



# Community Social Capital in Supporting Ecosystem Recovery in Rawa Kidang of Way Kambas National Park

Christine Wulandari\*, Lutfi Nur Latifah, Hari Kaskoyo, Yulia Rahma Fitriana, Zeda Erdian, Vinanda Arum Tri Kurniawan, Aryanti Rizki Adinda, Fadela Yunika Sari, and Mhd. Zaidi

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## Abstract

Ecosystem recovery plays a central role in environmental and forest conservation efforts, including efforts made in a conservation area that is a national park. This effort requires support from the communities living around the national park. Therefore, the presence of the community can become a form of capital, which is generally referred to as social capital and will determine the success of a program. Elements of social capital consist of trust, norms, and networks is one form of capital that is very valuable in addition to economic capital, physical capital, and human capital. The purpose of this research is to analyze the level of social capital that exists in the community and how the characteristics of respondents affect social capital. This research is located in Labuhan Ratu VII Village, Labuhan Ratu Subdistrict, East Lampung Regency from November to December 2023. Based on the results of the analysis, it is known that the trust element and the social network element are in the medium category, while the norm element is in the high category. Education and length of stay are respondent characteristics that influence community social capital in supporting ecosystem recovery in Rawa Kidang, Way Kambas National Park (WKNP). Increasing social capital can be done through two characteristics that affect community social capital in the form of informal education such as training. People who live for a long time will affect the sustainability of WKNP so training can be carried out for a long period of time in a structured and intensive manner towards sustainable WKNP management. The results of this study can be a consideration for WKNP managers in implementing Permen LHK policy no 14 of 2023 concerning business and/or activity arrangements in nature conservation areas, nature reserve areas and hunting arks because they must have a strong social foundation.

**Keywords:** trust, social networking, norms, ecosystem recovery

## 1. INTRODUCTION

Conservation areas are areas specifically designated to conserve biodiversity and maintain the original ecosystem. Conservation areas have the main objective of protecting flora, fauna, and natural habitats from disturbances that can threaten their survival. A repository of biodiversity, conservation areas serve as a living umbrella for various species, including endangered species. As one of the conservation areas in Lampung Province, Way Kambas National Park (WKNP) has been established based on the Minister of Forestry and Plantation Decree No. 670/Kpts-II/1999 with an area of approximately 125,621.30 ha which is administratively surrounded by 39 villages from 10

sub-districts. One of the characteristics of WKNP is that it is a habitat for Sumatran elephants (*Elephas maximus sumatranus*). In addition to Sumatran elephants, WKNP is also a habitat for various animals endemic to the island of Sumatra, such as Sumatran rhinos, Sumatran tigers, tapirs, and sun bears.

Over the past two decades, WKNP has experienced various damages due to various illegal activities in the area. The damage has resulted in an increase in critical land area of 33% of the total WKNP area [1]. The growing extent of degraded land in the area requires ecosystem recovery efforts to restore the degraded area to its original condition. Based on the identification results of WKNP and ALERt in 2018, there are at least 3 locations that are prioritized for ecosystem recovery, including Rawa Kidang. Ecosystem recovery is the right solution to improve degraded conservation forest areas to return to their original condition [2]. This effort must be triggered by public awareness of the importance of restoring the function of damaged ecosystems in maintaining biodiversity, providing food and energy, and providing environmental services [3]. One of the locations that has become an ecosystem recovery area in WKNP is Rawa Kidang, which is located in

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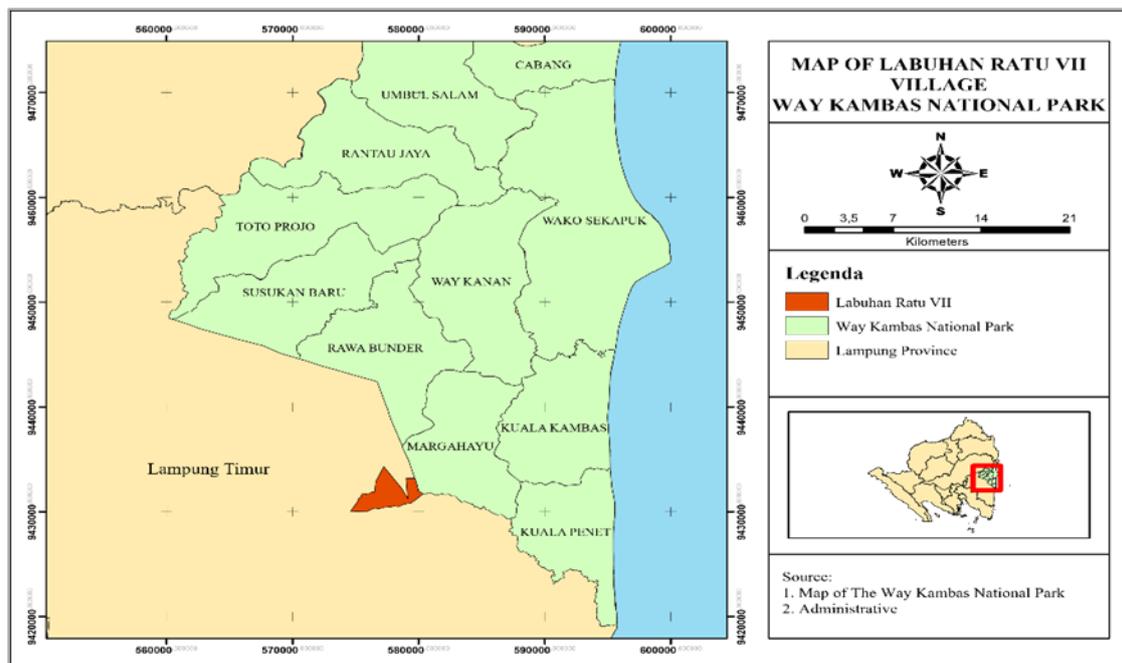
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**Figure 1.** Map of the research locations at Labuhan Ratu VII villages.

the Kuala Penet National Park Management Section (SPTN) III, which borders Labuhan Ratu VII Village. Ecosystem recovery in Rawa Kidang began on September 22, 2020, along with the commemoration of World Rhino Day. The types of trees planted at the location are local species and rhino plants.

Ecosystem recovery plays a central role in the overall conservation of forests such as national parks. This effort requires not only the support of the people directly involved but also the support of the community. According to Sinery and Manusawai, the community is one of the determining factors for the success of a program [4]. Through their local knowledge of flora and fauna and hereditary experience, communities have an important contribution to make in designing and implementing recovery programs [5]. Therefore, the presence of the community can be a separate capital, commonly referred to as social capital, which will determine the success of a program [6]. Capital that comes from the interaction of community members is commonly referred to as social capital. Social capital is one of the most valuable forms of capital besides economic capital, physical capital, and human capital. The role of social capital in ecosystem recovery is crucial in bridging the interaction between communities and nature conservation efforts. In the context of

ecosystem recovery, social capital can be the foundation for mobilizing community participation [7]. The social capital of each community will certainly be different from one another. This can be influenced by differences in characteristics between communities.

Many studies related to social capital, especially in conservation areas, have been conducted, such as research by Mariyani and Suciati which discusses the social capital of rehabilitation farmers in ecosystem recovery, showing that farmers' social capital is close to strong up to 72.74% so it is important for rehabilitation [8]. Strong social capital has proven to be very supportive of the success of the rehabilitation land ecosystem recovery program on critical land in Meru Betiri National Park. In addition, research by Hidayat *et al.* also discussed the social capital of communities in the buffer zone of Mount Ciremai National Park in supporting partnership-based management schemes, which showed that in the same watershed ecosystem unit, the social capital of the community did not necessarily have the same characteristics [9]. Trust, norms and networks are 3 important elements of social capital. Research by Wulandari *et al.* [10] and Kurniasari *et al.* [11] proved that trust between members of forest farmer groups and community trust with other parties, for example, the

Bukit Barisan Selatan National Park (TNBBS) manager, has an effect on supporting sustainability. The existence of trust in the TNBBS manager results in the community feeling comfortable in managing the forest according to existing regulations and based on the norms that apply in the location. In addition, the existing network also supports existing conservation efforts because a lot of information is obtained based on the network that is owned by various relevant parties, including marketing information.

As one of the conservation areas surrounded by many buffer villages, research related to social capital in WKNP with efforts to restore the Rawa Kidang ecosystem is still very minimal. Therefore, it is necessary to conduct research related to social capital to find out how the social capital of the surrounding community supports the recovery of the Rawa Kidang ecosystem. This research was not only conducted to determine the level of community social capital but also to analyze the influence of community characteristics on community social capital, especially in ecosystem recovery efforts. This research was conducted to analyze the level of community social capital as

well as the influence of respondent characteristics on social capital itself. The data obtained can then be a basis for consideration for managers to formulate what management scenarios are appropriate for the community in preserving WKNP, especially Rawa Kidang. The research results in the form of community characteristics that affect social capital will better ensure the implementation of programs based on Permen LHK No. 4 of 2023 concerning social forestry management because social aspects are important in restoring forest sustainability [12]. This can also be said as an achievement of the implementation of Law No. 32 of 2024 concerning Amendments to Law No. 5 of 1990 concerning Conservation of Living Natural Resources and Ecosystems.

## 2. MATERIALS AND METHODS

### 2.1. Materials

Camera, voice recorder, laptop with GIS software application, Microsoft Office (Microsoft Excel, Microsoft Word, Microsoft PowerPoint), SPSS application, camera, and stationery.

**Table 1.** Four-category Likert scale.

Score	Category	Description
4	Very High	Indicates a level or intensity that is optimal, excellent, or exceeds expectations. The respondent feels very satisfied or very well-versed in the subject matter.
3	High	Indicates a level or intensity that is good enough and in line with expectations. Respondents feel quite satisfied or understand enough.
2	Low	Indicates a level or intensity that is below average or less than optimal, but there is still some effort or perceived quality.
1	Very Low	Indicates the least level or intensity or far from expectations. The respondent feels there is almost no achievement, ability or quality in question.

**Table 2.** Level of community social capital.

No.	Level of community social capital	Value interval	Meaning of social capital levels
1.	Low	1.0–1.9	Difficult to develop for ecosystem recovery.
2.	Medium	2.0–2.9	Can be developed for ecosystem recovery but assistance or efforts to strengthen social capital are needed.
3.	High	3.0–4.0	Easy to develop for ecosystem recovery.

## 2.2. Methods

### 2.2.1. Time and Location Research

This research is located in Labuhan Ratu VII Village, Labuhan Ratu District, East Lampung Regency (Figure 1). The village is a buffer village located adjacent to the restoration of the Rawa Kidang ecosystem. In addition, Labuhan Ratu VII Village was chosen because some of the village community partnered with WKNP through a *Perjanjian Kerja Sama* (PKS). This research was conducted from November to December 2023.

### 2.2.2. Sampling Techniques and Research Instruments

The method used is the interview method with a tool in the form of a questionnaire. Respondents were selected based on the criteria set by the researcher. The researcher determined the research area based on occupation and distance therefore village VII was selected. Families in this village depend on forest products to fulfill their needs and the village is located close to WKNP. The occupation chosen is that the intensity of farmer (respondents) activities inside the forest area is higher than activities outside the forest area, so farmers are the chosen livelihood. In addition, distance to the forest can also affect the success of ecosystem recovery efforts [13]. The characteristics of the respondents analyzed were age, education, income and length of stay. Based on the research results of Ofoegbu *et al.*, the 4 variables above support SFM including interventions to deal with climate change [14]. According to Liu *et al.*, all four are important to support the sustainability of ecosystem services [15]. This means that it is important to support sustainability in a conservation area such as WKNP. The number of respondents in this study was determined using the Slovin formula with a margin of error of 15%.

$$n = \frac{N}{1 + N \times e^2} \quad (1)$$

Based on the information obtained, the number of families in Labuhan Ratu VII Village is 97 families, so the number of samples taken using the Slovin formula is 30 people. This number has met the minimum requirements for data collection through interviews. This is confirmed by Akdon and

Ridwan (2008), that the minimum number of samples is 30, 50, 75, 100, or multiples. Thus, the number of samples in this study has met the minimum sample limit.

### 2.2.3. Data Processing

Data collected in this study are primary and secondary data. Primary data were collected through direct interviews using questionnaires, while secondary data were collected through literature studies related to the research [16]. Data were analyzed quantitatively and qualitatively. Quantitative analysis was carried out using a Likert scale consisting of four answer categories, namely "very low" score 1, "low" score 2, "high" score 3, and "very high" score 4 (Table 1). The use of a four-category Likert scale is done to avoid middle (neutral) answers that can cause bias so that the data obtained can be more accurate [17].

In this study, the level of social capital is divided into three, namely low, medium and high social capital. To determine the level of social capital of the Labuhan Ratu VII Village community, it can be determined by calculating the interval distance. Wulandari *et al.* calculated the interval distance using the following Formula 2 [12].

$$\text{Interval value} = \frac{\text{sum of highest scores}}{\text{sum of lowest scores}} \quad (2)$$

The level of social capital in Labuhan Ratu VII Village was obtained by summing up the values of each element forming social capital. Furthermore, based on the hose equation, the value interval for the social capital level of the WKNP buffer community, along with the meaning of each level of social capital related to ecosystem recovery is presented in Table 2. The categories of social capital levels formed follow the concept of the social model which is modified into three levels of social capital, namely very low, medium, and very high [9].

The next analysis is a variable analysis that explains the relationship/influence of a variable on social capital. The analysis used is crosstabulation analysis. Cross tabulation is a method used to see the effect of a variable such as the effect of social capital on respondent characteristics, such as age, formal education, income, and length of stay quantitatively [18]. This technique is closely related

**Table 3.** Elements of community belief in Labuhan Ratu VII Village.

Sub element	Labuhan Ratu VII		
	Score	Value	Category
Fellow villagers	3.12	93.60	High
Community leaders	2.95	88.50	High
Government	3.10	93.00	High
Head of BTNWK & staff	3.27	98.00	High
Outside parties	1.84	55.30	Low
<b>Average</b>	<b>2.86</b>	<b>85.69</b>	<b>Medium</b>



**Figure 2.** Trust Level of Community in Labuhan Ratu VII.

to the chi-squared which is used to test the comparative hypothesis of k independent samples. Variables are said to have a relationship/influence if the calculated chi-square value > chi-square table or the probability value is < 0.05 [19].

$$x^2 = \sum_{i=1}^b \sum_{j=1}^k \frac{(n_{ij} - E n_{ij})^2}{E(n_{ij})} \tag{3}$$

### 3. RESULTS AND DISCUSSIONS

Social capital has been believed to have a great influence on the community in preserving forests. Social capital is a variety of things that are closely related to cooperation in a community or nation in realizing the ability to live better. Social capital is also closely related to patterns of cooperation that provide benefits to the community to improve the quality of life and build positive perceptions and support in the use and management of natural resources [9]. Social capital has an important role in an activity, one of which is recovery, especially through elements of trust, values and norms, as well as social networks to encourage participation by

society, government, non-governmental organizations, and business actors in an effort to create socio-economic conditions like before damage to the ecosystem occurred [20]. The elements of social capital are networks, values and norms, and trust. The results of the analysis of each element forming social capital in this study are as follows.

#### 3.1. Trust as an Element of Social Capital in Supporting Ecosystem Recovery

In rural areas, trust is the main element of social capital. Trust is also seen as a necessary condition (necessary condition) for the formation and development of social capital strong or weak of something public [21]. Without trusting relationships between community members, other social capital characteristics, such as cooperation and networks, will not be well established [22]. The formation of functional and trusting relationships among community members in the socio-cultural, economic and governance fields will provide strength for the cooperation and networks built in

the community. According to Hidayat *et al.*, the relationships between community members in neighbourhood groups, dukuh-level associations, and village-level organizations, and the growth of social network systems outside the village boundaries have led to the development of mutual trust [9]. The same thing is also obtained based on the results of research by Wulandari *et al.* [10] and Kurniasari *et al.* [11]. The existence of trust between the community and TNBBS managers makes the community more compliant with policies that regulate forest management in partnership with the community. Furthermore, the elements of trust in Labuhan Ratu VII Village are presented in Table 3.

Overall, the level of trust in Labuhan Ratu VII Village is moderate with a score of 2.86 (Table 3). Analysis of the five sub-elements of trust found that the village has a strong level of trust in fellow villagers, community leaders (religious/customary leaders), the village head and staff, the government, and the head of the WKNP and staff, while community trust in outsiders is in the low category. The high level of community trust in residents in one village is due to similarities in terms of lineage, religion and ethnicity [9]. It is known that most community members are Muslim and of Javanese ethnicity. This result is in line with statements and findings stating that individual trust, one of which grows and is built on the basis of similarity of lineage and similarity of identity values and interests or needs among individuals, which in turn will develop trust between individuals to build social trust [21]. Furthermore, the trust element of the Labuhan Ratu VII Village community is presented in the following Figure 2.

The people of Labuhan Ratu VII Village have high trust in community leaders because community leaders are considered as individuals who are able to be honest, nurturing, consistent in holding the values of truth and justice, and have more knowledge and experience in religious knowledge and customs [9]. The government, which also plays an important role in society, has a relationship with community social capital. Based on the research results, the people of Labuhan Ratu VII Village have high trust in the government. The community believes that the government is willing and able to organize programs and provide advice to improve

village welfare and development.

The community's trust in the WKNP Office, both the Head of the Office and its employees, can determine the success of various programs and policies implemented. Labuhan Ratu VII Village is a buffer village of WKNP, therefore the attitude and support of the community is very influential on the success of conservation area management, such as national parks [22]. High trust in the head of the center and staff because they are considered to have good performance. This trust arises because WKNP always strives to preserve the forest while paying attention to the welfare of the community around the buffer zone through various empowerment programs. This is in line with the WKNP slogan, "Sustainable Forest, Prosperous Community". Regarding ecosystem recovery, the people of Labuhan Ratu VII Village also believe that this step is the right effort to restore degraded forests. In contrast to the other sub-elements, the low level of trust in outsiders such as other villagers, NGOs, companies and NGOs is due to the high level of caution of the community towards people or parties outside their village that they do not know. Whereas according to Mutandwa *et al.* [19], the presence of institutions such as NGOs and NGOs can help villagers to increase their knowledge related to conservation, especially ecosystem recovery [23].

### 3.2. Social Networks as an Element of Social Capital in Support of Ecosystem Recovery

Social networks are one of the facilities to form trust and strengthen cooperation in a particular community or group through forms of communication or community interaction [24]. Social networks are an element that helps strengthen social capital, making it easier to channel information and ideas from outside for group development [25]. The level of social networks in this study can be known through the community's activeness and participation in a community/organization that focuses on ecosystem recovery, as well as the ease of access to information obtained through the community/organization. The existence of good social networks with the parties also gives the community a better marketing chain for non-timber forest products from TNBBS [10][11]. The social network level of the Labuhan Ratu VII Village community is more clearly presented in

**Table 4.**

The social network level presented in Table 4 shows that the social network of Labuhan Ratu VII Village falls into the medium category with a score of 2.0. This occurs because most individuals are not members of organizations that focus on ecosystem recovery. People often create or engage in social relationships based on their personal interests. This form of social network is ego-centric and has a limited scope/scale [26]. The resulting social network model emphasizes kinship, is limited to local communities, and has very strong relationships. This occurs as a result of the strong level of cooperation between fellow residents and groups within one community (within one village) compared to the level of cooperation outside the community due to the community's trust in community members within one village whom they have known for a long time, have similar ethnicity, social experience, religion, region, and family ties [27]. Furthermore, the social network elements of the Labuhan Ratu VII Village community are presented in Figure 3.

According to the findings of Bobowik et al., social networks that are built based on common

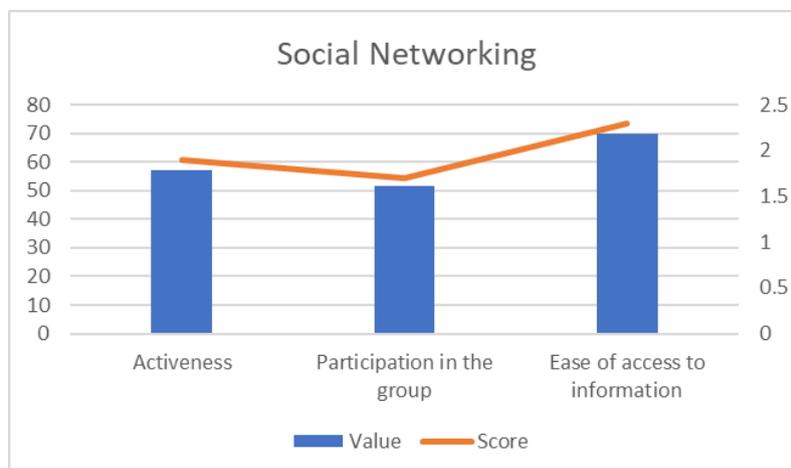
descent, social experience, and common views and beliefs tend to be highly cohesive but have a limited variety of networks and beliefs [28]. In contrast, groups that form networks based on the same direction and goals and are organized using existing organizational patterns will have a wider network. The community of Labuhan Ratu Village is not part of an organization that focuses on ecosystem recovery, so the level of community participation in the group tends to be low, so that the various information obtained is more general in nature, such as information related to forest fires. People who actively participate in social networks, both in their daily lives, can certainly obtain information more quickly and effectively [29].

*3.3. Norms as an Element of Social Capital in Supporting Ecosystem Recovery*

Norms are rules or standards of behavior that are expected or considered reasonable in a society or group. Norms can be formal, as set by formal institutions such as law, or informal, formed from habits, values, and manners [30]. Society has norms to regulate interactions between individuals. These norms are often applied to maintain social and

**Table 4.** Elements of community social networks in Labuhan Ratu VII Village.

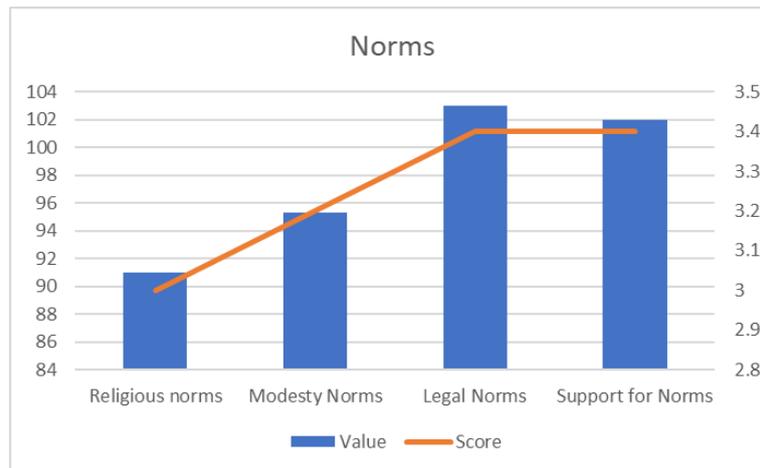
Sub element	Labuhan Ratu VII		
	Score	Value	Category
Activeness	1.9	57.3	Low
Participation in the group	1.7	51.5	Low
Ease of access to information	2.3	70.0	Medium
<b>Average</b>	<b>2.0</b>	<b>59.6</b>	<b>Medium</b>



**Figure 3.** Social Network Level of Community of Labuhan Ratu VII.

**Table 5.** Elements of community norms in Labuhan Ratu VII Village.

Sub element	Labuhan Ratu VII		
	Score	Value	Category
Religious norms	3.0	91.0	High
Modesty norms	3.2	95.3	High
Legal norms	3.4	103.0	High
Support for norms	3.4	102.0	High
<b>Average</b>	<b>3.3</b>	<b>97.8</b>	<b>High</b>

**Figure 4.** Community Norms Level in Labuhan Ratu VII.

moral values in a community environment [31]. The existence of good norms between communities and TNBBS managers and other parties has been shown to strengthen the achievement of conservation goals [10][11]. Norms in this study consist of religious norms, politeness norms, decency norms, and legal norms. Overall, the level of norms as an element of social capital has a high category. The level of norms in this study is presented in Table 5.

Based on the results presented in Table 5, the norm level of Labuhan Ratu VII Village is in the high category with a score of 3.3. All four sub-elements in the norm element fall into the high category. As religious people, the community believes that everything that is positive and beneficial can bring rewards. In relation to ecosystem recovery, people also believe that planting trees is an action that is seen as a positive practice that will bring blessings or rewards from a religious perspective [32]. In addition, people also believe that when in the forest we must maintain good manners, both in behavior and speech. This happens because some people think that in the forest there are certain places that are considered

sacred. Respecting locations that are considered sacred in the forest, the community indirectly contributes to forest conservation and sustainability efforts because it creates harmony between cultural diversity and environmental conservation [33]. Not only obeying and respecting the norms that apply in social life, the people of Labuhan Ratu VII Village also comply with applicable regulations and policies, such as not entering the forest illegally. However, as a community that lives side by side with the forest, the community hopes to get tolerance when carrying out activities in the forest, such as finding food for livestock during the dry season. Furthermore, the elements of community norms in Labuhan Ratu VII Village are presented in the following Figure 4.

### 3.4. Community Social Capital in Support of Ecosystem Recovery

Efforts Social capital is the ability of people to establish relationships and build strength that is very important not only for the economic life of the community but also for other social lives [34]. Social capital that has been formed for a long time

and has an impact on the community can be considered by the government in development [35]. The social capital approach can be used to understand community motivation in the development of a program, especially ecosystem recovery. Thus, social capital is a social investment that includes social resources such as trust, networks, values and norms as well as the power that moves the structure of social relations to achieve individual or group goals effectively and efficiently with other capitals [36]. Social capital is believed to be one of the main components in mobilizing togetherness, mobility of ideas, mutual trust and mutual benefit to achieve common progress. Social capital consists of three components/elements, namely norms, social networks and trust. The level of community social capital in Labuhan Ratu VII Village is further presented in Table 6.

Based on the scores of all elements of social capital analyzed in this study, the social capital score is obtained as in Table 6, it is said that the social capital is high, meaning that community members around the area are very easy to develop in supporting ecosystem recovery. If the social

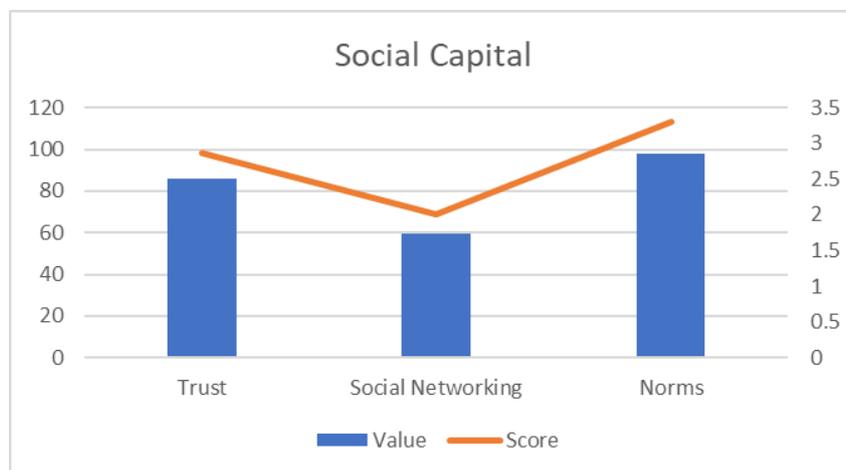
capital is moderate, it means that it is easy to develop and if the level of social capital is low, it is difficult to develop [6].

Based on the results obtained, community social capital in Labuhan Ratu VII Village is included in the medium category with a score of 2.70. This means that the community of Labuhan Ratu VII Village is easy to develop, especially in efforts to support ecosystem recovery, but still needs the help of other parties to facilitate. The elements of trust and social networks fall into the medium category, while the element of norms falls into the high category. High levels of community social capital will open up the possibility of solving complex problems more easily and easily in realizing common interests in ecosystem recovery efforts [37]. Through mutual trust, tolerance and cooperation they can build networks within their community groups and with other community groups. Furthermore, the social capital of the community in Labuhan Ratu VII Village is presented in the following Figure 5.

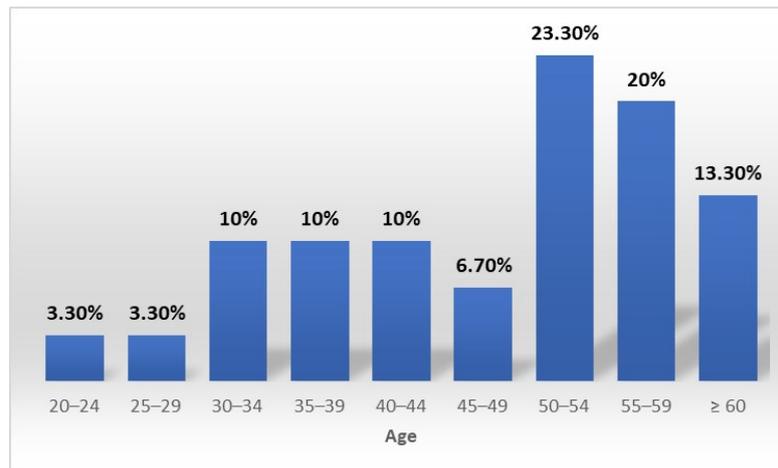
3.5. Analysis of The Influence of Respondent Characteristics on Community Social Capital

**Table 6.** Community social capital in Labuhan Ratu VII Village.

Sub element	Labuhan Ratu VII		
	Score	Value	Category
Trust	2.86	85.69	Medium
Social Network	2.00	59.60	Medium
Norms	3.30	97.80	High
<b>Average</b>	<b>2.70</b>	<b>81.04</b>	<b>Medium</b>



**Figure 5.** Social Capital Level of Community in Labuhan Ratu VII.



**Figure 6.** Age of respondents.

**Table 7.** The effect of age on the social capital of the Labuhan Ratu VII Village community.

		Social capital			Total	P value
		Low	Medium	High		
Age	20-24	Count	0	1	0	1
		% of Total	0.0%	3.3%	0.0%	3.3%
	25-29	Count	0	0	1	1
		% of Total	0.0%	0.0%	3.3%	3.3%
	30-34	Count	0	2	1	3
		% of Total	0.0%	6.7%	3.3%	10.0%
	35-39	Count	0	1	2	3
		% of Total	0.0%	3.3%	6.7%	10.0%
	40-44	Count	0	2	1	3
		% of Total	0.0%	6.7%	3.3%	10.0%
	45-49	Count	0	2	0	2
		% of Total	0.0%	6.7%	0.0%	6.7%
	50-54	Count	2	5	0	7
		% of Total	6.7%	16.7%	0.0%	23.3%
	55-59	Count	1	4	1	6
		% of Total	3.3%	13.3%	3.3%	20.0%
	≥ 60	Count	1	2	1	4
		% of Total	3.3%	6.7%	3.3%	13.3%
Total	Count	4	19	7	30	
	% of Total	13.3%	63.3%	23.3%	100.0%	

#### *Respondent Characteristics: Age*

Age is an individual characteristic factor in the form of biological conditions that take place during life and increase in line with the course of life [33]. Based on the results of the research, the age of the Labuhan Ratu VII Village community ranges from 20-61 years. The age of respondents according to

age groups (Figure 6), namely the highest age group category was 4 people (13.3%) in the age group ≥ 60 years, followed by 55-59 years old as many as 6 people (20%), 50-54 years old as many as 7 people (23.3%), 45-49 years old as many as 2 people (6.7%), 40-44 years old as many as 3 people (10%),

35–39 years old as many as 3 people (10%), 30–34 years old as many as 3 people (10%), 25–29 and 20–24 years old each 1 person (1.14%).

Referring to this data, which is associated with the level of population productivity based on age categories, the age of respondents in Labuhan Ratu VII Village is in the productive age category. The large number of people of productive age means that this guarantees the availability of human resources that will support and participate in development activities in particular. Because the condition of productive age is very influential on individual motivation to play an active role in an activity or activity. In addition, people who are classified as productive age are more receptive to new ideas or inputs that are beneficial to themselves and tend to think faster in making decisions about the objects observed [38].

In relation to the social capital of the Labuhan Ratu VII Village community, especially in supporting ecosystem recovery efforts, a test was conducted to determine whether there was an influence of respondent characteristics in the form of age on the social capital of the Labuhan Ratu VII Village community. Furthermore, the test results are presented in the following Table 7.

The test results between respondent characteristics in the form of age and social capital show that 19 people have social capital in the medium category (63.3%). Based on the results presented in Table 8, it is known that age does not significantly affect social capital. This can be seen from the P-value > 0.05 or 0.676 > 0.05. This means that old and young age do not affect community social capital, especially in supporting ecosystem recovery. The quality of social

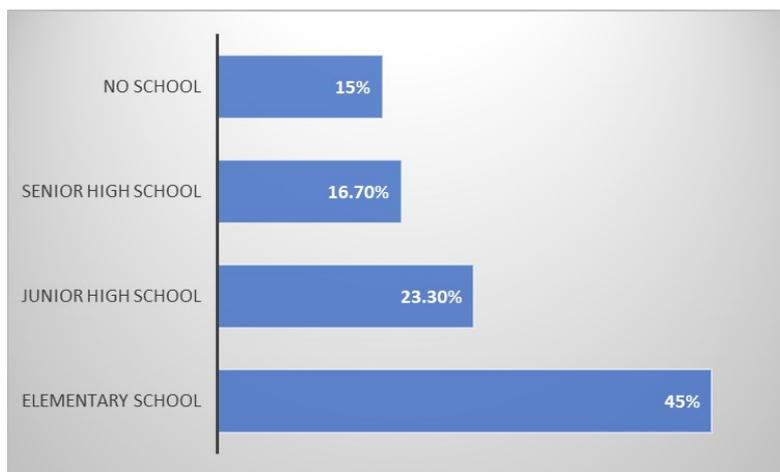
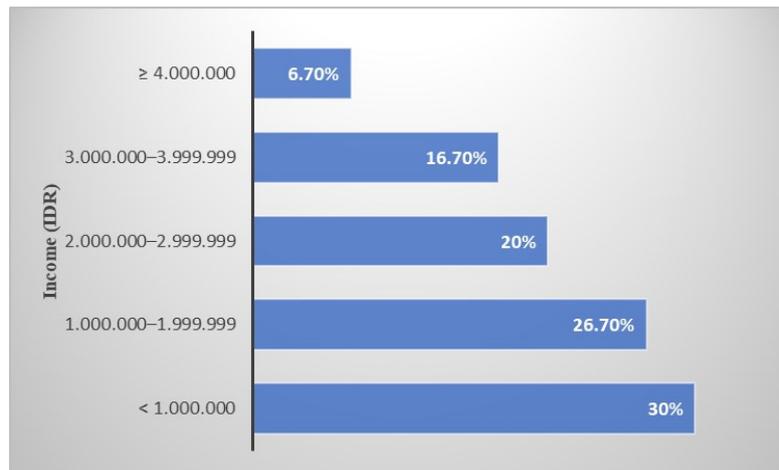


Figure 7. Social Capital Level of Community in Labuhan Ratu VII.

Table 8. The effect of education on the social capital.

		Social Capital			Total	P Value
		Low	Medium	High		
No school	Count	4	2	1	7	0.01
	% of Total	13.3%	6.7%	3.3%	23.3%	
Elementary school	Count	0	7	1	8	
	% of Total	0.0%	23.3%	3.3%	26.7%	
Junior high school	Count	0	5	2	7	
	% of Total	0.0%	16.7%	6.7%	23.3%	
Senior high school	Count	0	5	3	8	
	% of Total	0.0%	16.7%	10.0%	26.7%	
Total	Count	4	19	7	30	
	% of Total	13.3%	63.3%	23.3%	100.0%	



**Figure 8.** Labuhan Ratu VII Village community income.

**Table 9.** The effect of income on the social capital.

		Social Capital			Total	P Value
		Low	Medium	High		
Income (IDR)	< 1,000,000	Count	4	4	1	0.109
		% of Total	13.3%	13.3%	3.3%	
	1,000,000–1,999,999	Count	0	5	3	
		% of Total	0.0%	16.7%	10.0%	
	2,000,000–2,999,999	Count	0	5	1	
		% of Total	0.0%	16.7%	3.3%	
	3,000,000–3,999,999	Count	0	3	2	
		% of Total	0.0%	10.0%	6.7%	
	≥4,000,000	Count	0	2	0	
		% of Total	0.0%	6.7%	0.0%	
	Total	Count	4	19	7	
		% of Total	13.3%	63.3%	23.3%	

interactions, the ability to communicate, involvement in communities/groups, and the diversity of social networks are more significant factors in shaping social capital. With the development of technology and social media, cross-generational interactions are also increasingly possible, showing that social capital is not always related to age [39].

### 3.6. Respondent Characteristics: Education

The characteristics of respondents based on the level of education are divided into five categories including no school, elementary school, junior high school, senior high school, and diploma/degree. The existing level of education of respondents aims to determine the quality of human resources owned by

respondents, the higher the level of education owned, the higher the quality of existing resources [40]. Furthermore, the last formal education level of respondents in this study is presented in the following Figure 7.

Based on the data presented in Figure 7, it is known that there is no significant difference in numbers between education levels. There were 8 people (26.7%) with primary school education, 8 people (26.7%) with junior high school education, 7 people (23.0%) with senior high school education, and 7 people (23.0%) with no school education. Based on the information obtained, one of the problems in Labuhan Ratu VII Village is the lack of human resources with a high level of education. This can be seen from the large number of people

who do not attend school. The low quality of education in Labuhan Ratu VII Village is a result of the lack of funds and accessibility to education facilities. Education as one of the characteristics of respondents needs to be tested to determine whether or not there is an influence on community social capital. The test results are presented in the following Table 8.

Based on the results of tests conducted between the characteristics of respondents in the form of the latest education with social capital, it is known that most people with the latest level of education elementary school (23.3%), junior high school (16.7%), high school (16.7%) have a level of social capital in the medium category, while people who do not go to school mostly have social capital in the low category. The last education of the community is known to have an influence on social capital as evidenced by the P-value < 0.05 or 0.01 < 0.05. The same thing is also conveyed by Eriksson et al., that

individuals with high social capital have a high level of education as well [41]. Vice versa, a high level of education will lead individuals to have high social capital. This happens because the higher a person's education, the higher the way of thinking and acting for an activity because it will have implications for the level of community acceptance in receiving information, innovations and new technologies [38]. However, it is not impossible for people with low levels of education to improve their knowledge. Increasing community knowledge and skills outside of formal education is one of the effective strategies for strengthening social capital in a community. Success in the field will be more assured because based on the results of the analysis it is known that the level of community social capital can be increased. According to Wulandari et al., the training provided must also pay attention to the existing age groups, so that the efforts made are right on target [12]. The existence of training as

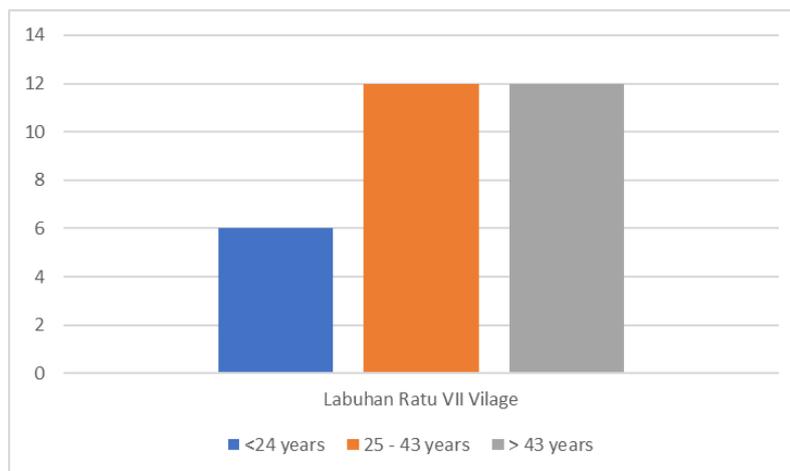


Figure 9. Graph of the length of stay of the people of Labuhan Ratu VII Village.

Table 10. The effect of length of stay on social capital.

		Social Capital			Total	P value	
		Low	Medium	High			
Length of stay	New	Count	0	5	1	6	0.035
		% of Total	0.0%	16.7%	3.3%	20.0%	
	Medium	Count	1	5	6	12	
		% of Total	3.3%	16.7%	20.0%	40.0%	
	Long	Count	3	9	0	12	
		% of Total	10.0%	30.0%	0.0%	40.0%	
Total	Count	4	19	7	30		
	% of Total	13.3%	63.3%	23.3%	100.0%		

information education to improve community SKA is mandated by government policy. This means that the Education variable is a respondent characteristic that must be carefully examined when a policy mandate conservation program will be implemented at the research location.

### 3.7. Respondent Characteristics: Income

Income is an indicator of community welfare. The higher the income, the higher the level of welfare [42]. In relation to social capital, income can be used as one of the determinants of the existence of social capital [43]. The income of the Labuhan Ratu VII Village community is presented in the following Figure 8.

Community income presented in Figure 8, shows that most people have an income  $\leq 1,000,000$  as many as 9 people (30.0%). Respondents with an income of IDR. 1,000,000–1,999,999 were 8 people (26.7%), the income of IDR. 2,000,000–2,999,999 were 6 people (20.0%), the income of IDR. 3,000,000–3,999,999 were 5 people (16.7%), and the income of more than IDR. 4,000,000 (6.7%). When compared to the East Lampung district drinking wage (UMK) of IDR. 2,716,497; 56.7% of the community has an income less than the UMK. The existence of different income and economic levels creates social classes in society so that people with high incomes are highly valued because it is a symbol of a person's stability [44]. In relation to social capital, the effect of income on social capital is presented in the following Table 9.

Based on the test results, it is known that community income does not significantly affect social capital. This can be seen from the P-value  $> 0.05$  or  $0.109 > 0.05$ . This can occur because the people of Labuhan Ratu VII Village are reluctant to mention their overall income because they consider it to be private. In addition, it is also because most people are not members of the ecosystem recovery program. Communities that are members of the ecosystem recovery program will get additional income from the program. This is in line with Wulandari and Inoue, that people who are members of a program, especially ecosystem recovery, will have a positive impact on their average annual income [45]. Likewise, for people who are not members of the program, their income is not affected.

### 3.8. Respondent Characteristic: Length of Stay

Length of residence is the number of years spent by a person living and settling in an area [46]. The length of stay of the community in Labuhan Ratu VII Village is categorized into three categories according to the data obtained in the field, namely the new category with a length of stay  $\leq 25$  years, the medium category with 25–43 years, and the old category with  $>43$  years (Figure 9).

Based on the distribution data of the characteristics of the respondents' length of stay at the research location, it shows that the largest percentage of length of stay is in the medium (25–43 years) and long ( $> 43$  years) categories. This shows that respondents have a long period of residence or are domiciled since birth in the area [38]. Based on information in the field, the people of Labuhan Ratu VII Village are immigrants from the Sundanese and Javanese tribes who have migrated and tried to find their fortune in the area for a long time. In relation to social capital, the effect of income on social capital is presented in the following Table 10.

Based on Table 10, it is known that length of stay has an influence on community social capital which can be seen from the P value  $< 0.05$  or  $0.035 < 0.05$ . This is in line with Wijaksono's research [47] which says that the longer a person lives and settles in an area, in general, it will have a positive influence so that awareness grows to maintain and manage the forest area. Nugroho et al., also stated that indigenous people who have lived and settled for a long time will create an attachment to the area they live in and to the utilization of surrounding resources [48]. The duration of stay in the research location and supported by education variables that also affect social capital, then training as a long period of informal education that is well planned and targeted and implemented over a long period of time will certainly support the achievement of increasing community social capital in preserving WKNP. Long-term training schemes that are implemented in accordance with policy mandates will certainly have more guaranteed sustainability. In the Permen LHK policy No. 3 of 2023 article 37 mandates training for community capacity building.

## 4. CONCLUSIONS

Based on the results obtained, it can be concluded that the trust element and social network element fall into the medium category, while the norm element falls into the high category. The average social capital score of the Labuhan Ratu VII Village community is 81.04, which is included in the medium social capital category. Social capital in the moderate category means that the community can be developed but assistance or efforts are needed to strengthen social capital. Four respondent characteristics consisting of age, education, income, and length of stay showed different results. Education and length of stay are characteristics that have an influence on social capital with P-values of 0.01 and 0.035 respectively, while other characteristics such as age and income have no significant effect on social capital with P-values of 0.676 and 0.109 respectively. Thus, education and length of stay should be optimized to increase community social capital.

## AUTHOR INFORMATION

### Corresponding Author

**Christine Wulandari** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia); Graduate Program of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0000-0003-2667-4911](https://orcid.org/0000-0003-2667-4911)

Email: [christine.wulandari@fp.unila.ac.id](mailto:christine.wulandari@fp.unila.ac.id)

### Authors

**Lutfi Nur Latifah** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0009-0008-6631-7082](https://orcid.org/0009-0008-6631-7082)

**Hari Kaskoyo** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0000-0001-7572-1492](https://orcid.org/0000-0001-7572-1492)

**Yulia Rahma Fitriana** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0000-0001-8449-9854](https://orcid.org/0000-0001-8449-9854)

**Zeda Erdian** — Department of Forestry, University of Lampung, Bandar Lampung-35141

(Indonesia);

[orcid.org/0009-0005-1295-5626](https://orcid.org/0009-0005-1295-5626)

**Vinanda Arum Tri Kurniawan** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0009-0009-8165-130X](https://orcid.org/0009-0009-8165-130X)

**Aryanti Rizki Adinda** — Department of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0009-0006-9809-8617](https://orcid.org/0009-0006-9809-8617)

**Fadela Yunika Sari** — Graduate Program of Forestry, University of Lampung, Bandar Lampung-35141 (Indonesia);

[orcid.org/0009-0003-4994-3341](https://orcid.org/0009-0003-4994-3341)

**Mhd Zaidi** — Way Kambas National Park, Labuhan Ratu-34375 (Indonesia);

[orcid.org/0009-0000-8922-7639](https://orcid.org/0009-0000-8922-7639)

## Author Contributions

Conceptualization, C. W. and L. N. L.; Methodology, C. W., H. K., and Y. R. F. M.; Software, Z. E.; Validation, C. W., and L. N. L.; Formal Analysis, L. N. L.; Investigation, L. N. L.; Resources, Z. E., and A. R. A.; Data Curation, V. A. T. K.; Writing – Original Draft Preparation, L. N. L. and C. W.; Writing – Review & Editing, F. Y. S., and L. N. L.; Visualization, Z. E.; Supervision, C. W. and H. K.; Project Administration, V. A. T. K. and A. R. A.; Funding Acquisition, C. W., H. K., and Y. R. F.

## Conflicts of Interest

The authors declare no conflict of interest.

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