# COMMUNITY- BASED ENVIROMENTAL EDUCATION IN COASTAL REGIONS AND ITS ROLE IN THE CONSERVATION OF FISHERIES RESOURCES IN INDONESIA

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*Abstract*

*The southern coastal areas of West Java in Indonesia has the potential of fishery and the conservation of fisheries resources. Most of the people living in coastal areas having livelihood as fishermen. Hence fishermen have an important role as actors in environmental conservation protection, e.g. by managing the zoning system for the sustainability of fisheries resources. This research aims to analyze factors that influence the level of community-based environmental education in coastal areas and their role in conservation of fisheries resources. The method used in this research is a case study using primary and secondary data. The number of respondents used in this research were 30 respondents with purposive sampling technique of taking respondents. The analysis tool used in this research is r*rank spearman. *Based on the results of the research we found factors that influence the level of community-based environmental education in coastal areas, namely attitude, awareness, and action. The strength of attitude ($X_1$) variable was found to be $r\_s = 0.556$ which indicates that attitude has a moderate relationship to environmental education conservation fisheries resources is turtles (Y). Meanwhile the strength of awareness ($X_2$) variable was found to be 0.639 which indicates that awarness has a strong relationship. Finally the strength of action ($X_3$) was found to be 0.509 which indicates that action has a moderate relationship. As a general conclusion of this research we believe that turtle conservation education has a better chance of success, if it can be done by all stakeholders by simulataneously involve together in comunity-based environmental education program.*

*Keywords: Education, Coastal areas, Environment, Conservation, Fisheries resources*

## Introduction

Sustainable development goals is to focus on the environment, one of which concerns environmental education. The role of environmental education in promoting conservation, is one way to improve the understanding and role of local communities in the biodiversity environment. Sustainable development means meeting the needs of the present generation without compromising the needs of the future. One of the fisheries resources is sea turtles, which in the FAO Code of Conduct For Responsible Fisheries attention to aquatic ecosystems in a sustainable manner. Some sea turtle stocks are very much affected by fishing and require treatment through conservation.

The concept of Environmental Education (EE) was first formalized by the International Union for Conservation of Nature (IUCN), in 1970 [1]. As a process of developing skills and

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attitudes towards the environment that are interrelated between humans, socio-cultural, economic and environmental based on bio-ecoregion conditions [2]. Environmental education requires field practice in decision making and formulating codes of behavior on issues concerning environmental quality. Environmental education requires field practice in decision making and formulating codes of behavior on issues concerning environmental quality [3]. The aim of environmental education is to improve public awareness about the environment through formal and non formal education processes. Environmental education for sustainable development (EESD) has broader implications not only for environmental education but also for development, poverty, population and gender [4].

Environmental education encourages the activities of individuals and local communities emphasizing local ideas in the context of learning through counseling aimed at supporting the environment [5]. Environmental education through conservation is a process that creates awareness and understanding of the relationship between humans and the environment, that is humans with nature, culture and technology. Environmental education is concerned with knowledge, values, attitudes, application and has a purpose as a responsible environmental behavior [6]. The process of environmental education through the stages of awareness, knowledge, attitudes, interests and participation skills in conservation activities.

Conservation is the management of living natural resources, including the use of them which is carried out wisely to ensure the continuity of it's supplies while maintaining and improving the quality of biodiversity. Conservation is carried out through the protection of life support systems, preservation of diversity of plant and animal species and their ecosystems, and through sustainable use. One of the conservation sea turtle areas is in West Java, Indonesia. Sea turtles are scattered in about 140 nesting sites in all territorial waters of Indonesia [7]. One of which in province of West Java, namely Pangumbangan Sukabumi District, Cipatujah Tasikmalaya District and Pangandaran District, with green turtle species (*Chelonia mydas*). At the international level, all types of sea turtles were included in the *Convention on International Trade in Endangered Species of Wild Flora and Fauna* (CITES) Appendix 1 list in 1978, which means that international trade in sea turtles has been banned [1].

The ever-decreasing number of green turtle populations is caused by various factors, including destruction of natural habitats, sea pollution, predator attacks, and hunting for meat or eggs for commercial purposes [7]. This will affect the sustainability and presence of green turtles. Green turtle *(Chelonia mydas)* is a species of long-lived organism that can live with a long life but has a slow reproductive period so that the generation rate is not proportional to the threat of extinction [8].

Indigenous peoples in Indonesia especially in Bali use turtles for religious customary events, and some also consumen turtle meat and eggs on the grounds for health. Some people use turtles for souvenirs [7, 9]. This has been banned by CITES (Convention on International Trade in Endangered Species). Conservation carried out is the conservation of sea turtles. Turtles have been on this earth for millions of years, but their future is now threatened. All turtle species are threatened with extinction due to damage or death at sea due to ship attacks and sea turtle capture and death due to ingestion of waste, pollutants. (IUCN 1996) [1]

Sea turtle species provide a non-consumptive service through educational ecotourism around the world [10]. Their survival depends on a shared commitment by the community, government and other key partners to reduce the threats they face. Sea turtle conservation is a very important effort to ensure the sustainability of the turtle population [11]. The challenge is to learn about the value of turtles on culture, heritage and tradition in each region, especially in Indonesia, about their role in the environment, economy and how we can ensure that turtles are valued by future generations.

Scarcity of certain resouce happens continuously with tendencies the longer the more difficult to find that resource, which eventually may lead to extinction. Sea turtles, as one of the endangered animals, need immediate conservation efforts. For this reason education is absolutely necessary about the principles of conservation of turtle populations. Environmental education and how it is within a broader educational framework, as an educational model of

social change [12]. Social research carried out in the field of conservation, for example, socio-economic analysis of local communities as a buffer zone that recommends the implementation of environmental education campaigns [13]. The socio-structural context includes such diverse variables as household consumption patterns, local and international market prices.

Community based enviromental stakeholders including fishermen, research institutions, management authorities and other stakeholders who deal with conservation and fisheries management must collaborate with relevant conservation and management, at national, sub-regional and regional levels. Natural resource issues often revolve around the negotiation of conflicts between multiple stakeholders at multiple levels [8, 9, 14]. Conservation activities are a joint responsibility between the government and the community, so that fishermen as parties who deal directly with the sea must be involved intensely because fishermen are the spearhead of the successful implementation of conservation strategies. Green turtle is one of the common types of turtles and is more numerous than some other turtles. Although there are more numbers than other types of sea turtles, the green turtle population is decreasing [15]. This research aims to analyze factors that influence the level of community-based environmental education in coastal areas and their role in conservation of fisheries resources.

## Methods

This research was conducted in February 2019 until August 2019. Research location at Pangumbangan Sukabumi District, Cipatujah Tasikmalaya District and Pangandaran Distric, West Java Province Indonesia. The research method used is the case study method. The study method is done by focussing on a certain case intensively and detail [16].

This research used primary data and secondary data. Primary data is data obtained in the field through observation, questionnaires and interviews, while secondary data is obtained from the results of studies and time series data from the turtle conservation center at Pangumbahan Sukabumi district, Cipatujah Tasikmalaya district and Pangandaran district. The selection of respondents is done by the method of purposive sampling, which is the method by which the researcher determines the respondents chosen themselves because there are certain considerations [16].

Data were analyzed by descriptive qualitative and quantitative. Descriptive is a method used to describe or analyze a research result. The data analyzed used reliability and validity of Instruments. The questionnaire in this research used a Likert scale, Likert scale is used to measure the relationship between two variables, noted with 5 (Strongly Disagree), 4 (Disagree), 3 (Neutral), 2 (Agree), 1 (Strongly Agree), namely the independent variable and the dependent variable that expresses attitudes, opinions or views, and the like of the subject under study in providing an assessment or response to a problem [17].

Likert scale is a scale used to measure the attitudes, opinions, and perceptions of a person or a certain group about social phenomena [17]. Validity test is a data that can be trusted in accordance with reality. Valid means that the instrument can be used to measure what should be measured. Validity indicates the degree of accuracy of the data actually happened on the object with the data collected by researchers. Test criteria if the correlation between items with a total score of more than 0.35 then the instrument is declared valid, or otherwise if the correlation between items with a total score of less than 0.35 then the instrument is declared invalid. And if $r_{value} > r_{table}$ with $\alpha = 0.05$ then the correlation coefficient is significant.

Reliability test is used to find out whether the data collection tool shows the level of accuracy, level of accuracy, stability or consistency in expressing certain symptoms [17]. Reliability test using *Cronbach's Alpha formula*:

$$r_{11=} \frac{k}{(k-1)}\left[1 - \frac{\sum \sigma_b{}^2}{\sigma_1{}^2}\right],$$

(1)

where: R11 -reliability Instrument, k -number of Questions; $\sum \sigma_b{}^2$ -number of item variance

The reliability test decision criteria are as follows:

$if\ r_{11}$> 0.60, the instrument is reliable.

if $r_{11}$< 0.60, the instrument is not reliable

The non parametric statistical data analysis method in this research is the Rank Spearman correlation method. Spearman Rank correlation is used to determine the relationship or influence between two ordinal scale variables, namely the independent variable and the dependent variable. Rank Spearman's formula:

$$\rho = 1 - \frac{6\sum b_i^2}{n(n^2-1)},$$ (2)

where: $\rho$= Rank Spearman Correlation Coefficient; $b_i$= Variable Data Rangking; $n$= Number of Respondent

After going through the calculation of Rank Spearman correlation analysis equation, then testing using defined criteria, by comparing the value of ρ is calculated by ρ tables were formulated as follows:

If , ρ hitung ≤ 0, means $H_0\ accepted$ and $H_a\ rejected$.

If , ρ hitung ≥ 0, means $H_0\ rejected$ and $H_a accepted$.

Questionnaire used for respondents assessments is presentend in Table 1.

Table 1. Structure of the Questionnaire used for respondents assessments

| Variable | Definition |
|---|---|
| Attitudes ($X_1$) | Pre-disposition or tendency to respond positively or negatively to the activities of conserving green turtle fisheries |
| Awareness ($X_2$) | Growth and development of awareness, understanding and awareness of bio-ecoregion and its problems, including human interactions and effects. |
| Action ($X_3$) | Take action and responsibility for conservation activities by integrating culture as well social economic values in decision making and does not damage the environment |
| Environmental Education Conservation Fisheries Resources is Green Turtles (Y) | A process of recognizing values and classifying concepts to develop the attitudes needed to understand and appreciate the interrelationship between humans, culture and the environment of bio-ecoregion in conservation activities |

The results of the calculation of the coefficient can be interpreted based on the table below to see how strong the level of relationship held between variables. To provide an impression of the correlation coefficient, the authors use guidelines in Table 2 [17].

Table 2. Value Interpretation $r_s$

| $r_s$ | Interpretation |
|---|---|
| 0.00 – 0.199 | Very low |
| 0.20 – 0.399 | Low |
| 0.40 – 0.599 | Moderate |
| 0.60 – 0.799 | Strong |
| 0.80 – 1.00 | Very Strong |

## Result and Disscusion

### *Research Location*

West Java province have a turtle conservation area that is Pangumbangan Sukabumi District, Cipatujah Tasikmalaya District and Pangandaran District. Period 2017 Pangumbahan Sea Turtle Conservation is managed by the Maritime and Fisheries Resources and Marine Resources and Inspection Center in the South Pangumbahan Region under the Office of Marine and Fisheries of West Java Province. Then, the period 2018 and onwards Pangumbahan Sea Turtle Conservation is managed by the Pangumbahan Coastal Sea Park Service Unit under the Southern Ocean and Fisheries Service Branch of the West Java Provincial Marine and Fisheries Service (Profile of the Pangumbahan Coastal Sea Turtle Park Service 2018) [18].

Sindangkerta Beach area is one of the green turtle distribution areas in Indonesia, so the Sindangkerta Wildlife Reserve was established specifically turtles. Sindangkerta beach, Tasikmalaya is a turtle nesting beach which is dominated by green turtles, the beach is a beach turtle conservation is in the southern island of Java. Sindangkerta Beach is located in Cipatujah Sub district, Tasikmalaya District, West Java Province. Sindangkerta Beach has a beach length of ±6,000 meters with a width between 12 - 150 meters, is one of the turtle nesting beaches in Cipatujah sub district. Most of the coastline still has forests that are overgrown with species of Pandanus tectorius and Barringtonia asiatica [19].

Turtle conservation in Pangandaran is carried out by a non-governmental organization through a community leader namely Didin Saefudin who has a commitment to the effort to conserve sea turtles, eventually he built a simple turtle egg breeding ground on the basis of self-help and self-financing. It all started when there were many leatherback turtles (Dermochelys sp) found in Pangandaran waters starting in 1963, along with the increasing public interest in sea turtles for commercial purposes, meat, eggs for consumption or just for decoration and home decoration. This condition moved local commutity to prevent over-exploitation of marine animals that are currently protected. Dissemination efforts to the local community are carried out through a persuasive approach, including an approach to the fishermen. The turtle conservation institution in Pangandaran is authorized through a notary named the Marine Biota Conservation Group in Pangandaran and its existence is recognized by the Indonesian Ministry of Environment [20].

In figure 1 shows that research location in south coast of west java province which is a turtle distribution area. The distribution of sea turtles in the world is concentrated in the tropics, but spread to the sub-tropics and temperate regions [21].
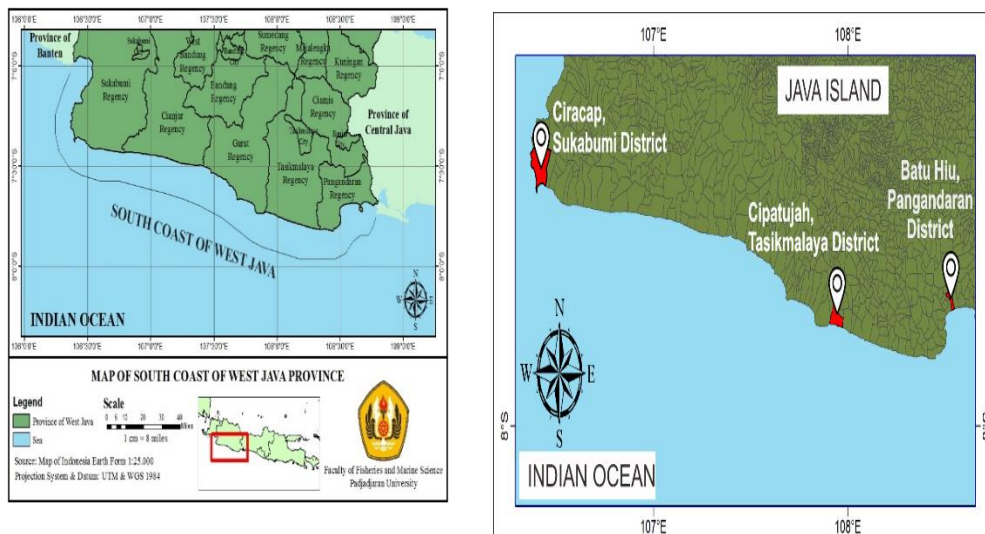


**Fig. 1.** Reserach Location in South Coast of West Java Province

The distribution of turtles in the southern parts of Java and Bali *Dermochelys coriacea, Chelonia mydas, Eretmochelys imbricata, Lepidochelys olivacae*. Pangumbahan beach is a place for spawning Chelonia mydas while Sindangkerta beach is a place for spawning *Chelonia mydas* and *Lepidochelys olivacea* but still dominated by *Chelonia mydas*.

### Classification and Morphology of Green Turtles (Chelonia mydas)

Green turtle (Fig. 2) is a type of turtle that is most often found and live in a tropical sea. It can be recognized from the shape of it's small head and blunt beak. It is named the green

turtle not because of its colored scales green, but the color of the fat found under the scales is green. The body can be gray, blackish or brownish. This type of turtle meat is the most widely consumed throughout the world, especially in Bali, Indonesia.

| Kingdom | : | Animalia |
| Phylum | : | Chordata |
| Class | : | Sauropsida |
| Ordo | : | Testudines |
| Sub order | : | Cryptodira |
| Super family | : | Chelonioidea |
| Family | : | Cheloniidae |



**Fig. 2.** Green Turtles

The turtle's body is wrapped in a shell or hard carapace that is flat and coated with horn. The morphological characteristic of sea turtles lies in the presence of infra marginal scales namely scales that connect between carapace, plastron and there is a motion tool in the form of a flipper. Turtles have a special skeleton and carapace (upper hood) formed from ribs that grow together and expand, in the ventral there is a plastron (lower hood). Turtles do not have teeth, but instead have horn-coated beaks that can tear food from animals and plants. Turtles breathe with lungs, the respiratory tract consists of larynx, trachea and bronchus which are two branches. The lungs are a pair of right and left parts that are blocked by the dorsal vertebrae.

To distinguish male and female sea turtles can be done by looking at the external body structures such as tails, nails, and carapace [21]. To distinguish male and female turtles can also be done by looking at the shape of the gonad. Male turtles have testicles that are brightly colored, denser and flatter than ovaries. Green turtles (Fig. 3) live in a shallow part of the sea, near the beach that has a lot of vegetation. Turtles dig nests and lay their eggs on a sandy beach. The sandy beach where turtles lay their eggs is an incubator and has an atmosphere suitable for the development of turtle embryos [22]. All turtle species have the same life cycle. In general, during it's life cycle, the habitat of a turtle is divided into nesting beaches, feeding and breeding habitats [21].

### Classification and Morphology of Oliver Ridley Turtle (Lepidochelys olivacea)

*Lepidochelys olivacea* has a high dome shaped carapace, consisting of 5 pairs of coastal scutes where each side consists of 6-9 parts, the edges of the carapace are soft. *Lepidochelys olivacea* is similar to a green turtle, but it's head is larger and the shape of the carapace is thinner and angular. *Lepidochelys olivacea* is a carnivorous turtle eating crabs, clams, shrimp and mussel shells [21].

| Kingdom | : | Animalia |
| Phylum | : | Chordata |
| Class | : | Reptilia |
| Ordo | : | Testudines |
| Family | : | Cheloniidae |
| Genus | : | Lepidochelys |
| Species | : | *Lepidochelys olivacea* |



**Fig. 3**. Green Turtles

### Validity and Reliability of Instruments

Based on this research, each question given to respondents after being tested for validity has a value> 0.35, meaning that each item has a value of validity. The question for responden are Attitudes $(X_1)$, Awareness $(X_2)$, Action $(X_3)$ and Environmental Education Conservation Fisheries Resources is Green Turtles (Y). The resulting reliability test using *Cronbach's Alpha* is more than 0.60 is means reliable. Reliability relates to the degree of consistency of the respondent in answering questions conducted at the interview using a questionnaire regarding conservation fisheries rasources is green turtles.

### Characteristic responden the level of community-based environmental education in coastal areas and their role in conservation of fisheries resources

This research uses primary and secondary data. Primary data of 30 respondents consisting of Researcher, Manager of the Turtle Conservation Center, Marine Biota Breeding Group, Fisherman, Department of Fisheries and Marine Resources of West Java Province, Tourist.

In figure 4 it is shown that characteristic responden based on education elementary school is 16%, junior high school 27 %, senior high school 40% and bachelor 17 %. Figure 5 shows that characteristic responden based on age : (1) 20 – 30 years old is 10%, (2) 31-40 years old is 33%, (3) 41 – 50 years old is 40%, (4) 51 – 60 years old is 10% and > 60 years old is 7%. A person's education level will influence attitudes and concerns for the environment, especially turtle conservation. It is important to realize that the educational process requires time to achieve the resulting action. Based on the results of research the education level will affect the handling of the environment, especially the ability to understand turtle conservation, based on the values of knowledge, attitudes and actions. In figure 5 can be seen characteristic responden based on age, a person's age will influence actions in making decisions about environmental conditions, such as the act of conserving sea turtles.
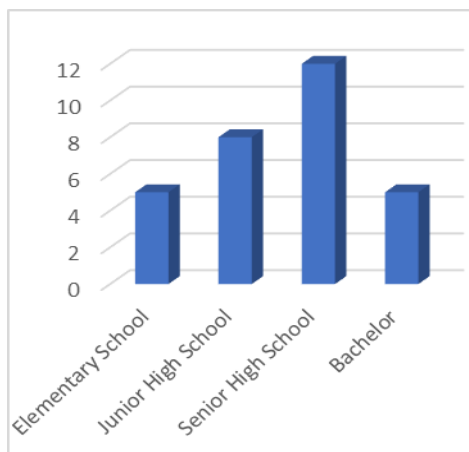


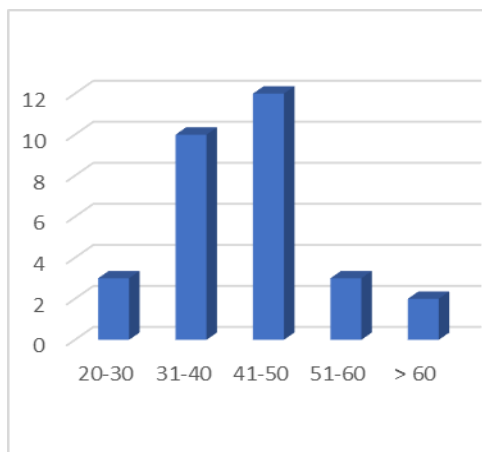**Fig. 4.** The Characteristic Responden Based On Education

**Fig. 5.** The Characteristic Responden Based On Age

During generation z, applying environmental education becomes important to achieve sustainable development, through environmental education materials. Based on the results of research based on age with the age range of millennial generation and generation z, the patterns of learning and education have changed and are more focused on real problems and problem solving with rapid reactions partially and simultaneously. Based on this research turtle conservation education has a better chance of success, provided there is a simultaneous action done by all stakeholders.

In figure 6 it is shown that characteristic of responden is researcher 6%, manager of the turtle conservation center is 7%, marine biota breeding group is 7%, fisherman is 10%, department of fisheries and marine resources of west java province is 3% and tourist is 67%. Tourists consist of students and not students, students include senior high school and university. Based on this research communication in conveying the learning process formally and informally is needed to increase understanding of sea turtle conservation.
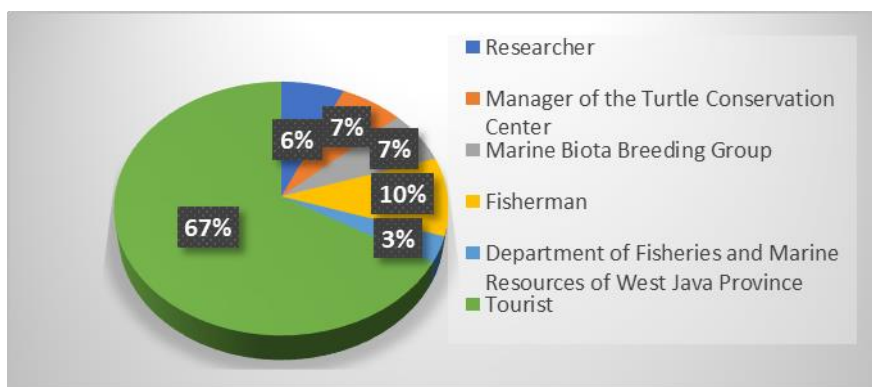


**Fig. 6.** Characteristic of Respondend

This environmental education is a collaboration of several stakeholders who have the same goal in preserving sea turtles i.e researchers, managers of the turtle conservation center, marine biota breeding group, fishermans, department of fisheries and marine resources, and tourist.

### The Role of Education in the Conservation of Fisheries Resources

Based on this result research environmental education is one of the most effective tools for increasing the general level of public environmental awareness, developing skills for solving environmental problems and maintaining and improving the quality of life and the environment. Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action. The important role of environmental education in promoting conservation ethics. The role of evironmental education conservation fisheries resources is turtles (Y) involving several variables: attitudes ($X_1$), awareness ($X_2$), Action ($X_3$).

Based on research results environmental awareness and environmental attitudes of each respondent, they have an attitude of environmental awareness towards the conservation of sea turtles. Local conservation groups can work with stakeholders to identify specific actions needed to meet the goals of turtle conservation. Environmental Education is one of the most effective tools to increase the level of environmental awareness, especially regarding turtle conservation. Environmental learning can increase stakeholders' critical ecological awareness about turtle conservation.

Based on research results, one form of environmental education is program through field trip activities. Field trips provide direct experience for participants with physical sites and resources in the community, specifically for sea turtle conservation. Responden was learning about the importance of sea turtles to our environment, culture and respect values, history, tradition and culture; understand and appreciate cultural differences heritage and economy and

should be take action, take responsibility for our actions, integrate cultural values into our decision-making processes.

In addition to field trips, field work can also be an important part of learning activities in turtle conservation. In table 3 can be seen the result of rank spearman analysis is correlation on the attitude $(X_1)$ variable = 0.556, this value indicates that attitude has a moderate relationship, awareness $(X_2)$ = 0.639, this value indicates that awarness has a strong relationship and action $(X_3)$ = 0.509, this value indicates that action has a moderate relationship to environmental education conservation fisheries resources is turtles $(Y)$.

**Table 3**. The results of rank spearman analysis

| No | Variable | $r_s$ | Category |
|----|----------|-------|----------|
| 1 | Attitudes $(X_1)$ | 0.556 | Moderate |
| 2 | Awareness $(X_2)$ | 0.639 | Strong |
| 3 | Action $(X_3)$ | 0.509 | Moderate |
| | Averange | 0,568 | Moderate |

Based on research results we found the importance of field trips and fieldwork to improve cognitive and affective abilities. The detail results are as follow. Variable attitude $(X_1)$ have value category moderate which means the attitude of the respondents towards turtle conservation has a high level of environmental interest. However, a high positive and significant correlation was found between environmental interests and environmental attitudes of each respondent. Variabel awareness $(X_2)$ have value category strong which means there is no significant difference in environmental awareness from each respondent. Environmental awareness through turtle conservation is carried out by all stakeholders based on their respective capacities. A visit to a turtle conservation area through field trips and field work will increase awareness and action in carrying out sea turtle conservation. Variabel action $(X_3)$ is a direct action that must be taken on turtle conservation and according to the results has a moderat value category

Based on the research results of the development of community-based turtle tourism education on the south coast of West Java are: (i) Instilling a sense of exception to the sustainability of sea turtles in the future; (ii) Development of turtle tourism education areas with local communities in planning, capital and yield sharing, so that local people will develop economically and socially to increase awareness of the conservation of turtle tourism education. Based on the results of the study, teachers as a buffer zone in educating their students through the environmental education curriculum. Visitors to turtle conservation provide insight into the conservation environment through education in various ways, from ecosystem studies to the development of conservation ethics. Based on the results of research that environmental education for the conservation of turtles is an ongoing behavior to maintain the balance of turtle habitat and the continuity of turtles in an ecosystem in the future.

In figure 7 it is shown that number of visitor in turtle conservation in Pangumbahan, Sukabumi district is fluctuating.

Environmental issues began to develop including in this case the travel awareness movement known as ecotourism. Tourists are starting to be aware of environmental issues so that they always link various themes of tourism activities, both from the supply and demand sides to the environment. Environmentally sound tourism and sustainable tourism. Ecotourism is a new form of travel that is responsible for the natural and adventurous environment that can create an industrial tourism area [21]. Ecotourism which is a visit to the

natural environment that is still relatively original and carried out responsibly aims to; (i) Enjoying and appreciating nature and all forms of culture that accompany it, (ii) Supporting efforts conservation, (iii) Has a low impact and (iv). The socioeconomic involvement of the local community is beneficial.
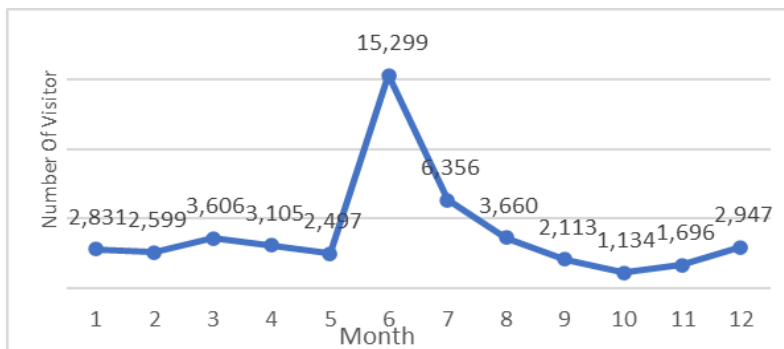


**Fig. 7.** Number of Visitor in Turtle Conservations

The purpose of conservation of natural resources that will be done is: are (i) Maintaining environmental quality by taking into account the aesthetics and ecotourism needs as well as the results and (ii) Maintaining the continuation and protection of living systems, preservation of turtle genetic resources. Based on the results of research in the field of education management based on turtle conservation are as follows: (i) Creating or designing spatial areas or areas that will become turtle-based attractions, based on bio-econegion conditions; (ii) Must have a management office and turtle information center; (iii) Location of semi-natural hatchery, hatchling and removal of hatchlings; (iv) Making theater facilities using natural materials and audio visuals about sea turtles, to educate turtle conservation for tourists; (v) Making promotional materials, such as leaflets, posters and booklets; The development of turtle-based tourism must keep in mind the conditions and comfort for turtles to lay eggs, given the nature of the turtle which is very sensitive to disturbance of light, sound, and habitat

The development of turtle conservation tourism education needs to involve stakeholders who play an important role, namely the education office, the tourism office, the marine and fisheries service, non-governmental organizations such as World Wildlife Fund (WWF) community monitoring groups, and village heads. Their role is to support the regulation and integration of conservation programs among other stakeholders by increasing stakeholder coordination, synchronizing regulations, applying sanctions and implementing the role of relevant stakeholders.

**Conclusion**

The conservation of sea turtle should be viewed as a collaboration amoung stakeholders by providing a good enviromental education. The survival of sea turtles is dependent on many sectors, i.e. communities, governments and the private sector in which they should work together to reduce the threats facing the sustainability of the turtle. Goverment should also promote the conservation sea turtle with enviromental education.

## Acknowledgments

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