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## RESEARCH ARTICLE

# IDENTIFICATION OF STAKEHOLDER IN THE MANAGEMENT OF GEOPARK CILETUH IN SUKABUMI, WEST JAVA INDONESIA

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## ABSTRACT

Geopark is an innovation of protection for geological, biological and cultural diversity. Protection implementation need strong and active participation from many stakeholders such as government, private, media, academically and, most importantly is local communities. Collaborative and cooperation between stakeholders need to begin from the early of planning, implementation, monitoring and evaluation. The pentahelix model, a five-party partnership can be applied as a model in the protection and maintenance of Geopark-Ciletuh, South-Sukabumi of West Java. The aim of the study is to identify stakeholders that are involved in the management of Geopark Ciletuh in Sukabumi. The study focuses on the interaction between the stakeholders identified in the management of the Ciletuh Geopark. The research is using descriptive method with qualitative approach and the data are collected from primary and secondary sources. The informants were purposively determined, based on consideration and goals connected with the focus of the research. The informants in the research is various parties connected with the effort of mapping the stakeholders in local community within the area of Ciletuh Geopark of Southern Sukabumi. The result show that the five-party partnership model (pentahelix) can be expanded and explored according to the needs of interested community groups on Geopark Ciletuh protection. Efforts to protect Geopark Ciletuh by involving various parties need to be implemented in harmony so it is expected also to generate the socio-economic conditions of local communities. Increasing local knowledge of the importance of Geopark Ciletuh protection can be implemented by increasing the income of the people as the number of tourists' increases.

## KEYWORDS

geopark, local community, stakeholder, participation, pentahelix model.

## 1. INTRODUCTION

According to the theory put forward the development of Geopark in Indonesia is an attempt of resistance to the environmental destruction, the transition of natural use, which was previously extractive-based to conservative one, as efforts to enrich the nation's intelligence through non-formal and informal education, to build the populist economy, as well as doing the mental revolution through discipline, live clean, and love the environment (Kusumahbrata, 2017). Similarly by the effort of Geopark Ciletuh that entered in UNESCO Global Geopark (UGG), not only to increase the popularity of Indonesia's natural beauty, but also closely related to those five reasons as well. UGG is a single unified geographic area where the geological site and its fascinating natural landscapes which is international standard, which are holistically managed for protection purposes, education, and also regional development in a sustainable way (UNESCO, 2015). The determination of a tourist site that become part of UGG is able to increase the number of foreign tourists with an average amount of 18% (Rosana, 2017). In turn, the increasing number of tourists will encourage the economic conditions, especially for the locals. Since its declaration as one of the Geopark in the world by the UNESCO Global Geopark in 2018, Ciletuh Geopark has attracted many visitors, both from domestic and abroad, where the abroad visitors reach more than 100.000 individual (detik.com, 2018). The government of Indonesia predicts that

in the future, the number of international visitors will be increasing benefiting both, the tourists and the local people.

Unavoidably Geopark will become one of the source of improving the welfare of society and the country. This is in line with the increasing number of tourists both foreign and domestic. The maintenance and protection of Geopark, which is also a natural tourist destination, will create new types of work for local communities. Driven and the creation of new types of work needs to be anticipated with efforts to improve their knowledge as well as their skills. Those new jobs, can be related to the tourism businesses such as accommodation services, transportations, tour guide services, and tour packages. Along with the development of Geopark will bring up the other businesses, such as shops or stalls, restaurants, travel shops, and also shops which sells local souvenirs. These are included as activities in geotourism as mentioned by some researchers which claimed that geotourism refers to the existing infrastructure and activities dedicated to public access and interpretation of the Earth heritage for the general public (Zouros and Valiakos, 2010).

There are three distinct traditions which we need to understand sustainability in geotourism, they are resources-based tradition, activity-based tradition and community-based tradition (Saarinen, 2006; Ferreira and Harmse, 2014). As continues to explained that resources-based

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tradition implies an objective and measurable limit or stage of growth at which there is no room for any individuals in a certain environment (Saarinen, 2006; Ferreira and Harmse, 2014). The activity-based tradition focusing more on the needs of tourism as an economic activity which push the related actors modify the environment for their needs (Saarinen, 2006; Ferreira and Harmse, 2014). The community-based tradition involving community and related actors' participation and negotiation to achieve sustainability in the tourism as socially constructed concept.

Saarinen continues to explain that as a social construct, sustainability refers to the maximum levels of the known or perceived impacts of tourism (Saarinen, 2006). The perceived sustainability of the tourism industry will be influenced by time-space context and the perspectives of specific social, cultural, political, or economic actors who possess sufficient power over the chosen indicators and criteria (Saarinen, 2006). Thus, the development of Geopark Ciletuh, becoming an effort of protecting and maintenance of nature as the resource-based tradition, an earth tourism (geotourism) as the activity-based tradition as well as safeguarding the art and cultural heritage using local and other stakeholders participation which serving as the community-based tradition to maintain the existence of Geopark Ciletuh Pelabuhan Ratu based on the time-space context and authorities actors who determine the indicators and criteria of the tourism industry.

The preparedness of Geopark Ciletuh Pelabuhan Ratu to become a geotourism in scope of UNESCO Global Geopark (UGG), needs to be supported by the improvement of its infrastructure and also the facilities, such as streets, facilities of worship, clean water, and the integrated waste management. The knowledge and awareness on environmental aspect should also be enhanced through the learning process from an early age up to college at the area of Geopark Ciletuh Pelabuhan Ratu.

The current study on The Geopark Ciletuh Pelabuhan Ratu conducted found the need of management priority on 13 variables, which are, regulating and maintaining the site; road infrastructure; tourism security; global networking; clean water infrastructure; regional and central regulation and management; electricity infrastructure; other energy type infrastructure; international tourists potency; government aid for the management of the site; geotourism information; tourism accessibility; research and development (Yanuar, 2018). These variables will support the plan of transforming Geopark Ciletuh Pelabuhan Ratu into geotourism and sustainability tourism through cooperation of every stakeholders involved, mainly the community of the Geopark Ciletuh Pelabuhan Ratu. As a group researchers emphasize on the importance of community involvement in tourism development which has been agreed by most researchers in this field (Salleh et al., 2016). Thus, in the context of ecotourism, the environment will be conserved due to the involvement of the community. The more aware the community is on the extent to which the environment should be developed in regard to tourism related activities the more sustain the ecotourism will be.

The challenge is not only to identify which stakeholders can be involved in the development of Ciletuh tourism, but also to build the participation of the local community and the stakeholders. The community involvement may begin from the early phase of preparation, implementation, and also monitoring and evaluation. Implementation and participation process in tourism development can be realized through a process of collaboration and cooperation between local communities and other stakeholders. Djakfar proposed a model of stakeholders participation which is known as pentahelix model which consist of educational institutions, business, community, government and media (Djakfar, 2017). Similar with some research adds that each stakeholder participates in accordance with their own potential and mandate, while still maintain the rhyme and direction of the other stakeholders (Djakfar et al., 2017). In the pentahelix concept, Rosana mentioned that each stakeholder acquires their own function based on their position, yet they are working as a unit (Rosana, 2017). Three main factors in the development of Geopark Ciletuh are community empowerment, rehabilitation and infrastructure and regulation adjustment. Those three factors are the attempt to maintain and protection of geological, biological and cultural diversities.

This article is aiming at identifying stakeholders involved in the geotourism of Geopark Ciletuh Pelabuhan Ratu Sukabumi in order to reveal the participation of each stakeholders involved since the preparation of Ciletuh becoming Geopark to after the declaration of Ciletuh as Geopark. The article is important to understand the role of each stakeholders the impact of geotourism to the local community because the research on stakeholders and local community participation is still limited.

## 2. RESEARCH METHOD

The research is using descriptive method with qualitative approach and the data are collected from primary and secondary sources. Qualitative approach is used to examine the process and meaning making of conducted activities, with focusing at great length on the studied phenomenon (Denzin and Lincoln 2009). The data collection techniques used are observation, interview, literature and document studies. As explained that in qualitative research, the data collection is consist of 4 types, which are observation, interview, document and audio-visual material (Creswell, 2002). In order to validate the acquire data and test its reliability, Emzir mentioned the process of triangulation, member checking and auditing (Emzir, 2010). Thus, with this research, the data validity was utilizing the data triangulation technique, which means rechecking the collected data with various collected data from other sources. The informants of the research were local citizens, PAPSU Committee (Paguyuban Alam Pakidulan Sukabumi) as local institution paying attention and focusing on the activities of running the Ciletuh Geopark and local government officers.

The informants were purposively determined, based on consideration and goals connected with the focus of the research. Dudley categorized the selection of informants based on the knowledge on information regarding the condition and phenomena studied as criterion sampling, which means, the informants are determined based on certain criterions in line with the needs of acquired data (Dudley, 2005). The informants in the research is various parties connected with the effort of mapping the stakeholders in local community within the area of Ciletuh Geopark of Southern Sukabumi.

The consideration in determining the informants are as follow:

- 1) Government officers involved in the running and maintaining the area of Ciletuh Geopark.
- 2) Citizens surrounding the geopark involved in the running and maintaining the area of Ciletuh Geopark.
- 3) Various parties, either directly or indirectly involved in the running and maintaining the area of Ciletuh Geopark.

From the above various criteria determined then gained several informants, they are local citizens, household organizations, community leaders, head of village, PAPSU (Paguyuban Alam Pakidulan Sukabumi) as NGO, Tourism Office of Sukabumi Municipality and Trade, Cooperation, Small and Medium Enterprises Office of Sukabumi Municipality as governments. After being collected, the data obtained then analyzed and presented.

## 3. RESULTS

Most of the geoparks in the world and including Indonesia are located in remote and rural areas. Thus geotourism provide opportunities for improving the socio-economic conditions of rural communities and cultural sustainability; reducing unemployment and migration through the involvement of local communities in geopark activities (Farsani et al., 2011). These opportunities should be created and maintain for the common people benefit. It is important to maintain the sustainability of the Geopark Ciletuh Pelabuhan Ratu through cooperation and coordination of every parties involved in the Geopark Ciletuh since the proposal of Ciletuh to become a Geopark to the awarding the Ciletuh as Geopark by UNESCO.

As Djakfar mentioned pentahelix model which consist of educational institutions, business, community, government and media, the research shows there are a number of parties who are involved in Geopark Ciletuh Pelabuhan Ratu (Djakfar, 2017). The educational institutions involved in Ciletuh Geopark are Education Office and Teachers Union of the Republic of Indonesia (PGRI), Universitas Padjajaran (Unpad), Universitas Gadjah Mada (UGM), Bandung Insitute of Technology (ITB), Bogor Institute of Farming (IPB), Universitas Pendidikan Indonesia (UPI), Telkom University and Junior High Schools (SMP) in the area of Geopark Ciletuh. From the business parties, there are PT. Biofarma, BJB Jawa Barat-Banten. Meanwhile, the government party involved is Regional Government and Tourism Office of Sukabumi Municipality and local authorities such as Tamanjaya Village Authority.

Kompepar (Tourism Driving Force Community), Local Community at Desa Tamanjaya, PAPSU (Pakidulan Sukabumi Nature Community), Cupumanik Group (Black Rice Farmers), Rafflesia Fatma Cullinary Group, Eel Cultivation Group, Regank Handycraft Group, Guay Art Group, Green

Ciletuh Conservation Group serve as community parties in stakeholders category of the Geopark Ciletuh Pelabuhan Ratu. The media parties as stakeholders involved in Geopark Ciletuh Pelabuhan Ratu is mostly online media, however every stakeholder is also published and informed their activities and events connecting with Geopark Ciletuh Pelabuhan Ratu. Each parties play an important role in ensuring the management of Geopark Ciletuh and maintain the ecotourism as the result of the determination of Ciletuh as Geopark.

The involvement of various stakeholders in the management of Geopark Ciletuh is very important in ensuring the sustainability of the tourism. In each of these stakeholders, there are also parties which needs to be considered about its involvement. For example, for educational institutions can be seen that based on education level, that is from pre-school, elementary school, junior high school, high school, and college. The involvement of the local educational institutions, educating the surrounding of the Geopark on the knowledge and importance of maintaining the tourism aspect from the existence of Geopark Ciletuh Pelabuhan Ratu. The community should be informed about the benefit of sustainable tourism for their future livelihood. By embedding the knowledge and importance of sustaining tourism for the future into the local curriculum, the pupils are expected to have different way of thinking and behavior on sustainable tourism and a longer term of income resources for them in the future. The strategy of embedding the knowledge and importance of sustainable tourism is one attempt to enhance the capacity of the local community mainly on the awareness of protecting and managing the Geopark area.

One of important factor in the development of environment-based tourism or nature is the involvement of local communities. The involvement of local communities in the management of environment-based tourism takes place at every stage of the management of nature tourism, which starts from identification stage of natural tourism potentials, the implementation of tourism activities, environmental maintenance, as well as monitoring of environmental-based tourism management activities. This is evident from the research that since its proposition to become the geopark, the local community joined in a local organization called PAPSI (Paguyuban Alam Pakidulan Sukabumi), Cupu Manik Group, Rafflesia Fatma Cullinary Group, Regank Handicraft Group, Guay Art Group, and Green Ciletuh Conservation Group had been active and engaged in the proposition. They are actively managed and maintain the tourism in the Geopark Ciletuh. The participation of local communities in the development of environmental-based tourism is very important. Thus, the development of local communities in tourist areas will be a determinant factor in the sustainability of environmental tourism development. As stated by community participation in the tourism sector is seen as capable in sustaining tourism development (Alqarni, 2016). Furthermore, community participation, as stated by World Tourism Organization (WTO), World Travel and Tourism Council (WTTC) and the Earth Council, that tourism development is in need of public participation, not merely to improve the socioeconomic conditions of society or profit, but also to ensure the sustainable development of tourist areas.

Increased awareness of local communities on tourism development which does not damage the environment, should also be followed by improving the socio-economic conditions of local communities. Thus, the natural environment is sustainably maintained, but on the other hand the local communities will receive the benefits in the form of increased knowledge and skills which encourages increased income and welfare of local communities. The research found that many renown higher educational institutions in Indonesian have been involved in raising awareness of the community of the geopark and maintaining the sustainability of the geopark, they are Universitas Padjadjaran, Bandung Institute of Technology, Universitas Gajah Mada, Universitas Pendidikan Indonesia, Telkom University, Bogor Institute of Farming.

A group researcher has seen the other side of the existence of geopark nature tourism that is cultural sustainability of a society (Farsani et al., 2011). Further, they has states that cultural sustainability is the concept for the recovery and protection of cultural identities (Farsani et al., 2011). It is linked to previous traditional practices through celebrating local and regional histories and passing down cultural values to future generations. The improvement and protection of the culture is an integral part of the concept of geopark itself. Because the concept of geopark is actually an attempt to protect the wealth of geological diversity (geodiversity), biodiversity, and cultural diversity in a region. Geopark Ciletuh-South Sukabumi, is also as a unified whole of geological diversity, biology, and culture within a particular area (site) that needs to be protected and maintained sustainability for a wider purpose. The result depicts the art group as an attempt to maintain the cultural sustainability in Geopark

Ciletuh.

The involvement of a number of stakeholders and the local community in the management of Geopark Ciletuh, South Sukabumi, is essential. Ciletuh as the area that is currently known for Geopark recognition from UNESCO, similar with other geoparks in other countries, generally located in remote areas or rural areas therefore, the condition requires a special approach in its management. Proceedings of International Conference on Tourism Development, states by term sustainable community based rural tourism (CBRT), that is a community-based sustainability based on rural tourism (Kamarudin, 2013). Such a program, in practice, very dependent on the strong participation from local communities and other stakeholders. This is also confirmed as stated by United Nations World Tourism Organisation (UNWTO, 2005), that state sustainable tourism development requires the informed participation of all relevant stakeholders, as well as strong political leadership to ensure wide participation and consensus building (Graci and Dodds, 2010). The research shows that the village authority take on role as the regulator, however, there have not yet many village regulations supportive to the management of Geopark Ciletuh.

Integrated partnership collaboration in Geopark Ciletuh management can be built through a number of these stakeholders with several requirements which are awareness and mutual understanding on the basis of mutual respect and mutual esteem to achieve the goal of Geopark Ciletuh development. The next step is each stakeholder move in accordance with the potential and authority respectively, but still along within and in line with other stakeholders. Thus using the pentahelix concept, the research found that there are various parties involved in managing and maintaining the Geopark Ciletuh.

The most important stakeholder of Geopark Ciletuh management is the local community itself. Local communities play an important role in the development and maintenance of Geopark Ciletuh, because of the resources and uniqueness of the traditions and culture that exists and is attached to the local community itself. The local community is the main driving element of nature-based tourism maintenance activities. They have grown and coexist with the natural attractions that are part of an inseparable ecological system. Success on development and conservation of Geopark Ciletuh natural tourism will depend on the level of acceptance and support from its own local community (Wearing, 2001). The local community acts as the host and becomes an important player in the development of the tourist village in all phases which starts from the planning, supervision, and finally at the implementation stage. This is evident from the involvement of the local community represented by PAPSI together with the PT Biofarma and Government in preparing and proposing the Ciletuh to become the Geopark and resulting in UNESCO awarding Ciletuh as one of the world Geopark.

#### 4. CONCLUSION

The identification of stakeholders in Geopark Ciletuh management is important to determine the position and their respective roles. The stakeholders in the management of Geopark Ciletuh are government (Central, Regional, District, Sub-district, and Village), academia (universities), private (PT Bio Farma), media, and local communities (groups and local communities), including PAPSI (Paguyuban Alam Pakidulan Sukabumi). Every stakeholder are aware of their respective positions and roles in the management and maintaining natural attractions of the Geopark Ciletuh. The government is expected to be a facilitator that really allows the growth of local communities and other stakeholders to take part. The existence of Geopark Ciletuh provides a greater role and benefit to the local community itself. In the future, improvement and protection attempts can not be done and the responsibility of one party only, for example, the government but also need strong support and efforts from various parties, especially the local community in managing, maintaining and protecting the geopark.

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#### REFERENCES

- Alqarni, Saleh, A.Y., 2016. Quality of Work Life as a Predictor of Work Engagement among the Teaching Faculty at King Abdulaziz University. *International Journal of Humanities and Social Science*, 6 (8).
- Creswell, J.W., 1994. *Desain Penelitian: Pendekatan Kualitatif dan Kuantitatif*. Terjemahan Angkatan III & IV KIK-UI bekerjasama dengan

- Nur Khabibah, 2002. Jakarta: KIK Press
- Denzin, N.K., Lincoln, Y.S., 2000. Handbook of Qualitative Research. Terjemahan Dariyanto, Fata, Abi, Rinaldi 2009. Yogyakarta, Pustaka Pelajar.
- Detik.com. 2018. UNESCO Akui Geopark Ciletuh, Aher: Sejarah Baru Wisata Jabar. Rabu 2 Mei diunduh pada 12 Februari 2018 pukul 13.40 di laman [https://news.detik.com/berita-jawa-barat/d-4000693/unesco-akui-geopark-ciletuh-aher-sejarah-baru-wisata-jabar?\\_ga=2.193957613.1344698040.1549953315-584972442.1533100078](https://news.detik.com/berita-jawa-barat/d-4000693/unesco-akui-geopark-ciletuh-aher-sejarah-baru-wisata-jabar?_ga=2.193957613.1344698040.1549953315-584972442.1533100078)
- Djakfar, Muhammad., 2017. Pariwisata Halal Perspektif Multidimensi. Malang: UIN-Maliki Press.
- Dudley, J.R., 2005. Research Methods for Social Work, becoming consumers and producers of research. Boston: Pearson Education, Inc.
- Emzir. 2010. Metodologi Penelitian Kualitatif: Analisis Data. Jakarta: Rajawali Press.
- Erfina, I.Y., Muhammad, R.A.T., Gunawan, W., Raharjo, S.T., 2016. CSR Pada Pengembangan Wisata Taman Bumi (Geopark) Ciletuh. Jatinangor: Unpad Press.
- Farsani, N.T., Coelho, C., Costa, C., 2012. Geotourism and Geoparks as Gateways to Socio-cultural Sustainability in Qeshm Rural Areas, Iran. Asia Pacific Journal of Tourism Research, 17 (1).
- Ferreira, S., Harmse, A., 2014. Kruger National Park: Tourism Development and Issues Around the Management of Large Numbers of Tourists. Journal of Ecotourism, 13 (1), Pp. 16-34. <http://dx.doi.org/10.1080/14724049.2014.925907>.
- Graci, S., Dodds, R., 2010. Sustainable Tourism in Island Destinations. London: Earthscan.
- Kamarudin, Hisyam, K., 2013. Local Stakeholders Participation In Developing Sustainable Community Based Rural Tourism (CBRT): The Case Of Three Villages In The East Coast Of Malaysia. Proceedings of International Conference on Tourism Development. Penang. 4 – 5 February.
- Kusumahbrata, Y., 2017. Konservasi Geologi dan Geowisata: Alternatif Pengembangan Potensi Sumber Daya Geologi secara Berkesinambungan. Museum Geologi Bandung,
- Raharjo, S.T., Darwis, R.D., Hidayat, E.N., Riana, A.W., 2017. Perumusan Model Pengembangan Kapasitas Masyarakat Lokal di Kawasan Geopark Ciletuh Sukabumi Selatan. Laporan Akhir Penelitian Unggulan Perguruan Tinggi (PUPT) Universitas Padjadjaran
- Raharjo, S.T., Darwis, R.D., Hidayat, E.N., Riana, A.W., 2018. Pemetaan Kapasitas Masyarakat Lokal Kawasan Geopark (Taman Bumi). Bandung: ITB Press.
- Rosana, Fatimah, M., 2017. Geopark Ciletuh-Pelabuhanratu Menuju UNESCO Global Geopark bagaimana Unpad berkontribusi. Pusat Penelitian Geopark & Kebencanaan Geologi Universitas Padjadjaran. Diunduh pada 29 Januari 2019 pukul 13.17 WIB pada laman [http://www.unpad.ac.id/wp-content/uploads/2017/02/GNCP-toward-UGG\\_Peran-UNPAD\\_07022017.pdf](http://www.unpad.ac.id/wp-content/uploads/2017/02/GNCP-toward-UGG_Peran-UNPAD_07022017.pdf)
- Salleh, N.H.M., Shukor, M.S., Othman, R., Samsudin, M., Idris, S.H.M., 2016. Factors of local community participation in tourism-related business: Case of Langkawi Island. International Journal of Social Science and Humanity, 6 (8), Pp. 565.
- Sugiono, D.A., Sasongko, S.E., 2015. Determinasi Peran dan Formulasi Kebijakan Triple Helix Dalam Pengembangan Kota Kreatif di Kawasan Malang Raya. Jurnal Ilmiah Mahasiswa Fakultas Ekonomi dan Bisnis Universitas Brawijaya, 3 (1).
- UNESCO. 2015. Statutes of The International Geoscience and Geoparks Programme (IGGP). 38 C/14. 14 September 2015. Retrieved from <http://unesdoc.unesco.org/images/0023/002345/234539E.pdf>
- Wearing, S.L., Donald, M.C., 2001. The Development of Community Based Tourism: Re-Thinking the Relationship between Tour Operators and Development Agents as intermediaries in rural and isolated area Communities. Journal of Sustainable Tourism.
- Yanuar, Y., 2018. Feasibility Model Development of Geopark Ciletuh Palabuhanratu Sukabumi Regency West Java Based on Geological Resources. Dissertation, Faculty of Technique of Geology Universitas Padjadjaran.
- Zouros, N., Valiakos, L., 2010. Geoparks Management and Assessment. Bulletin of Geological Society of Greece Proceeding of the 12<sup>th</sup> International Congress XLIII No. 2 pp. 965-975, Digital Library Theophrastos - Department of Geology.

