m<sup>3</sup> at an



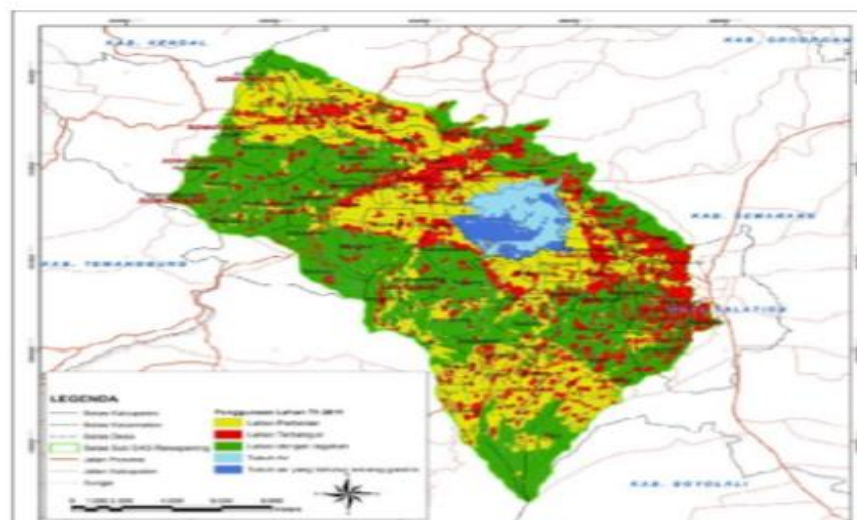
elevation of  $\pm 463.90^{\circ}$ . Experience extensive changes from year to year. Sedimentation due to *eceng gondok* and other wastes entering the river cause siltation (**Table 2**).

**Table 2. Area of Rawa Pening Lake (in hectares)**

No.	Date	<i>Eceng Gondok</i>	Lake / Waters	Total Area
1.	December 10, 2011	673.51	1,335.18	2,008.690
2.	July 15, 2012	951.89	689.01	1,640.90
3.	December 20, 2014	650.31	1,029.55	1,679.86
4.	June 24, 2015	821.83	801.53	1,623.36

Source: Analysis of Observation Results (Abimanyu, 2016)

Lake water comes from the eyes of a swamp and several rivers that become one estuary, including the river Galeh, Torong, Panjang, Emerging, Parat, Legi, Pitung, Praginan and Rengas. The width of the watershed (*DAS*) in the upper reaches of Rawa Pening is around 25,079 ha covering 72 villages with a slope between  $0^{\circ}$  around the reservoir to  $45^{\circ}$  on the mountains of Telomoyo and Merbabu (*Pemkab Semarang*, 2011). Land that is built always develops until the slope is 8-15 percent to 15-25 percent rather steep. Agricultural land shows a lot of pressure from land-use with stands. Agricultural land tends to expand on steep slopes of 25-40 percent to very steep  $> 40$  percent. This means that land conversion by standing into agricultural land shows that the extent of the catchment area in the upstream area of the Rawa Pening *Sub-DAS* is experiencing degradation (Apriliyana, 2015). Hydrology includes surface water and groundwater conditions. This condition is influenced by topography, vegetation and the amount of rainfall. Based on the topography, Rawa Pening lake is located in a low area and is a valley surrounded by mountains and hills and is dammed in the Tuntang river (**Figure 3**). The effect is that the amount of water is constantly being increased, while only a small amount is coming out. Furthermore, water-borne materials contribute significantly to the deposition (UNEP, 2014).



**Figure 3. Rawa Pening Tourism Area**

Source: *Kanwil BPN Propinsi Jawa Tengah* (2011); (Apriliyana, 2015)

### **1.2. Social**

Both local people and residents who do not live in the area tend to be homogeneous because their daily lives reflect Javanese culture. In terms of religious background, the majority of Muslims are around 90%, followed by Catholics, Christians, Hindus and Buddhists. The social life of rural communities is quite active and good, there are still group activities, community service, community work and community groups. Organizations and groups in the community are also quite diverse, ranging from farmer groups, fishermen, PKK mothers, youth clubs, and village cooperatives. The culture of the myths of ancestors and offerings is still always carried out by the public every month and year. Furthermore, the relationship between Rawa Pening and the local community was realized through the formation of legendary folklore about *Baru Klinting* (Nurdiani, 2011).

### **1.3. Political**

Community knowledge of the environment and the values it contains, including how they interact to bring up local traditions, is an important part of environmental politics. The existence of the Spatial and Regional Plan (*RTRW*) owned by the Semarang Regency Government has been in effect since the 2011-2031. Informal activities in dialogical political interaction are adopted into local government policies and do not tend to be top-down. Placing a balance of the portion of interests between the community, the environment and the government concerning policy formation and implementation about Rawa Pening, what was originally only in the form of ecosystems, it moves into an economic and cultural need of the local community towards political needs in the form of government policies (Seftyono, 2014).

### **1.4. Ecological**

The condition of the waters is used as fishery activities carried out by residents and from outside the region. Fish fauna in Rawa Pening recorded 26 species of both native and infectious species, and have been studied since the 1930s (Goltenboth and Krisyanto, 1994). Besides fish, one of the important commodities of fisheries is udang galah (*macrobrachium idea*). Its presence plays a role in maintaining ecological balance, which is as algae eaters, organic material leftovers and also food for other freshwater fish and shrim.

### **1.5. Economic**

Glueck stated that current and future economic conditions could affect the good fortune and strategy of the company. Specific economic factors must be analyzed including the level of the business cycle, inflation trends or deflation in prices of goods and services, monetary policy, interest rates and devaluation or revaluation and taxation policies. Each element of these economic factors can help or hinder the achievement of goals, success or failure of the company (Supriyono, 1993). One of the strategic administrative areas directly adjacent to the provincial capital of Central Java is Semarang Regency. Macroeconomic indicators contributed 3.64 percent of total growth. Even though the achievement is above the national and provincial levels, which is 5.79 percent in 2018 (*BPS*, 2019), it faces increasingly complex and challenging problems. This figure shows the economic performance improved. If you look closely, there are bubble economics. This is indicated by the relatively high poverty rate even though the GRDP is declared good. The percentage of poor population in March 2018 is around 79.66 thousand people (7.29 percent) (*BPS*, 2019). Increasing competition due to disparities between regions and the development of globalization, encourage increased regional competitiveness.

In short, poverty can be defined as a low standard of living, namely the level of material deprivation in a number or group of people compared to the general standard of living

that applies in the society concerned. The low standard of living has a direct effect on the state of health, moral life, and self-esteem of those classified as poor (Siregar and Wahyuniarti, 2008).

**Table 3. Poverty Data for 2010-2018**

Year	Population (People)	GRDP (Rp)	AHH (Year)	RLS (Year)	Poor Population (%)
2010	932,702	2.15721E+13	75.40	7.12	10.50
2011	946,708	2.29255E+13	75.42	7.20	10.30
2012	960,497	2.43067E+13	75.45	7.24	9.40
2013	974,115	2.57581E+13	75.48	7.28	8.51
2014	987,597	2.72641E+13	75.50	7.31	8.05
2015	1,000,887	2.87683E+13	75.52	7.33	8.15
2016	1,014,198	3.02925E+13	75.54	7.48	7.99
2017	1,027,489	3.20041E+13	75.57	7.87	7.78
2018	1,040,629	3.38576E+13	75.62	7.88	7.29

Source: *BPS Kabupaten Semarang (2019); Sulistyawan (2019)*

The poverty rate in Semarang Regency from 2010 to 2018 experienced a relatively good decline because it experienced a downward trend from 10.50 percent in 2010 to 7.29 percent in 2018 (**Table 3**). However, the poverty reduction rate that occurred was felt to be not optimal when compared to the realization of the 85.33 percent budget that had been issued. The existence of poverty alleviation programs during 2010-2018, although the population increased, the poverty rate decreased. When pressing the poverty rate, the government often takes steps to expect trickle-down effects, besides it needs to be improved human development index (HDI) (Yuliati, 2019). GRDP has increased the poverty rate will also increase. This can happen because of money circulating to produce goods and services is largely spent on capital goods instead of paying labor costs. Decreasing life expectancy (health level) will increase the number of poor people. The average length of school has no significant effect on poverty (Sulistyawan, 2019). Detecting the economic base and leading sectors, especially in Semarang Regency so that regional development is more focused as one of the efforts that can be done. The amount of contribution to economic income in a row is the service sector, agriculture, transportation and communication, trade, hotel and restaurant (tourism sector).

The policy of sustainable tourism development in the tourism objects of the Rawa Pening area provides important findings (Subanti, 2015). Referring to the results of observations in the field that the local government supports the formation of a tourist village, but the environmental conditions are still dirty, causing the attraction to decline. The Ministry of Environment held the Lake Indonesia National Conference II (*KNDI II*) on October 13-14, 2011 to save its already alarming condition due to eutrophication and water quality degradation. This is due to the enrichment of nutrients due to the supply of organic material naturally and derived from human activities, characterized by high concentrations of total nitrogen and phosphate to spur growth that is not controlled by blooming hydrilla. Hydrilla blooms disrupt the function of the lake as flood control, fisheries and tourist activities.

The activities of surrounding communities tend to do it independently and are not yet professional (LIPI, 2014). Community empowerment is the main key in managing abundant natural resources besides fish, namely *eceng gondok* (the 6th Superpriority Program of Germadan Rawa Pening, KLH, 2011a). Germadan (Lake Ecosystem Rescue Movement) is a government policy in overcoming lake management problems in Indonesia. The activity program is still top-down, the surrounding community is not accommodated in planning. The absence of the private sector results in a significant loss of potential for management funding. Although in general these economic efforts are carried out on a micro-scale, but there are also some artisans who succeed in maximizing economic value. Learning for the community about the use of *eceng gondok* for handicrafts, organic fertilizer, biogas, and animal feed needs to be done to improve yields and quality (Yuliyanto et al, 2016). *Eceng gondok* has a high growth speed so that this plant is considered a weed that damages the aquatic environment which is both disturbing and beneficial. The government has made various efforts to improve the skills of craftsmen through various guidance and counseling as well as training. So far it has not shown positive results, it is still patterned to only seek and take *eceng gondok* for deposit to collectors so that the community has not received additional economic value (Seftyono, 2014). As dominant vegetation has a significant effect on livelihoods for fishermen, *eceng gondok* seekers and boat services. Factors of residence, age, and recent education also play a role in this activity (Abhimanyu, 2016).

## 2. Strategy for Optimizing Rawa Pening Area

Utilization of the potential for the development of tourist areas requires appropriate management strategies so as not to cause damage to the ecosystem. The determination of management priorities is carried out by taking into account interrelated factors. The complete optimization strategy is shown in **Table 4** below::

**Tabel 4. Strategy for Optimizing Rawa Pening Area**

No.	Type of Strategy	Actions / Suggestions
1.	Implementation of three main priorities as a strategic plan (Jayanti, 2009)	<ol style="list-style-type: none"> <li>1. Coordinate with the local government including the community to overcome the threat of Rawa Pening lake</li> <li>2. Utilizing the potential of Rawa Pening lake to attract tourists</li> <li>3. Make tour packages with other tourist objects</li> </ol>
2.	Lake Ecosystem Rescue Movement / Germadan (Raharjo, Falah, Cahyono, 2019)	Make improvements from the research findings by synergizing the management of Rawa Pening lake by existing government agencies. Creating collective action through increased participation in planning and implementing imperfect programs, enforcement of rules agreed in Germadan, improving economic and social incentives.
3.	Economic life through primary and tertiary activities (Abhimanyu, 2016)	Empowering fishermen, <i>eceng gondok</i> seekers, peat miners, farmers, traders, boat services, and parking services

Source: Processed from various journals, 2020



Rawa Pening lake has the potential of natural resources and the environment such as natural scenery, flora and fauna, cultural potential, and socioeconomic potential add to the attraction for tourists who want to visit. Three main priorities as a strategic plan in the effort to manage tourist attraction areas, namely coordinating with local governments including the community to tackle, exploiting the potential to attract tourists, and making tour packages.

Lake is one form of common-pool resources (CPR) whose management success is highly dependent on the quality of management. The institution must be able to improve the welfare of the community and the people who depend on the lake (Satia, Isnadi, & Retnandari, 2016). CPR faces challenges in the form of over-exploitation which results in decreasing quality, quantity and continuity of natural resources (Nursidah et al., 2012). To overcome this problem strong institutions are needed and can be formed based on government policies (top-down) and community initiatives (bottom-up). Recognition and incorporation of local institutions in policy formulation is very important because local institutions have a large potential for collective action (CA) and meet the characteristics of sustainable CPR management (Nursidah et al., 2012). CA can generally be interpreted as a joint action of a group of people to achieve a common goal (Barnaud, et al., 2018; Schroeder, 2013).

Economic activities carried out by residents by utilizing the existence of Rawa Pening lake are included in primary and tertiary activities. Human activities that are directly related to the natural environment are called primary activities, including fishermen, *eceng gongok* seekers, peat miners, and farmers. While tertiary activities, namely making it easy for customers to get goods and services, namely traders, boat services, and parking services.

## **CONCLUSIONS**

Rawa Pening is a tourist attraction as an important ecosystem for the community. The issue of the problem is reviewed in a multidisciplinary viewpoint of science. The scientific approach is based on a geographic perspective that examines climate, temperature, altitude and biology. Social community concerns the history of the ecosystem itself, inherent culture, economic system, human geography and development. At the stage of environmental politics, a discussion of how the process of forming environmental policies is applied. The existence of the Spatial Plan and the area owned by the Semarang Regency Government, which took effect from 2011-2031, is important to be observed. The adoption of informal activities in political interaction is a policy of local government and does not tend to be top-down. Residents and outside the region who take advantage of the condition of the waters as a fishery activity is an ecological view. The economic activities of the surrounding population tend to do it independently and are not yet professional. The existence of the area as the livelihood of fishermen, *eceng gongok* seekers, peat miners, farmers, traders, boat services, and parking services. The strategy for optimizing economic improvement can be pursued by implementing the main priorities of the strategic plan, the Lake Ecosystem Rescue Movement, community empowerment through primary and tertiary activities.

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